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DENİZLİ METROPOLITAN MUNICIPALITY
GENERAL DIRECTORATE OF DENİZLİ WATER AND
SEWERAGE ADMINISTRATION (DESKİ)
DENİZLİ WATER, WASTEWATER AND STORMWATER
NETWORKS REHABILITATION PROJECT
REVISED FINAL
ENVIRONMENTAL and SOCIAL MANAGEMENT
PLAN

October 2020

GENERAL DIRECTORATE OF DENİZLİ WATER AND SEWERAGE ADMINISTRATION
SUSTAINABLE CITIES PROJECT

Denizli Water, Wastewater and Stormwater Networks Rehabilitation Project

Prepared by: DESKİ PROJECT MANAGEMENT UNIT, - October 2020

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1. INTRODUCTION

1.1. GENERAL

Environmental and Social Management Plan was prepared by **DESKİ PROJECT MANAGEMENT UNIT** for the management of environmental and social aspects and impacts within the scope of Sustainable Cities Project, Water Rehabilitation and Wastewater Systems Project of Denizli Directorate General of Water and Sewage Administration, and the same unit is responsible for its update and development. The Environmental and Social Management Plan has been approved by İller Bankası Project Management Unit and World Bank in February 2019.

Within Sustainable Cities Project (SCP-I) Sub Loan Agreement “Construction and Rehabilitation of Anafartalar, Dokuzkavaklar, Aktepe, Deliktaş and Karşıyaka Districts Water, Wastewater and Stormwater Networks (DES-W1)” tender is signed at 03.04.2019. By the change order signed at 17.12.2019, construction of Merkezefendi District water, wastewater and stormwater network; and by second change order, construction of wastewater networks in various streets in Yenişafak district, construction of stormwater networks in various streets in Bereketler district, construction of stormwater networks in various streets Zafer - Akçeşme districts and construction of stormwater networks in Vatan-Tuna-Kazım Karabekir streets are added to the scope of DES-W1.

“Sümer, Sevindik ve Karşıyaka Districts Water, Wastewater and Stormwater Networks (DES-W2)” tender is signed at 20.02.2020. By the change order signed at 08.06.2020, construction of Yenişehir District water network is added to the scope of DES-W2.

DESKİ is planning to use the remaining amount of the loan for renewing and rehabilitating the water, wastewater and stormwater networks of various districts. For this aim, DESKİ is planning a tender for DES-W3 contract. Within the scope of DES-W3 works, water, wastewater and stormwater networks of Hürriyet, Kayhan ve Asmalievler districts will be constructed.

The scope of works' of DES-W1 and DES-W2 are included in the “Final Environmental and Social Management Plan” that is approved in February 2020. The contracts of DES-W1 and DES-W2 are signed and the construction works are initialized. This study is prepared to update the existing “Final Environmental and Social Management Plan” by considering the additional areas that the infrastructure works will be utilized (Merkezefendi, Yenişehir, Bereketler, Yenişafak, Adalet, Zafer and Akçeşme districts) and the planned tender package DES-W3 (Construction and Rehabilitation of Hürriyet, Kayhan and Asmalievler Districts Water, Wastewater and Stormwater Networks).

Beyond the management of environmental and social dimensions and impacts, the report also provides general information on Drinking Water Rehabilitation and Wastewater Systems (including rainwater) projects, general and technical information within the scope of Municipal Services Project I and Municipal Services Project II (Additional Financing) financed through the loan provided by the World Bank via İller Bankası, presentation of the project area, environmental and social impact mitigation and monitoring plans prepared for the project, evaluations on the organizational structure of DESKİ which is responsible for the execution of the project, and notes on the meeting held to inform the public about the prepared plan in separate sections.

1.2. NEED FOR THE PROJECT

As one of the important cities featured by tourism and industry, Denizli, with an area of 11,868 km² in the Aegean Region, has experienced some significant organizational changes in the last 10 years. First of all, the province was made a “*Bütünşehir*” (“Whole City”) with the decision No. 2006/8352 of the Ministry of Internal Affairs which was published in the Official Gazette No. 26257 of 12.08.2006. With this amendment, legal entities of municipalities of Akkale, Bereketli, Gümüşler, Kayhan, Kınıklı, Servergazi, Hallaçlar, Üçler, Korucuk, Bağbaşı, Gökpınar and Göveçlik and villages of Bozburun, Eskihisar, Goncalı, Hisar, Kadılar, Karakurt, Saruhan, Şirinköy, Güzelköy (Yiğenağa) and Karakova, which had been under the central district of Denizli province, were terminated and they were included within the boundaries of Denizli Municipality pursuant to Article 11 of the Law on Municipalities No. 5393.

Then, Deniz Municipality gained the status of Metropolitan Municipality, along with other 13 municipalities, in the 2014 local election pursuant to the “Law on Establishing Metropolitan Municipalities and Twenty-Seven Districts in Fourteen Provinces” No. 6360 published in the Official Gazette on 06.12.2012. With the status of Metropolitan Municipality, some changes occurred both in the organizational structure and the service area. The unit, which had been named Water and Sewerage Directorate when Denizli was a Whole City Municipality, was expanded for its scope and transformed into the Directorate General of Water and Sewerage Administration (DESKİ) with the Cabinet decree No. 2014/6072 of 13.03.2014.

The decree of establishment of the Directorate General of DESKİ was published in the Official Gazette No. 28958 of 31.03.2014; and Directorate General of DESKİ has been operating pursuant to Law No. 2560, Law on Metropolitan Municipalities No. 5216, Law on Municipalities No. 5393 and other relevant legislation. DESKİ operates with 288 personnel including 108 Officers, 46 Contracted Personnel and 134 Workers. The organizational chart of DESKİ is presented in Section 5, Figure 5.2.

While water and sewage works of Denizli Central District had been carried out by Denizli Municipality until March 2014, DESKİ was established in April 2014 and water and sewerage works were transferred from the body of Denizli Metropolitan Municipality to DESKİ, and furthermore, DESKİ was assigned with the operation of water and sewerage works of all the districts and villages in Denizli province as well as Denizli Central District. With the change of the organizational structure within Denizli Municipality, the service boundaries of the Municipality were expanded, which increased the workload and responsibilities of DESKİ.

Whereas Denizli Directorate of Water and Sewerage had been responsible only for settlements connected to Denizli Central District until 2014, DESKİ has been responsible for the whole Denizli province since then.

Agreements for the loans taken on before 2014 had been signed by Deniz Municipality, but the following loan agreements started to be signed by Directorate General of DESKİ with the decree entering into force in 2014.

Since the scope of DESKİ was expanded, infrastructure investments of substantial amounts need to be made across the province.

DESKİ made a modification in the collector of the Bağırsak Stream to protect the environment and connected its 70% of which elevation was convenient to the Ellez collector (1600 mm). Thus, it was ensured that wastewater discharged to the receiving environment without being treated before was

directed to the existing Eskihisar Wastewater Treatment Plant for being treated before discharge. The original capacity of Eskihisar Treatment Plant is 1690 l/s, and the flow rate it had been receiving before the beforementioned modification was 638 l/s. The flow rate increased around 13.6% after the modification. The current flow rate of the plant is 868 l/sec; it operates at 51% fullness and it has the capability to treat the flow rates specified in line with the Sustainable Cities Project-I.

This is a very important decision taken by DESKİ towards environmental protection. In spite of all these works, most of the channels that provide the collection and transportation of wastewater in Denizli Central District are still outdated. Moreover, there are many unregulated connections from the roofs of buildings to the sewerage system in addition to the existing lines serving as a combined system, which causes the capacity of the sewage system to be full in heavy rainfall. For these reasons, the wastewater collection system needs to be renewed and separated.

To plan the investments of wastewater treatment plants to be carried out throughout the province, a Master Plan for Wastewater Treatment Plants was completed by DESKİ in 2017, and engineering preparations were performed for short- and medium-term investments.

The third issue is the rainwater adversely affecting people, life, traffic, buildings, etc. especially in the city centre. While there is an old rainwater drainage system in the Central District, it falls insufficient. In addition, as mentioned above, the wastewater collection system is also used for the collection of rainwater. Therefore, there is a need for a new drainage system that will collect rainwater separately, especially in the city centre.

Consequently, the beneficiary DESKİ initiated the infrastructure projects to eliminate the deficiencies related to the water mains rehabilitation, wastewater collection and rainwater systems. It is an important requirement that these projects are tendered and put into practice.

1.3. PURPOSE AND SCOPE OF THE PROJECT

A loan of EUR 29,387,685 was taken on from the World Bank via İller Bankası within the scope of Municipal Services Project I. The drinking water main line of 204,488.45 m, the drinking water subscription line of 136,073.38 m, the sewer mainline of 156,939.36 m, the sewer domestic and plot connection line of 70,944.69 m and the rainwater mainline of 34,712.24 m were completely constructed with this loan.

Within the scope of Municipal Services Project II (Additional financing), a loan of EUR 73,598,000 taken on from the World Bank was used for constructing the drinking water mainline of 230,982.96 m, the drinking water subscription line of 175,650.59 m, wastewater mainline of 167,957.19 m, the sewage domestic and plot connection line of 65,735.47 m and the rainwater mainline of 65,543.53 m. A part of this loan amounting to EUR 5,104,176 was utilized for the purchase of 5 On-Vehicle Grooving Tools, 2 Combined Grooving and Cleaning Tools, 10 drinking water and wastewater Repair Maintenance Repair Tools, 9 Vacuum Trucks with different capacities, 3 Complete In-Vehicle Physical Water Loss Detection Tools and 3 Complete In-Vehicle Internal Pipeline and Channel Monitoring Tools for Directorate General of DESKİ. Again, for the new loan taken on from the World Bank via İller Bankası within the scope of the "Sustainable Cities Project-I", the sub-loan agreement No. 1 was signed on 28.12.2016 to reinforce and expand the current project; the amount of the agreement is 53.750.000 Euro.

Within the scope of Sub Loan Agreement of Sustainable Cities Project (SCP-I), by construction contracts DES-W1 and DES-W2, it is planned to complete the construction works of water, wastewater and

stormwater networks and house connections of Anafartalar, Dokuzkavaklar, Aktepe, Deliktaş ve Karşıyaka, Sevindik ve Sümer neighborhood. Within this scope, tender of “Construction and Rehabilitation of Water, Wastewater and Stormwater Networks of Anafartalar, Dokuzkavaklar, Aktepe, Deliktaş and Karşıyaka Neighborhoods (DES-W1)” work is completed on 03.04.2019 and the contract is signed with Güven-Yuner joint venture with amount 14.002.495,25 \$. At 17.12.2019, an exploration increase of 14.83% is made and extra work (Merkezefendi water, wastewater and stormwater networks) with an amount 2.076.991,95 \$ is added to the scope of DES-W1 works. By the second change order signed at 23.09.2020, an exploration increase of 18.42% is made and extra works (various streets of Yenişafak neighborhood wastewater networks, various streets of Bereketler neighborhood stormwater networks, Zafer-Akçeşme neighborhoods stormwater networks and Vatan-Tuna- Kazım Karabekir streets’ stormwater networks) with an amount 2.579.001,77 \$ are added to the scope of DES-W1 works.

“Construction and Rehabilitation of Water, Wastewater and Stormwater Networks of Sümer, Sevindik and Karşıyaka Neighborhood (DES-W2)” work is completed on 20.02.2020 and the contract is signed with Atilla İnşaat Turizm ve Ticaret A.Ş with amount 14.099.177,22 \$. At 08.06.2020, an exploration increase of 14.98% is made and extra work (Yenişehir neighborhood water network) with an amount 2.112.056,75 \$ is added to the scope of DES-W2 works.

With the remaining part of the loan provided by DESKİ, it is planned to renew the drinking water, wastewater and stormwater systems and to eliminate the deficiencies in some neighborhoods where infrastructure problems are experienced. In this context, DES-W3 contract is planned to be opened to tender. Within the scope of the DES-W3 construction package, it is planned to construct water, wastewater and stormwater lines in Hürriyet, Kayhan and Asmalievler neighborhoods, which are urgent due to old network lines, frequent breakdowns and intense complaints.

The new project area will be the vicinity of the area recently constructed with the World bank loan (See Figure 1.1). This work aims to ensure that drinking water infrastructure investments are completed and operated efficiently and effectively to eliminate the abovementioned deficiencies, problems and complaints, especially water leaks. To this end, replacement and renewal works of main will be conducted. It is aimed with the wastewater systems project within the scope of Sustainable Cities Project to ensure the disposal of wastewater in a controlled manner without harming the environment (Figure 1.2). Accordingly, the project covers the construction and operation of the wastewater mains. In this context, the construction of the missing secondary collection lines will be completed, and the wastewater will be conveyed to the wastewater treatment plant.

Within the scope of the last project to be implemented within the scope of the Sustainable Cities Project (Project boundaries are given in Figure 1.1) stormwater network improvements is aimed. Additionally, it is also aimed to reduce the load on the treatment plant by collecting stormwater by new lines without damaging settlements, roads, buildings etc. In addition, separate collection of wastewater and stormwater will be provided.

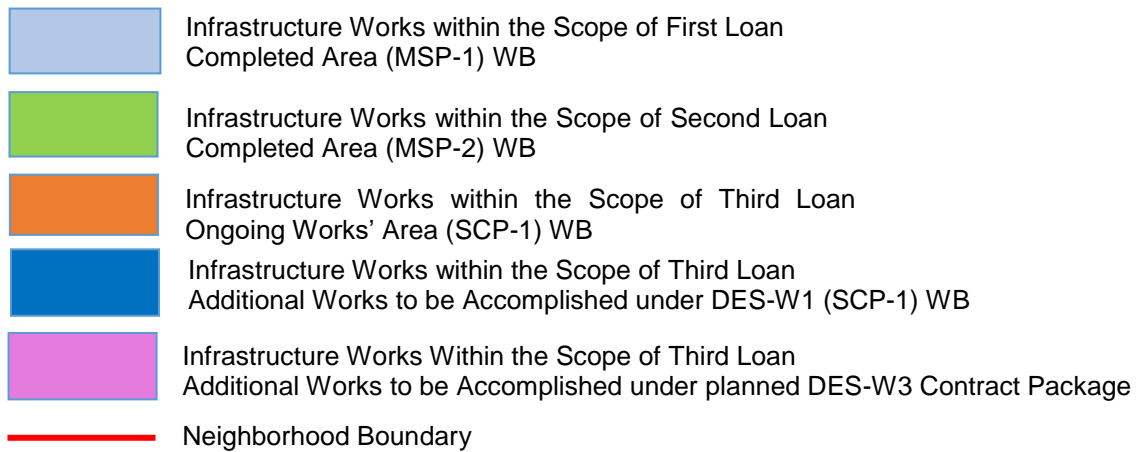
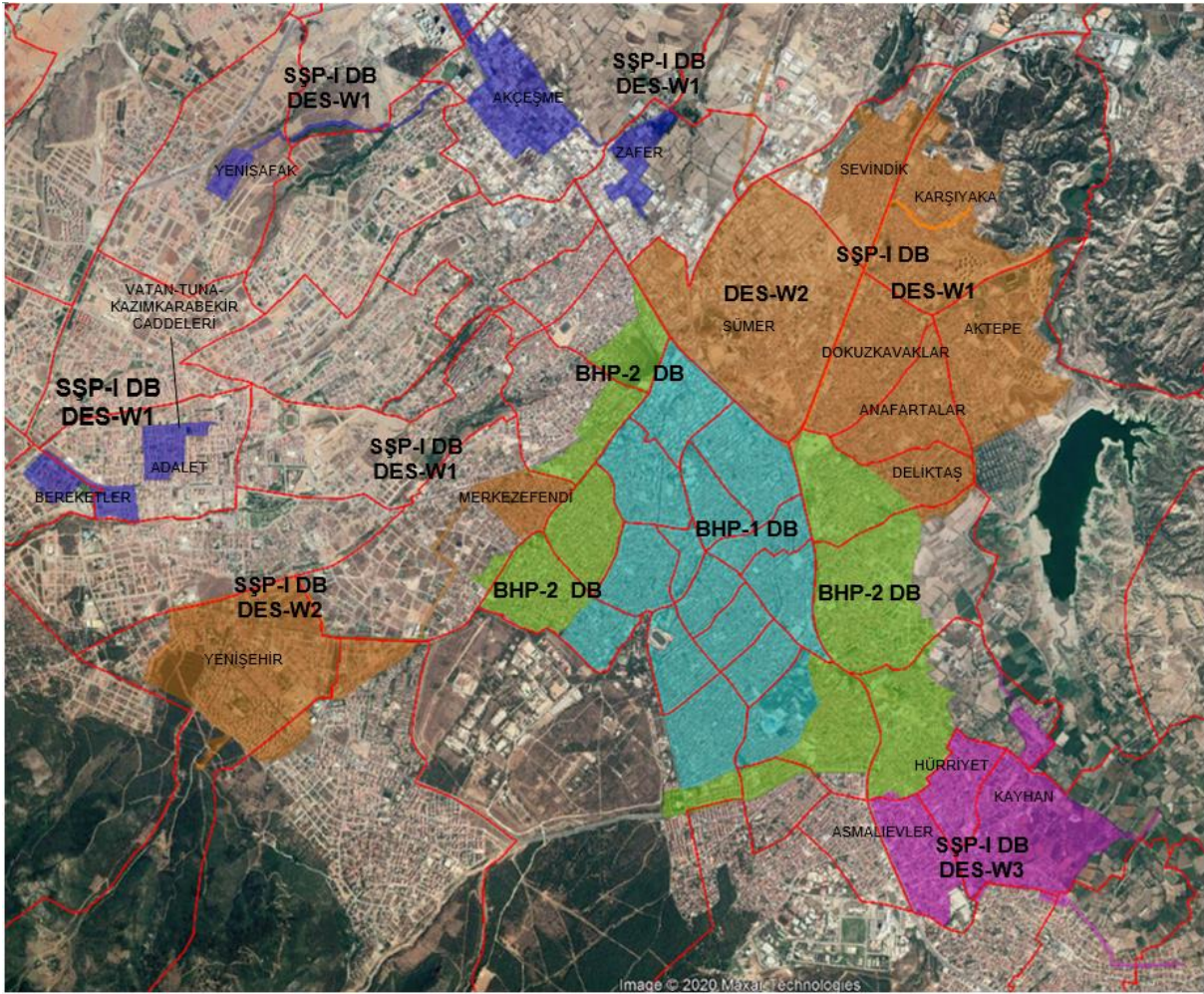


Figure 1.1. Areas of Infrastructure Works Performed with World Bank Loans in Denizli

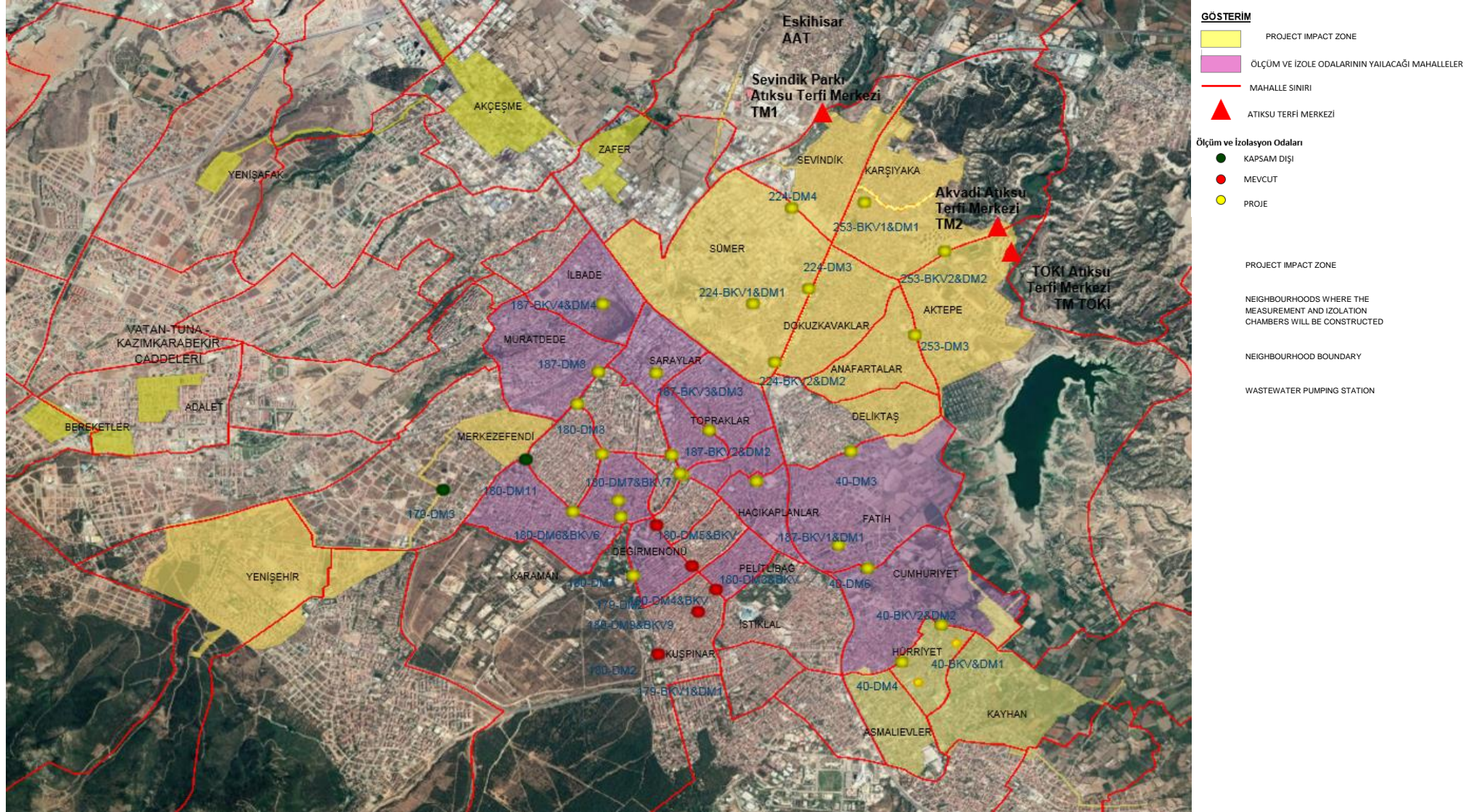


Figure 1.2. Project Domain

The project packages to be implemented under the Sustainable Cities Project will expand and reinforce the scope of the already-completed works. The completed projects were implemented in the old residential areas of the city with current and approved development plans having been taken into consideration. (Figure 1.1)

The following works will be done in the specified locations within the scope of the Sustainable Cities Project-I:

Table 1.1. Features and Locations of Investments to be made in Denizli within the Scope of the Sustainable Cities Project (SCP)

Definition of Work	Social and Environmental Domain of Location/Project
<p>Within the scope of ongoing infrastructure works of DES-W1 Package; Approx. 98 km long drinking water network line with ductile pipes ranging in diameter from 100 mm to 300 mm; approx. 82 km long sewage line with concrete/reinforced concrete pipes ranging in diameter from 300 mm to 600 mm; approx. 1.5 km long sewerage line with corrugated pipes with diameters of 200 mm, 300 mm, 600 mm and 1000 mm; 2025 sewage line manholes; approx. 1060 m long sewage pumping line with PE 100 PN 10 pipes with diameters of 140 mm, 355 mm and 500 mm; approx. 26 km long stormwater line with concrete/reinforced concrete pipes ranging in diameter from 400 mm to 1600 mm; 512 manholes as well as construction of TOKİ Wastewater Pumping Station (TM-TOKİ) (15 l/s), Akvadi Wastewater Pumping Station (TM-2) (200 l / h)</p>	<p>Neighbourhoods of Anafartalar, Dokuzkavaklar, Aktepe, Deliklitaş and (a part of) Karşıyaka</p>
<p>Within the scope of ongoing infrastructure works which are added to DES-W1 Package via change order; approximately 28 km of drinking water network line with ductile pipes ranging from 100 mm to 200 mm in diameter, approximately 12.5 km with concrete / reinforced concrete pipes with diameters of 200 mm and 600 mm sewerage line, approximately 2.5 km of sewer lines with corrugated pipes of 200 mm in diameter, 321 sewer line manholes, approximately 1 km of stormwater line with concrete / reinforced concrete pipes with diameters of 800 mm and 1000 mm, 19 stormwater manholes</p>	<p>Merkezefendi Neighbourhood</p>

Definition of Work	Social and Environmental Domain of Location/Project
<p>Within the scope of DES-W2 Package; approx. 70 km long drinking water line with ductile pipes ranging in diameter from 100 mm to 400 mm; approx. 53 km long sewer line with concrete/reinforced concrete pipes ranging in diameter from 300 mm to 2400 mm, 1308 sewage line manholes; approx. 1598 m long sewerage line with PE 100 PN10 pipes ranging in diameter from 400 mm to 2400 mm; approx. 24 km long rainwater line with concrete/reinforced concrete pipes ranging in diameter from 400 mm to 2000 mm; 490 rainwater manholes, construction of Sevindik Park Wastewater Pumping Station (TM-1) (110 l/s), the new wastewater collector delivering to Eskihisar Wastewater Construction of (2400 mm in diameter, 1.5 km long)</p>	<p>Neighbourhoods of Sevindik, Sümer and Karşıyaka (the remaining part) and neighbourhoods of Zafer and Eskihisar which the sewer collector goes through</p>
<p>Within the scope of ongoing infrastructure works which are added to DES-W2 Package via change order; approximately 42 km of drinking water line with ductile pipes ranging from 100 mm to 300 mm in diameter, approximately 6.3 km with PE 100 PN 16 pipes with diameters of 63 mm and 75 mm. drinking water line</p>	<p>Yenişehir Neighborhood</p>
<p>Measuring and Isolation Chambers (36 chambers)</p>	<p>Only the specified points in the neighbourhoods of Sümer, Karşıyaka, Aktepe, Değirmenönü, Muratdede, Karaman, Kuşpınar, Pelitlibağ, Topraklık, Saraylar, Palaces, İlbade, Hacıkaplanlar, 15 Mayıs, Cumhuriyet, Fatih, Hürriyet</p>
<p>Within the scope of ongoing infrastructure works which are added to DES-W1 Package via change order; approximately 4.5 km sewer line with concrete / reinforced concrete pipes with diameters ranging from 200 mm to 300 mm, 97 sewer line manholes, diameters varying between 400 mm-1600 mm Approximately 14 km stormwater line with concrete / reinforced concrete pipes, 253 stormwater manholes</p>	<p>Yenişafak, Bereketler, Adalet, Zafer and Akçeşme Neighbourhoods</p>
<p>Within the scope of planned DES-W3 Package; approx. 60 km long drinking water line with ductile pipes ranging in diameter from 100 mm to 400 mm; approx. 48 km long sewage line with concrete/reinforced concrete pipes ranging in diameter from 300 mm to 1000 mm; 1159 sewage line manholes; approx. 14 km long stormwater line with concrete/reinforced concrete pipes ranging in diameter from 400 mm to 1000 mm; and construction of 287 rainwater manholes</p>	<p>Hürriyet and Kayıhan Neighbourhoods</p>

Scope of the works for the construction of the project is shown in Table 1.1, and Figure 1.2 defines the location of the works to be done. This area constitutes the Environmental and Social Domain of the project.

1.4. LEGAL FRAMEWORK

1.4.1. National Legislation

The Law on Environment No: 2872 published on the Republic of Turkey Official Gazette No. 18132 of 11.08.1983 and later revised in the Official Gazette dated 29.05.2013 (Law No. 6486) constitutes the basic legal framework of the environmental legislation in Turkey. This law is supported by numerous regulations. Article 10 of Law on Environment forms the main framework of the Regulation on Environmental Impact Assessment (EIA Regulation) published in the Official Gazette No. 29186 of 25.11.2014. Environmental Impact Assessment (EIA) applications are carried out for identifying the positive and negative impacts of the projects planned to be implemented, for assessing the precautions to be taken to prevent negative impacts or minimize them in a way that will not harm the environment by determining the location and the alternative technologies and for monitoring and checking the implementation of the projects. The EIA process defines the process that includes the application and the pre-construction, construction, operation and post-operation works for performing the environmental impact assessment of the planned project. EIA is the process that starts with the presentation of the reports in which all the specified aspects of the projects are expressed and ends with the decision of the Ministry.

Unless the decision that “Environmental Impact Assessment is Positive” or “Environmental Impact Assessment is not Required” is made for projects subject to the Regulation on Environmental Impact Assessment published in the Official Gazette No. 29186 of 25.11.2014, incentive, approval, permit, building license and use permit for such projects cannot be granted, no investment can be started or tendered for the project. However, this does not preclude applying for the processes of such incentives, approvals, permits and licenses.

As part of the European Union membership process, Turkey has carried out a variety of organizational and legislative reforms. With these reforms, environmental legislation and environmental protection instruments have been harmonized with international standards. The activities and liabilities to be carried out within the scope of the project must be done in accordance with the provisions of the relevant Turkish legislation.

The regulations and laws in the national legislation concerning the project are given below:

- Law on Groundwater No. 167 (23.12.1960)
- Law on Environment No. 2872 (11.08.1983)
- Law on Land Protection and Land Use (19.07.2005)
- Occupational Health and Safety Law (30.06.2012)
- Regulation on Control of Packaging Wastes (24.08.2011 – 27.12.2017)
- Regulation on Control of Waste Electrical and Electronic Equipment (22.05.2012)
- Regulation on Control of Waste Batteries and Accumulators (31.08.2004)

- Regulation on Control of Waste Oils (30.07.2008-31.07.2009-30.03.2010-05.11.2013 – 21.12.2019)
- Regulation on Regular Storage of Waste (26.03.2010 – 26.10.2019)
- Regulation on Incineration of Wastes (06.10.2010)
- Regulation on Control of Vegetable Waste Oils (06.06.2015)
- Regulation on Control of Excavation Soil, Construction and Demolition Wastes (18.03.2004)
- Waste Management Regulation (02.04.2015-23.03.2017)
- Regulation on Control of End-of-Life Tires (25.11.2006-30.03.2013-10.11.2013-11.03.2015)
- Regulation on Control of Medical Wastes (25.01.2017)
- Regulation on Assessment and Management of Environmental Noise (04.06.2010-27.04.2011- 18.11.2015)
- Regulation on Air Quality Assessment and Management (06.06.2008-05.05.2009)
- Regulation on Control of Odour Emissions (19.07.2013)
- Regulation on Industrial Air Pollution Control (03.07.2009- 30.03.2010-10.10.2011- 13.04.2012- 16.06.2012-10.11.2012-20.12.2014)
- Regulation on Exhaust Gas Emission Control (11.03.2017)
- Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals (23.06.2017 – 29.11.2019)
- Regulation on Wastewater Collection and Removal Systems (06.01.2017)
- Regulation on Water Pollution Control (31.12.2004-13.02.2008-30.03.2010-24.04.2011- 25.03.2012-30.11.2012-10.01.2016 - 14.02.2018-14.01.2020)
- Regulation on Protection of Groundwater Against Pollution and Degradation (07.04.2012- 22.05.2015)
- Regulation on Control of Soil Pollution and Point-Source Contaminated Sites (08.06.2010- 14.06.2012-11.07.2013 - 08.07.2019)
- Regulation on Implementing the Law on Land Protection and Land Use (15.12.2005)
- Regulation on Monitoring of Greenhouse Gas Emissions (17.05.2014-29.06.2016- 31.05.2017)
- Regulation on Environmental Impact Assessment (25.11.2014-09.02.2016-26.05.2017- 14.06.2018 – 08.07.2019)
- Regulation on Strategic Environmental Assessment (08.04.2017)
- Occupational Health and Safety Law Regulation (09.12.2003)

1.4.2. International Liabilities

1.4.2.1. EU National Program (2008)

“Decision on the Turkey National Program regarding Adoption of Acquis and on Implementation, Coordination and Monitoring of the Turkey National Program regarding Adoption of Acquis” No. 2008/14481 was published in the Official Gazette No. 27097 of 31.12.2008 (the 5th repetition) (EU National Program, 2008).

The title “Improvement of Water Quality” in the National Programme published in 2003 was defined as the first priority, and urban wastewater treatment is also included in this title. The National Report published in 2008 lists the sub-initiatives required for these priorities.

1.4.2.2. Wastewater Treatment Action Plan (2015-2023)

“National Environmental Strategy and Action Plan“, “Integrated Harmonization Strategy Project” carried out with EU resources, “Planning of High-Cost Environmental Investments”, “Environmental Operational Program”, “Watershed Action Protection Plans”, “Strategic Plan of the Ministry of Environment and Urban Planning 2013-2017” and “2008-2012 Wastewater Treatment Action Plan” were utilized for preparing the Wastewater Treatment Action Plan (2015-2023).

Wastewater infrastructure investments, which have a very important place in the fulfilment of the obligations set forth in the Law on Environment and the transposition of the European Union Environmental Acquis to the national legislation, improvements on these investments, their costs and distribution by years were planned (ÇOB, 2015).

Pursuit of sustainable and long-term solutions to international, national and local environmental issues are among Turkey’s priorities. It was decided as an important task within the environmental policy in the Wastewater Treatment Action Plan to have particular focus on environmental services such as improving the systems of wastewater, sewage and rainwater and enhancing the infrastructure as well as on strengthening the organizational and financial capacity of local authorities.

1.4.2.3. International Environmental Conventions to which Turkey is a Party

International environmental conventions adopted in our country are as follows:

- International Convention for the Protection of Birds, Paris, 1959 (Turkish O.G. 17.12.1966, No. 12480)
- Convention for the establishment of European and Mediterranean Plant Protection Organization (Amended), Paris 1951 (Turkey 08/10/1965)
- European Cultural Convention 19.12.1954 (Turkey O.G. 17.6.1957, No. 9635)
- Convention concerning the Protection of World Cultural and Natural Heritage, Paris, 1972 (Turkey O.G. 14.2.1983, No. 17959)
- Convention on the Conservation of European Wildlife and Natural Habitats, Bern, 1979 (Turkey O.G. 20.2.1984, No. 18318)
- Convention for the Protection of the Mediterranean Sea Against Pollution, Barcelona 1976 (Turkey O.G. 12.6.1981, No. 17368)

- Protocol for the Protection of the Mediterranean Sea Against Pollution from Land-based Sources, Athens 1980 (Turkey O.G. 18.3.1987, No. 19404)
- Protocol concerning Specially Protected Areas in the Mediterranean, Geneva 1982, (signed on 6.11.1986) 23.10.1988, No. 19968)
- Convention on Long Range Transboundary Air Pollution, Geneva, 1979 (Turkey O.G. 23.3.1983, No. 17996)
- Additional Protocol on Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) to 1979 Convention on Long Range Transboundary Air Pollution, Geneva, 1984 (Turkey O.G. 23.7.1985, No. 18820)
- The Vienna Convention on the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer (R.G. 8-9.9.1990, No. 20629)
- Convention on Biological Diversity, Rio de Janeiro, 5.6.1992 (Official Gazette No. 22860 of 27 December 1996)
- Convention on Wetlands of International Importance especially as Waterfowl Habitat (RAMSAR), (R.G. 17.5.1994, No. 21937)
- Convention on International Trade in Endangered Species of Wild Fauna and Flora - CITES (Official Gazette dated 20 June 1996)

1.4.3. World Bank Policies of Protection Measures

Within the scope of the World Bank operational policies concerning Environmental Operational Assessment (OP4.01), projects are classified under the categories of A, B, C by the degree of their impacts on the environment. The said classification is based on the type, location, sensitivity, scale of the project, the structure and aspects of its potential impacts.

