TÜRKİYE CLIMATE AND DISASTER RESILIENT CITIES (CDRC) PROJECT

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

Istanbul Province, Unkapanı (Atatürk) Bridge Reinforcement Project of Istanbul Metropolitan Municipality

January, 2026

Document History

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ABBREVIATIONS

AF	Associated Facility
BMP	Biodiversity Management Plan
CDRC	Climate and Disaster Resilient Cities
CHMP	Cultural Heritage Management Plan
CMP	Contractor Management Plan
E&S	Environmental and Social
EHS	Environmental, Health and Safety
EHSG	Environmental, Health and Safety Guidelines
EIA	Environmental Impact Assessment
ESA	Environmental and Social Assessment
ESAP	Environmental and Social Action Plan
ESF	Environmental and Social Framework
ESMP	Environmental and Social Management Plan
ESIA	Environmental and Social Impact Assessment
ESMS	Environmental and Social Management System
ESS	Environmental and Social Standards
ETL	Energy Transmission Line
GFI	Ground Fault Interrupter
GIIP	Good International Industry Practice
GM	Grievance Mechanism
IFIs	International Financial Institutions
ILBANK	İller Bankası A.Ş.
KPI	Key Performance Indicator
LMP	Labour Management Plan
LRP	Livelihood Restoration Plan
NTU	Nephelometric Turbidity Unit
OHS	Occupational Health and Safety
PAP	Project Affected People
PIU	Project Implementation Unit
PPE	Personal Protective Equipment
Project	Climate and Disaster Resilient Cities Project
RD	Regional Directorate
RE	Renewable Energy
SEP	Stakeholder Engagement Plan
SOP	Standard Operating Procedures
Subproject	Istanbul Province, Unkapani (Atatürk) Bridge Reinforcement Project
WB	World Bank

GLOSSARY OF TERMS

Associated facilities	Facilities or activities that are not funded as part of the Subproject and are: (a) directly and significantly related to the project; (b) carried out, or planned to be carried out, contemporaneously with the project; and (c) necessary for the project to be viable and would not have been constructed, expanded or conducted if the project did not exist. For facilities or activities to be Associated Facilities, they must meet all three criteria.
Contractor	A person or organization providing services to an employer at the client worksite in accordance with agreed specifications, terms and conditions.
Excavated material	Materials/soils that are generated as a result of excavation and other similar activities carried out prior to construction
Legally protected area	Designated terrestrial, aquatic or marine ecosystems managed under the related legislation to protect and sustain the biodiversity features, natural and associated cultural resources. Legally protected areas of Türkiye include a diversity of natural ecosystems and associated features ranging from coastal zones to mountains, deltas, forests, plains, steppe, lakes, river systems, deep valleys, canyons, and glaciers.
Material borrow site	Sites, where loose material containing gravel, sand, silt, and clay, which is formed by the natural and geological processes of rock fracturing, fragmentation, alteration, transportation, and/or in-situ sedimentation, and which has the characteristics of slope debris, are extracted to be used as fill material.
Off-site accommodation	Accommodation of workers at hotels, rented housing, etc. available in the vicinity of Subproject area.
On-site accommodation	Accommodation of workers at temporary exploration camps, construction camps, dormitories, etc. established for the Subproject on site.
Risk	A combination of the likelihood of an occurrence of a hazardous event and the severity of injury or damage to the health of people caused by this event.
Topsoil	Part of soil that provides organic and inorganic materials, air and water required for vegetative growth, and is required to be stored separate from the subsoil.

EXECUTIVE SUMMARY

The Unkapanı (Atatürk) Bridge Reinforcement Subproject, located in Istanbul Province and crossing the Fatih and Beyoğlu districts, is a critical infrastructure initiative under the Istanbul Province Risk Reduction Plan (IRAP). The Subproject aims to enhance seismic resilience, secure post-disaster accessibility, and support urban mobility by structurally reinforcing one of the city's most essential transportation corridors. With daily vehicle traffic exceeding 100,000 vehicles, the bridge is vital to both routine mobility and emergency response operations.

The scope of works includes both terrestrial and marine interventions. On the terrestrial side, activities comprise partial demolition of deteriorated structural elements, strengthening of bridge piers, renewal of the superstructure with new steel components, and improvements to operational facilities such as administrative and control buildings, maintenance areas, pedestrian access points, and upgraded lighting and security systems. On the marine side, works involve reinforcement of the 24 pontoons supporting the 453.5-meter-long bridge, underwater strengthening of foundations, corrosion protection measures, and replacement of mechanical and structural components to ensure long-term durability. Collectively, these interventions will extend the bridge's service life, improve operational safety, and guarantee uninterrupted use during and after seismic events.

No associated facilities have been identified under the World Bank's Environmental and Social Framework (ESF) criteria. Existing road infrastructure will be utilized for access, and no new roads will be developed. The Subproject will be implemented entirely on public land; thus, no land acquisition or expropriation is required. The bridge spans areas without cadastral registration or under the ownership of the Fatih Municipality. The Environmental and Social Standard (ESS) 5 on Land Acquisition and Involuntary Resettlement is therefore not triggered. Moreover, the Project is not expected to result in permanent employment changes or economic displacement.

The construction and mobilization areas, defined in the ESMP layout plan, include temporary storage, office units, worker facilities, and access ramps. Construction will be staged to minimize disruption to traffic and operations at nearby facilities such as the Haliç Shipyard. No road closures at site entrances are expected.

All required permits and institutional approvals under Turkish legislation have been secured. No conflicts with existing infrastructure or protected cultural assets have been reported, provided that work near Hamidiye waterways adheres to protective provisions and obtains site-specific consent from regional cultural boards.

The ESMP package has been prepared to ensure the Subproject's compliance with national and international standards, including İLBANK Environmental and Social Policy [1] (ESP) and the World Bank's Environmental and Social Standards (ESSs), particularly ESSs 1, 2, 3, 4, 6, 8, and 10. The ESMP package includes a set of management plans that cover areas such as stakeholder engagement, biodiversity, traffic, labor, and cultural heritage.

The construction phase, estimated at 18 months with an additional 12-month defect liability period, is expected to generate localized, short-term impacts primarily related to dust, noise, vibrations, and the risk of water and soil contamination from construction activities.

During the feasibility phase, the investor had indicated in the report that dredging might be required for the Project. However, subsequent detailed geotechnical investigations and design-level studies concluded that dredging is technically unnecessary. This conclusion is based on the latest soil data and observations from similar works along the Golden Horn (Haliç) shoreline, which also suggest that dredging could potentially compromise ground stability. Accordingly, dredging operations are no longer planned under this Subproject design.Without mitigation, significant impacts would occur in the domains of noise and vibration, especially due to pile-driving near densely populated and sensitive receptor zones. Cultural

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

heritage impacts are also assessed as high in the absence of mitigation, given the bridge's proximity to registered historical assets. However, the implementation of site-specific mitigation measures under the ESMP will reduce all environmental, social, and cultural heritage impact levels to medium to low significance.

During the operational phase, impacts are minimal and largely associated with vehicle emissions, maintenance-related waste generation, and potential runoff pollution. Noise and vibration levels are expected to remain within regulatory limits due to improved traffic flow and reduced structural deterioration. The ESMP outlines monitoring, reporting, and mitigation frameworks to manage risks across air quality, water resources, labor safety, and community health.

Key environmental and social risks, including elevated seismic vulnerability, traffic disruptions, and potential impacts on nearby historical sites, have been addressed through a structured ESMP process. No critical or irreversible environmental effects are anticipated. While the ESMP commits that no dredging will take place, the Subproject will involve initial marine construction activities during the first phase. These will include demolition for the bridge foundations, lasting approximately 20 days, followed by sheet piling works, with both activities completed within a total of 50 days. Following the completion of sheet piling, additional works will include the construction of rock-based fortifications behind the sheet piles, anchoring of pontoons using a chain and anchor system, and installation of a new bridge joint system. The fortifications will be carefully placed to stabilize the structure. During all marine works, potential risks to the environment include temporary increases in turbidity, minor noise and vibrations, and waste generation. To mitigate these impacts, the ESMP prescribes the use of spill-prevention and response kits on all marine platforms, strict waste management and containment protocols, controlled placement of materials, use of sediment curtains, regular inspection and maintenance of machinery to prevent leaks, and careful scheduling of works to minimize disturbance to aquatic ecosystems. With these measures, adverse effects on the marine environment are expected to be low, temporary, and localized.The Subproject presents long-term benefits in disaster preparedness, urban mobility, and public safety. Recommendations include strict adherence to ESMP measures, stakeholder coordination, and compliance monitoring during all construction and operational phases. Continued engagement with municipal and regional institutions will be critical for timely approvals and adaptive implementation.