The World Bank requires customers to implement Policies of Protection Measures in its direct investments in the management of environmental risks and impacts for further development opportunities. The World Bank implements the Sustainability Framework together with other strategies, policies and initiatives as it directs business activities to achieve general development goals.

It is imperative to implement World Bank's 10 Policies of Protection Measures by the type and impact of the investment:

1.4.3.1. Environmental Policies

- **Environmental Assessment (OP/BP 4.01):** Activities performed within the scope of basic construction works create environmental and social impacts which are not very critical within the existing project boundaries by their nature. Although the impacts are not very critical, it is required to implement WB's Environmental Assessment Policy. The implementation of OP 4.01 requires the preparation of environmental and social management tools. This EMSP involves the mitigating measures for negative impacts that may arise during the construction of wastewater collection systems, rainwater collection systems and drinking water distribution systems in the neighbourhoods of Anafartalar, Dokuzkavaklar, Aktepe, Deliklitaş and (a part of) Karşıyaka, Merkezefendi, Yenişafak, Bereketler, Adalet, Zafer and

Akçeşme and TOKİ Wastewater Pumping Station (TM-TOKİ), Akvadi Wastewater Pumping Station (TM-1) within the scope of DES-W1; and the construction of wastewater collection systems, rainwater collection systems and drinking water distribution systems in the neighbourhoods of Sevindik, Sümer, Yenişehir and Karşıyaka (the remaining part), Sevindik Park Wastewater Pumping Station (TM-1) and measuring and control chambers in several points and the new collector going through Zafer and Eskişehir neighbourhoods delivering to Eskişehir Wastewater Treatment Plant and wastewater collection systems, rainwater collection systems and potable water distribution systems in Hürriyet, Kayhan and Asmalievler neighborhoods which is planned to be within the scope of DES-W3. The project is exempt from the EIA Regulation pursuant to Turkish Environmental Legislation. When an evaluation was made within the scope of the Sustainable Cities Project-I, the project was decided to be a **Category B** project considering that environmental impacts of the project are structurally reversible, specifically to the site where the project will be implemented, and that the sensitivity degree of the area is low.

- **Natural Habitats (OP/BP 4.04):** Natural assets of Denizli have come to the forefront with its effects both on the cultural and economic structure. Rough terrain structure and water corridors created by mountain ranges have been the main factor in the positioning of settlements and site selection for agricultural activities. Besides the natural elements that play a role in shaping the settlement and culture of the province, the natural structure and the biodiversity caused by the climate are the important natural assets of the region. This diversity includes plant species, bird species, biodiversity in water, fresh and saltwater fish and other living and game. There are no sensitive areas such as important environmental protection zones, etc. in the neighbourhoods within the scope of the project to be implemented in the residential areas in the city centre.
- **Pest Management (OP 4.09):** No action will be taken to require pest management within the scope of the project.
- **Physical Cultural Resources (OP/BP 4.11):** Laws and practices in Turkey meet the World Bank requirements. Since the national legislation on the protection of cultural property is strictly enforced, no additional condition is expected outside the World Bank's policies of protection measures. However, in case of a find randomly discovered or found by coincidence which will require management of cultural works, a random find procedure will be conducted to warn site supervisors and contractors about steps to follow. In addition, all official correspondence to be made before or during the construction works will be recorded and added to the periodical monitoring reports.
- **Forests (OP/BP 4.36):** The project is not expected to have an impact on forest areas.
- **Dam Safety (OP/BP 4.37):** There is no dam project affected by the project.

1.4.3.2. Social Policies

- **Involuntary Resettlement (OP/BP 4.12):** A Land Acquisition and Involuntary Resettlement Policy Framework (LAIRPF) which meets the requirements of this policy has been prepared, and possible land acquisition needs during the construction of the project require the preparation of a project-specific Land Acquisition and Involuntary Resettlement Action Plan (LAIRAP). Issues that might be subject to expropriation procedures such as areas without

cadastral roads, private property, etc. were eliminated in designating the line routes in the field surveys, and it was aimed to place the line route through the zoning roads. A large-scale land acquisition is not foreseen within the scope of DESKİ's "Improvement Project for Drinking Water, Wastewater and Rainwater Systems". However, it is foreseen that there will be need for allocating easement in an area where 28 people can be affected in 1 parcel. There are no agricultural activities in this area at the moment. The project is not expected to cause any situation subject to physical displacement.

- Land acquisition procedures for Akvadi, Sevindik and TOKİ TM centers, which are within the scope of the project, have been completed and construction works have started. (See Section 3.1.2.5)
- In addition, the allotment was made in 1 parcel through which the Eskihisar wastewater collector, which is included in the DES-W2 Construction Works Contract Package, and then the newly formed parcel was expropriated. Reconciliation negotiations were held with 20 shareholders of the parcel in question, and the title deeds were registered in the name of DESKİ by reaching an agreement with 11 people. With 9 persons, it is expected that the appraisal of the expropriation value will be decided through an unreconciled Court. The reason for the disagreement is that the shareholders do not consider the expropriation value sufficient. All shareholders have been reached. An expropriation case was filed for 9 shareholders who could not be reconciled on 26.12.2019 at the Denizli 3rd Civil Court of First Instance for the determination of the expropriation value with the base number 2019/857 and the registration of the title deed in the name of the General Directorate of DESKİ. The lawsuit in question was held in July due to the pandemic process in the world and in our country. The hearing was postponed to 05.11.2020 in order to clarify the discrepancy between the title deed records of one of the shareholders and the records in the population. There is no use in the parcel. In the project, a Land Acquisition Plan was prepared according to the World Bank OP 4.12, and it was determined that there was no housing, economic or agricultural activity in the previous meetings and consultations with the owners. The lawsuit filed for the purpose of "determination of the expropriation price by the court and registration of the immovable property in the name of the administration" according to the Article 10 of the Expropriation Law for the 9 owners who cannot be reconciled is ongoing. After the court determines the price, DESKİ will pay the appraised amount to 9 finances. However, it is possible to continue the works in return of a consent by undertaking that it will not cause any damage to the owners in this remaining part of the said construction.
- Easement right will be established in the area where 1 person can be affected in 1 passage where the rainwater collector passes in Zafer neighborhood, which will be additionally built within the scope of the DES-W1 Construction Works Contract Package. According to the 4th article of the Expropriation Law numbered 2942, the parcel no. 667 of the Merkezefendi district, Şemikler neighborhood was allocated and expropriated by the Board of Directors of the General Directorate of DESKİ. A letter was written to the Ministry of Environment and Urbanization to approve this decision. In addition, the preparation of the cadastral file of the part of the property where the collector line passes is underway. Following the approval of the public interest decision and the completion of the cadastral works, the relevant right holder will be notified and the negotiations will begin.

- For the expropriation of 23 parcels located on the wastewater and stormwater collectors route of Hürriyet, Kayhan and Asmalievler neighborhoods to be made within the scope of the DES-W3 Construction Works Contract Package, which is planned to be tender, DESKİ General Directorate Board of Directors to make the expropriation according to the 4th Article of the Expropriation Law numbered 2942 and expropriated 14.09.2018 dated and 203 numbered public benefit decision was taken and this decision was approved by the Ministry of Environment and Urbanization with the letter dated 12.11.2018 and numbered E.204357. The right of easement was established for the passage through settlement negotiations in 20 plots (77 shareholders in total) of private ownership on the collector routes. In the 3 parcels owned by DSI, the procedures for establishing easement rights continue.
- There is currently no agricultural activity in these areas. The subject project is not expected to create a situation subject to physical displacement.
- **Indigenous Peoples (OP / BP 4.10):** (This policy is not triggered in projects in Turkey.)

1.4.3.3. Legal Policies

- **Projects in Disputed Areas (OP/BP 7.60):** The location of the project is not in disputed areas.
- **Projects on International Waterways (OP/BP 7.50):** There is no international waterway within the scope of the project.

1.4.3.4. Objectives of Policies of Protection Measures

- Protect people and the environment from adverse effects,
- Increase environmental sustainability and social equality,
- Integrate environmental and social issues into decisions related to project selection, design and implementation,
- Establish a capacity of environmental and social management for the investor,
- Provide a mechanism for disclosure of information, stakeholder information and participation, and accountability,
- Respond to the needs of local and cultural stakeholders,

1.4.3.5. Works to Be Performed within the Scope of World Bank Environment, Health and Safety Guidelines

The World Bank Group's Environmental, Health and Safety (EHS) Guidelines are technical reference sources that include general and industry-specific examples of good international practice. They contain information on applicable environmental, health and safety issues for all industrial sectors. The World Bank uses the EHS Guidelines as a source of technical information at the project evaluation stage. EHS Guidelines cover performance levels and metrics that can be achieved in newly-established facilities using current technologies deemed appropriate by the World Bank and at reasonable costs. The relevant industrial guidelines (Water and

Sanitation EHS guidelines) should be used in conjunction with these guidelines. The General Environmental, Health and Safety Guidelines contain the following main topics:

1. Environment

- Air emissions and air quality of receiving environment
- Energy saving
- Wastewater and water quality of receiving environment
- Water saving
- Hazardous goods management
- Waste management
- Noise
- Polluted sites

2. Occupational Health and Safety

- General plant design and operation
- Communication and education
- Physical hazards
- Chemical hazards
- Biological hazards
- Radiological hazards
- Personal protective equipment
- Special hazard environments
- Monitoring

3. Public Health and Safety

- Water quality and availability
- Structural safety and project infrastructure safety
- Life and fire safety
- Traffic safety
- Transport of hazardous goods
- Disease prevention

- Emergency preparation and response

4. Construction and Delivery

- Environment
- Occupational health and safety
- Public health and safety

1.5. BENEFITS OF THE PROJECT

The following benefits are expected to be achieved once the works foreseen in the project are completed:

- Physical water losses are at 41% according to 2015 Water Balance as stated in the “Feasibility Report on the Designation of Drinking Water, Sewerage and Rainwater Lines in Various Regions” prepared by Temelsu Uluslararası Mühendislik Hizmetleri A.Ş. and approved by İller Bankası A.Ş., and it is planned to be reduced to 20%.
- Since the completed packages are currently in the old settlement of the city, there will be no change in the number of people being served, but an increase in the quality of the service provided to the same people.
- The operation will be easier and more systematic, thus reducing overspending and expenses due to antiquity.
- Denizli (Central District) will have a healthy wastewater collection system providing a better service. The wastewater collection system will be a “discrete system”, and rainwater will not be allowed to be connected to the wastewater system.
- More wastewater will be delivered to the treatment plant via the wastewater pumping stations to be completed.
- Possible floods, therefore, the consequent damage will be reduced with the collection of rainwater.

1.6. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

Within the scope of the World Bank Operational Policy on Environmental Assessment (O.P. 4.01) defined in the document of Turkey Sustainable Cities Project-I (P128605) Environmental and Social Management Framework, projects are classified under the categories of A, B, C by the degree of their impacts on the environment, and the examples serving as indicators which must be classified as Category B include rehabilitation or construction works of water and/or sewage network.

In Denizli, there are many projects of infrastructure (water supply, wastewater collection and rainwater drainage) that were completed, are being implemented and will be implemented. These projects cover facilities such as several pumping stations, wastewater treatment plants, reservoirs etc. besides pipe laying works. Nevertheless, the work subject to the management plan and to be carried out with the

World Bank (WB) loan is the renewal of drinking water, wastewater and rainwater pipes and construction of 3 pumping stations within the sewage system in the area shown in Figure 1.2. Apart from this, components such as the pumping building, wastewater treatment plant, reservoirs, mainlines, chlorination chamber, etc. within Denizli's drinking water systems are not included in the project to be supported by WB. Therefore, only the environmental and social impacts and mitigation plans of the pipe renewal works and pumping stations to be constructed in the before mentioned area are provided within the framework of the Environmental and Social Management Plan (ESMP). Moreover, recommendations on the impacts and monitoring of processes such as chlorination, pumping are presented in consideration of the integrity of the work although they do not directly concern ESMP on drinking water during operation and usage.

2. DESCRIPTION OF THE PROJECT AREA

2.1. GEOGRAPHICAL LOCATION

Denizli is a city of industry and tourism located in the southwest of the Aegean Region. It is surrounded by the cities of Afyon and Burdur in the east, Aydın and Manisa in the west, Muğla in the south and Uşak in the north. Denizli is located between 28° 30'- 29° 30' east longitudes and 37° 12'- 38° 12' north latitudes. Location of Denizli in Turkey and the region is shown in Figure 2.1.

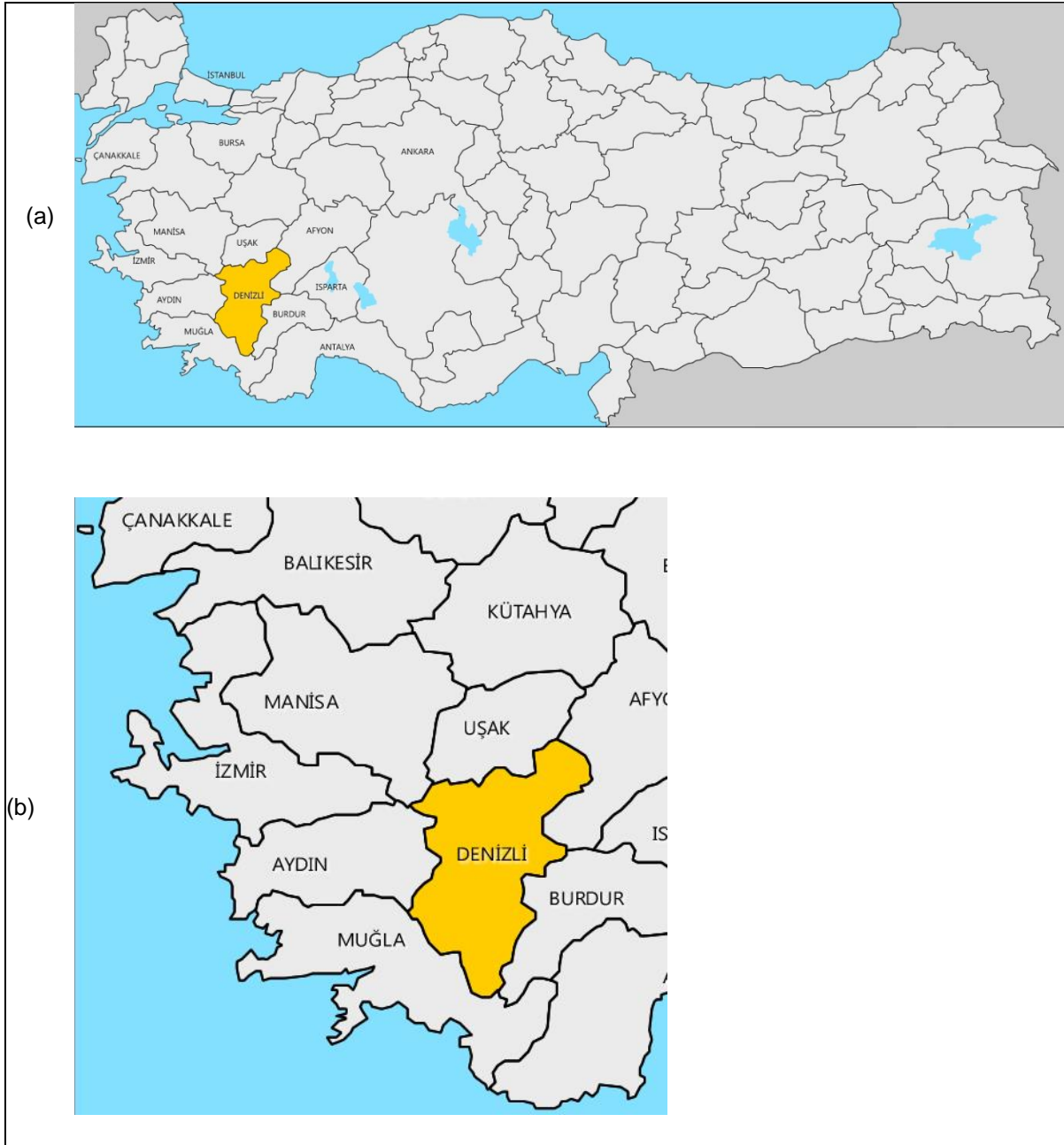


Figure 2.1. Location of Denizli province in (a) Turkey and (b) in the Aegean Region

Geographically located on the northern slope of Akdağ and on the plateau slightly split by Aksu River which is a branch of Büyük Menderes River, Denizli province has a surface area of 11,868 km².

Following the latest regulations, there are 18 districts of Denizli. These districts are Acıpayam, Akköy, Babadağ, Baklan, Bekilli, Beyağaç, Bozkurt, Buldan, Çal, Çameli, Çardak, Çivril, Güney, Honaz, Kale, Sarayköy, Serinhisar and Tavas (See Figure 2.2).

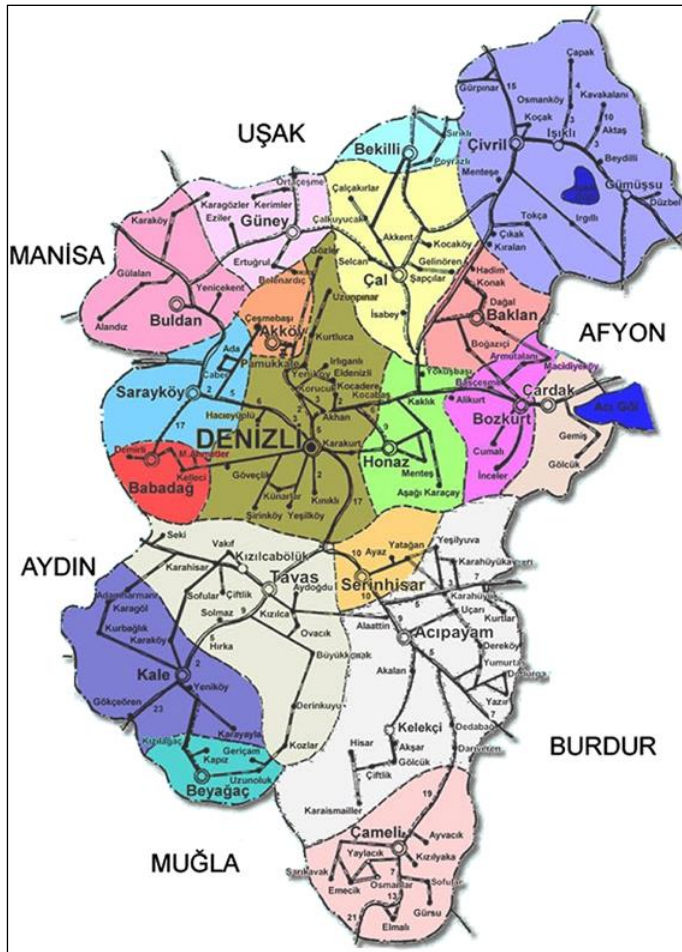


Figure 2.2. Districts of Denizli and neighbouring provinces

2.2. TOPOGRAPHY AND GEOMORPHOLOGY

Of Denizli province, approximately 28% -30% is formed by plains, 25% by plateaus and 47% by mountainous terrain. Height of settlement areas by sea level is the lowest in Sarayköy with 170 m and the highest in Çameli with 1,350 m. The altitude of Denizli city centre is 350 m. Digital elevation map showing the topographic structure of Denizli province is given in Figure 2.3.

Topographical and geomorphological status of the province can be examined in three main groups: (i) plains, (ii) plateaus and (iii) mountains and valleys.

Plains of Denizli province are divided into two parts: low and high (at the height of average 200 m and 900 m). The path to the low plains is like stair steps in east-west direction down to the Büyük Menderes River. From the Dinar district of Afyon province to the west, the first step is high plains of Dazkırı and Çardak and Çivril and Baklan in the north. It is the Kaklık Plain down from here; the transition from Kaklık to Böceli constitutes the second step. After Böceli village, it turns to north, and then west down to the Sarayköy Plain, reaching to the boundary of Aydın province in the flow direction of the Büyük Menderes River.

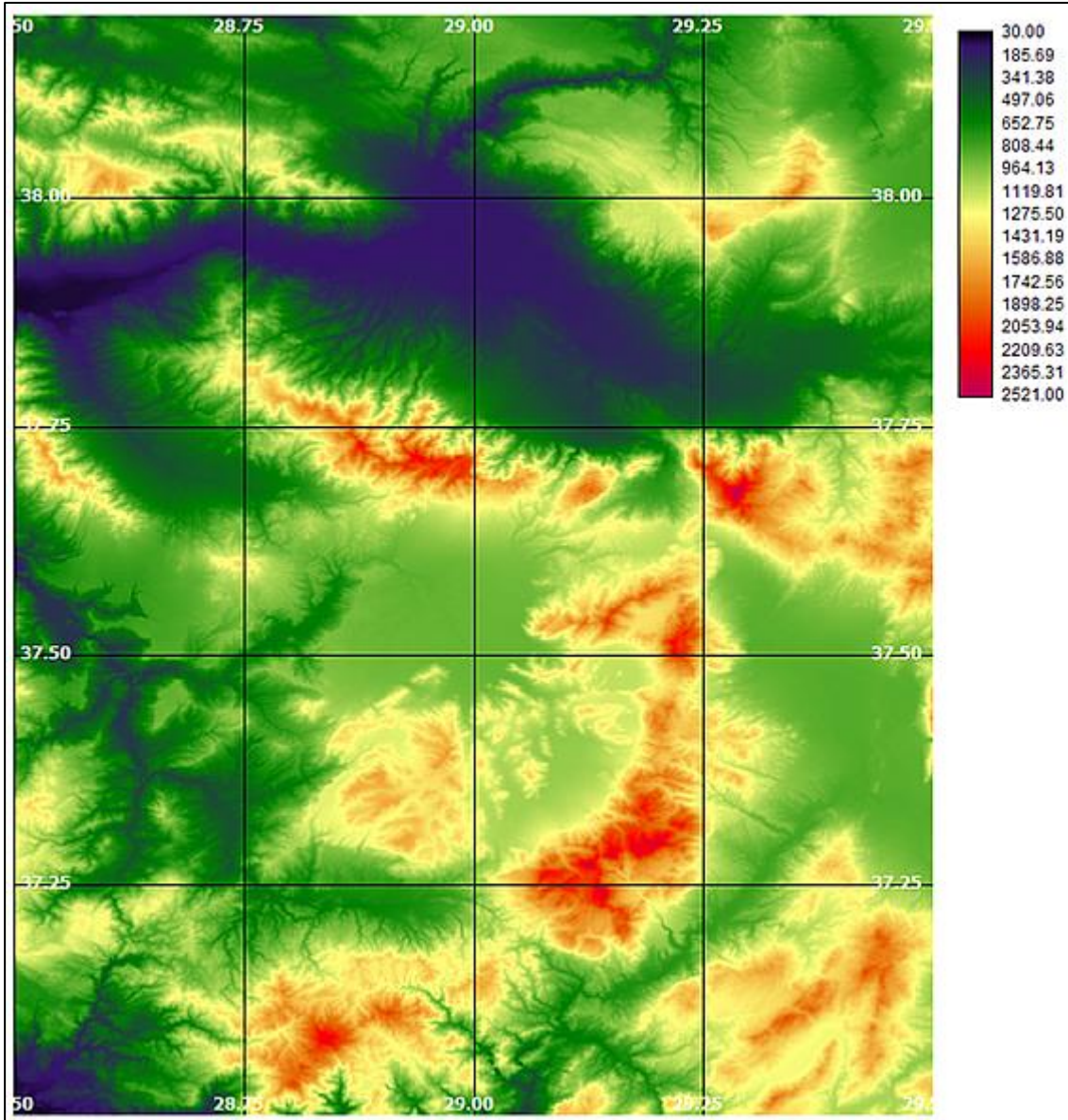


Figure 2.3. Topography of Denizli Province (Digital Elevation Map)

In Denizli province, there are Karayayla, Çameli Plateau in Kale district; Bağbaşı Plateau and Uzunpınar Plateau in the Central district; Yoran and Şahman Plateaus in Tavas; Eşeler Plateau in Acıpayam; Süleymaniye Plateau on the Sazak Mountain of Buldan; Homa Plateau on the Akdağ of Çivril district; and Kuyucak Plateau on the Beşparmak Mountain of Çal. There are also small plateaus used as pasture apart from these large ones.

The 2,571 m high Honaz Mountain within the province is the highest point of both Denizli and Western Anatolia. Other mountains in Denizli by their heights are as follows: Akdağ (2,449 m), Bozdağ (2,421 m), Babadağ (2,308 m), Eşeler Mountain (2,254 m), Kızılhisar Mountain (2,241 m), Bulkaz Mountain (1,990 m), Büyükçökelez Mountain (1,840 m), Elmadağ (1,805 m), Beşparmak Mountain (1,307 m) and Sazak Mountain (1,145 m). Valleys of Büyük Menderes and Çürüksu are the most fertile part of the province. They cover a large plane including Sarayköy, Buldan; Böceli, Gonçalı Villages of the Central district; and Pamukkale Town and Akköy district.

2.3. GEOLOGY AND SEISMICITY

The land character of Denizli province is mostly alluvium with the Quaternary-period metamorphic rocks. Geological periods are mixed in the land structure. The Neogene is dominant in the soil generally. The Neogene sediments are classified as clay silty sandstone, claystone, sandy claystone, silty sandy conglomerate, and conglomerate units. The Quaternary units are distinguished as alluvium and fan deposits. Alluvial units are found as clay-silt-sand-gravel unit, silt unit, sand-silt-clay unit and organic clay-silt unit. Fan deposits are distinguished as clay-silt-sand-gravel unit, sandy gravel unit and blocky gravel unit.

Denizli is at the intersection point of Gediz, Büyük Menderes and Çürüksu grabens. Therefore, the edge faults forming these grabens intersect especially around Denizli and Sarayköy. That is why the region is located within the 1st degree seismic belt (Figure 2.4). For this reason, earthquake-resistant ductile-font pipes will be used in the drinking water rehabilitation project. Pursuant to the "Disaster Regulation for Infrastructures" effective in our country, the materials of the pipes used in earthquake-prone areas must be flexible enough to adapt to ground movements, and the fittings must be resistant to breakage, rupture and corrosion. In addition, the nodes must be formed with a seal or fusion welding.

These standards, which are also adopted by İller Bankası, were taken into consideration in pipe material selection. Ductile iron pipes and fittings which have the ability of flexing and bending have therefore been selected in the project.

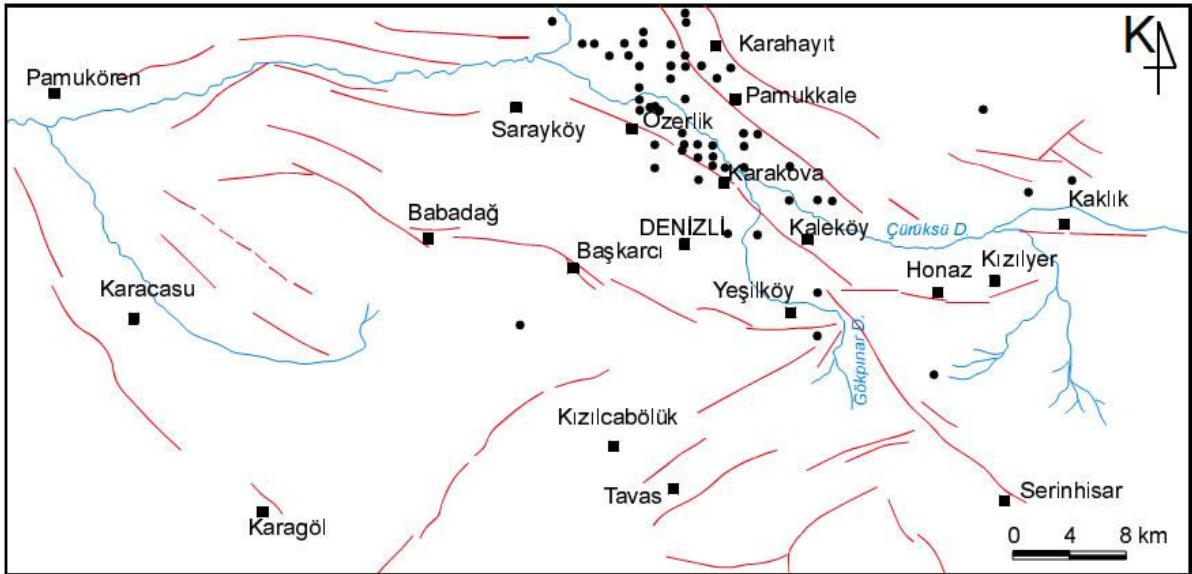


Figure 2.4. Active faults in Denizli

2.4. SOIL

Large soil groups and the areas covered by these soil types in Denizli province are as follows:

- Alluvial Soil 75,692 ha
- Red/Yellow Podzolic Soil 29,107 ha
- Colluvial Soil 134,457 ha
- Non-Calcareous Brown Forest Soil
- Rendzina 113,052 ha
- Brown Forest Soil 318,896 ha
- Red/brown Mediterranean Soil 234,748 ha
- Red Mediterranean Soil 38,055 ha
- Non-Calcareous Brown Soil 40,430 ha

The settled area of Denizli is located on Rendzina and Colluvial soils. In the rugged belt of Honaz Eskihisar-Kumkısıık, there are usually class VI-VIII soils. These are limestone dolomite and marly soils, and the natural vegetation is weed and shrub. In irrigable areas, vineyard and garden agriculture is performed whereas cereals are grown in areas where irrigation is not possible. There are also pasturelands and heathlands not covered by the farming culture.

The colluviums on the Kayhan-Hacıeyüplü strip are generally farmed, class-II soils. In recent years, the settled area of Denizli has been developing on these lands westwards. The same type of land extends westward as a strip between Eskihisar and Akkonak. Both sides of Çürüksu generally constitute an alluvial, second-class land where irrigated farming is possible. There is non-calcareous brown soil in the Şirinköy-Göveçlik-Kayaköy triangle in the west of Denizli. There are partly pastures, vineyards and heathlands.

The Rendzina lands extend from Hacıeyüplü to the northwest. The steeply sloped mountainous terrain in the south is composed of Class-VII Red/Brown Mediterranean soil. There are some adversities such as salinity, gradient, water and wind erosion in arable areas in Denizli and its surroundings. Soil capability, which is an important data affecting urban settlement decisions, is also a data that needs to be particularly considered for the Denizli Environmental Plan.

The development of Denizli is based on agricultural products and especially on industrial crop cultivation. The growing population's need for food is met by the agriculture done in the vicinity. Therefore, in addition to the geological limitations, it would be appropriate to avoid opening the arable areas to urban settlements. Consequently, lands that are geologically convenient, not arable and have a fragmented topography should be preferred as settlement areas.

2.5. LAND SIZE AND LAND USE

The surface area of Denizli province is 1,186,800 ha. Of this, 376,738 hectares (31.8%) are cultivated lands, 58,316 hectares (4.9%) are meadows and pastures, 521,959 hectares (44.0%) are forest lands, and the remaining 229,787 hectares (19.4%) are used as settlement areas. Use of cultivated lands is given in Table 2.1.

Table 2.1. Use of Cultivated Lands

Cultivated Lands	Area (ha)	Distribution (%)
Arable crops	296,356	78.7
Vineyard Land	45,783	12.2
Orchard	17,109	4.4
Vegetable Land	13,659	3.7
Olive Grove	3,831	1
Total	376,738	100.0

2.6. CLIMATE

As Denizli province functions as a passage among the Aegean Region, Central Anatolia Region and the Mediterranean Region, its climate is variable. Common characteristics of the southern part of Central Anatolia and the Aegean climate are generally observed in the province. Districts of Çameli, Beyağaç and Kale have the climatic characteristics of the Mediterranean Region; Sarayköy, partly Buldan and Çürüksu Valley of the Central district bears the climatic characteristics of the Aegean Region while the climatic characteristics of the Central Anatolia Region are observed in other districts.

The climate in Denizli is a bit harsher than in the Aegean region. In summer, the temperature rises up to 42° C, and in winter, it falls below zero down to -11°C– -15°C on average. The average temperature is at around 25°C–30°C in summer and 4°C–8°C in winter. The average temperature is higher than 10°C for at least 9 months of the year. According to the 17-year statistics, the average annual temperature is 15.8°C in the city.

The average annual total precipitation is 547 mm; this value was measured as 510.6 mm in 2006. 70% of the rain falls in the October–March period. In terms of snowfall, the highest snow depth in the area bearing the characteristics of the Aegean climate has been recorded as 3 cm.

The dominant wind direction in Denizli varies seasonally. The wind blows southwestwardly in March and April, northwestwardly until November and southwestwardly again in November. The wind speed is at its highest during December, January, February and March. The dominant wind directions are south-westward, in November, December, January, February, March and April, and north-westward in May–November.

2.7. POPULATION

In Denizli which is considered the second largest city in the Aegean Region, population growth by years, city and village population, population density and population changes in districts are presented in Table 2.2.

Across Denizli, the population increased by 1.9% on average, except for the population growth rate of 0.49% between 1935 and 1940. This rate is above the world average of 1.7% and especially above the European average of 0.3%. According to the 1990 Census, the annual population growth rate was 2.4%.

The annual growth rates in cities and villages by 6.1% and 2.7%, respectively according to the 1990 Census indicate that the urban population living in Denizli is increasing faster.

Table 2.2. Population and Changes of Population Density by Years in Denizli Province

Year of Consensus	City Population	Village Population	Total	Population Density
1927	41,209	202,603	243,812	21
1935	43,866	242,052	285,918	24
1940	47,619	237,606	285,225	24
1945	51,251	264,683	315,934	27
1950	61,297	278,980	340,277	29
1955	72,170	296,124	368,294	31
1960	100,916	324,533	425,449	36
1965	117,739	345,630	463,369	39
1970	141,309	369,851	511,160	43
1975	171,586	389,330	560,916	47
1980	205,938	397,400	603,338	51
1985	248,673	418,805	667,478	56
1990	337,793	413,089	750,882	63
2000	413,914	436,115	850,029	72
2009	630,997	295,365	926,362	77
2013	963,464	0	963,464	83
2017	1,018,735	0	1,018,735	88

2.8. SOCIO-ECONOMIC STRUCTURE

Denizli, which is located on a fertile land and in a region with good transportation facilities, has made a significant breakthrough in industrialization in the last 30 years while it used to appear as an agricultural and commercial centre in the past. This development has been underlain by the successful integration of the handicrafts and weaving skills of the region with the functioning as a commercial centre successfully and the ability to transfer of capital accumulation created by these activities to the industry. As a result, Denizli has become the fastest developing city centre in the Aegean Region following İzmir. Gross domestic product (GDP) per capita of the province is TRY 23,500 by current prices in 2004. Considering the total GDP value, Denizli ranks 14th in 81 provinces. This means a share of 2.1% within the national economy.