1. INTRODUCTION

1.1 Background

The Climate and Disaster Resilient Cities (CDRC) Project (hereinafter referred to as "the **Project**") aims to enhance resilience to climate and disaster risks and build capacity to manage those impacts in Türkiye. The Project Development Objectives are to increase access to seismic and climate resilient housing, municipal infrastructure and services in Project provinces in Türkiye, and to respond promptly and effectively in the event of an Eligible Crisis or Emergency.

The CDRC Project is financed by the World Bank (WB). It includes five components as listed below. İller Bankası A.Ş. (**ILBANK**) will be the Financial Intermediary (FI) for Component 3, and the utilities of Project metropolitan municipalities will be sub-borrowers.

- **Component 1:** Institutional Strengthening to Enable Conditions for Urban Resilience (Ministry of Environment, Urbanisation and Climate Change – **MoEUCC**)
  This Component will provide technical assistance to MoEUCC and local authorities in Project provinces and other provinces vulnerable to disaster risks, to strengthen their capacity to develop, implement, and monitor green and resilient urban transformation programs
- **Component 2:** Expanding Access to Resilient Housing (**MoEUCC**)
  This Component will provide demand-side support for resilient housing in the Project provinces by financing subloans (in Turkish lira) at below-market conditions for eligible owners to retrofit or reconstruct their housing or commercial units in risky residential or mixed-use buildings to meet resilient building code[2] and energy efficiency standards
- **Component 3:** Investments in Climate and Disaster Resilient Municipal Infrastructure (**ILBANK**)
  This Component will support ILBANK to on-lend loans (in Euro) with longer maturities and lower interest rates than the comparable domestic market to eligible utilities of Project metropolitan municipalities to undertake infrastructure investments that increase resilience against the impacts of climate-related and/or other disaster hazards.
- **Component 4:** Project Management, Monitoring, and Evaluation (**MoEUCC** for 4a and **ILBANK** for 4b)
  This Component will have two sub-components that finance consultant and non-consulting services, goods, training, and operating costs as required by ILBANK and MoEUCC.
- **Component 5:** Contingent Emergency Response Component
  This Component will allow the Government of Türkiye to respond promptly and effectively to an eligible emergency or crisis, that is a natural or human-made disaster or crisis that has caused or is likely to imminently cause a major adverse economic and/or social impact by requesting a rapid reallocation of project funds.

İstanbul Metropolitan Municipality (hereinafter referred to as "the **Sub-borrower"**) has applied to ILBANK for sub-financing of Unkapanı (Atatürk) Bridge Reinforcement Project (herein after referred to as "the **Subproject**"), which is located in İstanbul Province, Fatih and Beyoğlu Districts, Unkapanı and Azapkapı Neighbourhoods.

ILBANK has established an **Environmental and Social Management System (ESMS)** effective from **24th of Dec 2023**. The ESMS is designed to align with the WB Environmental and Social Framework (ESF, 2018) including Environmental and Social Standards (ESSs) forming part of the ESF. It also adheres to the environmental and social (E&S[3]) polices and standards of other

[2] Resilient under this Project will refer to a building complying with the structural requirements provided under the Earthquake Regulation that has been updated and entered into force on January 1, 2019.

[3] The acronym E&S refers to all aspects of "sustainability" as encompassed by the International Finance Corporation (IFC) Performance Standards, i.e. environment, social, health and safety, human rights and labour aspects.

International Financial Institutions (IFIs) with which ILBANK collaborates. The ESMS will apply to all ILBANK projects and subprojects financed through International Financial Institutions (IFIs), including the Unkapanı (Atatürk) Bridge Reinforcement Project.

The ESMS aims to ensure systematic identification, assessment, management, monitoring, and reporting of the E&S risks and impacts in IFI-financed projects and subprojects of ILBANK. This process will be implemented on an ongoing basis throughout the loan duration of respective ILBANK projects in line with the requirements of the national legislation, international agreements and conventions ratified by Türkiye and E&S standards of lending IFIs, such as WB for the CDRC Project. As a key element of the ESMS, ILBANK has adopted and published an **E&S Policy**[4] applicable to all IFI-financed ILBANK projects and subprojects.

Under ILBANK's ESMS and WB ESF (2018), subprojects are classified as High Risk, Substantial Risk, Moderate Risk or Low Risk taking into account relevant potential risks and impacts, such as the type, location, sensitivity and scale of a subproject; the nature and magnitude of the potential E&S risks and impacts; and the capacity and commitment of the relevant sub-borrower.

ILBANK is considering financing the Subproject under the CRDC Project. In line with the ESMS, ILBANK has conducted an E&S screening and risk classification for the Subproject. Based on this assessment, the Subproject has been classified as having "**moderate**" E&S risk.

Given this classification, the Sub-borrower has retained a third-party consultancy company for the preparation of the E&S instruments required as per the E&S risk category assigned to the Subproject. This **Environmental and Social Management Plan** (ESMP) has been prepared by Encon Çevre Danışmanlık Şti. (ENCON) for the Subproject in line with the applicable E&S requirements as set out in Section1.3.

A list of individuals/organizations involved in the preparation or contribution to the development of this ESMP is provided in Annex-A. A stand-alone Stakeholder Engagement Plan (SEP) has also been developed for the Subproject. In addition to SEP, Biodiversity Management Plan, Livelihood Restoration Plan, Traffic Management Plan, Labour Management Plan, Contractor Management Plan and Cultural Heritage Management Plan are developed.

1.2 Objective of the ESMP

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

1.3 Overview of E&S Requirements Applicable to the Subproject

The Subproject will be implemented in full compliance with the İLBANK ESMS and ESP. In addition, it will adhere to the requirements of the World Bank's Environmental and Social Standards (ESSs), as well as the applicable national legislation and the international agreements and conventions to which Türkiye is a party. The applicable standards and guidelines include:

- WB Environmental and Social Framework (ESF, 2018) and the Environmental and Social Standards (ESSs) forming part of the ESF,

[4] https://www.ilbank.gov.tr/sayfa/ilbank-environmental-and-social-policy
https://www.ilbank.gov.tr/sayfa/ilbank-cevresel-ve-sosyal-politika-dokumani

- World Bank Group (WBGs) General Environmental, Health and Safety Guidelines (EHSGs) (2007)
- WBG's Sector-Specific Environmental, Health, and Safety Guidelines,
    - WBG's Environmental, Health, and Safety Guidelines for Toll Roads (2007),
    - WBG's Environmental, Health, and Safety Guidelines for Ports, Harbors, and Terminals (2017),
- ILBANK Environmental and Social (E&S) Policy for Projects Financed by International Financial Institutions, November 2023.
- Good International Industry Practices (GIIPs), including those established by other international financial institutions, such as:
    - International Finance Corporation (IFC) Performance Standards on Environmental and Social Sustainability,
    - Equator Principles,
    - International Labour Organization (ILO) Core Labour Standards,

Table 1 outlines the relevance of the WB ESSs to the Subproject.

Table 1. Relevance of the WB ESSs to the Subproject

ESSs	Definition	Relevance to the Subproject
ESS 1	Assessment and Management of E&S Risks and Impacts	Relevant to the Subproject
ESS 2	Labour and Working Conditions	Relevant to the Subproject
ESS 3	Resource Efficiency and Pollution Prevention and Management	Relevant to the Subproject
ESS 4	Community Health and Safety	Relevant to the Subproject
ESS 5	Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant to the Subproject
ESS 6	Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant to the Subproject
ESS 7	Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not relevant in Türkiye
ESS 8	Cultural Heritage	Relevant to Subproject
ESS 9	Financial Intermediaries	Not relevant to the Subproject
ESS 10	Stakeholder Engagement and Information Disclosure	Relevant to the Subproject

When national requirements differ from the levels and measures presented in the EHSGs, the Subproject will achieve or implement whichever is more stringent. A summary of the national legislation and international standards applicable to the management of environmental, social, health, and safety aspects of the Subproject is provided in Annex B.

1.4 Review and Update

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

The Sub-borrower will notify ILBANK of any updates made to the ESMP and will ensure that such updates do not result in deviation from the requirements set forth by the national legislation and the E&S requirements applicable to the Subproject. These updates will be managed in a manner that maintains alignment with the Subproject's objectives while safeguarding environmental and social sustainability.

This ESMP has been reviewed and updated taking into account feedback received during the Stakeholder Engagement Meeting held on 22 January 2026, conducted as part of the subproject preparation process. Issues raised by stakeholders, including concerns related to cultural heritage, marine users, amateur fishing activities, seismic resilience, and construction impacts, have been considered and reflected in relevant sections of this ESMP where applicable.