2.9. FLORA AND FAUNA

2.9.1. Fauna

The terrestrial fauna components of the project area and the immediate vicinity were compiled from the current studies and are given below.

2.9.1.1. Amphibia (Species of Frogs and Salamander)

The species of amphibia species that can be observed in the habitats of similar characteristics and ecologically follow-up of each other are shown in Table 2.3.

Table 2.3. Species and Conservation Status of Amphibia in the Project Area

Name of Familia and Species	English Name	Habitat	IUCN	Bern
PELOBATIDAE				
<i>Pelobates syriacus</i>	European spadefoot toad	This digger species lives buried in loose and soft soil outside the spawning period. They migrate to pools and ponds during the spawning period.	LC	II
BUFONIDAE				
<i>Bufo bufo</i>	Common toad	They live in moist, stony parts in areas with few plantation or forested areas. They hide under stones, in the hollows and holes in the soil during the day.	LC	III
<i>Pseudepidalea viridis</i>	European green toad	Active at night, this species hides under stones in gardens and in open lands or in holes in the soil during the day.	LC	II

Source: (Demirsoy, 1996), (Baran, 2008)

Two of the three amphibian species present in and around the project area and possibly present due to the habitat characteristics are included in the Bern Annex-2 list and the other in the Annex-3 list.

All amphibian species are in the LC (least concern) category, which is a Red List category of International Union for Conservation of Nature (IUCN), and they are very abundant and common in Turkey with no threat to them whatsoever.

2.9.1.2. Species of Reptile (Reptilia)

The species of reptile that can be observed in the habitats of similar characteristics and ecologically follow-up of each other are shown in Table 2.4.

Table 2.4. Species and Conservation Status of Reptile in the Project Area

Name of Familia and Species	English Name	Bern	IUCN	AYK	Habitat
TESTUDINIDAE					
<i>Testudo graeca</i>	Common tortoise	II	VU	Annex-I	They usually live on sandy, stony and dry lands.
AGAMIDAE					
<i>Laudakia stellio</i>	Stellion	II	LC	Annex-I	They live on cliffs and stone walls.
ANGUIDAE					
<i>Ophisaurus apodus</i>	Sheltopusik	-	-	-	They inhabit heathlands, macquis groves and slopes abundant in plants.
COLUBRIDAE					
<i>Eirenis modestus</i>	Ring-headed dwarf snake	III	LC	Annex-I	They live on stony lands with sparse vegetation and hide under stones.
<i>Hemorrhoids nummifer</i>	Coin-marked snake	-	-	Annex-I	They live in stony areas with few plantations.
<i>Natrix natrix</i>	Water snake	III	LC	Annex-I	Stony areas near water
<i>Natrix tessellata</i>	Dice snake	II	LC	Annex-I	Water and waterfronts
TYPHLOPIDAE					
<i>Typhlops vermicularis</i>	European blind snake	II	-	Annex-I	They live in open terrains with sparse plantation, in moist soil and under stones.

Source: (Demirsoy, 1997), (Baran, 2008) (Kiziroğlu, 2008)

8 of the 14 reptile species present in the project area and highly likely to be present due to the habitat characteristics are included in Annex-2 list and the 2 of them in the Bern Annex-3 list.

Four species of reptile are classified as LC of IUCN categories and are not under any threat and are widespread. A species is in the VU category, and it is classified as the species endangered if no protection measure is taken.

2.9.1.3. Bird Species (Aves)

The bird species that can be observed in the habitats of similar characteristics and ecologically follow-up of each other are shown in Table 2.5.

Table 2.5. Species and Conservation Status of Birds (Aves) in the Project Area

Name of Familia and Species	English Name	IUCN	Red Data Book	Bern	Status	MAK	AYK
ACCIPITRIDAE							
<i>Accipiter nisus</i>	Eurasian sparrowhawk	LC	A.3	II	Y, KZ	-	Annex-I
<i>Buteo buteo</i>	Common buzzard	LC	A.3	II	Y, KZ, T	-	Annex-I
<i>Buteo rufinus</i>	Long-legged buzzard	LC	A.3	II	Y, KZ	-	Annex-I
<i>Circaetus gallicus</i>	Short-toed snake eagle	LC	A.4	II	I	-	Annex-I

Name of Familia and Species	English Name	IUCN	Red Data Book	Bern	Status	MAK	AYK
FALCONIDAE							
<i>Falco tinnunculus</i>	Common kestrel	LC	A.2	II	Y	-	Annex-I
PHASIANIDAE							
<i>Alectoris chukar</i>	Chukar partridge	LC	A.2	III	Y	Annex-2	Annex-I
COLUMBIDAE							
<i>Columba livia</i>	Rock pigeon	LC	A.5	III	Y	Annex-2	Annex-I
<i>Streptopelia decaocto</i>	Eurasian collared dove	LC	A.5	III	Y	Annex-1	Annex-I
STRIGIDAE							
<i>Athene noctua</i>	Little owl	LC	A.2	II	Y	-	Annex-I
APODIDAE							
<i>Apus apus</i>	Common swift	LC	A.3.1	III	G, T	-	Annex-I
ALAUDIDAE							
<i>Galerida cristata</i>	Crested lark	LC	-	III	Y	Annex-1	Annex-I
HIRUNDINIDAE							
<i>Delichon urbicum</i>	Common house martin	LC	A.3	II	I	-	Annex-I
<i>Hirundo rustica</i>	Barn swallow	LC	A.5	II	I	-	Annex-I
MOTACILLIDAE							
<i>Motacilla alba</i>	White wagtail	LC	A.3.1	II	Y	-	Annex-I
TURDIDAE							
<i>Erithacus rubecula</i>	European robin, robin redbreast	LC	A.3	II	Y	-	Annex-I
<i>Oenanthe hispanica</i>	Black-eared wheatear	LC	A.2	II	G, T	-	Annex-I
<i>Oenanthe oenanthe</i>	Northern wheatear	LC	A.3	II	I	-	Annex-I
<i>Turdus merula</i>	Common blackbird	LC	A.3	III	Y	Annex-2	Annex-I
PARIDAE							
<i>Parus caeruleus</i>	Eurasian blue tit	LC	A.2	II	Y	-	Annex-I
<i>Parus lugubris</i>	Sombre tit	LC	A.2	II	Y	-	Annex-I
CORVIDAE							
<i>Corvus cornix</i>	Hooded crow	LC	A.5	-	Y	-	Annex-I
<i>Corvus frugilegus</i>	Rook	LC	A.5	-	Y, KZ	Annex-2	Annex-I
<i>Garrulus glandarius</i>	Eurasian jay	LC	A.3.1	-	Y	Annex-2	Annex-I
<i>Pica pica</i>	Common magpie	LC	A.5	-	Y	Annex-2	Annex-I
STURNIDAE							
<i>Sturnus vulgaris</i>	Common starling	LC	A.5	-	Y	Annex-1	Annex-I
PASSERIDAE							
<i>Passer domesticus</i>	House sparrow	LC	A.5	-	Y	Annex-2	Annex-I
FRINGILLIDAE							
<i>Carduelis chloris</i>	European greenfinch	LC	A.3	II	Y	-	Annex-I
<i>Fringilla coelebs</i>	Common chaffinch	LC	A.4	III	Y	Annex-1	Annex-I
EMBERIZIDAE							

Name of Familia and Species	English Name	IUCN	Red Data Book	Bern	Status	MAK	AYK
<i>Emberiza cia</i>	Rock bunting	LC	A.2	II	Y, G	-	Annex-I
<i>Miliaria calandra</i>	Corn bunting	LC	A.4	III	Y	Annex-1	Annex-I

Source: (Kizirođlu, 2008), (Demirsoy, 1997)

In the publication prepared by Prof. İlhami Kizirođlu named “The Birds of Turkey” (Kizirođlu, 2008), the protection status and status of bird species are described as follows:

A.1.0 : Any species that undoubtedly are extinct and no longer seen in natural life.

A.1.1 : Tamed, domestic species of which natural populations are extinct now or have not been seen in natural life for the last 15–25 years, but continue to live in aviaries, cages and other artificial conditions.

A.1.2 : Populations of these species in Turkey have decreased in general. They are represented by 1–10 pairs in the regions they are monitored.

A.2 : The numbers of these species range from 11 to 25 pairs in the regions they are observed.

A.3 : Populations of these species across Turkey vary between 26–250 pairs in the regions they observed.

A.3.1 : There is a decrease in the populations of these species in the regions they are observed. Population of these species ranges from 251 to 500 pairs in the regions they are observed.

A.4 : Although population densities of these species are not yet threatened with extinction according to the IUCN and ATS criteria in the regions they are observed, there is a decrease in their populations locally and they are likely to become extinct over time.

A.5 : The observed populations of these species are not yet subject to a decrease or threat of extinction.

A.6 : It contains species that have not been thoroughly investigated and have no healthy data on them.

A.7 : It is not possible to make an evaluation about these species, because there is no healthy and reliable record on them in Turkey at the moment.

B.1.0 : Under this status, no example can be given for extinct species although there are records on that they had been previously wintering in Turkey.

B.1.1 : These species use Turkey as winter quarters or a passage, but their populations are significantly under threat of extinction.

B.1.2 : Populations of these species are very low in general in Turkey, and they are represented by 1 individual–10 pairs in regions where they are monitored.

B.2 : The numbers of these species range from 11 to 25 pairs in the regions they are observed.

B.3 : Populations of these species across Turkey vary between 26–250 pairs in the regions they observed.

B.3.1 : There is a decrease in the populations of these species in the regions they are observed. Their populations range from 251 to 500 pairs.

B.4 : Population densities of these species have not yet been under threat of extinction, but there is a local decrease in their population.

B.5 : The observed populations of these species are not yet subject to a decrease or threat of extinction.

B.6 : It contains species that are not sufficiently investigated and not adequately recorded.

B.7 : It is not possible to make an evaluation about these species at this time because the records are very few, not reliable and healthy.

Y : Domestic bird species that brood regularly in our country

G : Species that migrate after hatching in our country

K : Species that do not brood but transit our country

KZ : Species that winter in our country

16 of the 30 bird species present in and around the project area and possibly present due to the habitat characteristics are included in the Bern Annex-2 list and 8 of them in the Bern Annex-3 list.

Moreover, “Central Hunting Commission Decisions for the 2017-2018 Hunting Season” were entered into relevant lists by the Ministry of Agriculture and Forestry, the Directorate General of Nature Conservation and National Parks.

All of the bird species are in the LC category of the IUCN Red List Categories and are not under any threat.

2.9.1.4. Mammal Species (Mammalia)

The mammal species that can be observed in the habitats of similar characteristics and ecologically follow-up of each other are shown in

Table 2.6.

Table 2.6. Species and Conservation Status of Mammals (Mammalia) in the Project Area

Name of Familia and Species	English Name	Bern	MAK	AYK	IUCN	Habitat
ERINACEIDAE						
<i>Erinaceus concolor</i>	Eastern European hedgehog	-	-	Annex-I	LC	Sparsely forested areas, settlements, fields, gardens
SPALACIDAE						
<i>Spalax leucodon</i>	Lesser mole rat	-	-	Annex-I	DD	Galleries they open underground
SORICIDAE						
<i>Crocidura leucodon</i>	Bicolored white-toothed shrew	III	-	Annex-I	LC	All kinds of environments, rather open and bushy lands
MURIDAE						
<i>Rattus norvegicus</i>	Brown rat	-	-	-	LC	All kinds of environments
<i>Rattus rattus</i>	Black rat	-	-	-	LC	Tunnels they open underground
<i>Mus musculus</i>	House mouse	-	-	-	LC	Under and on earth
CANIDAE						
<i>Vulpes vulpes</i>	Red fox	-	Annex-2	Annex-I	LC	Forests and shrublands, fields, open lands
SCIURIDAE						
<i>Citellus xanthophrymnus</i>	Asia Minor ground squirrel	-	-	Annex-I	-	Open lands

Source: (Demirsoy, 1997), (Demirsoy, 1996)

1 of the 8 mammal species present in and around the project area and possibly present due to the habitat characteristics is included in the Bern Annex-3 list.

“Central Hunting Commission Decisions for the 2017-2018 Hunting Season” were entered into relevant lists by the Ministry of Agriculture and Forestry, the Directorate General of Nature Conservation and National Parks.

Mammal species other than *Citellus xanthophrymnus* are in the IUCN Red List Categories. 1 of these (*Spalax leucodon*) is in the category of “DD” (“Data Deficient”) while the remaining species are defined in the “LC” (Least Concern) category.

2.9.2. Flora

Plant species present in the project area are shown in Table 2.7.

Table 2.7. Plants in the Project Area

Name of Familia and Species	English Name	Phytogeographical Area	Endemism	RDB
LABIATAE/LAMIACEAE				
<i>Scutellaria orientalis</i> L. subsp. <i>pinnatifida</i> EDMONDSON	-	-	-	-
<i>Marrubium vulgare</i> L.	Common horehound	-	-	-
<i>Nepeta italica</i> L.	Catnip	-	-	-
<i>Origanum onites</i> L.	Turkish oregano	E. Medit. Elt.	-	-
<i>Micromeria myrtifolia</i> BOISS. ET HOHEN.	Turkish Micromeria	E. Medit. Elt.	-	-
<i>Salvia viridis</i> L.	Sage	Medit. Elt.	-	-
<i>Salvia tomentosa</i> MILLER	Sage	Medit. Elt.	-	-
EUPHORBIACEAE				
<i>Euphorbia pepelis</i> L.	Spurge	Medit. Elt.	-	-
<i>Euphorbia chamaesyce</i> L.	Spurge	-	-	-
PAPAVERACEAE				
<i>Glaucium corniculatum</i> (L.) RUD. subsp. <i>corniculatum</i> (L.) RUD.	Horned poppy	-	-	-
<i>Roemeria hybrida</i> L.	Genie poppy	-	-	-
<i>Papaver hybridum</i> L.	Poppy	-	-	-
ASCLEPIADACEAE				

Name of Familia and Species	English Name	Phytogeographical Area	Endemism	RDB
<i>Vincetoxicum canescens</i> (WILLD.) DECNE. subsp. <i>canescens</i> (WILLD.) DECNE	-	-	-	-
PRIMULACEAE				
<i>Androsace maxima</i> L.	-	-	-	-
<i>Lysimachia atropurpurea</i> L.	-	E. Medit. Elt.	-	-
ANACARDIACEAE				
<i>Pistacia leutiscus</i> L.	Gum tree	Medit. Elt.	-	-
<i>Pistacia atlantica</i> DESF.	Atlas gum tree	-	-	-
LINACEAE				
<i>Linum bienne</i> MILLER	Pale flax	Medit. Elt.	-	-
<i>Linum trigynum</i> L.	Pale flax	Medit. Elt.	-	-
CRUCIFERAE/BRASSICACEAE				
<i>Lepidium sativum</i> L. subsp. <i>spinescens</i> (DC.) THEL.	-	-	-	-
<i>Lepidium sativum</i> L.	-	-	-	-
<i>Iberis attica</i> JORD.	-	E. Medit. Elt.	-	-
<i>Iberis acutiloba</i> BERTOL.	-	-	-	-
<i>Erophila verna</i> (L.) CHEVALL. subsp. <i>verna</i> (L.) CHEVALL.	-	-	-	-
<i>Arabis turrita</i> L.	-	-	-	-
<i>Hesperis pendula</i> DC.	Night violet	-	-	-
<i>Sisymbrium officinale</i> (L.) SCOP.	-	-	-	-
<i>Sisymbrium orientale</i> L.	-	-	-	-
RESEDACEAE				
<i>Reseda lutea</i> L. var. <i>lutea</i> L.	Saffron	-	-	-
ARACEAE				
<i>Arisarum vulgare</i> TARG.-TOZZ. subsp. <i>vulgare</i> TARG.-TOZZ.	Larus	Medit. Elt.	-	-
<i>Dracunculus vulgaris</i> SCHOTT	Snake lily	E. Medit. Elt.	-	-
RUBIACEAE				
<i>Galium incanum</i> SM. subsp. <i>centrale</i> EHREND.	Bedstraw	E. Medit. Elt.	-	-
<i>Galium incanum</i> SM. subsp. <i>elatius</i> (BOISS.) EHREND.	Bedstraw	Ir.-Tur. Elt.	-	-
UMBELLIFERAE/APIACEAE				
<i>Eryngium creticum</i> LAM.	Eryngo	E. Medit. Elt.	-	-
<i>Eryngium campestre</i> L. var. <i>campestre</i> (L.) HUDSON	-	-	-	-
<i>Scandix iberica</i> BIEB.	Scandix	-	-	-
<i>Scandix australis</i> L.	Scandix	-	-	-
<i>Smyrniolum rotundifolium</i> MILLER	Smyrniolum	E. Medit. Elt.	-	-
<i>Bunium ferulaceum</i> SM.	Bunium	-	-	-
<i>Pimpinella peregrina</i> L.	Pimpinella	-	-	-
<i>Bupleurum intermedium</i> POIRET	-	-	-	-
<i>Bupleurum flavum</i> FORSSK.	-	E. Medit. Elt.	-	-
<i>Ferulago asparagifolia</i> BOISS.	Ferulago	E. Medit. Elt.	-	-
<i>Tordylium apulum</i> L.	-	Medit. Elt.	-	-
GUTTIFERAE/HYPERICACEAE				
<i>Hypericum lydium</i> BOISS.	St John's wort	-	-	-
ROSACEAE				
<i>Cerasus prostrata</i> (LAB.) SER. var. <i>prostrata</i> (LAB.) SER.	-	-	-	-
<i>Rubus sanctus</i> SCHREBER	Holy bramble	-	-	-
<i>Potentilla recta</i> L.	Sulphur cinquefoil	-	-	-
<i>Sanguisorba minor</i> SCOP. subsp. <i>magnolii</i> (SPACH) BRIQ.	Garden burnet	-	-	-
<i>Rosa foetida</i> J. HERRM.	Persian yellow rose	Ir.-Tur. Elt.	-	-
VALERIANACEAE				
<i>Valerianella echinata</i> (L.) DC.	-	Medit. Elt.	-	-
<i>Valerianella coronata</i> (L.) DC.	-	-	-	-
DIPSACACEAE				
<i>Scabiosa sicula</i> L.	Scabiosa	Medit. Elt.	-	-
COMPOSITAE/ASTERACEAE				
<i>Inula salicina</i> L.	-	-	-	-
<i>Inula heterolepis</i> BOISS.	-	E. Medit. Elt.	-	-
<i>Pulicaria odora</i> (L.) REICHB.	-	Medit. Elt.	-	-
<i>Helichrysum graveolens</i> (BIEB.) SWEET	Everlasting	-	-	-
<i>Filago eriocephala</i> GUSS.	-	E. Medit. Elt.	-	-
<i>Senecio vernalis</i> WALDST. ET KIT.	Ragwort	-	-	-
<i>Anthemis aciphylla</i> BOISS. there is. <i>aciphylla</i> BOISS.	Daisy	E. Medit. Elt.	-	-
<i>Anthemis coelopoda</i> BOISS. there is. <i>bourgaei</i> BOISS.	Daisy	-	-	-

Name of Familia and Species	English Name	Phytogeographical Area	Endemism	RDB
<i>Achillea coarctata</i> POIR.	Yarrow	-	-	-
<i>Centaurea calolepis</i> BOISS.	Cornflower	E. Medit. Elt.	Endemic	LR (Ic)
<i>Echinops ritro</i> L.	Southern globethistle	-	-	-
<i>Picris pauciflora</i> WILLD.	-	-	-	-
<i>Scorzonera laciniata</i> L. subsp. <i>laciniata</i>	Scorzonera	-	-	-
<i>Tragopogon longirostis</i> BISCH. EX SCHULTZ BIP. var. <i>longirostis</i> BISCH. EX SCHULTES	Salsify	-	-	-
GRAMINEA / POACEAE				
<i>Elymus panormitanus</i> (PARL.) TZVELEV	-	Medit. Elt.	-	-
<i>Aegilops triuncialis</i> L. subsp. <i>triuncialis</i> L.	-	-	-	-
<i>Aegilops umbellulata</i> ZHUKOVSKY subsp. <i>umbellulata</i> ZHUKOVSKY	-	E. Medit. Elt.	-	-
<i>Bromus hordeaceus</i> L. subsp. <i>hordeaceus</i>	-	-	-	-
<i>Lolium persicum</i> BOISS. ET HOHEN. EX BOISS.	Persian ryegrass	Ir. Tur. Elt.	-	-
<i>Vulpia fasciculata</i> (FORSSKAL) FRITSCH	-	Medit. Elt.	-	-
<i>Vulpia muralis</i> (KUNTH) NEES	-	Medit. Elt.	-	-
<i>Poa diversifolia</i> (BOISS). ET BAL.) HACKEL EX. BOISS.	-	E. Medit. Elt.	-	-
<i>Poa bulbosa</i> L.	-	-	-	-
<i>Poa nemoralis</i> L.	-	-	-	-
<i>Briza humilis</i> BIEB.	-	-	-	-
<i>Androsace maxima</i> L.	-	-	-	-
<i>Stipa bromoides</i> (L.) DÖRFLER	Drygrass	Medit. Elt.	-	-
<i>Stipa holosericea</i> TRIN.	Drygrass	-	-	-
BORAGINACEAE				
<i>Onosma armenum</i> DC.	Golden drop	-	Endemic	LR (Ic)
<i>Onosma heterophyllum</i> GRISEB.	Golden drop	-	-	-
CRASSULACEAE				
<i>Sedum caespitosum</i> (CAV.) DC.	Stonecrop	-	-	-
<i>Sedum hispanicum</i> L. var. <i>hispanicum</i> L.	Stonecrop	-	-	-
RANUNCULACEAE				
<i>Nigella arvensis</i> L. var. <i>involuta</i> BOISS.	Nigella	-	-	-
<i>Consolida orientalis</i> (GAY) SCHROD.	Eastern larkspur	-	-	-
<i>Adonis flammea</i> JACQ.	Pheasant's-eye	-	-	-
<i>Ranunculus paludosus</i> POIRET	Ranunculus	-	-	-
<i>Ranunculus sprunerianus</i> BOISS.	Ranunculus	E. Medit. Elt.	-	-
<i>Ranunculus marginatus</i> D'URV. var. <i>trachycarpus</i> (FISCH. ET MEY.) AZN.	Ranunculus	-	-	-
<i>Ranunculus rumelicus</i> GRISEB.	Ranunculus	E. Medit. Elt.	-	-
<i>Ranunculus chius</i> DC.	Ranunculus	-	-	-
CISTACEAE				
<i>Fumana thymifolia</i> (L.) VERLOT var. <i>viridis</i> (TEN.) BOISS.	-	Medit. Elt.	-	-
CARYOPHYLLACEAE				
<i>Minuartia juniperina</i> (L.) MARIE ET PETITM.	-	-	-	-
<i>Minuartia hybrida</i> (VILL.) Schischke. subsp. <i>hybrida</i> (VILL.) Schischke.	-	-	-	-
<i>Cerastium dichotomum</i> L. subsp. <i>dichotomum</i> L.	-	-	-	-
<i>Cerastium glomeratum</i> THUILL.	-	-	-	-
<i>Dianthus anatolicus</i> BOISS.	Anatolian dianthus	-	-	-
<i>Velezia rigida</i> L.	-	-	-	-
<i>Silene chlorifolia</i> SM.	Catchfly	Ir.-Tur. Elt.	-	-
<i>Silene subconica</i> FRIV.	Catchfly	-	-	-
<i>Silene colorata</i> POIRET	Catchfly	-	-	-
<i>Silene tenuiflora</i> GUSS.	Catchfly	E. Medit. Elt.	-	-
PLANTAGINACEAE				
<i>Plantago coronopus</i> L. subsp. <i>coronopus</i> L.	Plantain	Eur.-Sib. Elt.	-	-
<i>Plantago coronopus</i> L. subsp. <i>commutata</i> (GUSS.) PILGER	Plantain	E. Medit. Elt.	-	-
URTICACEAE				
<i>Urtica dioica</i> L.	Nettle	Eur.-Sib. Elt.	-	-
LILIACEAE				
<i>Asparagus acutifolius</i> L.	Wild asparagus	Medit. Elt.	-	-
<i>Allium neapolitanum</i> CYR.	White garlic	Medit. Elt.	-	-
<i>Allium roseum</i> L.	White garlic	Medit. Elt.	-	-
<i>Scilla hyacinthoides</i> L.	Squill	Medit. Elt.	-	-
<i>Ornithogalum sphaerocarpon</i> KERNER	Star of Bethlehem	-	-	-

Name of Familia and Species	English Name	Phytogeographical Area	Endemism	RDB
<i>Ornithogalum umbellatum</i> L.	Star of Bethlehem	-	-	-
SCROPHULARIACEAE				
<i>Verbascum parviflorum</i> LAM.	Mullein	E. Medit. Elt.	-	-
<i>Linaria simplex</i> (WILLD.) DC.	-	-	-	-
<i>Scrophularia lucida</i> L.	Figwort	-	-	-
VIOLACEAE				
<i>Viola parvula</i> TINEO	Violet	-	-	-
<i>Viola kitaibeliana</i> ROEM. ET SCHULT.	Violet	-	-	-
POLYGONACEAE				
<i>Polygonum arenastrum</i> BOR.	Knotweed	-	-	-
<i>Polygonum pulchellum</i> LOIS.	Knotweed	-	-	-
<i>Rumex patientia</i> L.	Patience dock	-	-	-
RHAMNACEAE				
<i>Rhamnus alaternus</i> L.	-	Medit. Elt.	-	-
OLEACEAE				
<i>Jasminum fruticans</i> L.	Jasmine	Medit. Elt.	-	-
<i>Olea europaea</i> L. var. <i>europaea</i> L.	Olive	-	-	-
<i>Ligustrum vulgare</i> L.	Common privet	-	-	-
PINACEAE				
<i>Pinus brutia</i> TEN	Calabrian pine	E. Medit. Elt.	-	-
FAGACEAE				
<i>Quercus aucheri</i> JAUB. ET SPACH	Pirnal oak	E. Medit. Elt.	-	-
<i>Quercus coccifera</i> L.	Kermes oak	Medit. Elt.	-	-
MORACEAE				
<i>Ficus carica</i> L. subsp. <i>carica</i> (ALL.) SCHINZ ET THELL.	Fig	-	-	-
APOCYNACEAE				
<i>Nerium oleander</i> L.	Oleander	Medit. Elt.	-	-
LEGUMINOSAE / FABACEAE				
<i>Genista anatolica</i> BOISS.	Weaver's broom	E. Medit. Elt.	-	-
<i>Spartium junceum</i> L.	Weaver's broom	Medit. Elt.	-	-
<i>Ononis reclinata</i> L.	Small restharrow	Medit. Elt.	-	-
<i>Ononis spinosa</i> L. subsp. <i>leiosperma</i> (BOISS.) SIRJ.	Small restharrow	-	-	-
<i>Trigonella velutina</i> BOISS.	Fenugreek	Ir.-Tur. Elt.	-	-
<i>Trigonella spruneriana</i> BOISS. var. <i>spruneriana</i> BOISS.	Fenugreek	Ir.-Tur. Elt.	-	-
<i>Medicago sativa</i> L. subsp. <i>sativa</i> L.	Alfalfa	-	-	-
<i>Medicago coronata</i> (L.) BART.	Alfalfa	Medit. Elt.	-	-
<i>Dorycnium hirsutum</i> (L.) SER.	-	Medit. Elt.	-	-
<i>Coronilla scorpioides</i> (L.) KOCH	Scorpion vetch	-	-	-
<i>Coronilla varia</i> L. subsp. <i>varia</i> L.	Scorpion vetch	-	-	-
ORCHIDACEAE				
<i>Ophrys mammosa</i> DESF.	Mammosa	E. Medit. Elt.	-	-
<i>Ophrys reinholdii</i> SPRUNER EX FLEISCHM. subsp. <i>reinholdii</i> SPRUNER EX FLEISCHM.	Mammosa	E. Medit. Elt.	-	-
<i>Ophrys holoserica</i> (BURM. FIL.) GREUTER subsp. <i>holoserica</i> (BURM. FIL.) GREUTER	Mammosa	Medit. Elt.	-	-
<i>Orchis sancta</i> L.	Mammosa	E. Medit. Elt.	-	-
<i>Orchis tridentata</i> SCOP.	Mammosa	Medit. Elt.	-	-
<i>Orchis italica</i> POIRET	Mammosa	Medit. Elt.	-	-
<i>Orchis anatolica</i> BOISS.	Mammosa	E. Medit. Elt.	-	-
<i>Orchis provincialis</i> BALBIS EX DC.	Mammosa	Medit. Elt.	-	-
<i>Dactylorhiza romana</i> (SEB.) SOO subsp. <i>romana</i> (SEB) SOO	Mammosa	Medit. Elt.	-	-

Source: (Adil, ve diğerleri, 2012), (Ekim, ve diğerleri, 2000)

Various abbreviations are used to indicate phytogeographical regions in the Flora table. Accordingly, Eur.-Sib. Elt. refers to Euro-Siberian Element, Medit. Elt. to Mediterranean Element, E. Medit. Elt. to Eastern Mediterranean Element, and Ir.-Tur. Elt. to Irano-Turanian Element. Wide-spread species or species with vague phytogeographical region are identified with (-).

The distribution of 150 plants in the category of species and subspecies in the flora list by phytogeographical regions is as follows: 6 Irano-Turanian elements, 2 Euro-Siberian elements, 28

Eastern Mediterranean elements and 33 Mediterranean elements. The remaining 81 species are in the category of cosmopolitan region or undetermined phytogeographical region.

Plant Species under Protection by Bern Convention

Turkey became a member of the the “Convention on the Conservation of European Wildlife and Natural Habitats” known as “Berne Convention” on 20.02.1984. The convention aims to protect natural plant and animal species and their natural habitats and to cooperate between member countries for this purpose. The signatory countries of the convention are obliged to take necessary legal and administrative measures to protect endangered plants and animal species and their natural habitats.

The project area involves no plant species protected by the Bern Convention.

Status of Flora Species in terms of Endemism and Threat Classes

Due to functioning as a transcontinental transition region, Turkey is rich in endemic and rare plants. About 30% of the total plant species identified in our country are endemic species.

For the endemic and rare plant species, the 1994 IUCN Red Data Book categories used in the publication “*Red Book of Plants in Turkey*” prepared by Ekim, T., et al. (2000) are described below:

- EX: Extinct
- EW: Extinct in the Wild
- CR: Critically Endangered
- EN: Endangered
- VU: Vulnerable
- DD: Data Deficient
- NE: Not Evaluated
- LR: Least Concern; There are 3 subcategories that can be sorted by threat according to species' status in the future.
 - cd- Conservation Dependent: The taxa which may fall in one of the above categories within 5 years are in this group.
 - nt- Near Threatened: Plant species which cannot be placed in the previous category but are close candidates to VU category are included in this group.
 - lc- Least Concern: Plant species that do not require any conservation and are not under threat are included in this category.

It was determined that two endemic plant species might be present in the project area and its vicinity. These species are *Centaurea calolepis* LR (lc) and *Onosma armenum* LR (lc). Endemic plant species in the LR (lc) category grow widely and abundantly in Turkey, and it is not in question that they are under threat or endangered.

2.10. RESERVES

Some important areas of historical and touristic importance in Denizli, which are listed below, have been put under protection:

- Honaz Mountain National Park – The Honaz Mountain, the highest mountain in the Aegean Region, and its vicinity have an area of 9616 ha.
- Pamukkale Special Environmental Reserve - Thermal water resources and travertines constitute a cultural and natural site that corresponds to UNESCO World Heritage List criteria (iii, iv, vii) due to Pamukkale: Hierapolis Antique City in UNESCO World Heritage List.
- Beyağaç Kartal Lake and its Vicinity – It was declared as a Nature Reserve in 1994 due to Kartal Lake formed as a morainal lake in the glacial valley and larches and monumental trees in the vicinity. Its total area is 1.309 ha.
- Cankurtaran Drainage Basin Reserve
- Karcı Stream Forest Land
- Buldan Süleymaniye Forest Land– has an area of 150 ha. This lake a large part of which is covered with reeds, which constitutes a shelter and a habitat for bird species such as wild duck and stork, and species of water snake, frog and turtle, is an important natural resource as a Wetland Ecosystem.
- Acıpayam Evkara Pinetum – A Calabrian pine forest of 5 ha.
- Güney Waterfalls Natural Monument Reserve
- Akbaş Dam Reserve

The distances of these reserves to the project area and the IUCN protected area categories are shown in Table 2.8.

Table 2.8. Distances of Reserves to the Project Area and IUCN Categories

Conserved Area	Distance to Project Area (km)	IUCN
Honaz Mountain National Park	5.8	II
Pamukkale Special Environmental Reserve	4.3	III
Beyağaç Kartal Lake and Vicinity Nature Reserve	75	Ia
Cankurtaran Drainage Basin Reserve	8.5	-
Karcı Stream Forest Land	6.5	-
Buldan Süleymaniye Forest Land	44	-
Acıpayam Evkara Pinetum	40.5	-
Güney Waterfalls Natural Monument Reserve	32.5	III
Akbaş Dam Reserve	21	-

The following is a brief description of the IUCN protected area categories:

I : Strict Nature Reserve / Wilderness Area: Nature reserve managed for science and the protection of wildlife. This type of protection is divided into two subclasses.

Ia : Strict Nature Reserve: Nature reserve managed for science

Ib : Wilderness Area: Nature reserve managed for the protection of wildlife

II : National Park: Nature reserve managed for ecosystems conservation and recreation

III : Natural Monument or Feature: Nature reserve managed for the protection of certain natural assets

IV : Habitat/Species Management Area: Nature reserves where conservation takes place with the intervention of management

V : Protected Landscape/ Seascape: Nature reserve managed for landscape/seascape conservation and recreation

VI : Protected Area with Sustainable Use of Natural Resources: Nature reserve managed for the sustainable use of natural ecosystems

Locations of the above listed reserves by the project area are given in Figure 2.5 - Figure 2.12.



Figure 2.5. Honaz Mountain National Park

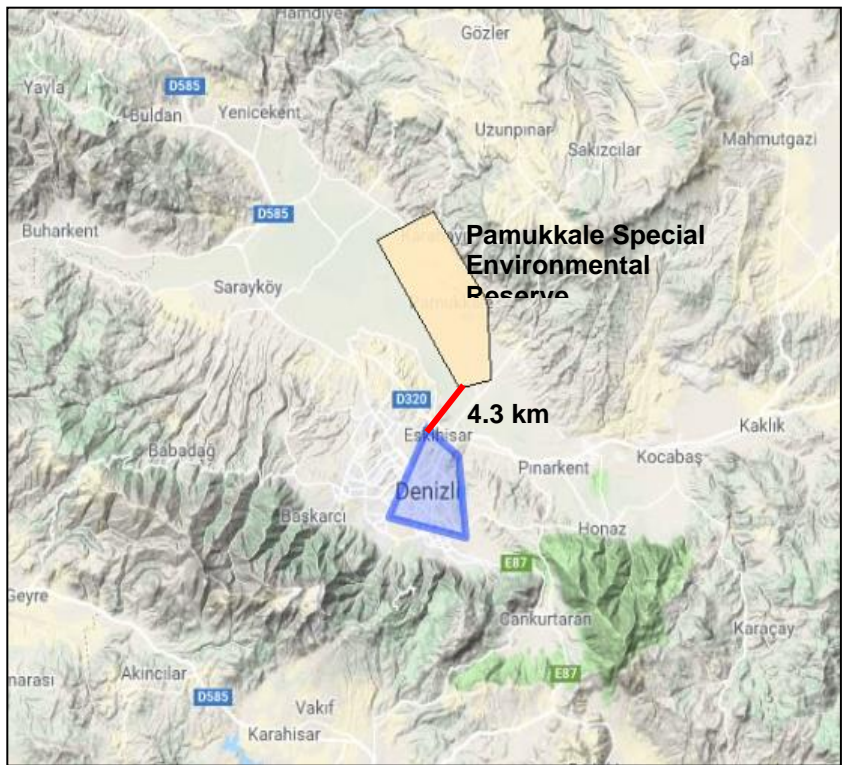


Figure 2.6. Pamukkale Special Environmental Reserve



Figure 2.7. Beyeğaç Kartal Lake and Vicinity Nature Reserve



Figure 2.8. Karcı Stream Forest Land, Cankurtaran Drainage Basin Reserve

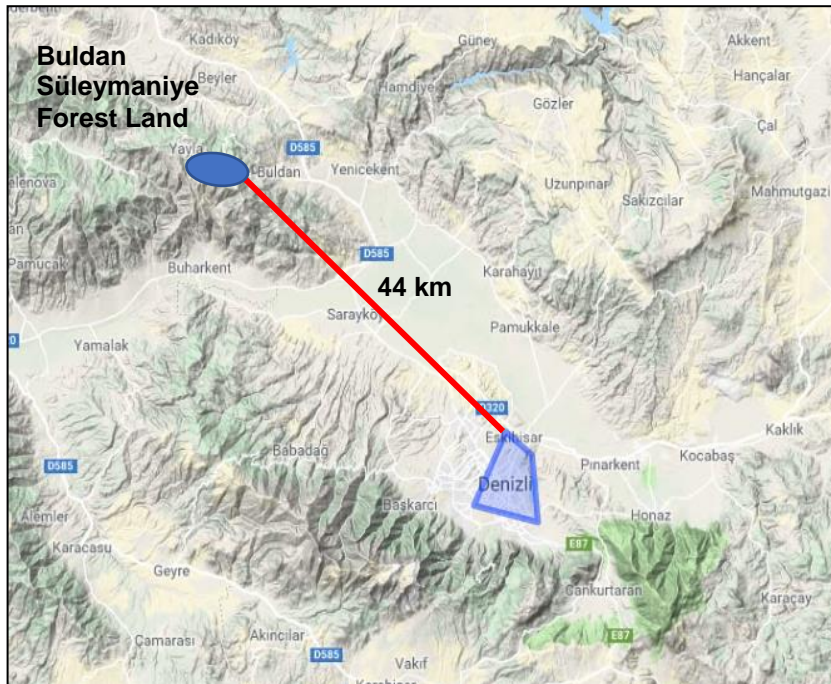


Figure 2.9. Buldan Süleymaniye Forest Land



Figure 2.10. Acıpayam Evkara Pinetum

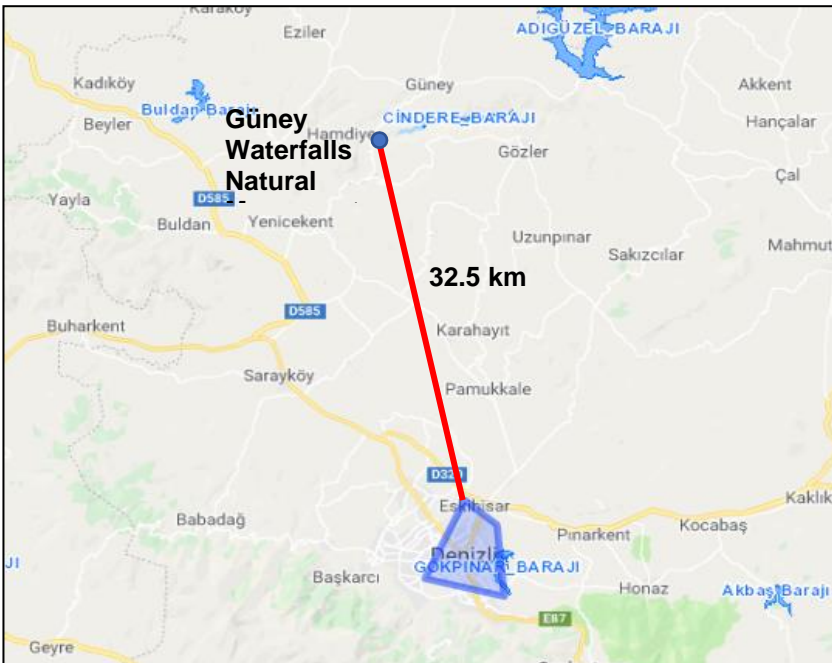


Figure 2.11. Güney Waterfalls Natural Monument Reserve

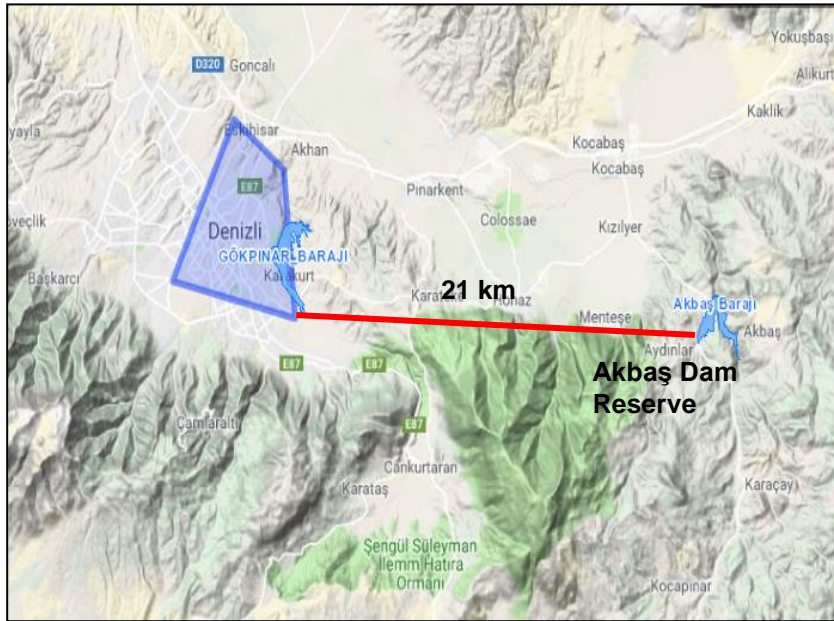


Figure 2.12. Akbaşı Dam Reserve

Among historical sites, only Hierapolis (Pamukkale) is within the boundaries of the municipality and is 4.3 km away from the project area. The distances of other historical sites from the project area are given below and shown on the map.

Table 2.9. Distances of Historical Places to the Project Area

- Eumenia (96 km)	- Sebastopolis (45 km)
- Tripolis (40 km)	- Colossae (25 km)
- Alacain (60 km)	- Anava (58 km)
- Herecleia Salbece (52 km)	- Attuda (37 km)
- Laund (64 km)	- Trapezopolis (35 km)
- Tabae (78 km)	

Distances of other districts in Denizli to the central district are presented in Table 2.10.

Table 2.10. Distances of District Centres in Denizli Province to the Project Area

Settlement	Distance to Denizli (km)	Settlement	Distance to Denizli (km)	Settlement	Distance to Denizli (km)
Acıpayam	60	Bozkurt	51	Güney	65
Akköy	23	Buldan	39	Honaz	22
Babadağ	35	Çal	64	Kale	71
Baklan	61	Çameli	111	Sarayköy	20
Bekilli	87	Çardak	58	Serinhisar	39
Beyağa	108	Çivril	96	Tavas	45

In addition, the abovementioned touristic places are shown on Figure 2.13. Likewise, the area where the ESMP was made (Denizli-Central District) is marked on the map. As can be seen from this figure,

the said historical and touristic places are far from the Denizli Central District, and the canal excavations will not affect these areas whatsoever.

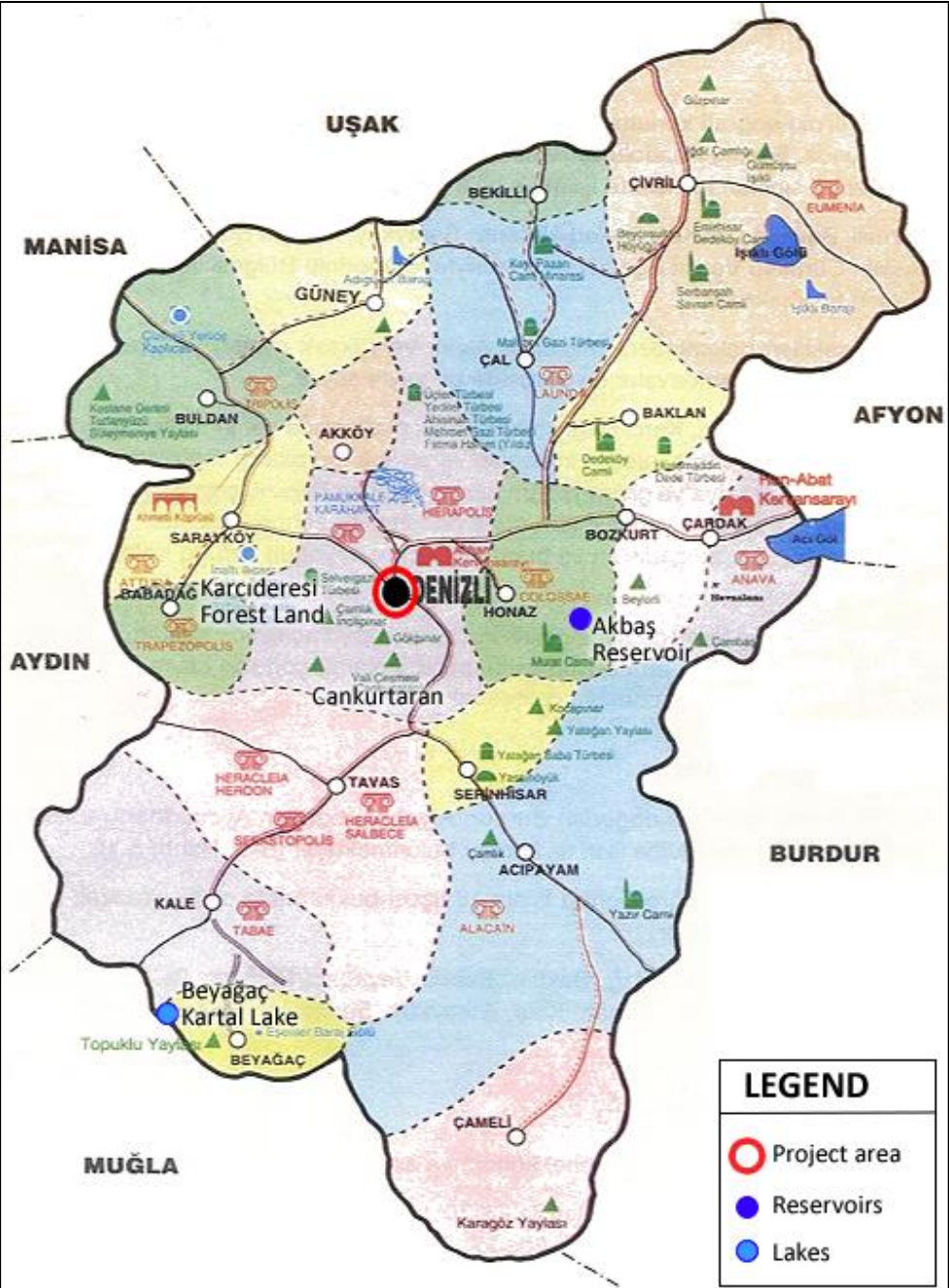


Figure 2.13. Denizli Tourism Map

3. ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT REPORT

3.1. POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

3.1.1. Environmental Impacts

3.1.1.1. Soil and Land

Following the signing of the DES-W1 and DES-W2 construction work contracts within the scope of SCP-I, the construction works contractors took the consent of the Consultant Firm for the selection of the construction sites and realized the installation of the construction site and started the construction works. DES-W1 construction site was established in Aktepe Asphalt Construction Site, which is located in Dokuzkavaklar neighbourhood and belongs to Denizli Metropolitan Municipality. The use of the area in question until the completion of the works from 02.09.2019 has been permitted by Denizli Metropolitan Municipality. DES-W2 construction site area is located in the sevindik neighborhood and has been established in a privately owned rental space. Images of DES-W1 and DES-W2 construction sites are given below.



Figure 3.1. DES-W1 Site Area



Figure 3.2. DES-W2 Site Area

The construction site to be created for the construction works within the scope of DES-W3, which DESKI plans to tender, can be determined following the signing of the contract with the construction works contractor. At this stage, it is foreseen that the construction site facilities can be established on the outer borders of the residential areas and on the empty lands within the zoning plan.

Minimum 30 cm depth of topsoil will be lost in the excavations to be performed for pumping stations and in non-asphalted areas.

Due to the formation of uncontrolled surface flows during ditch excavations and pumping station constructions in rainy weather, there is a possibility that the excavation or filling sets at the edges of the ditch or excavation area may be subject to erosion.

There is a possibility of contamination of exposed subsoil layers in case of oil and fuel flow/leakage due to accidents or faults from vehicles during ditch excavation and pumping station construction works.

Physical damage to the land during the excavations to be performed for pumping stations and in non-asphalted areas is inevitable.

Qualified sand and gravel will be required during the backfilling of the pipe ditches. The provision of such natural materials may necessarily lead to loss of soil and land.

3.1.1.2. Water Resources

Wastewater and rainwater that have not been collected with a sufficient and discrete system until today will be collected via healthy and adequate systems. The collected wastewater after having been treated and the rainwater after having been collected more cleanly without endangering the safety of life and property will be discharged to receiving aquatic environments. The project will have a positive impact as it will reduce pollution on water resources.

There is a particular possibility that the surface drainage structure may deteriorate during and after the construction of the pumping stations.

During ditch excavations, there may be ponding in pipe ditches or manholes, the isolation and measuring chambers due to rainfall or groundwater.

Domestic wastewater will generate in the camp areas where the employees will stay.

There is a possibility of contamination in the water resources in the vicinity of the camp areas even if the wastewater collected from these areas are treated in a domestic wastewater treatment plant in case of temporary storage of vegetable waste oils, fuels and petroleum; irregular storage of containers containing additives to be used in construction works possibly, solid wastes, batteries and accumulators and in case that they are not disposed of.

3.1.1.3. Air Quality

The project will reduce the amount of treated water offered to the public use through the reduction of uncalculated water losses by DESKİ. Energy efficiency will increase in newly designed systems. The use of electrical energy will be reduced for the treatment of less water and as a result of the use of systems with increasing efficiency. As the reduced use of electricity will mitigate the use of fossil fuels for producing this energy, it is expected that air pollution and greenhouse gas emissions will be indirectly reduced.

Since the wastewater discharged to the environment without being treated previously will be collected through new sewage systems and treated before being discharged, it will be ensured that odours and emissions from the wastewater to the environment will be reduced.

In case of unusual conditions during the operation phase, the short-term odour that may be caused by wastewater kept in the wastewater pumping stations may affect the people who use the houses and workplaces in the vicinity of the wastewater pumping stations.

Certain levels of dust and vehicle exhaust emissions will occur during the excavation and filling of pumping stations and pipe ditches, disassembly of excavation and filling materials, dismantling and repaving of parquets/curbs, and loading and unloading of them onto vehicles, and transport of materials with vehicles. This dust and exhaust emission will affect the people living in the project area and the parks, gardens, fruit trees and other trees owned by people in the gardens, and ornamental plants for landscaping.

3.1.1.4. Acoustic Environment

Although the tools and equipment used during construction works are equipped with new technology, noise cannot be prevented. However, vehicles and equipment are allowed to operate within a specified period of time and at the specified noise level.

During the ditch excavations and construction of pumping stations, vibrations may occur due to the operation of heavy machinery or pile driving, etc. This level of vibration must be kept within the permitted legal levels.

Noise and vibration are likely to occur due to the operation of the pumps during the operation of the pumping stations.

3.1.1.5. Natural Habitats

Sensitive areas protected by various protection status are located quite away from the project area as stated in 2.10. While the Akvadi Pumping Station (DES-W1) appears to be registered as a forest land owned by the State Treasury in its title deed, it is located within the Mass Housing Area. Due to the built-up nature of the area, the forest status did not prevail. An application was made to the Denizli Regional Directorate of Forestry for the allocation of the parcel in which the facility will be built, and a permission was obtained on 15.05.2019 for 49 years of use of 614.33 m². There are no natural habitats in the areas where ditch excavations and construction of pumping stations will be performed and in the vicinity of these areas.

3.1.1.6. Flora and Fauna

There are no species belonging to the flora and fauna mentioned in 2.9 in the areas where ditch excavations and construction of pumping stations will be performed.

3.1.1.7. Waste Management

Domestic solid waste and packaging waste will be generated by employees meeting their daily needs during the preparation of the land and the construction phase.

Excess excavation materials will be generated during excavations and construction and operation of pumping stations, isolation and measuring chambers. Considering their volumes and qualities, their random storage or being dumped will have negative environmental impacts.

Certain amount of excavation wastes will be generated even if the earth to be excavated during the ditch excavations will be used for backfilling operations. It is also possible that excavation waste will be generated during the construction of the pumping stations.

Medical waste is not expected to occur as the nearest healthcare facility will be consulted in case of accidents and injuries and illnesses during the construction.

Wastes of accumulator, oil and tire will be formed in case vehicles and machinery to be used during construction and operation are maintained within the construction sites.

During the construction phase of the project, maintenance and repair of heavy equipment will be carried out within the construction sites, and at the machine park which will be located in the workshops of DESKİ during the operation. It is possible that wastes of clothes and rags contaminated with waste oil will be generated due to the maintenance and repair of heavy equipment.

Old metal pipes, valves, etc. to be exposed during excavations are of solid waste properties other than the asbestos cement pipes (ACP). Such wastes must be disposed of in accordance with the legislation.

3.1.2. Impacts on Social Environment

3.1.2.1. Residents in the Project Area

It is inevitable that there will be complaints on issues such as dust, noise, interruption of communication and water cuts, disruption of transportation, etc. during the construction and operation phases of the project. The measures proposed in the following sections should be taken to reduce these complaints.

Vehicle traffic will be adversely affected due to route changes arising from excavations during the construction and operation phases and due to additional traffic load to be caused by construction works.

3.1.2.2. Aesthetics and Landscaping

For Akvadi Pumping Station, which is located in the parcel 1903 belonging to the Ministry of Finance within the boundaries of the forest land in the Akvadi Recreation area, permission was obtained from Denizli Regional Directorate of Forestry for 49 years on 15.05.2019. It will not be required to cut down trees during the construction of Akvadi Pumping Station.

Sevindik Pumping Station will be constructed in the block 6710, parcel 4 owned by Denizli Metropolitan Municipality within the Sevindik Park area. In addition to the odour and noise problem due to the presence of such a pumping station in the park area, visual aesthetics may be adversely affected.

No permanent loss of aesthetics and landscaping is anticipated due to pipe ditch excavations and constructions of isolation and measuring chambers and pumping stations. However, if there are trees in the boulevards and streets to present hindrance during ditch excavations, their transplantation, if not possible, planting new ones on site or in other appropriate places will reduce the impact on the environment. Such works will be performed by the relevant unit of the Metropolitan Municipality.

As well as the visual pollution, it is possible that the borders and roads are also damaged during the general excavation activities. This negative impact will have to be eliminated. Restoration will be carried out in accordance with their condition before the project. The necessary repairs and constructions will be done, and the damaged parts will be restored.

3.1.2.3. Public Health

Safety problem may occur due to ditches as pipes will be laid, isolation and measuring chambers and pumping stations will be constructed in public areas used every day and moment. Health problems may also occur in case wastewaters, accumulated solid wastes within the sewage systems or old asbestos pipes are exposed during the excavations in these areas. People using these areas as well as the employees may be adversely affected by these problems.

Disassembly, transport and disposal of asbestos pipes to be exposed during excavation lead to health problems. In case of encountering asbestos pipes during excavations, they will be left intact and will not be removed in any way.

Sewage or solid wastes will be generated during the construction and operation phases. These have a negative impact on human health, as well.

New systems of drinking water, sewage and rainwater will contribute to the improvement of general health and hygiene conditions of people who benefit from these systems. Monitoring of the quality of the water provided will inform users and operators if the system has a negative impact.

Sewage lines may be clogged during the operation phase. The rapid solution to this problem will ensure that public health is not affected.

There may be water cuts during the operation due to reasons such as occasional maintenance in the main supplying drinking water or lack of water supply. Hygienic problems occur in the main as a result of these water cuts or maintenance works. This negative impact will have to be eliminated.

In case of any other epidemic and / or contagious disease, including COVID-19, during the construction and operation phases, T.C. Ministry of Health, T.R. The directives, directives and recommendations of the Ministry of Family, Labor and Social Services and the World Health Organization will be followed and all necessary measures will be taken.

3.1.2.4. Communities

The project will require the employment of personnel during the construction phase. Labour force and employment will be provided from the local community as much as possible. However, there may be a need for housing for those who are experts in their field and who will come from outside the city. So, a camp will have to be set up in the construction site during the construction works. The facilities in the camp will be sufficient to meet the daily needs in terms of health and hygiene. The social needs of the people living in the camp will be minded. Legal requirements will be complied with in relation to child labour and forced labour among the employees.

All necessary measures due to the pandemic in the facilities will be implemented by taking into account the provisions published by the Ministry of Health and all other relevant institutions. Hygiene and cleanliness of living areas and all machinery and equipment will be ensured. General cleaning frequency will be increased for the hygiene of frequently used and contacted surfaces.

Site-specific contingency / emergency / crisis management / action plan will be prepared and implemented for COVID-19 and other possible epidemic and communicable diseases. In emergency action plans, regulations for the storage and disposal of possible medical wastes that may occur in the field will also be taken into consideration. It will also be taken into account that these wastes may remain infectious depending on the material and their amount may increase over time. In order to make the roles and responsibilities of individuals understandable, there will be widespread information in emergency action plans.

Employees will be trained at regular intervals on the symptoms of COVID-19, how to protect them, and what to do when symptoms occur.

3.1.2.5. Land Acquisition

There will be no land acquisition due to the construction of the isolation and measuring chambers during the laying of the pipelines (excluding the collector to the Eskihisar Wastewater Treatment Plant). Since there is no built-up housing on any of the areas, there is no issue concerning resettlement. However, a Land Acquisition and Resettlement Action Plan (LARAP) was prepared by DESKİ and approved by İller Bankası Project Management unit and World Bank in June 2019 in accordance with the World Bank (WB) Policies and procedures set out in World Bank Operational Policy OP/BP 4.12 titled "Involuntary

Resettlement” since land acquisition is required for the construction of collectors. In addition, Land Acquisition Progress Reports are prepared by DESKİ in 6-month periods in order to follow the land acquisition requirements that may arise during the construction works, which are detailed below.

SCP-I construction work contractors carried out the installation of the construction site with the approval of the Consultant Firm for the selection of the construction site. DES-W1 construction site ownership was established in Aktepe Asphalt Construction Site located in Dokuzkavaklar neighbourhood, 721 block, parcel no 46. Denizli Metropolitan Municipality has given permission to use the area in question from 02.09.2019 until the works are completed. DES-W2 construction site was established in Sevindik district, block 6145, private leased parcel area no 1.

Additional areas (Merkezefendi, Yenişehir, Bereketler, Yenişafak, Adalet, Zafer and Akçeşme districts) where infrastructure works will be carried out within the scope of SCP-I and DES-W3 (Construction and Rehabilitation of Hürriyet, Kayhan and Asmalıevler Districts Water, Wastewater and Stormwater Networks), the current Land Acquisition and Resettlement Action Plan (LARAP) has been updated by DESKİ.

The works covered by the DES-W1 and DES-W2 contracts are included in the LARAP report approved in June 2019. Land acquisition procedures for the Akvadi, Sevindik and TOKİ PS centers mentioned above have been completed and construction works have started. Land acquisition processes for Eskişehir wastewater collector included in the DES-W2 contract package are ongoing. There will be no land acquisition, except for 1 parcel where the stormwater collector passes from the Zafer neighbourhood, which is included in the scope of DES-W1 and DES-W2 with change orders. Land acquisition works were carried out in 23 parcels where wastewater and stormwater collectors routes pass in Hürriyet, Kayhan and Asmalıevler neighborhoods to be constructed within the scope of the DES-W3 construction contract planned to be made by DESKİ. In 20 of the parcels in question, easement rights have been taken for passage, and land acquisition processes continue in the other 3 parcels.

The following information is given below related with the areas mentioned above:

- Akvadi Pumping Station (DES-W1) - Denizli Regional Directorate of Forestry was applied for the allocation of the parcel 1903 owned by the State Treasury within the forest boundaries pursuant to Article 16 of the Forest Law No. 6831 and a 49-year Forest Permit was obtained on 15.05.2019 for the use of the 614.33 m² area where the facility will be located. Construction work continues in the area.
- Sevindik Pumping Station (DES-W2) – where the station will be constructed on the block 6710, parcel 4; revision of development plan is completed as “Wastewater Facilities Area” in accordance with the related item is Municipality Law no 5393. With the letter dated 11.02.2020 E.7519 of Denizli Municipality, the area is permitted to be used by DESKİ in accordance with the intended use of the development plan.
- The zoning plan modification has been completed as "Wastewater Facilities Area" in accordance with the relevant articles of the Municipality Law No. 5393 of the Denizli Metropolitan Municipality, where the Sevindik (DES-W2) Pumping Center will be built. With the letter of Denizli Metropolitan Municipality dated 11.02.2020 and numbered E.

- TOKİ Pumping Station (DES-W1) will be constructed in the non-registered (non-owned) area. Currently, this area is not allocated to any institution or individual. It is not used for economic or agricultural purposes on the specified area on the ground. With the completion of the construction works of the pumping center, the area will be registered in the name of our Administration.
- The area where the Eskihisar collector (DES-W2) will be constructed is in Eskihisar parcel 307 and owned by separate shareholders. 15 of the 28 shareholders are alive. Addresses of 6 shareholders could not be accessed. Therefore, no easement has been provided yet. Efforts are still underway to provide easement. gives information on the collector route, location of the said parcel and the use of the area in the zoning plan.
- Eskihisar wastewater collector (DES-W2) passes through parcel no. 307 of Gümüşçay neighbourhood, Merkezefendi district. The mentioned parcel belongs to 20 different shareholders. Figure 3.1 gives information about the collector route, the location of the parcel and the way of use in the development plan of the area. The 485.64m² part of the cadastral parcel no. 307 passing the sewerage line was subdivided, and the new parcel no. 2483 was expropriated. Reconciliation negotiations were held with 20 shareholders of the parcel no. 2483. By reaching an agreement with 11 of them, the title deed registration was made on behalf of our Administration. It is expected that the expropriation value will not be reconciled with 9 people and the expropriation value will be decided through the court. The reason for the disagreement is that the shareholders do not consider the expropriation value sufficient. All shareholders have been reached. An expropriation case was filed for 9 shareholders who could not be reconciled on 26.12.2019 at the Denizli 3rd Civil Court of First Instance for the determination of the expropriation value with the base number 2019/857 and the registration of the title deed in the name of the General Directorate of DESKİ. The lawsuit in question was held in July due to the pandemic process in the world and in our country. The hearing was postponed to 05.11.2020 in order to clarify the discrepancy between the title deed records of one of the shareholders and the records in the population. The construction process will continue after this process is completed and the costs are deposited in the bank account of the parcel owners in the amount of "replacement cost" or a consent is received.
- Zafer neighbourhood stormwater collector (DES-W1) route passes through Parcel no. 667 of Şemikler neighborhood, Merkezefendi district. This parcel is a farm and belongs to 1 person. Easement right will be established in the area. The decision of the Board of Directors of the General Directorate of DESKİ regarding the transaction was taken. It was sent to the Ministry of Environment and Urbanization on 19.08.2020 for approval of the decision of public benefit. In addition, the preparation of the cadastral file of the part of the property where the collector line passes is ongoing. Following the approval of the public interest decision and the completion of the cadastral works, the relevant right owner will be notified and the negotiations for reconciliation will begin. In Figure 3.4, information is given about the collector route, the location of the parcel no. 667 and the use of the area in the development plan.
- Bereketler neighborhood stormwater collector (DES-W1) route passes through parcel no 478 belonging to Denizli Metropolitan Municipality, which is currently the development road. Necessary permissions will be obtained in accordance with the relevant articles of the Municipality Law No. 5393 for parcel transition. (See Figure 3.4)

- With the purpose of expropriating 23 parcels located on the wastewater and stormwater collectors (DES-W3) routes of Hürriyet, Kayhan and Asmalievler neighborhoods, the decision of the General Directorate of DESKİ was taken by the Board of Directors of the General Directorate of DESKİ, dated 14.09.2018 and numbered 203, and this decision was made by the decision of has been approved by the Ministry of Environment and Urbanization by letter E.204357 at 12.11.2018. Easement right was established for passage through negotiations on 20 parcels belonging to private individuals (77 shareholders in total) that are located in Pamukkale district Kayhan neighborhood 193, 198, 199, 200, 201, 202, 203, 270, 271, 273, 314, 315, 319, 324, 611, 1033, 1052, 1058, 1055, and 1093 parcels on where the collector routes pass. The ownership of parcels 1025, 1027 and 1034 in Pamukkale district Kayhan neighbourhood located on the collector route belongs to DSI. The procedures for establishing easement rights in the 3 parcels in question continue (See Figure 3.5).

Furthermore, Land Acquisition Progress Reports will be prepared by DESKİ in 6-month periods to follow up the abovementioned requirements of land acquisition that may arise during construction works.