1.5 Implementation Arrangements

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

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

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

Sub-management plans have been developed for the Subproject within this ESMP and include, but are not limited to, Stakeholder Engagement, Labor Management, Traffic Management, and Cultural Heritage Management Plans. Based on the outcomes of the ESMP, additional thematic management plans such as the Occupational Health and Safety Management Plan, and Emergency Preparedness and Response Plan, will be prepared by the contractor, in coordination with the Sub-borrower, prior to site mobilization. These plans are required to ensure compliance with the World Bank Environmental and Social Framework. They will be treated as living documents and may be updated during implementation in response to evolving conditions or new information.

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

2 SUBPROJECT DESCRIPTION

2.1 Subproject Information

The Subproject aims to enhance the structural resilience of one of Istanbul's critical transportation routes before a potential major earthquake. The Subproject is a crucial part of the Istanbul Province Risk Reduction Plan (IRAP) and plays a significant role in ensuring the continuity of emergency transportation routes during and after disasters.

The primary objectives of the Subproject include:

- Strengthening the bridge against seismic risks to ensure its functionality as an emergency transportation route.
- Extending the bridge's service life through repair and renovation works.
- Eliminating operational difficulties related to bridge opening and closing for marine vessels, thereby improving access to the Haliç Shipyard and increasing maritime accessibility for tourism facilities in the Golden Horn area.

Key technical information on the Subproject is summarized in Table 2.

Table 2 Key Technical Information on the Subproject

Component	Features
Bridge	The bridge, which rests on 24 pontoons, has a total length of 453.5 meters. With an average daily traffic load of nearly 100,000 vehicles, it is a crucial transit point for both public and private transportation between Fatih and Beyoğlu. The existing bridge's reinforced concrete infrastructure includes a retaining structure that supports a 12.5-meter reinforced concrete approach bridge, along with a 25-meter-wide approach road embankment and a 25-meter-wide side pier structure that holds both the reinforced concrete approach bridge and the steel bridge beams. The planned side abutment structure is designed to support a new 19-meter-long steel superstructure bridge, featuring barrette pile foundations and a socket approach fill on solid rock ground. The superstructure to be rebuilt will consist of eight primary steel beams with transverse beams connecting them. Construction works will involve the demolition and replacement of various structural elements of the existing bridge, including the renewal of both side abutment structures, installation of barrette piles, removal and replacement of old steel bridge segments, and reconstruction of concrete slabs. The demolition work is expected to last approximately 20 days, followed by sheet piling, with both activities expected to be completed within a total of 50 days. Once these works are finalized, no further construction activities will take place over the marine area. Following the completion of sheet piling, additional works will include the construction of rock-based fortifications behind the sheet piles, anchoring of pontoons using a chain and anchor system, and installation of a new bridge joint system.Renewal of the bridge's opening and closing mechanism, corrosion protection measures, drainage systems, and expansion joints will also be undertaken. The project will include installation of a cathodic protection system for pontoons, a new fire extinguishing system, and maintenance and inspection walkways. All construction activities, including demolition, pile driving, jet grouting, heavy equipment deployment, and prefabrication of steel components, will be conducted in accordance with detailed plans and scheduling. These works are comprehensively described in Section 3.1.1 of this report.
	Operation Facilities: These facilities will be located in the area that was the main camp area during the construction

	phase (see Figure 17): Administrative buildings and offices, Maintenance and storage areas, Traffic control center, Electrical and lighting systems, Security systems.
Support and Auxiliary Facilities	The construction site will include temporary storage areas (for waste, for mechanical equipment, materials etc.), social facilities for employees to meet their daily needs, a generator and a concrete mixer. Further details are provided in Section 3.1 of this report .

During the early stages of the Subproject development, dredging of the seabed (16,600 m³) had been planned, as indicated in the feasibility report prepared by IMM. However, subsequent preliminary and detailed geotechnical assessments, as well as design-level studies, concluded that dredging is technically unnecessary. This decision is based on the latest soil data and observations from similar works along the Golden Horn (Haliç) shoreline, which demonstrate that dredging could potentially compromise ground stability. Considering these findings, dredging operations are excluded from the scope of this Subproject. This approach ensures both technical feasibility and the minimization of potential adverse impacts on the surrounding environment.