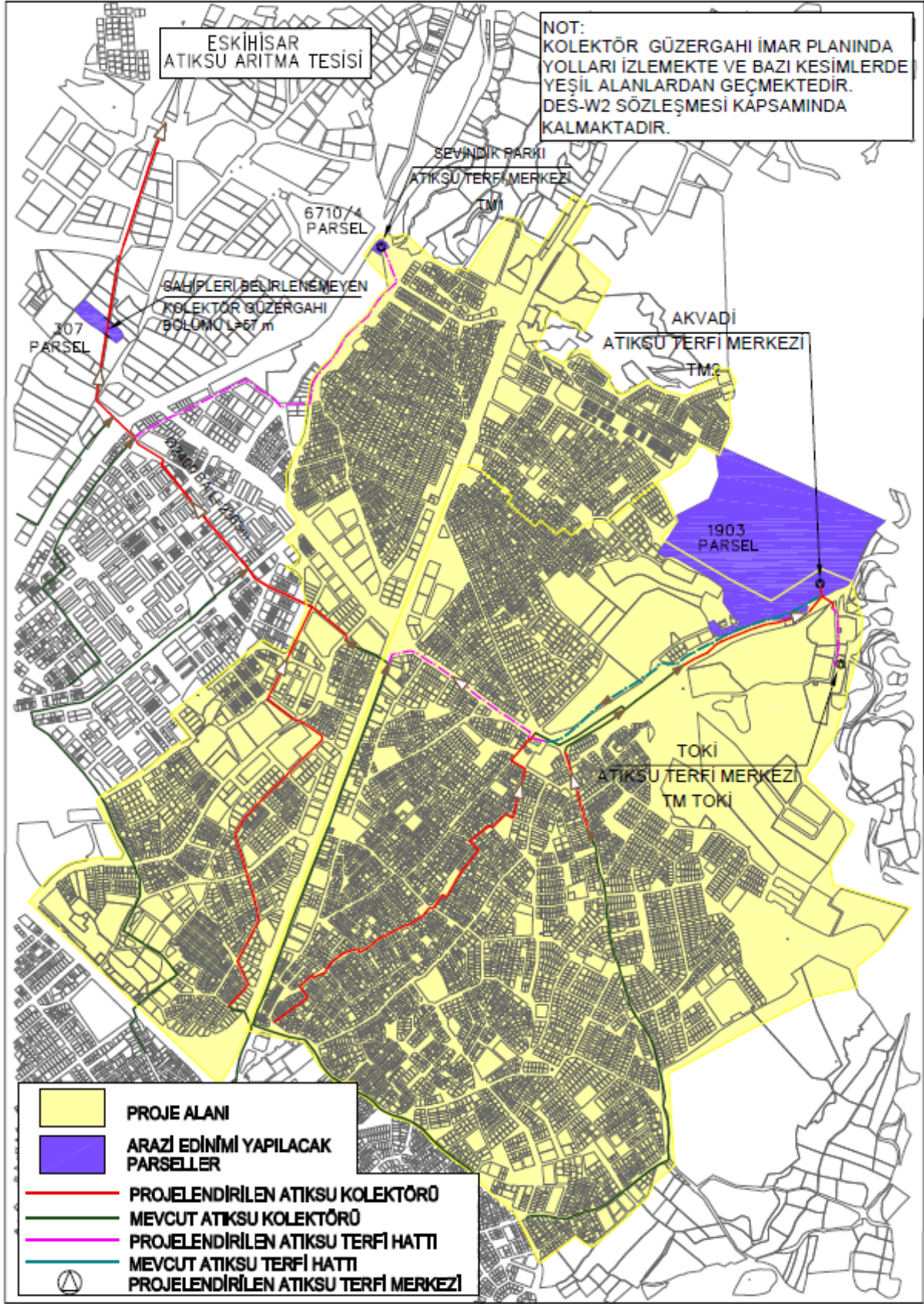


Figure 3.3. Status of Land Acquisition in the Project Area

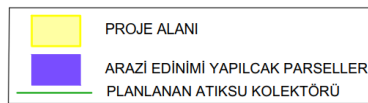
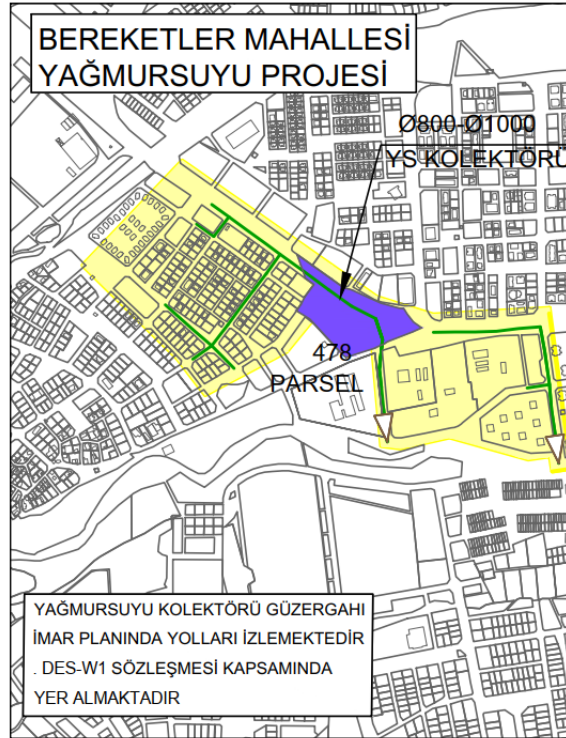
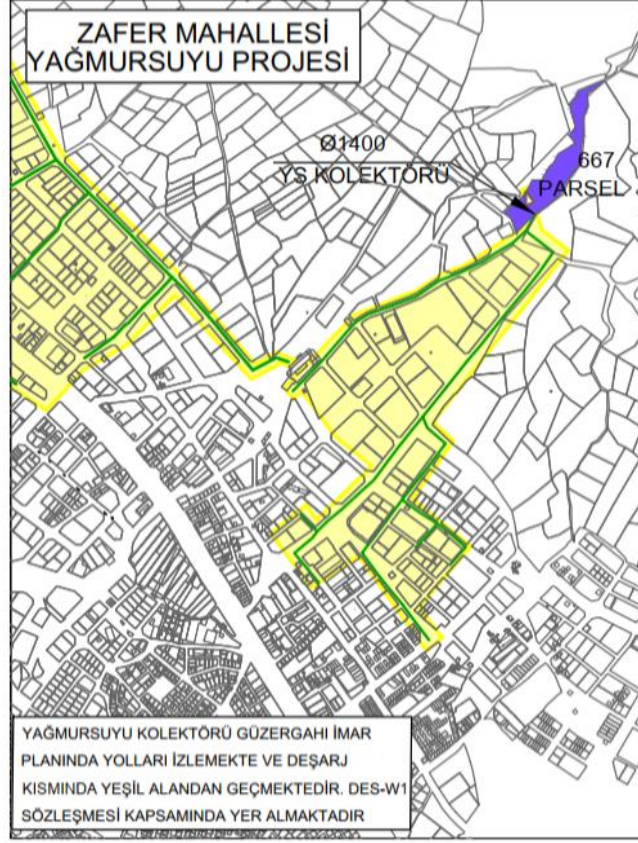


Figure 3.3. Zafer ve Bereketler Neighborhoods Stormwater Collectors Land Acquisition Status

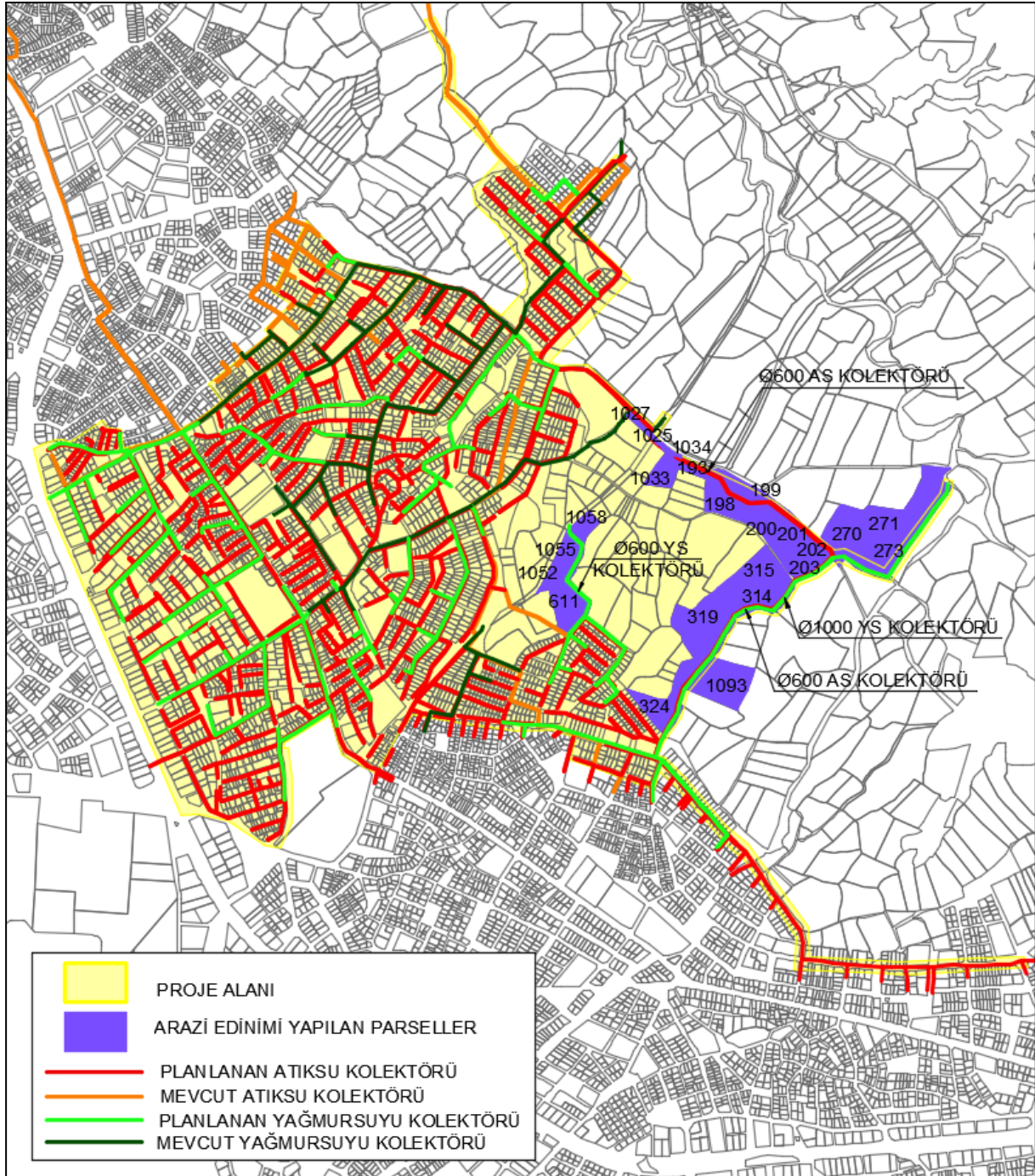


Figure 3.4. Hürriyet, Kayhan and Asmalievler Neighborhoods Wastewater and Stormwater Collectors Land Acquisition Status

3.1.2.6. Historical and Cultural Areas

As stated in 2.10 of the Report, no cultural finds were observed in the project area. In the excavations to be carried out in the area, there is a low possibility of observing such finds as they were not in the previous tender packages. In case of discovery of a cultural find, work in progress around the find will be stopped, and all necessary precautions will be taken to prevent damage to the finds according to the National Legislation.

3.1.2.7. Occupational Health and Safety

Construction work can cause accidents that threaten the health and safety of employees unless necessary precautions are taken. Accordingly, DESKİ, consultant and contractor companies are obliged to provide a safe and healthy working environment for employees.

Precaution must be taken against formation of hydrogen sulphide and methane gas due to dismantling of parts of existing sewage systems to be connected to the newly laid lines during construction and the anaerobic conditions during the maintenance in the operation phase. These gases have toxic and explosive properties.

In case of any other epidemic and / or contagious disease, including COVID-19, on construction sites and camp sites, T.C. Ministry of Health, T.R. Directives, directives and recommendations of the Ministry of Family, Labor and Social Services and the World Health Organization will be followed and all necessary measures will be taken regarding the issue. Cleaning and hygiene of working environments, machinery and equipment will be provided. Employees will be ensured to comply with the measures and rules taken.

3.1.3. General Assessment of Environmental and Social Impacts

Table 3.1 classifies the abovementioned environmental and social impacts of Denizli Improvement Project for Drinking Water, Wastewater and Rainwater Systems (DIPDWRS) as positive, no impact and negative.

In general, it can be argued that the project's environmental and social impacts are positive since project's environmental impacts of negative nature can be eliminated or mitigated by necessary measures.

Table 3.1. Environmental and Social Impacts of Denizli Improvement Project for Drinking Water, Wastewater and Rainwater Systems

No	Environmental and Social Component	Impact		
		Positive	No Impact	Negative
1.	Socio-economic	X		
2.	Public health and safety	X		X
3.	Occupational health and safety			X
4.	Third-party infrastructures			X
5.	Cultural and Heritage		X	
6.	Land use			X
7.	Air quality			X
8.	Water resources and water quality	X		
9.	Groundwater quality	X		
10.	Noise			X
11.	Solid waste			X
12.	Hazardous waste			X
13.	Forests and biological diversity			X
14.	Visual impact			X

3.2. MITIGATION PLAN

Within the scope of the planned project, a Mitigation Plan was prepared to reduce the impacts on land, water, air and other environments at each stage of the project.

In this section, possible impacts due to renewal of drinking water and sewage pipes to be laid and the laying of rainwater pipes in the areas specified in Figure 1.2 and how they can be taken under control and mitigate are described. It is worth noting that the construction works show similarities even if the service properties of these three separate investments are different (such as excavation, pipe laying and filling). Therefore, “mitigation” and “monitoring” plans of the three projects are summarized in two separate tables (Table 3.2 and Table 3.3).

The project will have certain impacts on environment during the construction and subsequent operation. Certain impacts anticipated during the construction phase are as follows: dust, noise, traffic, public health and occupational safety and waste disposal (including hazardous and harmful wastes) due to excavation (manual/machine), preparation of the ditch base, laying of the pipes, various fillings (ditch filling for pipe ducts), construction of the manholes, asphalt work and dismantling and repaving of the parquets/curbs. Possible impacts of the abovementioned works on the environment during the construction and subsequent operation are projected in Table 4.1. Detailed descriptions of these issues are also included in the table. Potential environmental and social impacts were defined under 3.1 when preparing the table in the first place by the works to be done. Next, the procedures for mitigating these impacts were explained and processed into the same table. The said table also specifies the costs of mitigation and who will be in charge of the mitigation process (responsibility). Similarly, the possible impacts during the operational phase of the project are summarized in Table 4.1.

Primary impacts during this phase include noise pollution, dust formation and air pollution, waste generation, traffic problems, aesthetic impacts, and occupational health and safety. Measures to reduce/prevent these impacts are provided in the same table together with the impacts. In addition, institutions and organizations in charge are specified, and mitigation costs are presented.

Table 3.2. Mitigation Plan for Denizli Improvement Project for Drinking Water, Wastewater and Rainwater Systems

Impact	:	Mitigation Measure	Cost ^a	Responsibility ^b
PRE-CONSTRUCTION				
Soil and Land	Sand and gravel pit	The designation of the pit where the sand and gravel material to be used for backfilling will be procured from, the existence of license and EIA positive certificate for the area, and restoration plans related to environmental restoration will reduce the impact.	Included in construction cost.	Contractor
Water Resources	Leachate of wastes	For temporary solid wastes and hazardous and harmful materials as well as leachate of wastes in temporary storage sites in the construction site not to damage environment, the Contractor will be responsible for the certification of these storage sites in regard to the storage of such wastes, residuals and harmful materials and their disposal by authorized institutions and organizations in accordance with the specified standards.	Included in construction cost.	Contractor
Residents in the Project Area	Public Participation	In case the project documents are revised, after the approval of the revised ESMP, İlbank and the World Bank, it will be opened to public access and, if any, their suggestions and expectations will be taken on a platform where the public can present their opinions and suggestions. The consultation process will be carried out taking into account all restrictions due to Covid 19 at the time of consultation and selecting appropriate consultation methods. After the consultation, Final ESMP will be submitted for approval by İlbank and World Bank	None	DESKİ
Residents in the Project Area	Complaint System	A Grievance Mechanism will be established and integrated into the existing complaint system. This mechanism will enable any stakeholder to submit a complaint or proposal about the way the project is planned, constructed and implemented. In addition to the establishment of the Grievance Mechanism, and its announcement to the public, the public opinion about each phase of the project, such as website, announcements, telecommunication tools, posters, banners, flyers, etc. will be informed via announcements.	None	DESKİ

Impact	:	Mitigation Measure	Cost ^a	Responsibility ^b
		The public will be regularly informed about the traffic regulations and the construction schedule, and consultation meetings will be held on the project components and activities. All information to be made will be made with appropriate methods, taking into account the current measures taken due to Covid 19.		
Human/Public Health	Accident, injury	Appropriate protective measures shall be taken in the working areas against the risks of accidents and injuries. The residents in the project area will be informed by DESKİ about the risks that may arise during the excavations.	None	DESKİ
Land Acquisition	Land acquisition and easement for Pumping Stations, Collector line	The Land Acquisition and Resettlement Action Plan (LARAP) has been prepared by DESKİ for the parcels subject to land acquisition in the areas required for the project in accordance with the World Bank (WB) Policy and procedures specified in the World Bank Operational Policy OP / BP 4.12, entitled "Involuntary Resettlement" and acquisition studies will be carried out in accordance with LARAP. In addition, Land Acquisition Progress Reports will be prepared in 6-month periods.	None	DESKİ
CONSTRUCTION PHASE				
Soil and Land	Topsoil	To prevent the loss of topsoil that will be formed during excavations in the construction site and pumping stations and areas not covered with asphalt, the topsoil layer is scraped of at least 30 cm before the excavation, the topsoil remaining or unused after the completion of the restoration work is the metropolitan and / or in areas to be determined to be used in landscaping and green area arrangement works of district municipalities.	Included in construction cost.	Contractor
Soil and Land	Erosion, runoffs and drainage structure	Covering the materials in the sets so as to prevent them from being affected by rainfall in case of working in rainy weather conditions will reduce the possibility of erosion. Furthermore, by excavating ditches directed towards a designated river bed/canal around the constructions of pumping station damage by uncontrolled runoffs and also stop landslides from sets and slopes will also be prevented.	Included in construction cost.	Contractor

Impact	:	Mitigation Measure	Cost ^a	Responsibility ^b
		In the event of oil and fuel flow/leakage during construction works, the establishment of a cleaning procedure by the relevant Contractor and informing heavy equipment operators and the personnel responsible for the field safety of the procedure will eliminate the impacts that cause the pollution of the subsoil.		
Soil and Land	Physical deterioration of soil	Excavations to be carried out in the pumping stations and non-asphalted areas will damage the land physically to a limited extent, and heavy equipment will use the designated routes and areas. Damages such as collapses, pit formation etc. which may occur in undesirable situations will be eliminated by the contractor in accordance with the pre-construction condition.	Included in construction cost.	Contractor
Water Resources	Water accumulated due to ponding	The deteriorated surface drainage structure will be reconstructed during construction by excavating ditches toward a designated river bed/canal around the constructions of pumping stations. These ditches can also be used to remove ponds that may occur due to rainfall or groundwater inside the pumping stations.	Included in construction cost.	Contractor
Water Resources	Domestic wastewater in the campsite	The wastewater to be generated at the camp site will be collected without damaging the receiving environment. If possible, a connection will be made to the urban sewer system through a manhole. If a connection is not possible, a leak-free septic tank will be built in an appropriate area within or near the construction site, and the wastewater collected here will be suck with a sewage truck to the sewage system via a manhole to be designated by the Municipality or to the inlet of the city's Wastewater Treatment Plant. A portable toilet will be used by workers during canal excavations in densely populated areas.	Included in construction cost.	Contractor
Air Quality	Dust formation	The impact of the dust formed during the construction phase will be mitigated by watering the transportation routes and roadside embankment, regulating the time intervals of the works, controlling the vehicle speeds and covering the tops of the transportation vehicles with tarpaulin. The top of the excavated material will be wetted to prevent dust formation (especially in dry, windy weather).	Included in construction cost.	Contractor

Impact	:	Mitigation Measure	Cost ^a	Responsibility ^b
		<p>Protective curtain will be used in the working area depending on wind conditions. Trucks hauling excavation material will be covered, their chassis will be checked, the material will be prevented from scattering during transportation, and the roads will be cleaned quickly if the material is scattered. Care will be taken during filling and unloading of the material. The route to be used in the transport of the excavation will be carefully selected and care will be taken not to pass through the densely populated areas. Roads where traffic is heavy in dry weather will be wetted 3 times a day, other roads will be wetted once a day. Care will be taken to enforce speed limits for transport vehicles. Accordingly, the speed limit will not exceed 30 km/h on roads with a poor coating.</p>		
Air Quality	Exhaust emission	<p>Construction machinery, equipment and vehicles will be periodically inspected and maintained to reduce the exhaust emissions generated during the construction phase, use of fuel conforming to standards will be ensured. Each vehicle to be used for transport during the construction phase shall have the "Motor Vehicle Exhaust Emission Measurement Stamp". The measurement stamp is renewed every year by measuring exhaust gas. Routine inspection and maintenance of the vehicles used for transportation will be performed (daily and periodically). Daily maintenance will be performed at the end of each shift; the operation time of each vehicle will be recorded by the operator so that periodic maintenance can be done in a timely manner. Maintenance forms will be filled regularly.</p>	Included in construction cost.	Contractor
Acoustic Environment	Noise	<p>Regarding the noise occurring during the construction phase, the environmental noise criteria for the Construction Sites are regulated by Article 23 of the Regulation on the Assessment and Management of Environmental Noise (RAMEN) published in the Official Gazette No. 27601 of 04.06.2010. Paragraph (b) of this article is related to the working area of the Denizli Improvement Project for Drinking Water, Wastewater and Rainwater Systems (DIPDWRS). By this paragraph, construction activities in and around the residential areas cannot be sustained in the evening and night time outside the daytime period. The daytime period specified in RAMEN is 07:00–</p>	Included in construction cost.	Contractor

Impact	:	Mitigation Measure	Cost ^a	Responsibility ^b
		<p>19:00. The environmental noise limit value permitted between these hours in Table 5 of Annex VII of the RAMEN is 70 dBA. The impact noise occurring in the construction site shall not exceed L_{cmax} 100 dBC. Construction activities will be carried out at specified times and so as not to exceed the specified environmental noise limit so that the noise does not affect the work/rest activities.</p> <p>Table 5 of Annex VII of the RAMEN provides the Limit Values of Indoor Noise Levels, and the limit values in these areas must be ensured during the works. A noise screen will be used around the working area where these limit values are exceeded. In this scope, muffler or noise-cancelling parts shall be used in all motor vehicles.</p> <p>The equipment and vehicles to be used in excavation, construction, transportation, pipe laying and asphaltting stages will be periodically maintained. The basic indicator is the distance covered by vehicle for the maintenance of transport vehicles (e.g. trucks). Under ESMP, maintenance of vehicles and heavy equipment such as excavators, forklifts, etc. will be performed in accordance with relevant regulations and manufacturer recommendations.</p> <p>Works will be performed in daytime (07:00–19:00). Construction will not be continued in the evening and night time periods unless required. In the event that the construction works will be continued overnight, or the noise level will be high, the people to be affected will be informed before the activity date.</p>		
Acoustic Environment	Vibration	<p>Regarding the vibrations occurring during the construction phase, care will be taken in equipment and part selection so as to comply with ground vibration velocity values shown in Table 7 of Annex VII as specified in Article 25 of the RAMEN. In case of observations and complaints that the selected vehicles and equipment generate vibration above the expected level during the construction phase, measurement will be carried out and necessary arrangements will be made.</p>	Included in construction cost.	Contractor

Impact	:	Mitigation Measure	Cost ^a	Responsibility ^b
Waste Management	Organic Domestic Wastes	<p>The management of organic domestic solid wastes originating from the personnel to be employed during the construction phase of the project will be performed in accordance with the provisions of the "Waste Management Regulation" that entered into effect when published in the Official Gazette No. 29314 of 02.04.2015. Solid wastes that cannot be recycled and utilized will be collected in the garbage containers at the construction site and borrow pits and collected by the Municipality on a daily basis and disposed of in the landfill site of Kumkısıık. Measures will be taken to prevent waste generation and domestic solid wastes (paper, cardboard, glass, plastic, etc.) that are classified as recyclable will be collected, stored separately in consideration of their reusability and will be recovered by licensed companies.</p> <p>Records will be kept regarding waste generation, temporary storage and final disposal.</p>	Included in construction cost.	Contractor
Waste Management	Vegetable Oil	<p>In the case of cooking at the cafeteria of construction site facilities, vegetable oil will be regularly collected and given to enterprises licensed under the Regulation on Control of Vegetable Waste Oils and will be certified. Vegetable waste oils which are likely to occur during the construction phase will be collected in leakproof drums with corrosion-resistant internal and external surfaces and given to environmentally authorized and licensed vegetable waste oil plants for recycling. The provisions of the "Regulation on Control of Vegetable Waste Oils" which entered into effect when published in the Official Gazette No. 29378 of 06.06.2015 shall be complied with in the disposal of vegetable waste oils.</p>	Included in construction cost.	Contractor
Waste Management	Excavation Waste	<p>Excess material in the construction of ditches, pumping stations, isolation and measuring chambers should be classified, recycled, reused separately as asphalt, curb, parquet, concrete and soil, and opportunities for reuse in the construction site must be taken. The excavation material will be deposited on the edge of ditch until reused as filling material. Unused material, wastes of asphalt-concrete and excavation according to the "Regulation on Control of Excavation</p>	Included in construction cost.	Contractor

Impact	:	Mitigation Measure	Cost ^a	Responsibility ^b
		<p>Soil, Construction and Demolition Wastes” will be sent to “Kumkısıık” landfill.</p> <p>Excavation soil to be stored temporarily in construction sites will be covered with tarpaulin or plastic material in order to protect against erosion.</p>		
Waste Management	Waste oils	<p>Waste oils that will originate from maintenance-oil change operations of the vehicles and heavy equipment that will operate during the construction phase will be collected in sealed tanks/containers placed on impermeable ground according to Regulation on Control of Waste Oils. There will be overfill prevention in the tanks/containers, and they will be filled to the marked point. Tanks/containers shall be coloured red according to the regulation and shall contain the phrase “Waste Oil”. Waste oil removal process will be controlled by the Municipality.</p>	Included in construction cost.	Contractor
Waste Management	Hazardous Waste	<p>Hazardous wastes that will be generated during the construction phase shall be kept temporarily in sound, leakproof, secured containers complying with internationally accepted standards which are placed on concrete area. The phrase “hazardous waste” shall be stated on the containers, the amount of the stored substance and the storage date shall be indicated on the containers; in case the containers are damaged, the wastes will be transferred to another container of the same properties, the containers will be kept closed at all times, and the wastes will be stored temporarily in a way that will not enter into chemical reaction. These materials will be kept in this area against the spillage and leakage.</p> <p>If hazardous waste is stored in temporary storage area, they will be stored in this area for a maximum of 180 days. Hazardous waste will be sent to the nearest licensed hazardous waste recovery facility or licensed hazardous waste disposal facility. Licensed vehicles will be used for transport. The provisions of the “Waste Management Regulation” which entered into effect when published in the Official Gazette No. 29314 of 02.04.2015 shall be complied with in the disposal of vegetable waste oils.</p>	Included in construction cost.	Contractor

Impact	:	Mitigation Measure	Cost ^a	Responsibility ^b
		Records will be kept regarding waste generation, temporary storage and final disposal.		
Waste Management	Accumulators and Batteries	The accumulators coming out of the vehicles and the batteries coming out of the construction site shall be disposed of in accordance with the Consumer Obligations as specified in Article 13 of "Regulation on Control of Waste Batteries and Accumulators". Accordingly, the batteries will be collected separately from domestic wastes and delivered to the waste battery collection points of Association of Portable Waste Battery and Exporters and Importers (TAP).	Included in construction cost.	Contractor
Waste Management	End-of-life tires	End-of-life tire waste will be generated during maintenance-repair works of the heavy equipment to be operated during the construction phase. End-of-life tire wastes that will be possibly generated due to maintenance and repair works of the heavy equipment during construction shall be delivered to environmentally licensed recycling facilities pursuant to the "Regulation on Control of End-of-Life Tires" which entered into effect when published in the Official Gazette No. 26357 of 25.11.2006 (amended with the O.G. on No: 27537 of 30.03.2010) and disposed of.	Included in construction cost.	Contractor
Waste Management	Old pipe wastes (except ACPs)	Upon evaluating the recovery possibilities of old pipe wastes resulting from the replacement of old pipes in the main (e.g. giving some old valves and metal parts to scrap dealers, etc.), the remaining part will be disposed of in Kumkısık landfill. These will be stored in temporary storage containers until they are sent from the construction site.	Included in construction cost.	Contractor
Residents in the Project Area	Habits of Use	To prevent residents' habits of use in the project area during the construction phase, the relevant institutions and organizations (Municipality, Electricity Distribution Company-AYDEM, natural gas distribution and operating company (ENERYA, TÜRK TELEKOM, etc.) will be informed by DESKİ/Contractor before construction starts.	None	DESKİ

Impact	:	Mitigation Measure	Cost ^a	Responsibility ^b
		<p>If water cut is required during construction and operation, the public will be informed, and water cuts will be carried out between 12:00-18:00. The public will be informed 24 hours before the water cut.</p>		
Residents in the Project Area	Traffic	<p>To mitigate the possible negative impacts on human health during construction works, DESKÍ will first get the necessary permissions to close these areas to traffic during the construction period before the construction, and then, inform the public of these areas closed to traffic and for how long they will remain closed in writing, visually and via telecommunication. The Police Department will work in coordination with the Traffic Unit, the Municipality and the contractor. In case the traffic is closed in the areas where the work will be done, written permission will be obtained from the Traffic Branch Directorate, the routes to be closed to traffic and the duration will be determined. Such information will also cover alternative routes outside the restricted roads during the construction period in the construction zone. The contractor will be informed in writing by DESKÍ about the areas and working hours to be worked before the construction works are started. The contractor shall take the necessary safety measures for the residents in the areas where the works will be carried out before construction works. Warning signs, light warning signs and fences will be placed in the working area and unauthorized access will be prevented. Appropriate warning signs and lights will be used on roads where traffic is closed within the city and will not be removed until the work is completed. Considering that there will be traffic density, alternative routes will be determined, and transportation will be scheduled. Transitions required for the passage of people, especially elderly, children and the disabled over the ditches to be opened will be built by the Contractor. The damages to be incurred as a result of accidents and injuries caused by these opened ditches and sets formed on road sides shall be compensated by the Contractor. Damaged roads will be re-asphalted. Asphalt will be provided from the facilities with valid operating license granted by the Municipality. Asphalt will be provided by the asphalt plant owned</p>	Included in construction cost.	Contractor/DE SKÍ

Impact	:	Mitigation Measure	Cost ^a	Responsibility ^b
		<p>by the Municipality. Alternative routes will be designated and used; the hours when the traffic is not heavy will be preferred. Speed limits shall be complied with. Within the scope of construction works, safe driving training will be provided to the drivers.</p> <p>DESKİ will inform the authorized representative of the institution/organization of the matter before construction works to be performed in front of buildings such as school, workplace, mosque, etc. and ask the institution/organization for contribution to taking necessary measures during the excavations.</p>		
Aesthetics and Landscaping	Construction of Sevindik Pumping Station in the park area	<p>Within the framework of the discussions between the municipality and the Contractor during the construction of the Sevindik pumping station, plants preventing odour and noise and contributing aesthetically, and landscaping works will mitigate the negative impact on the visual aesthetics as well as the odour and noise problem.</p>	Included in construction cost.	Contractor
Aesthetics and Landscaping	Aesthetic problems in general excavations	<p>Visual pollution will be reduced by using relevant curtains (separators) in regard to discomfort that will be caused during the works. Furthermore, photographs and information about the city placed on the separators will bring a more aesthetic look.</p> <p>Materials to be used during construction will be stored in closed and protected environment.</p> <p>All kinds of road, pavement, wall, pole, etc. damaged during the works will be repaired and restored.</p>	Included in construction cost.	Contractor
Public Health	Asbestos Pipe	<p>If any asbestos pipe is encountered by the Contractor during the excavations, it will not be removed to the surface.</p>	None	Contractor
Public Health	Sewage wastes that may be exposed in excavations	<p>In the event that sewage wastes are encountered during excavations and they are not removed from the environment by the Contractor and not delivered to a treatment plant designated by DESKİ, health problems may arise among the employees and the users of the area. Therefore, the material generated by the canal cleaning will be stored in the area to be shown by the Municipality after the necessary hygiene measures have been taken.</p>	Included in construction cost.	Contractor

Impact	:	Mitigation Measure	Cost ^a	Responsibility ^b
Public Health	Pre-operation hygiene	Before commissioning, components such as pipes, valves, fire hydrants, etc. will be cleaned and disinfected. The ends of the installed pipes will be closed to prevent any contamination.	Included in construction cost.	Contractor
Communities	Working conditions in camps	Camping facilities will include cafeteria, dormitories, hygienic areas and maintenance areas for office and machinery and equipment. All necessary measures due to the pandemic in the facilities will be implemented by taking into account the provisions published by the Ministry of Health and all other relevant institutions. Hygiene and cleanliness of living areas and all machinery and equipment will be ensured. General cleaning frequency will be increased for the hygiene of frequently used and contacted surfaces. It is expected that the workers who will live in this area will meet all their social needs in Denizli city centre. Workforce and employment will be provided by the local people as much as possible. The contractor shall not employ any child and shall not use any forced labour. All Turkish Laws and International Labour Organization Conventions on child labour, forced labour, discrimination, freedom of association and collective bargaining will be fully complied with.	Included in construction cost.	Contractor/DESKİ
Historical and Cultural Heritage	Destruction of historical artefacts	In the event that the Contractor encounters any immovable cultural assets during the practices to be carried out in the area, the Contractor shall cease all works. The nearest Local Authority or Museum Directorate shall be notified by DESKİ pursuant to Article 4 of Law No. 2863, and the subsequent instructions shall be followed.	None	Contractor and DESKİ
Occupational Health and Safety	Construction activities	During the construction phase, employees will be informed of their job descriptions, responsibilities, relations with the locals and the risks that will threaten occupational health and safety before the start of the works. Employees will be provided with the necessary personal protective equipment and informed of work and occupational safety through regular training. Risk Assessment Report will be prepared for all works to be performed before the start of construction works, and necessary measures will be taken to eliminate risks. "Emergency Plans" will be prepared for a possible accident or emergency,	Included in construction cost.	Contractor

Impact	:	Mitigation Measure	Cost ^a	Responsibility ^b
		<p>emergency teams will be formed, and drills and trainings in accordance with emergency scenarios will be performed. In the event of any significant accident in the working area (environmental spills, fatal or injured accidents, etc.), the Contractor will inform DESKİ, and DESKİ will inform İller Bankası immediately. İller Bankası will inform the World Bank of the accident within 5 working days and of the accident report and additional measures within 30 working days.</p> <p>All necessary precautions will be taken in working areas due to the pandemic. Working environments, cleaning and hygiene of machinery and equipment will be provided. Employees will be ensured to comply with the measures and rules taken.</p> <p>In order to prevent damage to people living in the area (especially children, the elderly, the disabled), people entering the construction site will be prevented by plastic bands, barriers, glow or illuminated warning signs. Bracing will be applied against landslide especially in deep excavation places.</p> <p>Walking paths will be made for pedestrians. Platforms will be used at the entrance and exit of buildings and shops. Platforms will be wider than 60 cm; chain, plastic band or wooden barriers shall be used at the edge of the platform and shall be illuminated where necessary.</p> <p>The inlet nozzles of the rainwater drainage system will be sufficiently robust to prevent them from being stolen and damaged.</p> <p>On the rainy days, no excavation work will be carried out; after the rain has stopped, necessary measures will be taken against slipping (cleaning of slippery floors or laying of slippage-preventing material, etc.), and the work will be continued.</p> <p>In the event that work machinery such as excavator, bulldozer, etc. are used, all workers will clear the area where the machines are moving, and machinery will not be used by any unauthorized person.</p> <p>Provisions of the “Occupational Health and Safety Services Regulation (29/12/2012)”, “Noise Regulation (23/12/2003)” and “Regulation on the Use of Personal Protective Equipment in</p>		

Impact	:	Mitigation Measure	Cost ^a	Responsibility ^b
		Workplaces (02/07/2013)” published in regard to the Occupational Health and Safety Law No. 6331 (20/06/2012).		
OPERATION PHASE				
Acoustic Environment	Noise and vibration during operation of pumping stations	Landscaping works will be carried out with plants that prevent odor and noise and contribute to aesthetics at the pumping stations to be built as an buried package facility. The noise caused by the machinery-equipment to be used in the pumping stations will be absorbed in the closed structure. To prevent the noise and vibration be during operation, all mechanical equipment which may cause noise will be regularly maintained. Oil levels, components of equipment such as of mufflers, etc. will be checked in accordance with the manufacturer’s recommendations and at the recommended periods. In order to prevent odor in the facilities, an odor removal and ventilation unit with active carbon filter connection will be installed.	Included in operating cost.	DESKİ
Waste Management	Excavation Waste	Excavation waste originating from the ditch excavations performed for maintenance during the operation phase should be classified, recycled, reused separately as asphalt, curb, parquet, concrete and soil, and opportunities for reuse in the construction site must be taken. The excavation material will be deposited on the edge of ditch until reused as filling material. The remaining material, wastes of asphalt-concrete and excavation will be sent to “Kumkısıık” landfill according to the “Regulation on Control of Excavation Soil, Construction and Demolition Wastes”.	Included in operating cost.	DESKİ
Waste Management	Hazardous Waste	Hazardous wastes that will generate during the operation phase shall be kept temporarily in sound, leakproof, secured containers complying with internationally accepted standards which are placed on concrete area. The phrase “hazardous waste” shall be stated on the containers, the amount of the stored substance and the storage date shall be indicated on the containers; in case the containers are	Included in operating cost.	DESKİ

Impact	:	Mitigation Measure	Cost ^a	Responsibility ^b
		<p>damaged, the wastes will be transferred to another container of the same properties, the containers will be kept closed at all times, and the wastes will be stored temporarily in a way that will not enter into chemical reaction. These materials will be kept in this area against the spillage and leakage.</p> <p>If hazardous waste is stored in temporary storage area, they will be stored in this area for a maximum of 180 days. Hazardous waste will be sent to the nearest licensed hazardous waste recovery facility or licensed hazardous waste disposal facility. Licensed vehicles will be used for transport. The provisions of the "Waste Management Regulation" which entered into effect when published in the Official Gazette No. 29314 of 02.04.2015 shall be complied with in the disposal of vegetable waste oils. Waste oils that will originate from maintenance-oil change operations of the vehicles and heavy equipment that will operate during the operation phase will be collected in sealed tanks/containers placed on impermeable ground according to Regulation on Control of Waste Oils. There will be overflow prevention in the tanks/containers, and they will be filled to the marked point. Tanks/containers must be coloured red according to the regulation and shall contain the phrase "Waste Oil". Waste oil removal process will be controlled by the Municipality.</p>		
Waste Management	Accumulators and Batteries	<p>The accumulators coming out of the vehicles and the batteries coming out of the maintenance-repair shops shall be disposed of in accordance with the Obligations of Consumers as specified in Article 13 of "Regulation on Control of Waste Batteries and Accumulators". Accordingly, the batteries will be collected separately from domestic wastes and delivered to the waste battery collection points of Association of Portable Waste Battery and Exporters and Importers (TAP). Hazardous wastes that will generate during the operation phase shall be kept temporarily in sound, leakproof, secured containers complying with internationally accepted standards which are placed on concrete area.</p>	Included in operating cost.	DESKİ

Impact	:	Mitigation Measure	Cost ^a	Responsibility ^b
Waste Management	End-of-life tires	End-of-life tire waste will be generated during maintenance-repair works of the heavy equipment to be operated during the operation phase. End-of-life tire wastes that will be possibly generated due to maintenance and repair works of the heavy equipment during construction shall be delivered to environmentally licensed recycling facilities pursuant to the "Regulation on Control of End-of-Life Tires" which entered into effect when published in the Official Gazette No. 26357 of 25.11.2006 (amended with the O.G. on No: 27537 of 30.03.2010) and disposed of.	Included in operating cost.	DESKİ
Waste Management	Old pipe wastes (except ACPs)	Upon evaluating the recovery possibilities of old pipe wastes resulting from the replacement of old pipes in the main (e.g. giving some old valves and metal parts to scrap dealers, etc.) during the operation phase, the remaining part will be disposed of in Kumkısıık landfill.	Included in operating cost.	DESKİ

Impact	:	Mitigation Measure	Cost ^a	Responsibility ^b
Residents in the Project Area	Traffic	<p>To mitigate the possible negative impacts on human health due to excavations during the operation phase, DESKİ will first get the necessary permissions to close these areas to traffic during the construction period before the construction, and then, inform the public of these areas closed to traffic and for how long they will remain closed in writing, visually and via telecommunication. The Police Department will work in coordination with the Traffic Unit and DESKİ. In case the traffic is closed in the areas where the work will be done, written permission will be obtained from the Traffic Branch Directorate, the routes to be closed to traffic and the duration will be determined. Such information will also cover alternative routes outside the restricted roads during the construction period in the construction zone. DESKİ will provide a written notification about the areas and working hours to be worked before the maintenance construction works are started. DESKİ shall take the necessary safety measures for the people of the region in the areas where the works will be carried out before construction works. Warning signs, light warning signs and fences will be placed in the working area and unauthorized access will be prevented. Appropriate warning signs and lights will be used on roads where traffic is closed within the city and will not be removed until the work is completed. Considering that there will be traffic density, alternative routes will be determined, and transportation will be scheduled. Transitions required for the passage of people, especially elderly, children and the disabled over the ditches to be opened, will be built by those who perform the maintenance works. The damages to be incurred as a result of accidents and exploits caused by these opened ditches and sets formed on road sides shall be compensated by the institution/organization performing the maintenance works. Damaged roads will be re-asphalted. Asphalt will be provided from the facilities with valid operating license granted by the Municipality. Alternative routes will be designated and used; the hours when the traffic is not heavy will be preferred. Speed limits shall be complied with. Within the scope of construction works, safe driving training will be provided to the drivers.</p>	Included in operating cost.	DESKİ

Impact	:	Mitigation Measure	Cost ^a	Responsibility ^b
Public Health	Sewage wastes that may be exposed in excavations	In the event that sewage wastes are encountered during excavations to be performed for maintenance-repair during operation and they are not removed from the environment by the DESKİ and not delivered to a treatment plant determined by DESKİ, health problems may arise among the employees and the users of the area. Therefore, the material generated by the canal cleaning will be stored in the area to be shown by the Municipality after the necessary hygiene measures have been taken.	Included in operating cost.	DESKİ
Public Health	Drinking water quality	The drinking water quality shall be monitored in accordance with the provisions of the "Regulation on Water Intended for Human Consumption", and the results of the monitoring shall be announced to the public.	Included in operating cost.	DESKİ
Public Health	Canal clogs	To open the possible canal clogs in the operation phase, the canal cleaning and opening equipment and the team will be kept ready to use methods such as pressurized water.	Included in operating cost.	DESKİ
Public Health	Disruption of hygienic environment in the main	Main which has lost its hygienic environment due to cuts and maintenance works and all kinds of environments in touch with water from such environments must be cleaned and disinfected to ensure hygienic conditions. Internal surfaces of tanks and reservoirs shall be cleaned. Particular attention will be paid to cleaning the corners and ports. To open the possible canal clogs in the operation phase, the canal cleaning and opening equipment and the team will be kept ready to use methods such as pressurized water.	Included in operating cost.	DESKİ
Occupational Health and Safety	Operational activities	During the operation phase, employees will be informed of their job descriptions, responsibilities, relations with the locals and the risks that will threaten occupational health and safety before the start of the works. Employees will be provided with the necessary personal protective equipment and informed of work and occupational safety through regular training. Risk Assessment Report will be prepared for all works to be performed before the start of construction works,	Included in operating cost.	DESKİ

Impact	:	Mitigation Measure	Cost ^a	Responsibility ^b
		<p>and necessary measures will be taken to eliminate risks. “Emergency Plans” will be prepared for a possible accident or emergency, emergency teams will be formed, and drills and trainings in accordance with emergency scenarios will be performed. In the event of any significant accident in the working area (environmental spills, fatal or injured accidents, etc.) during the operation phase, the Contractor will inform DESKİ, and DESKİ will inform İller Bankası immediately. İller Bankası will inform the World Bank of the accident within 5 working days and of the accident report and additional measures within 30 working days.</p> <p>In case of any other epidemic and / or contagious disease, including COVID-19, on construction sites and camp sites, T.C. Ministry of Health, T.C. Directives, directives and recommendations of the Ministry of Family, Labor and Social Services and the World Health Organization will be followed and all necessary measures will be taken regarding the issue. Employees will be trained on COVID-19 symptoms, how to protect them and what to do when symptoms occur. Working environments, machinery and equipment will be cleaned and hygienic. Employees will be ensured to comply with the measures and rules taken.</p> <p>In order to prevent damage to people living in the area (especially children, the elderly, the disabled), people entering the construction site will be prevented by plastic bands, barriers, glow or illuminated warning signs.</p> <p>Bracing will be applied against landslide especially in deep excavation places.</p> <p>Walking paths will be made for pedestrians. Platforms will be used at the entrance and exit of buildings and shops. Platforms will be wider than 60 cm; chain, plastic band or wooden barriers shall be used at the edge of the platform and shall be illuminated where necessary.</p> <p>The inlet nozzles of the rainwater drainage system will be sufficiently robust to prevent them from being stolen and damaged.</p>		

Impact	:	Mitigation Measure	Cost ^a	Responsibility ^b
		<p>On the rainy days, no excavation work will be carried out; after the rain has stopped, necessary measures will be taken against slipping (cleaning of slippery floors or laying of slippage-preventing material, etc.), and the work will be continued.</p> <p>In the event that work machinery such as excavator, bulldozer, etc. are used, all workers will clear the area where the machines are moving, and machinery will not be used by any unauthorized person. Provisions of the "Occupational Health and Safety Services Regulation (29/12/2012)", "Noise Regulation (23/12/2003)" and "Regulation on the Use of Personal Protective Equipment in Workplaces (02/07/2013)" published in regard to the Occupational Health and Safety Law No. 6331 (20/06/2012).</p> <p>Operational personnel will be trained against the risk of possible methane gas build-up in the pumping stations and not enter the facility before observing via sensor and opening the vent door.</p>		

^a Mitigation Cost ^b: Related institutions and organizations

3.3. MONITORING PLAN

A monitoring plan was prepared for institutions and organizations to evaluate the effectiveness of the mitigation measures specified in the pre-construction, construction and operation phases. Details of this monitoring plan are given in Table 3.3.

Monitoring plan works will be carried out in coordination with “Public Relations Unit – PRU” to be formed by the contractor. In this way, it will be possible to monitor the complaints received.

Table 3.3. Monitoring Plan for Denizli Improvement Project for Drinking Water, Wastewater and Rainwater Systems

Which Parameter to be Monitored	Where to Monitor Parameter	How to Monitor Parameter Type of Monitoring Equipment	When to Monitor Parameter / Frequency of Measurement? Constantly?	Monitoring Cost	Responsibility
PRE-CONSTRUCTION					
Land acquisition and easement in the areas of construction	At pumping stations and collector line	<p>The Land Acquisition and Resettlement Action Plan (LARAP) was prepared in accordance with the World Bank (WB) Policy and procedures specified in the World Bank Operational Policy OP / BP 4.12, titled "Involuntary Resettlement", in order to construct facilities that require land acquisition prior to construction.</p> <p>In order to follow the land acquisition requirements that may arise during construction works, Land Acquisition Progress Reports will be submitted in 6-month periods, it will be checked whether the title deed records are registered with the municipality and whether the permits and easement rights are recorded in the title deed records.</p> <p>Construction activities will start following the completion of the land acquisition process.</p>	Before the start of project constructions Monthly	None	DESKİ
CONSTRUCTION PHASE					
Amount of excavation material to be stored at the excavation/construction site	At the excavation site	On-site review: By checking the fullness rate and the number of temporary storage containers placed for the excavation material	Daily logs during the project construction	None	Contractor
	Where the material is stored temporarily	It will be determined by measuring the quantity of material coming into the final storage area and the volume and/or weight of the trucks carrying it. These data will be recorded.			
	Where the material is finally stored	Topsoil amount, storage conditions and reused parts will be monitored and recorded.			
	At the excavation site	On-site review:		None	Contractor

Which Parameter to be Monitored	Where to Monitor Parameter	How to Monitor Parameter Type of Monitoring Equipment	When to Monitor Parameter / Frequency of Measurement? Constantly?	Monitoring Cost	Responsibility
Waste pipe materials		1. Checking whether the waste pipe material is placed in containers in which they need to be deposited 2. Estimation of the amount of waste by considering the fullness and number of the temporary storage containers placed for the waste pipe material	When the pipe waste is exposed following the excavation		
	Kumkısıık regular landfill	The quantity of material coming into the Kumkısıık regular landfill will be determined by measuring the volume and/or weight of the trucks carrying it. These data will be recorded.			
Asbestos Cement (AC) Pipes	At the excavation site	By checking whether the asbestos pipes found during the excavation were left untouched	When any AC pipe is exposed during excavation	None	Contractor
Hazardous, harmful wastes and special wastes	Construction zone	Maintenance of vehicles will be recorded. Replaced oil and accumulators will be checked from these records.	Constantly	None	Contractor
	Construction site	Whether there is soil pollution due to oil, fuel and hazardous wastes in the work areas will be observed and recorded on site. Whether there are any asbestos material residuals on the site will be checked and examined on site. On-site review: 1. Level check for waste oil tanks. 2. Records related to collection of vegetable oils. 3. Records related to end-of-life tires. 4. Records on the collection and storage of hazardous wastes 5. Whether batteries and accumulators are placed in the correct container and fullness of these containers			

Which Parameter to be Monitored	Where to Monitor Parameter	How to Monitor Parameter Type of Monitoring Equipment	When to Monitor Parameter / Frequency of Measurement? Constantly?	Monitoring Cost	Responsibility
		<p>6. Fullness of containers in which hazardous and harmful wastes other than waste oil, batteries and accumulators are deposited.</p> <p>7. Whether containers, in which hazardous and harmful waste are deposited, are placed on the appropriate platforms and whether there is any leakage</p>			
Solid waste	<p>Construction zone</p> <p>Construction site</p>	<p>On-site review:</p> <p>1. Records on waste types and quantities, temporary storage and final disposal.</p> <p>2. Visual inspection of the physical condition of the collection containers (wear, deterioration, cracking, etc.)</p> <p>3. Checking whether solid waste is disposed into the collection containers.</p> <p>4. Checking whether the collection containers are full and unloaded regularly</p>	Constantly	None	Contractor
Liquid Waste	<p>Construction zone</p> <p>Construction site</p>	<p>On-site review:</p> <p>By checking whether there is any wastewater leakage</p> <p>By measuring the water level in the tank when using septic tank</p> <p>Review of the sewage truck records</p>	Constantly	None	Contractor
Dust and Air Pollution	<p>At the excavation and construction zones (in the affected area around)</p> <p>Transport routes</p>	<p>On-site review:</p> <p>Checking whether the material stacked along the ditch is covered</p> <p>Checking whether the material causing dust formation is wetted in windy weather</p> <p>Checking whether the wind barriers are in the right place</p> <p>Checking whether the transport trucks are covered</p> <p>Speed control via tachograph on transport trucks</p> <p>Monitoring of vehicles' periodic maintenance</p> <p>With portable air quality measuring devices (e.g. PM10 equipment)</p>	<p>Weekly routine during project</p> <p>Excavation, weekly in the filling period</p> <p>Instantaneously upon complaints</p> <p>In windy weather</p>	Additional cost in the case of using a portable measuring device	Contractor

Which Parameter to be Monitored	Where to Monitor Parameter	How to Monitor Parameter Type of Monitoring Equipment	When to Monitor Parameter / Frequency of Measurement? Constantly?	Monitoring Cost	Responsibility
		Inspection of exhaust emission measuring stamp of transport vehicles	At the beginning of construction	None	
Noise	At the excavation and construction zones (in the affected area around) Transport routes	Noise level detection in the closest sensitive areas Measurement in case of inspection and complaint With calibrated sound meters for the appropriate range (30-130 dB)	Weekly routine during project Weekly during the periods when activities intensify Instantaneously upon complaints	Additional cost in the case of using a portable measuring device	Contractor
Traffic	Construction zone Transport routes	On-site review: Checking whether traffic is jammed due to works Monitoring whether the measures to be taken regarding traffic and pedestrian safety are followed Monitoring the effects of ordinary traffic route changes on infrastructure and, if any, complaint records on this issue	During the project Especially when the traffic is heavy Upon complaint Accident records	Included in construction cost.	Contractor
Historical artefacts	Construction zone	By ensuring that experts with the Ministry of Culture and Tourism visit the zone and supporting their inspection within the zone	During excavation work Visual observation Coincidental Finding Record and Official notification to Authorities	None	Contractor/DES Kİ
Aesthetic issues	In the vicinity of construction zone	On-site review: Is the construction zone (material causing visual pollution) sufficiently concealed by barriers placed? Are the placed barriers aesthetically appropriate (e.g. clean, painted, etc.)?	During construction	None	Contractor
Pre-operation hygiene	Tubes placed in ditches	Checking whether the inside of the pipes is clean Checking whether the end of the pipes is closed		None	Contractor

Which Parameter to be Monitored	Where to Monitor Parameter	How to Monitor Parameter Type of Monitoring Equipment	When to Monitor Parameter / Frequency of Measurement? Constantly?	Monitoring Cost	Responsibility
			At the end of construction - before filling		
Public health and safety	Construction zone Construction site	<p>On-site review: By on-site control of the presence or absence of warning signs, barriers placed for the protection of citizens from accidents and hazardous and harmful wastes Public and work accident records, their statistical evaluation and root-cause research records In the event of any significant accident in the working area (environmental spills, fatal or injured accidents, etc.), the Contractor will inform DESKİ, and DESKİ will inform İller Bankası immediately. İller Bankası will inform the World Bank of the accident within 5 working days and of the accident report and additional measures within 30 working days.</p> <p>All necessary measures due to the pandemic in the facilities will be implemented by taking into account the provisions published by the Ministry of Health and all other relevant institutions. Employees will be ensured to comply with the measures and rules taken. Arrangements will be made for the storage and disposal of possible medical wastes that may occur in the field, and taking into account that these wastes may remain contagious depending on the material and their amount may increase over time, necessary measures will be taken and regular control and disposal will be ensured. In order to make the roles and responsibilities of individuals understandable, a widespread information will be provided in emergency action plans. Employees will be trained and monitored at regular intervals on COVID-19 symptoms, how to protect them and what to do when symptoms occur.</p>	Daily	None	Contractor
		Health checks of workers should be ensured.	Twice a year	None	

Which Parameter to be Monitored	Where to Monitor Parameter	How to Monitor Parameter Type of Monitoring Equipment	When to Monitor Parameter / Frequency of Measurement? Constantly?	Monitoring Cost	Responsibility
		Monitoring whether workers use their personal protective equipment in the zone and whether trainings in the matter have been provided	Constantly	None	
OPERATION PHASE					
Water quality: Residual chlorine	At pumping stations and reservoirs In the main	Analysis of water samples in laboratories or with portable measuring equipment on site Establishment of the SCADA system will make it possible to continuously monitor the quality.	Constantly	Included in operating cost.	DESKi
Water quality (physical and chemical quality parameters specified in the Regulation on Water Pollution and its Control): free chlorine, total and faecal coliform, colour, turbidity, taste and odour, pH, conductivity, ammonium, insecticides, herbicides, fungicides, heavy metals, organic and toxic chemicals	At the water source At reservoirs In the main	By taking samples and conducting analyses according to <i>Standard Methods</i> in accredited laboratories	Water quality must be monitored according to the principles of the "Regulation on Water Intended for Human Consumption" No. 25730 of 17.02.2005. Accordingly, free chlorine analysis must be performed on the samples to be taken consecutively for 5 days of the week. In addition, routine microbiological parameters (coliform, e-coli) and chemical parameters (colour, turbidity, taste and odour, pH, conductivity and	Included in operating cost.	DESKi

Which Parameter to be Monitored	Where to Monitor Parameter	How to Monitor Parameter Type of Monitoring Equipment	When to Monitor Parameter / Frequency of Measurement? Constantly?	Monitoring Cost	Responsibility
			ammonium) must be measured weekly. Insecticide, herbicide, fungicide, heavy metal and organic toxic parameters must be analysed at Izmir the Public Health Institute once a year.		
Noise	At pumping stations	With sound meter	Periodically (recommended to be once a month) and upon complaint	Included in operating cost.	DESKİ
Odour	At pumping stations	With odour measuring devices	Periodically (recommended to be once a month) and upon complaint	Included in operating cost.	DESKİ
Public health and safety	Within the boundaries of the project	<p>By monitoring the chlorine chamber with chlorine detector</p> <p>By checking whether protective equipment and safety measures (e.g. door lock, control of water level in the pool) are provided in the chamber</p> <p>By checking the presence of safety and warning signs in the chlorine chamber and pumping stations</p> <p>By checking whether the sewer manhole covers and rainwater inlet nozzles are in place</p> <p>Fencing of the project areas, on-site control of the relevant warning signs</p>	<p>Constantly</p> <p>Weekly</p> <p>Weekly</p> <p>Monthly</p> <p>Monthly</p>	Included in operating cost.	DESKİ

Which Parameter to be Monitored	Where to Monitor Parameter	How to Monitor Parameter Type of Monitoring Equipment	When to Monitor Parameter / Frequency of Measurement? Constantly?	Monitoring Cost	Responsibility
		<p>Monitoring of the measures taken in relation to Occupational Safety</p> <p>In the event of any significant accident in the working area (environmental spills, fatal or injured accidents, etc.), DESKİ will inform İller Bankası immediately. İller Bankası will inform the World Bank of the accident within 5 working days and of the accident report and additional measures within 30 working days.</p> <p>In construction and construction sites, it will be ensured that all the determined measures and rules are followed by taking into account the provisions published by the Ministry of Health and all other relevant institutions. Arrangements will be made for the storage and disposal of possible medical wastes that may occur at the site, and regular control and disposal of these wastes will be ensured.</p>	Monthly		
Chlorine gas leakage	In the chlorine dosing chamber	With automatic gas detection and alarm equipment	Constantly	Included in operating cost.	DESKİ
Blockage of wastewater canals	Between manholes	Using canal monitoring equipment (remote controlled camera and TV)	Once-twice a year	Additional costs are required if the camera and TV are used.	DESKİ

4. MANAGEMENT PUBLIC RELATIONS, STAKEHOLDER'S REQUESTS AND COMPLAINTS

The basic approach of public communication within the scope of the project is possible by informing the public through various methods and procedures during the construction and operation phases of the project and taking necessary feedbacks from the public.

A "Public Participation Meeting" will be organized to inform the public and receive feedback about the project from the public in the pre-construction phase of Denizli Improvement Project for Drinking Water, Wastewater and Rainwater Systems. For this meeting, necessary announcements will be made through local press, DESKİ website and voice announcements. Information about the meeting is given under the 7th main heading.

The public will also be informed against the risks that may occur before the implementation of the project through brochures and information/links to be placed in the DESKİ website. At the moment, a system called D4P50 Public Relations Procedure has been adopted by DESKİ, independent of the Sustainable Cities Project, to receive the demands and complaints of citizens and to provide possible solutions. In this context, it is aimed to produce solutions within the municipality for the complaints and demands of the citizens.

The D4P50 Public Relations Procedure is based on the following basic principles:

- Transparency
- Accessibility
- Answerability
- Objectivity
- Free service
- Confidentiality
- Customer-Oriented Approach
- Accountability
- Constant Improvement

Although this system is not considered an effective Grievance Mechanism for Denizli Improvement Project for Drinking Water, Wastewater and Rainwater Systems, it is thought that it can be developed by DESKİ in accordance with the project objectives. In fact, integrating the system established for the project will ensure the sustainability of the Grievance Mechanism during operation.

The DESKİ complaint system can be accessed by contacting the call centre (Alo 185), the web page, or in person. A tracking number is provided for each opinion/complaint to allow following up the status of the opinion/complaint. The Alo 185 call centre aims to provide better quality assistance and faster solutions to citizens through the Beyaz Masa solution team. There are also Beyaz Masa sections on

municipal websites that allow citizens to communicate electronically with public relations specialists. Citizens can also apply in person so that their requests can be solved quickly.

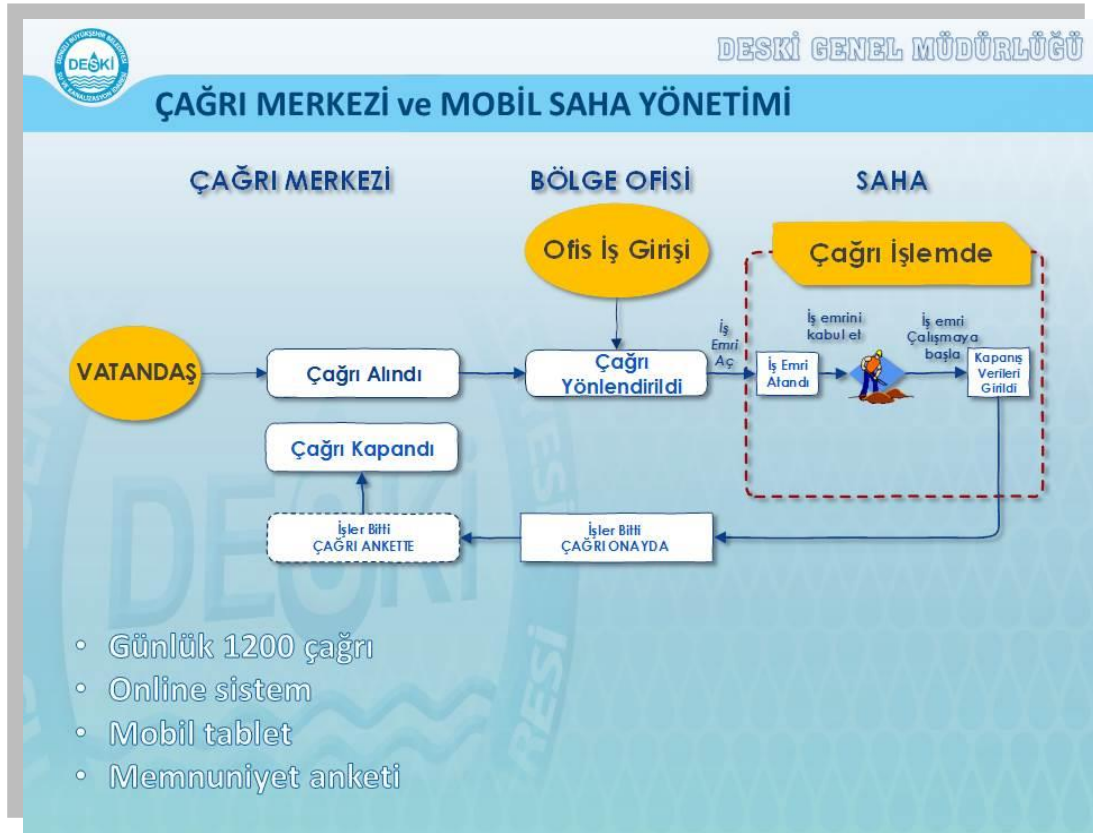


Figure 4.1. Simple Workflow Concerning Requests Taken by the Call Centre and their Conclusion

Within the scope of the Sustainable Cities Project, a Grievance Mechanism through which the public can apply to the DESKİ/Project Management unit regarding the problems that may arise during the construction and operation phase will work together with DESKİ's Integrated Management System. To this end, necessary additions will be made to the website, WhatsApp and BİP applications and will be activated at the beginning of 2019. DESKİ will specifically code the applications made within the scope of Denizli Improvement Project for Drinking Water, Wastewater and Rainwater Systems refer to the Project Management Unit and refer them to the Project Management Unit as a priority. These applications can be distinguished, analysed or created via deski.net and EBYS (DESKİ Electronic Document Management System) on the basis of neighbourhoods within the project area.

Complaint records received in the complaint system via the Complaint Form no. D4 F103 are closed via the Complaint Closure Records and Evaluation no. D4 F104 and evaluated. The D4 F100 Web Contact Form and the D4 F101 Information Acquisition Web Form prepared within the scope of the 10002 Customer Satisfaction system for the Sustainable Cities Project, Denizli Improvement Project for Drinking Water, Wastewater and Rainwater Systems will be used for this purpose. A diagram of the process is given in Figure 4.1.

The Grievance Mechanism of Denizli Improvement Project for Drinking Water, Wastewater and Rainwater Systems integrated into the current system before the project will be notified to the public via the following methods:

- Distribution of booklets in public areas
- Noticeboards
- Website
- Telecommunication Tools
- Public Meetings
- Voice Announcements

The Grievance Mechanism is a process that enables any stakeholder to submit a complaint or proposal about the way the project is planned, constructed and implemented. It is aimed to establish a transparent and comprehensive Grievance Mechanism before the implementation of the project to receive the concerns, questions and complaints of the affected communities regarding the environmental and social aspects of the project.

A public relations unit was established for complaints and suggestions from the public during the construction and operation phases, and the public relations process is followed as described in the above sections. DESKİ will also form a Complaint Solution Commission within the scope of the Sustainable Cities Project, which will include the relevant municipality representative, the PMU representative, the Representative of the Real Estate and Expropriation Department, representatives of the Drinking Water and Sewerage Departments, as well as a representative of the affected people. A representative will be selected by the community to be affected by the project in a participatory, accessible and transparent manner. The Complaint Solution Commission will be accessible to the affected people. Depending on the severity of the impact and the needs, a telephone number that can be called to the affected persons free of charge will be provided by the Public Relations Department of DESKİ. Moreover, it will be ensured that the citizens residing in the project area are informed of water and wastewater services, water quality etc.

Contact information of Denizli Metropolitan Municipality is as follows:

- <http://www.denizli.bel.tr>
- Call Centre: 185
- Phone number: 444 85 20
- Tel:+90 (258) 280 20 20
- Tel:+90 (258) 265 21 37
- SMS:+90 (258) 265 21 37
- Fax:+90 (258) 280 29 99
- Mail:denizli@denizli.bel.tr

Sustainable Cities Project Denizli Public Participation Meeting was held on 15.01.2019 in order to inform the public in the pre-construction phase of the Denizli Drinking Water, Wastewater and Stormwater

Systems Improvement Project and to take the necessary measures by taking the feedback of the public about the project.

The Revised Draft ESMP, prepared and approved for additional areas (Merkezefendi, Yenişehir, Bereketler, Yenişafak, Adalet, Zafer, Hürriyet, Kayhan and Asmalievler neighborhoods) where infrastructure works will be carried out within the scope of SCP-I, is published on the website of DESKİ on October 9, 2020 and opened to the opinions and suggestions of the stakeholders who will be re-consulted with the relevant stakeholders. The public participation meeting is made online via the ZOOM program on 13.10.2020 at 14:00 due to Covid 19 pandemic. Information letter regarding the Participation Meeting was sent to the mukhtars. SMS to the residents of the neighbourhood. An announcement was made with the necessary information. The approved Revised Final ESMP will be shared again on DESKİ and iLBANK websites.

5. ORGANIZATIONAL STRUCTURE

5.1. GENERAL

This section provides information about authorities, responsible persons and the organizational arrangements required for the mitigation of the impacts envisaged in the Environment and Social Management Plan in the process of improving drinking water and wastewater mains and implementing the monitoring program afterwards. In this context, firstly the current administrative structure of the Denizli Directorate General of Water and Sewerage Administration (DESKİ) was examined and evaluated, and then, the organizational infrastructure required for the provision of the services envisaged was explored.

5.2. CURRENT ADMINISTRATIVE (INSTITUTIONAL) STRUCTURE

Denizli Directorate General of Water and Sewerage Administration (DESKİ) is a public legal entity with an independent budget established within the body of Denizli Metropolitan Municipality pursuant to the Laws No. 2560 of 20.11.1981, Temporary Article 10 Amended by Law No. 3305 and the Cabinet decree No. 2014/6072 of 13.02.2014. The duty, jurisdiction and responsibility of the Directorate General of DESKİ is limited to the jurisdiction of Denizli Metropolitan Municipality. However, the services in regard to water resources utilized by the city are carried out by the Administration even if they are outside the boundaries of the Metropolitan Municipality.

DESKİ Main Service Units include:

- a) Department of Information Technologies: To plan and manage all data processing activities of DESKİ
- b) Department of Strategy Development: To prepare the strategic plan and performance program of the administration and to carry out the activities of consolidating the results
- c) Department of Subscriber Affairs: Execution of subscriber transactions
- d) Department of Treatment Plants: Operation of existing treatment plants
- e) Department of Electrical Machinery and Material Supply: Management of the processes requiring the electrical and mechanical expertise of the entity and the flow of materials, equipment
- f) Department of Sewerage: Management of wastewater and rainwater mains and structures
- g) Department of Drinking Water: Management of drinking water resources and facilities
- h) Department of Planning, Investment and Construction: Planning, design and construction of the necessary investments for the entity
- i) Directorate of Operations: Management of water-wastewater operations in districts and rural areas
- j) Department of Real Estate and Expropriation: Management of expropriation and immovable transactions

In 2018 budget projections of Denizli Metropolitan Municipality Directorate General of DESKİ, a fund of TRY 312.949.600,00 in total was appropriated for the strategic objectives envisaged in the plan. Considering the distribution of the appropriation by strategic objectives;

Product Availability

Directorate General of DESKİ continues to work 24/7 for drinking water to be drinkable in accordance with the provisions of the “Regulation on Water Intended for Human Consumption”.

The drinking water mains are analysed for auto-control on the basis of the entire province by DENÇEV Quality Laboratory within the body of the Metropolitan Municipality, accredited by TÜRKAK and certified by the Municipality for qualification. In addition, Inspection and Control Monitoring samples are taken from the whole main by the Ministry of Health Public Health Agency regularly and the samples are analysed by the Public Health Institute.

In addition, a SCADA system was established within the scope of Municipal Services Project II (MSP II) financed by the World Bank, and water quality measurements (conductivity, turbidity, pH, residual chlorine etc.) are made at many locations.



Figure 5.1. DESKİ SCADA Monitoring Centre

Institutional Structure

The services of Directorate General of DESKİ are carried out by a total of 1186 personnel. Of these personnel, 134 are workers, 108 are civil servants, 46 are contracted, 898 are PERAŞ personnel.

Project Management Unit, Registrar's Office, Public Relations Branch Office, 185 Call Centre, Department of Drinking Water, Department of Sewerage, Occupational Health and Safety Branch Directorate, Quality Management and R&D Branch Directorate units will be responsible in the works to be performed within the body of DESKİ in line with the Environmental and Social Management Plan (ESMP) prepared for the Sustainable Cities Project-I,

Directorate General of DESKİ consists of administrative units in the following organizational chart (Figure 5.2):



Figure 5.2. Organizational Chart

5.3. INSTITUTIONAL ARRANGEMENTS UNDER ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

During the implementation phase of the Environmental and Social Management Plan, which was prepared for the healthy implementation of the project, the issues concerning how the responsibilities will be shared and the defined services (mitigation measures, monitoring, etc.) were evaluated separately for construction and operation phases.

İller Bankası

İller Bankası is the relevant institution of the Ministry of Environment and Urbanization. The Bank has two main functions:

- a) to support infrastructure development at local level through technical assistance, grants and loans,
- b) to transfer central tax revenues to local administrations.

Municipalities are the stakeholders of the Bank. İller Bankası provide planning, construction and financing for water supply, sewerage mains, water and wastewater treatment plants, solid waste management system, sea discharge, geothermal applications as well as the construction of buildings needed by municipalities (city hall, cold storage, station buildings and landscape architecture, etc.). In the case of the project, İller Bankası will ensure that:

- Guidance will be provided on the preparation of DESKİ's project documents in accordance with World Bank requirements and on public participation and announcement requirements,
- Guidance will be provided to the DESKİ officials and consultants on World Bank's requirements for protection measures (documents and procedures) on cultural assets, land acquisition and involuntary resettlement, natural habitats, forests and international waterways,
- Documents on environmental and social assessment of the project are examined and formal consent is given to these documents and procedures in accordance with World Bank protection measures,
- Works such as the implementation of the ESMP and other environmental and social protection measures are monitored,
- ESMP practices by DESKİ are monitored, supervised and opinion is provided on its performance, recommendations and additional steps to be taken within the scope of general project supervision which will be reported to İller Bankası quarterly, (Reports prepared quarterly will be compiled by İller Bankası and included in the project progress report to be submitted to the World Bank semi-annually)
- An opinion is hold about the views of the relevant groups and local environmental/social experts on the project implementation's environmental and social aspects, and when necessary, these groups are met during field visits,
- Coordination and communication are provided in regard to the field visits to be made within the scope of World Bank inspection missions concerning environmental and social protection measures of the project implementation.