As part of the Subproject activities, an application indicating its final scope was submitted to the Ministry of Environment, Urbanization and Climate Change on 24 October 2024 under the Environmental Impact Assessment (EIA) Regulation. On 19 November 2024, the Ministry issued a formal decision stating that the Subproject is not subject to EIA (see Annex I). Although dredging was initially considered during the feasibility stage, subsequent preliminary and detailed geotechnical assessments and design-level studies concluded that dredging is technically unnecessary. Given that dredging is a construction activity with potentially higher environmental impacts, its removal from the scope of work further reduces potential environmental risks. According to the EIA Regulation, modifications to the Project scope that decrease potential environmental impacts—such as the exclusion of dredging—do not require a new submission to the Ministry, provided no other significant changes are introduced. Therefore, the October 2024 application continues to reflect the final scope of the Subproject, and the exclusion of dredging does not necessitate a separate application for confirmation.

2.2 Subproject Location

The Subproject is located in İstanbul province. The route crosses Fatih and Beyoğlu district(s). Unkapanı (Atatürk) Bridge is a 477-meter-long and 25-meter-wide bridge connecting the Fatih and Beyoğlu districts. Since the Subproject is the renovation of the existing bridge, land acquisition is not required. A map of the Subproject location is presented in Figure 1.

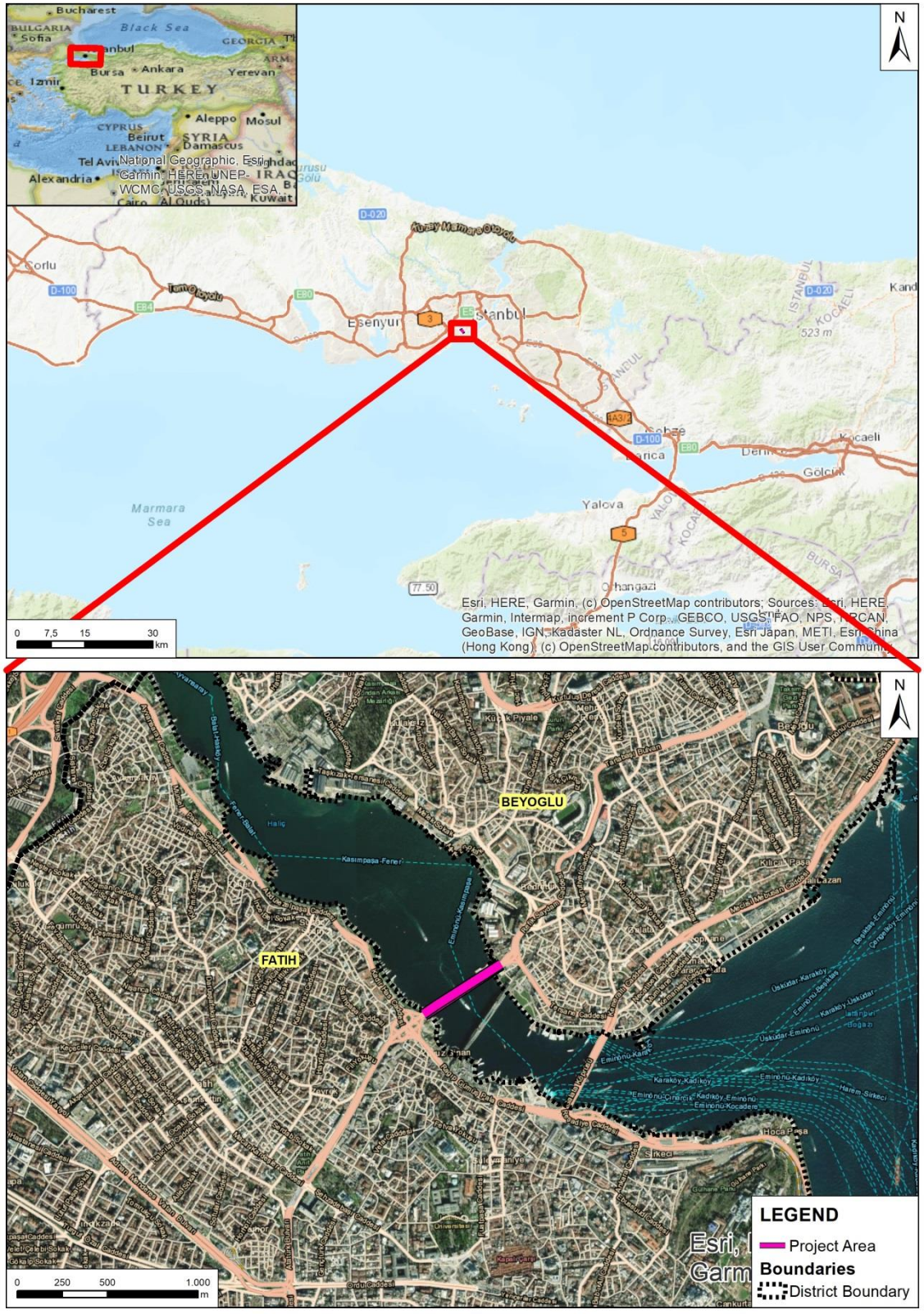
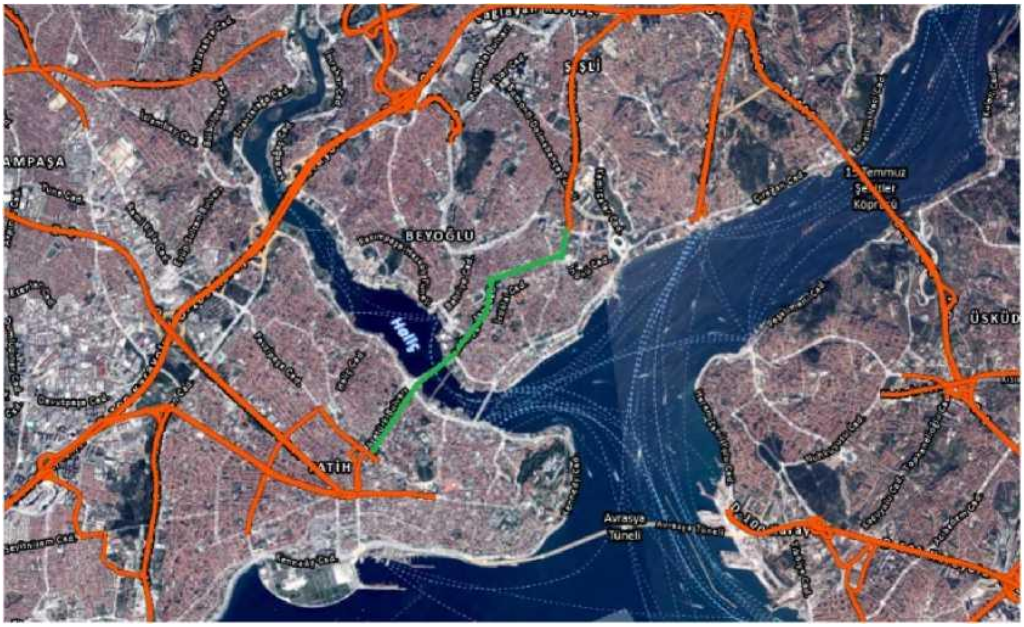