World Bank

The World Bank's duty is to oversee the expenditure of the loan obtained from the Bank within the scope of the project and to audit and approve the compliance of tenders and contracts within the scope of this

project with the World Bank procurement procedures. The transactions will be periodically checked by the Bank.

DESKİ and Contractor

Directorate General of DESKİ is the “owner” of Projects for Drinking Water Rehabilitation and Wastewater Systems and is responsible for the implementation of the ESMP “indirectly” in construction works, “directly” in the operation phase (see Table 3.2 and Table 3.3). DESKİ will add the Environmental and Social Management Plan (ESMP) to the tender documents prepared for the construction work to designate the contractor. Therefore, it will be ensured that the contractor submits a quotation including the costs related to the management of environmental and social issues and will prevent any problems during the execution of the contract. In other words, the construction of works related to the mitigation of environmental and social impacts requested by the contractor but not available in the tender dossier in many projects can be overcome without difficulty.

It is recommended for the contractor to assign a Health-Safety-Environment (HSE) Officer to effectively implement the environmental and social management plan and monitor environmental impacts during the construction phase. HSE directly implements the ESMP as well as playing a key role in the communication with DESKİ, the Ministry of Environment and Urbanization (MoEU), Provincial Directorate of Environment and Urbanization (PDEU), Non-Governmental Organizations (NGO), etc.

The second important point for the effective implementation of the ESMP is to train personnel (engineers, technical staff, workers, etc.) who will work in construction activities. The contractor should inform their personnel about the environmental issues in general and the ESMP requirements in particular. For this, they can use their own resources from private firms or from relevant departments of universities. In addition, the contractor will apply the Code of Conduct for all project personnel (including subcontractors and day laborers) to ensure compliance with their environmental, social, health and safety (ESHS) obligations. The environmental and social impact training program should include:

- Environmental and social impacts and mitigation practices of projects,
- Understanding the reporting requirements and rules,
- Providing information on official institutions and legislation concerning the environmental and social aspects of the projects,
- Providing training on relations with public and press members,
- Providing training on environmental accidents and other emergency situations,
- Responding to the demands and complaints of the stakeholders / complaint management,
- Stress Management,

The contractor is obliged to keep records related to the above education received by the personnel. The effectiveness and adequacy of the training should be tested with internal audits. The contractor must also ensure that the subcontractor personnel are trained on environmental and social matters and take this into account in the contract to be made with the relevant subcontractor.

Apart from the above technical considerations, the contractor should also work on raising public awareness. To this end, it is useful that the contractor establishes a “Public Relations Unit - PRU”. The

PRU will provide services for listening to, recording, overcoming and responding to complaints concerning the negative impacts on the environment during the construction phase. In this context, the contractor firm must prepare a complaint procedure. This procedure should ensure that possible complaints and recommendations are directed to the Public Relations Officer (PRO). Each received complaint must be recorded and notified to the assigned technical personnel by PRO for the necessary measures and corrective actions to be taken. It should also be the responsibility of the unit (PRU) to communicate the developments to the public from time to time and inform the public. In addition, the Municipality informs the public about the services provided within the scope of the project via its own website. The website, which will be published in January 2019 by the Department of Information Technologies, will also be in an effective way to allow the public to write complaints. Again, the D4 F101 Information Acquisition Web Form prepared within the scope of the 10002 Customer Satisfaction system will be used for this purpose.

DESKİ will specifically code the applications made within the scope of Sustainable Cities Project-II and refer them to the Project Management Unit **as a priority**. These applications can be distinguished, analysed or created via deski.net and EBYS (DESKİ Electronic Document Management System) on the basis of neighbourhoods within the project area.

DESKİ will ensure that the printed copies of the final ESMP documents in the Turkish language are shown through announcement in a public place.

During the construction period, the contractor shall submit their works in accordance with the ESMP in monthly reports to DESKİ. In this context, the contractor will work with the companies certificated by the Republic of Turkey Ministry of Environment and Urbanization for laboratory qualification and laboratory prequalification or universities especially on subjects that require experimental monitoring.

Similarly, DESKİ will evaluate the reports submitted by the contractor in terms of the Water and Sewerage offices, the municipal legislation as well as the relevant Environmental Legislation, and will inform İller Bankası. These reports will also be given to Denizli Provincial Directorate of Environment and Urbanization upon request. In the event that a warning is received from any institution that the ESMP has not been carried out properly, the Contractor shall take the necessary measures, take corrective actions and forward the result to the General Directorate of DESKİ in writing or report again.

As a result, the tasks foreseen in the construction phase will be shared between DESKİ and the Contractor to ensure that the projects are performed in accordance with the ESMP and that their performance on environmental and social issues is high. The contractor firm is primarily responsible for the training of key personnel and all employees, preparation of an Emergency Action Plan, corrective actions, internal audit, reporting and responding to complaints, and the provision and operation of the Independent Monitoring Company (IMC) if necessary. As the owner of the projects, the municipality is responsible for its relations with the press in accordance with the general rules of practice in public investments. However, it will help the contractor company responsible for the preparation of the Emergency Action Plan and the internal audit issues. The IMC, which can be used when necessary, will be responsible for environmental quality monitoring and training of key personnel.

In the operation of drinking water and wastewater systems, the Department of Sewerage, Department of Drinking Water, Department of Operations will be activated by DESKİ to ensure that the facilities operate in a healthy way and that the environmental and social impacts of the projects are regularly monitored. A person from each department will be responsible for monitoring environmental and social issues. DESKİ will start the installation works of ISO 14001 Environmental Management System

following the installation works of Quality Management Systems, **Customer Satisfaction Management System**, Occupational Health and Safety Management System, and Electronic Document and Archive Management System, which has been carried on under the leadership of Quality Management and R&D Directorate as an indicator of the care the Directorate give to environmental and social management.

A public relations unit was established for complaints and suggestions from the public during the construction and operation phases, and the public relations process is followed as described in the above sections. DESKİ will form a Complaint Solution Commission which will include the relevant municipality representative, the PMU representative, the Representative of the Real Estate and Expropriation Department, representatives of the Drinking Water and Sewerage Department, as well as a representative of the affected people. A representative will be selected by the community to be affected by the project in a participatory, accessible and transparent manner. The Complaint Solution Commission will be accessible to the affected people. Depending on the severity of the impact, a telephone number that can be called to the affected persons free of charge will be provided by the Public Relations Department of DESKİ. Moreover, it will be ensured that the citizens residing in the project area are informed of water and wastewater services, water quality etc. via website and telecommunications tools.

In addition, Directorate General of DESKİ provides its personnel (engineers, technical staff, workers, etc.) who will work in the operational activities with information and training on environmental and social management, customer satisfaction, occupational health and safety, traffic safety, public health, and safety and monitoring.

6. INFORMATION ON LAND ACQUISITION AND EXPROPRIATION

There will be no land acquisition due to the construction of the isolation and measuring chambers during the laying of the pipelines (excluding the collector to the Eskihisar Wastewater Treatment Plant). Since there is no built-up housing on any of the areas, there is no issue concerning resettlement. However, Land Acquisition and Resettlement Action Plan (LARAP) is prepared by DESKİ in accordance with the policies and procedures set out in World Bank Operational Policy OP/BP 4.12 titled "Involuntary Re-Settlement" since land acquisition is required for the construction of collectors and the concerning plan is approved by İller Bankası Project Management Unit and World Bank in June 2019. In addition, Land Acquisition Progress Reports are prepared by DESKİ in 6-month periods in order to follow the land acquisition requirements that may arise during construction works, which are detailed below.

SCP-I construction work contractors carried out the installation of the construction site with the approval of the Consultant Company for the selection of the construction site. DES-W1 construction site ownership was established in Aktepe Asphalt Construction Site located in Dokuzkavaklar neighborhood, 721 block, 46 parcel, belonging to Denizli Metropolitan Municipality. The use of the mentioned area until the completion of the works as of 02.09.2019 has been permitted by Denizli Metropolitan Municipality. DES-W2 construction site has been established in Sevindik neighborhood, block 6145, private leased parcel no 1.

Additional areas (Merkezefendi, Yenişehir, Bereketler, Yenişafak, Adalet, Zafer and Akçeşme districts) where infrastructure works will be carried out within the scope of SCP-1 DES-W3 (Hürriyet, Kayhan and Asmalievler Neighborhoods Construction and Rehabilitation of Drinking Water, Wastewater and Stormwater Networks), where DESKİ plans to tender, the current Land Acquisition and Resettlement Action Plan (LARAP) has been updated by DESKİ, taking into account the contract package.

The works covered by the DES-W1 and DES-W2 contracts are included in the LARAP report approved in June 2019. Land acquisition procedures for Akvadi, Sevindik and TOKİ PS centers mentioned above have been completed and construction works have started. Land acquisition processes for Eskihisar wastewater collector included in the DES-W2 contract package are ongoing. There will be no land acquisition except for 1 parcel where the stormwater collector passes from the areas included in the scope of DES-W1 and DES-W2 by change orders. In Hürriyet, Kayhan and Asmalievler neighborhoods to be constructed within the scope of the DES-W3 construction contract planned to be made by DESKİ, land acquisition studies were carried out in 23 parcels where wastewater and stormwater collectors routes pass. In 20 of these parcels, easement rights have been taken for passage, and land acquisition processes still continue in the other 3 parcels.

Information on the areas mentioned above is given below:

Akvadi Pumping Station : It is planned to be constructed under the DES-W1 contract.

It is applied to Denizli Regional Directorate of Forestry for the allocation of the parcel 1903 owned by the State Treasury within the forest boundaries pursuant to Article 16 of the Forest Law No. 6831; and for the 614.33 m² part where the facility will be located, forest permit was obtained on 15.05.2019 for 49 years of use.

Sevindik Pumping Station : It is planned to be constructed under the DES-W2 contract.

The development plan modification has been completed as "Wastewater Facilities Area" in accordance with the relevant articles of the Municipality Law No.5393 of the block no. 6710, parcel 4 belonging to Denizli Metropolitan Municipality. With the letter of Denizli Metropolitan Municipality dated 11.02.2020 and numbered E.7519, the use of the immovable property was permitted by our Administration in line with the purpose of the development plan.

TOKİ Pumping Station : It is planned to be constructed under the DES-W1 contract. It will be constructed in a non-registered/non-owned area. After completion of construction, the land in question will be registered on behalf of DESKİ.

Eskihisar collector : It is planned to be constructed under the DES-W1 contract. Eskihisar 307 parcel located on the collector route belongs to 20 different shareholders. The 485.64m² part of the cadastral parcel no. 307 passing the sewerage line was subdivided, and the new parcel no. 2483 was expropriated. Reconciliation negotiations were held with 20 shareholders of the parcel no. 2483. By reaching an agreement with 11 of them, the title deed registration was made on behalf of our Administration. It is expected that the expropriation value will not be reconciled with 9 people and the expropriation value will be decided through the court. The reason for the disagreement is that the shareholders do not consider the expropriation value sufficient. All shareholders have been reached. An expropriation case was filed for 9 shareholders who could not be reconciled on 26.12.2019 at the Denizli 3rd Civil Court of First Instance for the determination of the expropriation value with the base number 2019/857 and the registration of the title deed in the name of the General Directorate of DESKİ. The lawsuit in question was held in July due to the pandemic process in the world and in our country. The hearing was postponed to 05.11.2020 in order to clarify the discrepancy between the title deed records of one of the shareholders and the records in the population.

Zafer Mahallesi Yağmusuyu Collector: It is planned to be built within the scope of the DES-W1 contract. Merkezefendi district, Şemikler neighborhood, located on the collector route, has 667 parcels of land and belongs to 1 person. Easement right must be established in the parcel for collector passage in the area defined as green area in the zoning plan. According to the 4th article of the Expropriation Law numbered 2942, the Parcel no. 667 of the Merkezefendi district, Şemikler neighborhood was allocated and expropriated by the Board of Directors of the General Directorate of DESKİ. A letter was written to the Ministry of Environment and Urbanization to approve this decision. In addition, the preparation of the cadastral file of the part of the property where the collector line passes is underway. Following the approval of the public interest decision and the completion of the cadastral works, the relevant right owner will be notified and the negotiations for reconciliation will begin.

Bereketler Neighborhood Stormwater Collector: It is planned to be constructed within the scope of DES-W1 contract. The parcel number 478 on the collector route belongs to Denizli Metropolitan Municipality. Necessary permissions will be obtained in accordance with the relevant articles of the Municipality Law No.5393 for the mentioned parcel transition, which is currently a development road.

Decision of public interest dated 14.09.2018 and numbered 203 for expropriation of 23 parcels on the routes of the wastewater and storm water collectors (DES-W3) of Hürriyet, Kayhan and Asmalievler neighborhoods by the Board of Directors of the General Directorate of DESKİ according to Article 4 of the Expropriation Law No. 2942 was taken and this decision was approved by the Ministry of Environment and Urbanization with the letter dated 12.11.2018 and numbered E.204357. Ownership of Pamukkale district Kayhan neighborhood 193, 198, 199, 200, 201, 202, 203, 270, 271, 273, 314, 315,

319, 324, 611, 1033, 1052, 1058, 1055, and 1093 located on collector routes, right of easement was established for the passage through negotiations in 20 parcels belonging to private individuals. The property of parcels 1025, 1027 and 1034 in Pamukkale district Kayhan neighborhood located on the collector route belongs to DSI. The procedures for establishing easement rights in the 3 parcels in question continue (See Figure 3.5).

Land Acquisition Progress Reports will be prepared by DESKİ in 6-month periods in order to follow the land acquisition requirements explained above and that may arise during construction works.

7. PUBLIC PARTICIPATION MEETING

In order to inform the public in the pre-construction phase of the "Sustainable Cities Project Denizli Drinking Water, Wastewater and Stormwater Systems Improvement Project" and to take the necessary measures by taking the public's feedback about the project, the Public Participation Meeting of the project in question was held at Çatalçeşme Oda Tiyatrosu on 15.01.2019 at 9.00 (See 7.1.1).

The 2nd Public Participation Meeting was held in order to introduce the additional areas to be infrastructure works within the scope of the SCP, to inform the public during the pre-construction phase and to take the necessary measures by taking the feedback of the public about the project. The meeting was held on 29.07.2020 at 10.00 at Nihat ZEYBEKÇİ Congress and Culture Center. Before the meeting, the announcement containing the place and time of the Public Participation Meeting was published on the Denizli Metropolitan Municipality website, posters and flyers were made. (See 7.2)

Additional areas where infrastructure works will be carried out within the scope of SCP-I (Merkezefendi, Yenişehir, Bereketler, Yenişafak, Adalet, Zafer, Akçeşme, Hürriyet, Kayhan and Asmalıevler neighborhoods) and the approved Revised Draft ESMP is published on the website of DESKİ on October 9, 2020 and re-consulted with the relevant stakeholders and shared their views and opinions. The public participation meeting is made online via the ZOOM program on 13.10.2020 at 14:00 due to Covid 19 pandemic. Prior to the meeting, the information letter regarding the Public Participation Meeting was sent to the mukhtars. The residents of the neighborhood were informed via SMS. (See 7.3)

In the Public Participation Meeting, the participants were informed of the environmental and social impacts of the project and mitigation efforts and land acquisition. Thus, the neighborhood residents were provided with information, and their opinions and suggestions on the activity were taken. Questions about the project were answered, and detailed information was given about the project. The explanations regarding the public questions in the meeting are presented below.

7.1. 1ST PUBLIC PARTICIPATION MEETING

The Public Participation Meeting of the project in question was held at Çatalçeşme Oda Tiyatrosu on 15.01.2019 at 9.00. The meeting was resided by

- Denizli Metropolitan Municipality Directorate General of Water and Sewerage Administration (DESKİ)
- Neighbourhood mukhtars
- TEMELSU Uluslararası Mühendislik Hizmetleri A.Ş
- Neighbourhood residents

7.1.1. PRE-MEETING WEB ANNOUNCEMENT

Deski, Denizli Su ve Kanalizasyon

www.deski.gov.tr/haberler.aspx?nr=426

Uygulamalar Hızlı erişim için yer işaretlerinizi buraya, yer işareti çubuğuna yerleştirin. Yer işaretlerinizi şimdi içe aktarın... Diğer yer işaretleri

DENİZLİ BÜYÜKŞEHİR BELEDİYESİ
SU VE KANALİZASYON İDARESİ
GENEL MÜDÜRLÜĞÜ

15 TEMMUZ
BİRLEŞİM
ÜNİTİMA
UNUTTURMA!

Ana Sayfa Kurumsal Abone Hizmetleri Denizli & Su İhaleler Vezneler İletişim Online İşlemler

Online İşlemler

- Su Faturası Ödeme
- Su Faturası Sorgulama
- Üyelik İşlemleri
- Bilgi Edinme


Sık Kullanılanlar

- Haber Arşivi
- Duyuru Arşivi
- İhaleler
- Su Kesintileri
- Abonelik İşlemleri
- Gezici Vezneler
- Arıtma Tesisleri
- ALO 185

Haberler

Haber Tarihi : 10.1.2019 16:58:43 Haber 65 kez okundu.

Sürdürülebilir Şehirler Projesi kapsamında Halkın Katılım Toplantısı
Sürdürülebilir Şehirler Projesi kapsamında Halkın Katılım Toplantısı



Sürdürülebilir Şehirler Proje kapsamında Sümer, Sevindik, Karşıyaka, Dokuzkavaklar, Anafartalar, Deliktaş ve Aktepe mahallelerinde gerçekleştirilecek olan içmesuyu, kanalizasyon ve yağmursuyu şebekeleri inşaatı ve rehabilitasyonu çalışmaları için Çatalçesme Oda Tiyatrosunda 15.01.2019 tarihi Salı günü saat 09:00'da gerçekleştirilecek olan "Halkın Katılım Toplantısı"na tüm halkımız davetlidir.

7.1.2. INVITATION LETTER



T.C.
DENİZLİ BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞI
DESKİ Genel Müdürlüğü
Proje Yönetim Birimi



Sayı : 89114452-622-E.535
Konu : Halkın Katılım Toplantısı

10/01/2019

DAĞITIM YERLERİNE

Sürdürülebilir Şehirler Projesi kapsamında Sümer, Sevindik, Karşıyaka, Dokuzkavaklar, Anafartalar, Deliktaş ve Aktepe mahallelerinde gerçekleştirilecek olan içme suyu, kanalizasyon ve yağmursuyu şebekeleri inşaatı ve rehabilitasyonu çalışmaları için Çatalçeşme Oda Tiyatrosunda 15.01.2019 tarihi Salı günü saat 09:00'da gerçekleştirilecek olan "Halkın Katılım Toplantısı"na mahalle muhtarlığınızın ve mahalle sakinlerinin katılım sağlanması hususunda;
Gereğini rica ederiz.

e-İmzalıdır

Prof. Dr. Mahmud GÜNGÖR
Genel Müdür

Dağıtım:

Sümer Mahallesi Muhtarlığı
Sevindik Mahallesi Muhtarlığı
Dokuzkavaklar Mahallesi Muhtarlığı
Karşıyaka Mahallesi Muhtarlığı
Anafartalar Mahallesi Muhtarlığı
Deliktaş Mahallesi Muhtarlığı
Aktepe Mahallesi Muhtarlığı

Erdoğan'ın aslını elden teslim aldım.

Yaşar BEŞPARMAKÇIYA
Sevindik Mahallesi Muhtarlığı
Tel: 251 56 11 11



MEHMET ARAL AYKAN
Merkezefendi İlçesi
Sümer Mahallesi Muhtarlığı

Nihat URHAN
Dokuzkavaklar Mahallesi



KARŞIYAKA MAHALLESİ
MUHTARI

Mustafa GÜLMEZ

Denizli İl
Pamukkale İlçesi
Aktepe Mahallesi Muhtarlığı
Sengül GÜNER







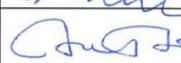


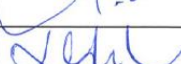
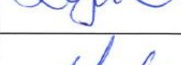



ANAFARTALAR
MAHALLESİ MUHTARI
EKREM DEMİR

Adres: Topraklık Mah. İzmir Bulvarı (Otogar Yanı) No: 41 Pamukkale / DENİZLİ
Telefon: 0258 297 20 20 Faks: 0258 263 22 49
Elektronik Ağ: www.deski.gov.tr KEP: deski@hs01.kep.tr

Bilgi için: M.YILDIRIM Tekniker
(Hizmet Alımı) Dahili: 1314
mustafa.yildirim@deski.gov.tr

5070 sayılı Elektronik İmza Kanunu'na uygun olarak Güvenli Elektronik İmza ile üretilmiştir.
Evrak teyidi <http://ebysorgu.deski.gov.tr/> adresinden 2DİV-SIAJ-87M5 kodu ile yapılabilir.

7.1.3. MEETING PARTICIPANT LIST

 <p style="text-align: center;">T.C. DENİZLİ BÜYÜKŞEHİR BELEDİYESİ SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ (DESKİ) SÜRDÜRÜLEBİLİR ŞEHİRLER PROJESİ İÇMESUYU, ATIKSU VE YAĞMURSUYU SİSTEMLERİ İYİLEŞTİRME PROJESİ</p> 						
Katılımcı Listesi						
No	Ad-Soyad	Katıldığı Kurum	Adres	E-posta	Tel.	İmza
1	Hüsnü BAYAR	DESKİ	izmir Bulvarı 0101	bayr.husna@gmail.com	0502 774 77 06	
2	Ayden ASAL	DESKİ	"	aydin.asal@deski.gov.tr	0.553.214.09	
3	MUSTAFA GÜLMER				0543 5656348	
4	H. İbrahim Buldu	DESKİ	"	hbuldu	531 1050443	
5	Aliettin UGURLU	TEMELSU			532 452 3632	
6	ŞABAN ÇİMEN	TEMELSU	ANKARA	sbancimen@temelsu.com.tr	538 427 58 66	
7	Aydenir Akçok	DESKİ	Denizli	aydenir.akcok@deski.gov.tr	0511072441	
8	Ufuk YARAR	DESKİ	Denizli	ufuk.yarar@deski.gov.tr	531 1050450	
9	MUSTAFA SENGÜK	DESKİ	Denizli	mustafa.senguk@deski.gov.tr	0536415334	
10	Taner BAYDAR	DESKİ	Denizli	taner.baydar@deski.gov.tr	0532 163 4323	
11	Özge DENİZLİ	DESKİ	Denizli	ozge.denizli@deski.gov.tr	0536435246	
12	OKTAY ÖZOĞLU	DESKİ	Denizli	oktayozoglu@gmail.com	0531-0823955	



T.C.
DENİZLİ BÜYÜKŞEHİR BELEDİYESİ
SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ (DESKİ)
SÜRDÜRÜLEBİLİR ŞEHİRLER PROJESİ
İÇMESUYU, ATIKSU VE YAĞMURSUYU SİSTEMLERİ İYİLEŞTİRME PROJESİ



Katılımcı Listesi

No	Ad-Soyad	Katıldığı Kurum	Adres	E-posta	Tel.	İmza
13	M. Çağrı KARAGÜZÜ	DESKİ	Denizli	m.cagri.karaguzu@deskigsu.tr	05068888339	
14	Tayfun EROL	"	"	tayfun.eral@deskigsu.tr	0531 082 3328	
15	Onur İLHAN	"	"	onurilhan20@gmail.com	0535 643 5036	
16	Semi AYHAN	"	"		530.699.1694	
17	M. Rasit TILDA	"	"			
18	Ali BİZER	"	"	alibizer@deskigsu.tr		
19	Av. Mehmet BARKAN	"	"			
20	Ömer Küçüköskel	"	"			
21	Nihal URBAN	Muhur	Dokuz Eylül	urban_nihal@kocaeli.com	0532.2915491	
22	Ahmet Altınkaya	mahalle Sakini	Dokuz Eylül		05365529132	
23	Süleyman Hayran	mahalle Sakini	Dokuz Eylül		05355149513	
24	Osman KURT	-	Denizli	-	05332826034	



T.C.
DENİZLİ BÜYÜKŞEHİR BELEDİYESİ
SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ (DESKİ)
SÜRDÜRÜLEBİLİR ŞEHİRLER PROJESİ
İÇMESUYU, ATIKSU VE YAĞMURSUYU SİSTEMLERİ İYİLEŞTİRME PROJESİ
Katılımcı Listesi



No	Ad-Soyad	Katıldığı Kurum	Adres	E-posta	Tel.	İmza
25	Çağrı Kılıç	Deski	Denizli.	-	05363314150	[İmza]
26	Muhammed YAVUZ	DESKİ	Denizli	-	05311050431	[İmza]
27	Ali İhsan SENER	DENİZLİ	Denizli	-	05052002542	[İmza]
28	Yasar BESPARMAKÇI	-	Sevindik	-	05426356813	[İmza]
29	Mevret TATLİCAN	Deski	H -	-	5362652522	[İmza]
30	Derken BARMACI	Deski	Denizli	barmaci-5062000000	05358688858	[İmza]
31	Begüm YILDIRIM	Deski	Deski	-	05308922596	[İmza]
32	Mehmet ARALAKKAN	-	Sömür	-	05223757904	[İmza]
33	Mehmet KARTEPE	Deski	Adalet	-	05046810522	[İmza]
34	Misak SULAN	DESKİ	Medcehdi	-	05448229825	[İmza]
35	Muhammed ALAYAT	Deski	Barışbaşı/panidok	-	05066094609	[İmza]
36	Mehmet ÖZEN	//	Festlegen 1014sh No: 5	-	05357890745	[İmza]



T.C.
DENİZLİ BÜYÜKŞEHİR BELEDİYESİ
SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ (DESKİ)
SÜRDÜRÜLEBİLİR ŞEHİRLER PROJESİ
İÇMESUYU, ATIKSU VE YAĞMURSUYU SİSTEMLERİ İYİLEŞTİRME PROJESİ
Katılımcı Listesi



No	Ad-Soyad	Katıldığı Kurum	Adres	E-posta	Tel.	İmza
37	A.Fatih Önülü	DESKİ	Merkezi / Denizli	a.fatih.onulu@deskijp.v.tr	5553758720	
38	Gökhan ARAS	"	Pamukkale / Denizli	gokhanaras@deskijp.v.tr	5423744550	
39	Ramazan Moğaz	DESKİ	Paullu / Denizli		0533557075	
40	Mehmet Dayıoğlu	DESKİ	Pamukkale	mehmetdayiglu@deskijp.v.tr	05066088696	
41	İsa SOYSAL	DESKİ	Pamukkale	isa.soyсал@deskijp.v.tr	05304313311	
42	Abdullah R. İŞİK	"	Merkezefendi	abdullah.ismet@qmail.com	05057039489	
43	Ali Daniş Diza	"	Merkezefendi	danurdiza@hatir	0532163557	
44	Elvan Demir	"	Pamukkale		05324223568	
45	Ahmet Çiftçi	"	Belediye		05300420700	
46	Mehmet ALACALI	"	DESKİ	mehmetalacali@deskijp.v.tr	05366700328	
47	Yasar KOCYİĞİT	DESKİ	MERKEZEFENDİ / DENİZLİ	yasar.kocyigit@deskijp.v.tr	05555592053	
48	Kadir KARADURAK	"		dektdog@nshtr.com	0533-3716060	



T.C.
DENİZLİ BÜYÜKŞEHİR BELEDİYESİ
SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ (DESKİ)
SÜRDÜRÜLEBİLİR ŞEHİRLER PROJESİ
İÇMESUYU, ATIKSU VE YAĞMURSUYU SİSTEMLERİ İYİLEŞTİRME PROJESİ
Katılımcı Listesi



No	Ad-Soyad	Katıldığı Kurum	Adres	E-posta	Tel.	İmza
49	Kamuran Şahin		K. yakamah 2439/13		053069736 20	
50	ÖMU Tebe		Dokuzkavaklı		05549056845	
51	BAY					
52	Emre BİLGE	DESKİ			05382884283	
53	Seçer BİÇAKCI	DESKİ			05614181610	
54	Kemal ARSLAN	DESKİ			05444838008	
55	Mehmet JARMIŞ	DESKİ			05300420743	
56	Halit KOCATÜRKMEZ	DESKİ			05543219000	
57	Deniz ÖPÜZKAN YABIZ	DESKİ			5535073659	
58	Ayşe Çar	DESKİ	Pomuköle Denizli		05392828215	
59	Servet COSKUN	DESKİ	//		05365994842	
60	Faruk MARMAR	DESKİ	DESKİ		0532624961	



T.C.
DENİZLİ BÜYÜKŞEHİR BELEDİYESİ
SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ (DESKİ)
SÜRDÜRÜLEBİLİR ŞEHİRLER PROJESİ
İÇMESUYU, ATIKSU VE YAĞMURSUYU SİSTEMLERİ İYİLEŞTİRME PROJESİ
Katılımcı Listesi



No	Ad-Soyad	Katıldığı Kurum	Adres	E-posta	Tel.	İmza
61	Hatirullah SAZL	DESKİ	—	hatirullah@msn.com	05336613663	
62	İsmail YALÇINKAYA	DESKİ	—	ismailyalcin.k@gmail.com	505 279 15 31	
63	Bilge Şahin Sarı	DESKİ	—			
64	Burak Süsücü	DESKİ				
65	MUSTAFA YARMAÇ	DESKİ	Pamukkale DENİZLİ		05798580912	
66	Bilal Taşkın	Karsiyolu	Pamukkale DENİZLİ		05426601858	
67	Emre Peköz	DESKİ		emrepekoz@denizli.com	5354390110	
68	Burhanettin YILDIRIM	DESKİ		burhanettin.yildirim@yandex.com	5069819202	
69	Mahmed GÜNGÖR	DESKİ Genel Müdür			5306057229	
70	O. Akınçın	DESKİ			5541531868	
71	Gökdemir Boztepe	DESKİ			05442642645	
72	Abdül AKOĞL	?			05456355222	



T.C.
DENİZLİ BÜYÜKŞEHİR BELEDİYESİ
SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ (DESKİ)
SÜRDÜRÜLEBİLİR ŞEHİRLER PROJESİ
İÇMESUYU, ATIKSU VE YAĞMURSUYU SİSTEMLERİ İYİLEŞTİRME PROJESİ
Katılımcı Listesi



No	Ad-Soyad	Katıldığı Kurum	Adres	E-posta	Tel.	İmza
73	Mehmet Uygunlu	Deski		mehmet.uygunlu@gmail.com	0542342690	
74	Sait Dink	Deski		Sait.Dink@deski.gov.tr		
75	İlkehan Kesen	DESKİ		Elk.m.k. ve mlz ikur. daresi		
76	Yunus Emre KADIOĞLU	DESKİ		Elk.m.k. ve mlz ikur. daresi		
77	Muhammed Göran			Bilgi islem		
78	Tahir Yavuz DOĞANLI			Yapim Sube	05310823329	
79	Akdoğan Şimşek		Sevindik		05323947515	
80	Cağdas TABAK	Deski	Kuspinar	cağdas.tabak@ deski.gov.tr	05442161552	
81	Adem KARS	Deski	Aktepe	adem.kars@ deski.gov.tr	05425097728	
82	Serkan SAHİN	DESKİ	Hacı Karabuldu 8881 TSK No 11	Serkan.mustro hotmail.com	05302033797	
83	OSMAN BOZKURT		Karşıyaka mah		05327125715	
84	Kamil Bayraktar		Karşıyaka Mah		05377228082	

7.1.4. MEETING PHOTOS





DENİZLİ
BUYUKSEHIR
BELEDİYESİ



Sürdürülebilir
Şehirler

Projeleri

DENİZLİ BÜYÜKŞEHİR BELEDİYESİ
SU VE KANALİZASYON İDARESİ
(DESKİ)

İÇMESUYU, ATIKSU VE YAĞMURSUYU SİSTEMLERİ
İYİLEŞTİRME PROJESİ



DESKİ



DENİZLİ
BUYUKSEHIR
BELEDİYESİ



Projeleri

DENİZLİ BÜYÜKŞEHİR BELEDİYESİ
KENTSEL İZLENİM VE KANALİZASYON İDARESİ
(DESKİ)

ATIKSU VE YAĞMURSUYU SİSTEMLERİ
İYİLEŞTİRME PROJESİ











7.1.5. INFORMATION AND ANNOTATIONS ON THE MEETING PROGRAMME

A Public Participation Meeting was held at Çatalçeşme Chamber Theatre at 09:00 on 15.01.2019 for the construction works of drinking water, wastewater and rainwater mains to be conducted in Sümer, Sevindik, Karşıyaka, Dokuzkavaklar, Anafartalar, Deliktaş and Aktepe neighbourhoods in Merkezefendi and Pamukkale districts of Denizli province by Denizli Metropolitan Municipality Directorate General of Water and Sewerage Administration (DESKİ).

Addressing projects' environmental and social impacts after the opening speech of the meeting, Head of Treatment Facilities Department Aydemir AKYÜREK informed the participants of mitigation efforts and land acquisition. Denizli Metropolitan Municipality DESKİ General Manager Prof. Mahmud Güngör declared the boundaries of the project area and stated that that construction of drinking water subscriber connections and domestic and parcel connection of wastewater will be renewed within the scope of the project.

7.1.6. SPECIFIC MINUTES OF MEETING (QUESTION - ANSWER)

Question 1: Which neighbourhoods will be covered by the new loan?

Answer 1: Sümer, Sevindik, Karşıyaka, Dokuzkavaklar, Anafartalar, Deliktaş and Aktepe neighbourhoods

Question 2: Blockage is occurring in the wastewater connection at Karşıyaka Covered Market and the capacity of the wastewater main it is connected to is not sufficient. Can you address this issue?

Answer 2: Karşıyaka Neighbourhood is included in the project. The minimum diameter of the projected wastewater lines is 300 mm. Moreover, the sewage station to be built at Sevindik neighbourhood which is downstream will solve the wastewater problems of these neighbourhoods.

Question 3: What are the environmental impacts and measures to be taken in the construction process?

Answer 3: Environmental aspects and impacts such as dust, exhaust emissions from construction machinery, noise, traffic increase, formation of debris and excavation waste, solid waste generation, public safety, occupational health and safety risks will be in question due to excavation, bedding, pipe laying, covering, backfilling, manhole construction, asphalt work and repair of damaged surface coatings.

A "Mitigation Plan" has been prepared and will be implemented for the environmental impacts, and impacts and measures will be monitored with the "Monitoring Plan" at all times. Efforts will be made to eliminate the deficiencies identified during the project work which were carried out with the first loan and to respond to the requests and complaints of the citizens.

These measures can be summarised as follows:

- Wetting of the excavation material and heavy roads to prevent the formation of dust, transporting the material to the areas complying with the regulation,
- Covering the trucks, control of their haulage, preventing the material from spilling out,

- Careful selection of the route to be used in the transportation of excavated material, not passing through the dense settlements, improvement of the pavement, the speed limits complied with by the vehicles
- Periodical maintenance of the equipment and vehicles to be used in excavation, construction, transportation, pipe laying and asphaltting stages,
- Collection and disposal of waste oils, waste batteries and accumulators from machinery and vehicles in accordance with the relevant environmental legislation,
- Storage of all hazardous wastes in accordance with the legislation of waste and their disposal by licensed companies,
- In case of encountering with asbestos pipes, it should be left untouched and not brought to the surface in any way.
- Collecting and removing the wastewater to be generated on the construction site without damaging the receiving environment,
- The use of sound insulation parts in all types of work machines, not exceeding the impact noise of 100 dBC, performing the work in the daytime, not working at night if not required in line with the environmental legislation,
- Providing weekly and daily inquiries to the public and other institutions for boulevards and streets to be worked on,
- Construction of pedestrian walkways and steel ditch crossing bridges,
- Establishment of safety areas (such as plastic strip, steel railing, illuminated warning signs) so that construction work does not harm people in the region,
- Providing direction and warning signs for traffic flow, signallers; designation of alternative access roads,
- Bracing to prevent landslides in deep excavations,
- No performing excavation on rainy days,

7.2. 2ND PUBLIC PARTICIPATION MEETING

Public Participation meeting was held at Nihat ZEYBEKÇİ Congress and Culture Center at 10.00 on 29.07.2020 in order to introduce the additional areas where infrastructure works will be carried out within the scope of the SCP and to create the necessary measures by taking the feedback of the people about the project. The meeting was resided by;

- Denizli Metropolitan Municipality Directorate General of Water and Sewerage Administration (DESKİ)
- Neighbourhood mukhtars
- TEMELSU Uluslararası Mühendislik Hizmetleri A.Ş
- Neighbourhood residents

7.2.1. PRE-MEETING WEB ANNOUNCEMENT

deski.gov.tr/duyuru/surduru



DENİZLİ BÜYÜKŞEHİR BELEDİYESİ SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ

Ana Sayfa » » Sürdürülebilir Şehirler Projesi Kapsamında Halkın Katılım Toplantısı

Sürdürülebilir Şehirler Projesi Kapsamında Halkın Katılım Toplantısı

HIZLI MENÜ

KISAYOLLAR

Sürdürülebilir Şehirler Projesi kapsamında, Zafer, Akçeşme, Hürriyet, Kayıhan, Asmalievler, Merkezefendi, Yenişehir, Bereketler, Yenişafak ve Adalet mahallelerinde gerçekleştirilecek olan içme suyu, kanalizasyon ve yağmursuyu şebekeleri inşaatı ve rehabilitasyonu çalışmaları için, Nihat ZEYBEKÇİ Kongre ve Kültür Merkezinde 29.07.2020 tarihi Çarşamba günü saat 10.00'da gerçekleşecek olan "Halkın Katılım Toplantısı"na tüm halkımız davetlidir.

DENİZLİ BÜYÜKŞEHİR BELEDİYESİ
SU VE KANALİZASYON İDARESİ
GENEL MÜDÜRLÜĞÜ

DESKİ
DENİZLİ BÜYÜKŞEHİR BELEDİYESİ
SU VE KANALİZASYON İDARESİ

SÜRDÜRÜLEBİLİR ŞEHİRLER PROJESİ
ÇEVRESEL VE SOSYAL YÖNETİM PLANI
HALKIN KATILIMI TOPLANTISI

PROGRAM

- Açılış Konuşması
- Yeni Proje Tanıtımı
- Etki Azaltma ve İzleme Planı
- Soru Cevap
- Kapanış

29 Temmuz Çarşamba Saat: 10:00

Nihat Zeybekci Kongre ve Kültür Merkezi

www.deski.gov.tr | deski@deski.gov.tr | 0(258) 297 20 20 | ALO 185





7.2.2. INVITATION LETTER



T.C.
DENİZLİ BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞI
Denizli Su ve Kanalizasyon İdaresi Genel Müdürlüğü
İçme Suyu ve Kanalizasyon Dairesi Başkanlığı



Sayı : 23831565-750-E.16236
Konu : Halkın Katılım Toplantısı

25/07/2020

DAĞITIM YERLERİNE

Sürdürülebilir Şehirler Projesi kapsamında, Zafer, Akçeşme, Hürriyet, Kayıhan, Asmalıevler, Merkezefendi, Yenişehir, Bereketler, Yenişafak ve Adalet mahallelerinde gerçekleştirilecek olan içme suyu, kanalizasyon ve yağmursuyu şebekeleri inşaatı ve rehabilitasyonu çalışmaları için, Nihat ZEYBEKÇİ Kongre ve Kültür Merkezinde 29.07.2020 tarihi Çarşamba günü saat 10.00'da gerçekleşecek olan "Halkın Katılım Toplantısı"na mahalle muhtarlığınızın ve mahalle sakinlerinin katılım sağlaması hususunda; Gereğini rica ederiz.

(e-İmzalıdır)
Ufuk YARAR
Genel Müdür a.
İçme Suyu ve Kanalizasyon Dairesi Başkan V.

Dağıtım :



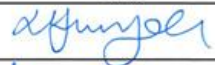



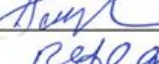


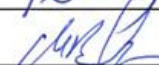
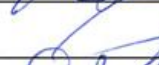






Adalet Mahallesi MUHTARLIĞI
Akçeşme Mahallesi MUHTARLIĞI
Asmalıevler Mahallesi MUHTARLIĞI
Bereketler Mahallesi MUHTARLIĞI
Hürriyet Mahallesi MUHTARLIĞI
Kayıhan Mahallesi MUHTARLIĞI
Merkezefendi Mahallesi MUHTARLIĞI
Yenişafak Mahallesi MUHTARLIĞI
Yenişehir Mahallesi MUHTARLIĞI
Zafer Mahallesi MUHTARLIĞI

*Bu belge elektronik imzalıdır. İmzalı suretinin aslını görmek için <https://idogrulama.beladiye.gov.tr> adresine girerek (jJHC69-vz8cxx-kDEwPA-wIT6f/-bKd0WyOC) koduna yazınız.

Topraklık Mahallesi İzmir Bulvarı (Otogar Yanı) No:41 Pamukkale Denizli
Telefon No: (258)297 20 20 Faks No: (258)263 22 49
e-Posta: deski@deski.gov.tr İnternet Adresi: <https://www.deski.gov.tr>

Bilgi için: Engin Aykut YILMAZ
Memur
Telefon No:

7.2.3. MEETING PARTICIPANT LIST

		DENİZLİ BÜYÜKŞEHİR BELEDİYESİ SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ SÜRDÜRÜLEBİLİR ŞEHİRLER PROJESİ HALKIN KATILIM TOPLANTISI Katılımcı Listesi				
No	Ad Soyad	Adres	E-posta	Telefon	İmza	
1	Ufuk YARAR	DESKİ Genel Müdürlüğü				
2	Özür ÖZMUL	TEMELSU				
3	Emre BİLGE	Deskİ Genel Müdürlüğü				
4	Ömer ABACI	" " "				
5	Ayden ASAL	" " "				
6	Burhanettin YILDIRIM	" " "				
7	Fehmi GOMEK	" " " "				
8	Sait DİRK	" " "				
9	Av. Mehmet Bekent	" " "				
10	Av. Tolga TELLİ	" " "				
11	Ramazan Meranlar	" " "				
12	Ahmet Fatih Örmüç	" " "				
13	Ramazan Sağdıç	Zafer				
14	M. AKİF DİLBAŞI	Deskİ Gen. Müd.				
15	Ramazan MARIM	Desk. G.M.A.				



DENİZLİ BÜYÜKŞEHİR BELEDİYESİ
SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ
SÜRDÜRÜLEBİLİR ŞEHİRLER PROJESİ
HALKIN KATILIM TOPLANTISI
Katılımcı Listesi



No	Ad Soyad	Adres	E-posta	Telefon	İmza
16	Mehmet KAYAÇAPRAZ	DESKİ			
17	Selma ÖZMEN	DESKİ			
18	DURDUMURAT DILAZ	PENELSD			
19	Ali BİZAN	DESKİ			
20	RASİT ŞENOCAK	Muhtar ZAFER			
21	Sercan Ercan	Zafer mahallesi			
22	ERKAN DURAN	MUHTAR			
23	Zeki Tülüoğlu	Asmalıeuler			
24	Hüdaşverdi Özalp	Deniz. Büy. Bl.			
25	Belenmeri KÖMÜR	DESKİ			
26	Erol Baygacı	Yeni Sataş K. ARA			
27	Hüseyin ÖZMEN	Furukli			
28	İbrahim KÖKÇE	DESKİ			
29	Osman KURT	DESKİ			
30	Bilge İnder Seo	DESKİ			

Katılımcı Listesi

No	Ad Soyad	Adres	E-posta	Telefon	İmza
31	Mustafa Yatayan	Koyu hon Mah.			
32	Mehmet Ocal	Hürriyet Mah.			
33	Yılmaz EKİZ	Hürriyet mah.			
34	Süleyman ÖZGEN	Hürriyet mah.			
35	Hasan SAY	Hürriyet mah.			
36	Kenan GABİR DOĞRUK	DESKİ			
37	Osman ALI ÖZALP	DESKİ			
38	Mehmet İWAÇ	DESKİ			
39	ALİ ÖZMEN	DESKİ			
40	UĞUR ERGEN	Atatürk Mah.			
41	Özcan GARDİN	DESKİ			
42	Ramazan Güneş	Asmalı evler			
43	Mehmet Dikmen	Asmalı Evler			
44	Osman Ulubaş	Asmalı Evler			
45	Mehmet SÖNMEZ	Asmalı Evler			

Katılımcı Listesi

No	Ad Soyad	Adres	E-posta	Telefon	İmza
46	Emre PETEK	Merke			
47	Mehmet ALPILMAZ	Deski			
48	Selçuk GÜNEŞ	Deski Genel Md.			
49	Mehmet YAPICI	Deski Genel Md.			
50	H.brahim Bulduz	Gen. Md. Yed. V.			
51	Senay HAYTAN	Asmalıevler mah.			
52	M. Faik Hafiroğlu	Asmalı evler mah.			
53	Brahim Halaza	Asmalı evler mah.			
54	Nazmi Dağ	Asmalı evler mah.			
55	Serdar Aray	ADALAT MAH			
56	Faykut Yaşar ÖZÇEKİR	Albayrak Mah.			
57	Ayşe Aktürk	Deski Gn. Md.			
58	Ayşe ÇAN	Deski Gn. Md.			
59	Cüneyt TENİÇ	Yenişehir			
60	ÖZKAN ÖZEREN	DESKİ			



DENİZLİ BÜYÜKŞEHİR BELEDİYESİ
SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ
SÜRDÜRÜLEBİLİR ŞEHİRLER PROJESİ
HALKIN KATILIM TOPLANTISI
Katılımcı Listesi



No	Ad Soyad	Adres	E-posta	Telefon	İmza
61	ÖMER SÖZÜK	DESKİ Genel Müd.			
62	Halit KOCATÜRKÜMEN	DESKİ Genel Müd.			
63	Solime Çelik	Mektepli			
64	Aykut ÖZGÜ	DESKİ Genel Müd.			
65	Osman HAKAN	DESKİ Genel Müdürlüğü			
66	Hamdi ERDAL	DESKİ Genel Müd.			
67	Mehmet Diyetkin	Asmalı sokaq mah.			
68	Ali urhan	Asmalı Evler			
69	Mehmet Dalkıran	ASMAK Kulek mah.			
70	Ramazan AŞK	Adalet mh			
71	Mehmet Karateş	Yenişehir Nohutlu			
72	Harun Korkut	Adalet muhtarlığı			
73	Mehmet Dayıoğlu	DESKİ Genel Müd. (göç)			
74	Aykut KARMAZ	DESKİ Genel Müd. (göç)			
75	Burak Göster	DESKİ Genel müdürlüğü			

No	Ad Soyad	Adres	E-posta	Telefon	İmza
76	Osman ZOLAN	Büyükşehir Belediyesi			
77	Şaban HEYBELİ	AKÇEŞME			
78	Osman Er	Yenisoluk			
79	Ahmet Çakır	Merkez Mah.			
80	ÖMER Gözler	Yenisoluk Mah.			
81	Mahmut Uğur	Kayhan Mah.			
82	Adnan KEÇMEZ	Mer.Egen-AZA			
83	Zeki Çacur	Asmalı Mah.			
84	Osman Özyöğür	Adalet Mah.			
85	İsmail SAKAN	Asmalı Mah.			
86	Hülya ETCİ	Zeytinlik Mah.			
87	İbrahim MADEN	DESKİ			
88	Mertcan HANCI	Genç Köyü			
89	Emel Mikirap	Bereketler Mah.			
90	Elisayn Akın	Hürriyet			



DENİZLİ BÜYÜKŞEHİR BELEDİYESİ
SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ
SÜRDÜRÜLEBİLİR ŞEHİRLER PROJESİ
HALKIN KATILIM TOPLANTISI



Katılımcı Listesi

No	Ad Soyad	Adres	E-posta	Telefon	İmza
91	MUSTAFA YARMAÇ	DESKİ GENEL MÜD.			
92	Kayhan Halora	Asmalı ekin mah			
93	Remazan TEMİZ	Mokoz efendi			
94	Niyazi TÜRLÜ	DESKİ Genel Müdürlüğü			
95					
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102					
103					
104					
105					

7.2.4. MEETING PHOTOS













7.2.5. INFORMATION AND ANNOTATIONS ON THE MEETING PROGRAMME

Public Participation Meeting was held at Nihat ZEYBEKÇİ Congress and Culture Center on 29.07.2020 by Denizli Metropolitan Municipality Water and Sewerage Administration (DESKİ) General Directorate for the construction works of drinking water, wastewater and storm water networks of Hürriyet, Kayhan and Asmalievler neighborhoods which are included in the planned tender package DES-W3 and Zafer, Akçeşme, Merkezefendi, Yenişehir, Bereketler, Yenişafak and Adalet neighbourhood to be made as an additional work within the scope of the Sustainable Cities Project.

Following the opening speech of the meeting held by the Mayor of Metropolitan Municipality, Osman ZOLAN, the participants were informed about the environmental and social impacts of the project, impact reduction studies and land acquisition. Information was given about the boundaries of the project area and the infrastructure works to be carried out in these areas. In addition, it was stated that drinking water subscriber connections and wastewater domestic and parcel connections will be renewed within the scope of the project.

7.3. 3RD PUBLIC PARTICIPATION MEETING

Additional areas where infrastructure works will be carried out within the scope of SCP-I (Merkezefendi, Yenişehir, Bereketler, Yenişafak, Adalet, Zafer, Hürriyet, Kayhan and Asmalievler neighborhoods) the revised Draft ESMP is published on the website of DESKİ on October 9, 2020 and re-consulted with the relevant stakeholders and submitted to stakeholders' opinions and suggestions. The public participation meeting is made online via the ZOOM program on 13.10.2020 at 14:00 due to Covid 19 pandemic. The meeting was resided by;

- Denizli Metropolitan Municipality Directorate General of Water and Sewerage Administration (DESKİ)
- Neighbourhood mukhtars
- TEMELSU Uluslararası Mühendislik Hizmetleri A.Ş

7.3.1. PRE-MEETING ANNOUNCEMENTS and INVITATION LETTER



T.C.
DENİZLİ BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞI
Denizli Su ve Kanalizasyon İdaresi Genel Müdürlüğü
İçme Suyu ve Kanalizasyon Dairesi Başkanlığı



Sayı : E-23831565-750-24437
Konu : Altyapı İmalatları Hakkında

09/10/2020

DAĞITIM YERLERİNE

İller Bankası aracılığıyla Dünya Bankası kredisi ile yürütülen altyapı çalışmaları kapsamında mahallenizde atıksu/yağmursuyu çalışmaları yapılacaktır. Çalışma yapılacak bölgeleri gösterir kroki yazımız ekindedir.

Söz konusu çalışmalarla ilgili Genel Müdürlüğümüz resmi Web sayfası Duyurular kısmında yayımlanan Taslak Çevresel ve Sosyal Yönetim Planı'nın incelenip bilgi edinilmesi, mahalle sakinlerimize Çevresel ve Sosyal Yönetim Planı içeriği ile ilgili bilgi verilmesi, varsa sizin veya vatandaşlardan gelen soruların en geç 16.10.2020 saat 13:00'e kadar tarafımıza bildirilmesi gerekmektedir.

Ayrıca 13.10.2020 salı günü saat 14:00 de Covid-19 salgını nedeniyle online olarak ZOOM programı üzerinden proje hakkında detaylı bilgi verilecek olup varsa sorularınız cevaplanacaktır. Katılım sağlamanız hususunda;

Bilgilerinizi ve gereğini rica ederiz.

Ufuk YARAR
Genel Müdür a.

İçme Suyu ve Kanalizasyon Dairesi Başkan V.

Ek: İmalat Krokisi

Dağıtım :

Bereketler Mahallesi Muhtarlığı
Adalet Mahallesi Muhtarlığı
Yenişafak Mahallesi Muhtarlığı
Zafer Mahallesi Muhtarlığı
Akçeşme Mahallesi Muhtarlığı
Merkezefendi Mahallesi Muhtarlığı
Yenişehir Mahallesi Muhtarlığı

*Bu belge elektronik imzalıdır. İmzalı suretinin aslını görmek için <https://dogrulama.belediye.gov.tr> adresine girerek (oRrPmb-VST1aK-7+C5BJ-ByCwaJ-6bGE3ckR) kodunu yazınız.

Topraklık Mahallesi İzmir Bulvarı (Otogar Yanı) No:41 Pamukkale Denizli
Telefon No: (258)297 20 20 Faks No: (258)263 22 49
e-Posta: deski@deski.gov.tr İnternet Adresi: <https://www.deski.gov.tr>

Bilgi için: Engin Aykut YILMAZ
Memur
Telefon No:

Mehmet KARATAŞ
Yenişehir Mah. Muhtarı
Merkezefendi/DENİZLİ



T.C.
DENİZLİ BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞI
Denizli Su ve Kanalizasyon İdaresi Genel Müdürlüğü
İçme Suyu ve Kanalizasyon Dairesi Başkanlığı



Sayı : E-23831565-750-24476
Konu : Altyapı İmalatları Hakkında

09/10/2020

DAĞITIM YERLERİNE

İller Bankası aracılığıyla Dünya Bankası kredisi ile yürütülen altyapı çalışmaları kapsamında mahallenizde içme suyu/atıksu/yağmursuyu çalışmaları yapılacaktır. Çalışma yapılacak bölgeleri gösterir kroki yazımız ektededir.

Söz konusu çalışmalarla ilgili Genel Müdürlüğümüz resmi Web sayfası Duyurular kısmında yayımlanan Taslak Çevresel ve Sosyal Yönetim Planı'nın incelenip bilgi edinilmesi, mahalle sakinlerimize Çevresel ve Sosyal Yönetim Planı içeriği ile ilgili bilgi verilmesi, varsa sizin veya vatandaşlardan gelen soruların en geç 16.10.2020 saat 13:00'e kadar tarafımıza bildirilmesi gerekmektedir.

Ayrıca 13.10.2020 salı günü saat 14:00 de Covid-19 salgını nedeniyle online olarak ZOOM programı üzerinden proje hakkında detaylı bilgi verilecek olup varsa sorularınız cevaplanacaktır. Katılım sağlamanız hususunda;

Bilgilerinizi ve gereğini rica ederiz.

Üfuk YARAR
Genel Müdür a.
İçme Suyu ve Kanalizasyon Dairesi Başkan V.

Ek: İmalat Krokisi

Dağıtım :

Asmalievler Mahallesi Muhtarlığı
Hürriyet Mahallesi Muhtarlığı
Kayhan Mahallesi Muhtarlığı

Zeki ÇACUN
Asmalievler Mahallesi
Muhtarı

Kayhan Muhtarı
Mahmut Oğuz
Maz

Mehmet ÇAKAK
Denizli Pamukkale İlçesi
Hürriyet Mahallesi Muhtarı

*Bu belge elektronik imzalıdır. İmzalı suretinin aslını görmek için <https://dogrulama.belediye.gov.tr> adresine girerek (A33/SB-b11095-6uADq4-X+e2VG-I.fCFtjwz) kodunu yazınız.

Topraklık Mahallesi İzmir Bulvarı (Otogar Yanı) No:41 Pamukkale Denizli
Telefon No: (258)297 20 20 Faks No: (258)263 22 49
e-Posta: desk@deski.gov.tr İnternet Adresi: <http://www.deski.gov.tr>

Bilgi için: Engin AYKUT YILMAZ
Memur
Telefon No:

TUTANAK

Genel Müdürlüğümüz İçme Suyu ve Kanalizasyon Dairesi Başkanlığı Proje Yönetim Biriminin 09.10.2020 tarih ve 24468 sayılı yazısına istinaden aşağıda belirtilen mahallelere belirtilen SMS'ler gönderilmiş olup; toplam giden SMS sayısı 24961'dir.

İş bu tutanak 12.10.2020 tarihinde hazırlanmıştır.

Adalet Mahallesi

Denizli Büyükşehir Belediyesi alt yapı yatırımlarına devam ediyor. Çalışmalar kapsamında mahallenizde yağmursuyu imalatları gerçekleştirilecektir. Detaylı bilgi için <https://bit.ly/33LDBP1> adresini ziyaret edebilirsiniz.

Bereketler Mahallesi

Denizli Büyükşehir Belediyesi alt yapı yatırımlarına devam ediyor. Çalışmalar kapsamında mahallenizde yağmursuyu imalatları gerçekleştirilecektir. Detaylı bilgi için <https://bit.ly/33LDBP1> adresini ziyaret edebilirsiniz.

Yenişafak Mahallesi

Denizli Büyükşehir Belediyesi alt yapı yatırımlarına devam ediyor. Çalışmalar kapsamında mahallenizde kanalizasyon imalatları gerçekleştirilecektir. Detaylı bilgi için <https://bit.ly/33LDBP1> adresini ziyaret edebilirsiniz.

Akçeşme Mahallesi

Denizli Büyükşehir Belediyesi alt yapı yatırımlarına devam ediyor. Çalışmalar kapsamında mahallenizde kanalizasyon ve yağmursuyu imalatları gerçekleştirilecektir. Detaylı bilgi için <https://bit.ly/33LDBP1> adresini ziyaret edebilirsiniz.

Zafer Mahallesi

Denizli Büyükşehir Belediyesi alt yapı yatırımlarına devam ediyor. Çalışmalar kapsamında mahallenizde kanalizasyon ve yağmursuyu imalatları gerçekleştirilecektir. Detaylı bilgi için <https://bit.ly/33LDBP1> adresini ziyaret edebilirsiniz.

Merkezefendi Mahallesi

Denizli Büyükşehir Belediyesi alt yapı yatırımlarına devam ediyor. Çalışmalar kapsamında mahallenizde içme suyu, kanalizasyon ve yağmursuyu imalatları gerçekleştirilecektir. Detaylı bilgi için <https://bit.ly/33LDBP1> adresini ziyaret edebilirsiniz.

Asmahevler Mahallesi

Denizli Büyükşehir Belediyesi alt yapı yatırımlarına devam ediyor. Çalışmalar kapsamında mahallenizde içme suyu, kanalizasyon ve yağmursuyu imatları gerçekleştirilecektir. Detaylı bilgi için <https://bit.ly/33LDBP1> adresini ziyaret edebilirsiniz.

Hürriyet Mahallesi


Denizli Büyükşehir Belediyesi alt yapı yatırımlarına devam ediyor. Çalışmalar kapsamında mahallenizde içme suyu, kanalizasyon ve yağmursuyu imatları gerçekleştirilecektir. Detaylı bilgi için <https://bit.ly/33LDBP1> adresini ziyaret edebilirsiniz.

Kayıhan Mahallesi

Denizli Büyükşehir Belediyesi alt yapı yatırımlarına devam ediyor. Çalışmalar kapsamında mahallenizde içme suyu, kanalizasyon ve yağmursuyu imatları gerçekleştirilecektir. Detaylı bilgi için <https://bit.ly/33LDBP1> adresini ziyaret edebilirsiniz.

Yenişehir Mahallesi

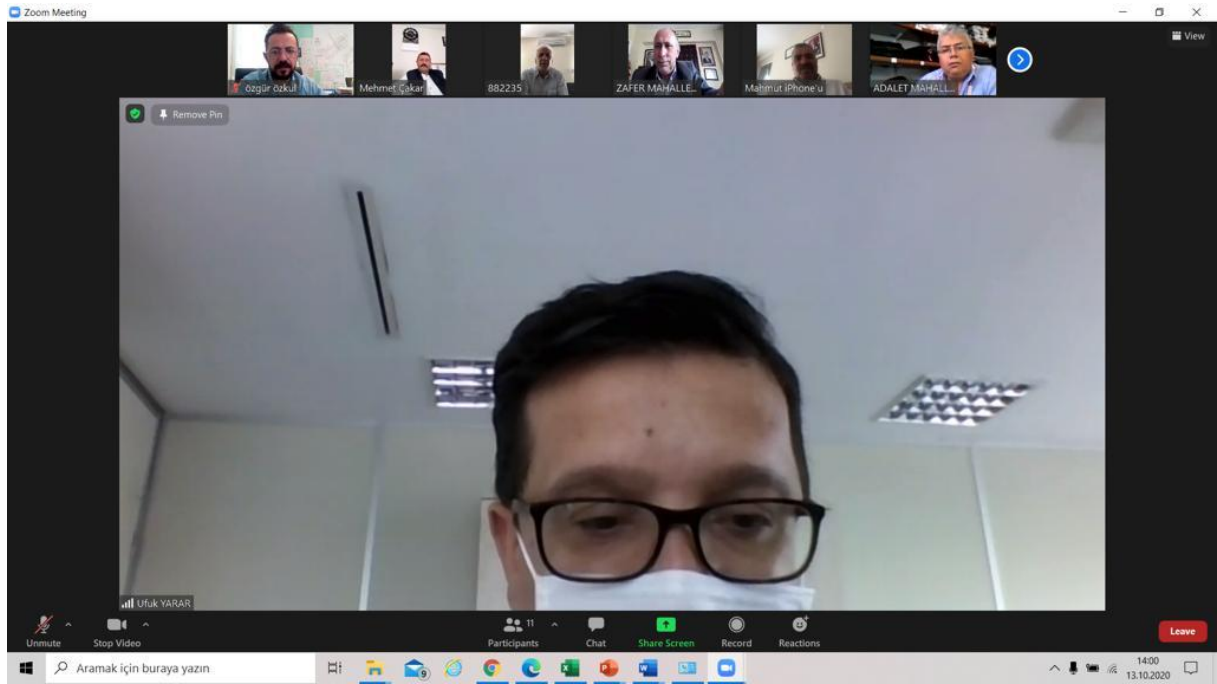
Denizli Büyükşehir Belediyesi alt yapı yatırımlarına devam ediyor. Çalışmalar kapsamında mahallenizde içme suyu imatları gerçekleştirilecektir. Detaylı bilgi için <https://bit.ly/33LDBP1> adresini ziyaret edebilirsiniz.


Erdiñ SALMAL
Çağrı Merkezi Görevlisi


Hasan METİN
Çağrı Merkezi Koordinatörü


Mehmet KARATEPE
Halkla İlişkiler Şube Müdür V.

7.3.2. MEETING PHOTOS



7.3.3. INFORMATION AND ANNOTATIONS ON THE MEETING PROGRAMME

The Revised Draft ESMP, which was prepared and approved for additional areas (Merkezefendi, Yenişehir, Bereketler, Yenişafak, Adalet, Zafer, Hürriyet, Kayhan and Asmalievler neighborhoods) where infrastructure works will be carried out within the scope of SCP-I, is published on the website of DESKİ on October 9, 2020 and was re-consulted with the relevant stakeholders and opened to the opinions and suggestions of the stakeholders.

Denizli Metropolitan Municipality Water and Sewerage Administration (DESKİ) General Directorate, Zafer, Akçeşme, Merkezefendi, Yenişehir, Bereketler, Yenişafak and Adalet districts to be made as an additional work within the scope of the Sustainable Cities Project, and Hürriyet, Kayhan, within the scope of the DES-W3 construction package, which is planned to be tendered. A Public Participation Meeting was held on 3.10.2020 at 14:00 for the construction of potable water, wastewater and stormwater networks to be carried out in Asmalievler and Bağbaşı neighborhoods. The meeting was held online over the ZOOM program due to the Covid-19 pandemic.

At the meeting, participants were informed about the environmental and social impacts of the project, impact mitigation studies and land acquisition. Information was given about the boundaries of the project area and the infrastructure works to be carried out in these areas.

7.3.4. SPECIAL MEETING MINUTES (QUESTION - ANSWER)

No questions were submitted orally or in writing.

7.3.5. INFORMATION REPORT

T.C.
MERKEZEFENDİ KAYMAKAMLIĞI
Yenişehir Mahallesi Muhtarlığı

Sayı:06

Konu: Altyapı İmalatları Hakkında
13.10.2020

DENİZLİ BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞI
Denizli Su ve Kanalizasyon İdaresi Genel Müdürlüğü İçme Suyu ve
Kanalizasyon Daire Başkanlığı

İlgi: Denizli Büyükşehir Belediye Başkanlığının 09.10.2020 E-23831565-750-24437 Sayılı yazısı

İller Bankası aracılığıyla Dünya Bankası kredisi ile yürütülen altyapı çalışmaları kapsamında mahallemizde içme suyu şebekesi yenileme çalışması yapılacaktır. Yapılacak olan çalışmada mahalle sakinlerimize **çevresel ve sosyal yönetim** planı ile alakalı gereken bilgilendirme yapılmıştır.

Gereğini bilgilerinize Arz Ederim.

Mehmet KARATAŞ
Yenişehir Mahalle Muhtarı

Mehmet KARATAŞ
Yenişehir Mah. Muhtarı
Merkezefendi/DENİZLİ

Bilgi : Mehmet KARATAŞ / Yenişehir Mah. Muhtarı
Tel : 0 538 299 8000
Adres : Yenişehir Mahallesi /Merkezefendi

mehmetkaratas20@hotmail.com.tr

Denizli Bykehir Belediyesi; Aki Genel Mdrlg
tarafından yapılacak olan alt yapı çalışmalarını, evresel ve
sosyal konularda bilgi edindim.

Mahalle sakinlerine alt yapı çalışmalarını, hakkında
bilgi verildi.

12.10.2020



DENİZLİ BÜYÜK ŞEHİR BELEDİYESİ

DESKİ

Denizli büyükşehir belediyesi Deski
genel müdürlüğü tarafından
yapılacak olan Altyapı Çalışmaları
hakkında içme suyu ve kanalizasyon
Daire başkanı, ufuk yarar bilgi
vermiştir. mahalle sakinlerine
Altyapı çevresel ve sosyal olarak
Bilgi verilmiştir.

Zeki ÇACIR
Asmalıevler Mahallesi
Müdürlüğü



DEMLİ BÜYÜKŞEHİR BELEDİYESİ

DESKİ

Demli Büyükşehir Belediyesi DESKİ Genel Müdürlüğü'ne
tarafından yapılacak olan Alt Yapı Çalışmaları hakkında
işine uygun kanalizasyon Daire Başkanı Ufuk YARAR bilgileri
mahalle sakinlerine Alt Yapı Çetresi ve Sosyal Olanak
bilgileri için

Mehmet ÇAKAR



DENİZLİ BÜYÜKSİHİR BELEDİYESİ
DESKİ

Denizli Büyükşehir Belediyesi Deskİ 9 me/mu dİşİğİ
tarafından yapılmış olt topİ Çalımları H-ŞİHİ de
İğmüŞÜM ve Koro lİğmüŞÜM Deniz baskı NİKUL JARAR
bİlğİ vermiş-ür Mhülle SİğmüŞÜM Alttopİ Çalımları ve
SİğmüŞÜM Çalımları bİlğİ verilmektedir



Denizli b3yskşehir belediyesi Desk1 gene m3dirlięu tarafında
Yapılacak olan atyara g3liřmalarından g3resel ve
Sosyal konulardan bilgi edindiren mahalle s3nkilerine
g3liřmeleri hakkında bilgi verilmiřtir.

Osman ER
Merkezefendi ilęesi
Yeniřafak Mah. Muhtar

13. 10. 2020

Denizli Byk ehir Belediyesi
Desti Genel-mudurluęi tarafından
Aldiyapı Calımları hakkında çevresel
ve sosyal konularda bilgi edinim.
Mahalle sakinlerinde yaşıma hakkında
bilgi verildi

13-10-2020



Denizli B?y?k?ehir Belediyesi

Su kanal idaresi tarafmda
Mahallemizde yaplacak olan Alt
yap? çalışmalar? hakkında bilgi
aldım. Çalışmalar hakkında Mahalle
Sakinlerine bilgi verilmiştir.

13.10.2020

BEREKETLER MAHALLE
MUHTARI

Cemal MİKİROĞLU



Denizli Byskehir Belediyesi Deskir Genel
Msdurisijsi torofndn yopilodk olan
altyopi colismolri hokknda bilgsyi edindim.
Mohalle soliklerine colismolor hokknda bilgi verildi.

13.10.2020


Adalet Mahallesi Muhtiri
Nevzat KAYLAN

Denizli Byksehir Belediyesi

Deski Genel Mdrlęi Tarafından Yapılacak
Olan Altyapı Galiřmaları Hakkında Gevresel
ve Sosyal Konulardan icme suyu ve Kanalizasyon.

Dairesi Bařkanı Ufuk YARAA'dan Bilgilendirildim

Mahalle Sakinlerine Galiřmalar Hakkında
Bilgiler Aktarıldı.

13.10.2020



Denizli Bykehir Belediyesi Dski Genel Mdrlđ
tarafından yapılacak olan Altyapı sasmaları hakkında ime
suyu ve Kanalizasyon Dairesi Başkanı Hk YARAR tarafından
Gevresel ve sosyal konularda bilgi vermitir.
Mahalle sakinlerine sasmalar hakkında bilgilendirme yapılmıtır.

15.10.2020

BAGBAI MAHALLESİ
MHTARI
ERKAN DURAN