Figure 1 Map of Subproject Location

2.3 Site Access Route

There will be no new access roads to be constructed within the scope of the Subproject. Existing access roads will be used. As part of the Istanbul Province Risk Reduction Plan (IRAP) and shown in Figure 2 of this document, the Atatürk Bridge is a crucial traffic route that ensures continued access to emergency transportation networks. This includes facilitating the movement of support and aid to assembly areas and enabling evacuation, transfer, and post-disaster relocation in the event of a major earthquake in Istanbul.

The bridge's connection to Emergency Transportation routes is depicted in Figure 2:



Red: Emergency access route,
Green: Roads that will provide continuity of access after a disaster
Figure 2 Emergency Access Roads in Fatih and Beyoğlu Districts
Source: Istanbul Metropolitan Municipality Open Data Portal

2.4 Associated Facilities

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

These facilities or activities must meet all the following criteria:

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

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

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

2.5 Subproject Impact Area

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

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

While determining the impact area, the compliance of environmental impacts with Subproject standards has been checked. Since environmental impacts are expected to have an effect of approximately 65 meters, a buffer zone was determined according to this distance. The neighbourhoods affected by the Subproject were taken as basis in the social impact area.

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

The Area of Influence (AoI) refers to the geographical area where the Subproject may cause direct and indirect environmental impacts (e.g., noise, vibration, air quality, water, biodiversity), while the Social Area of Influence (SAoI) covers the zones where social impacts may occur, including access restrictions, traffic disruptions, impacts on livelihoods, and cultural heritage. The environmental and social impact area map of the Subproject is presented in Figure 3.

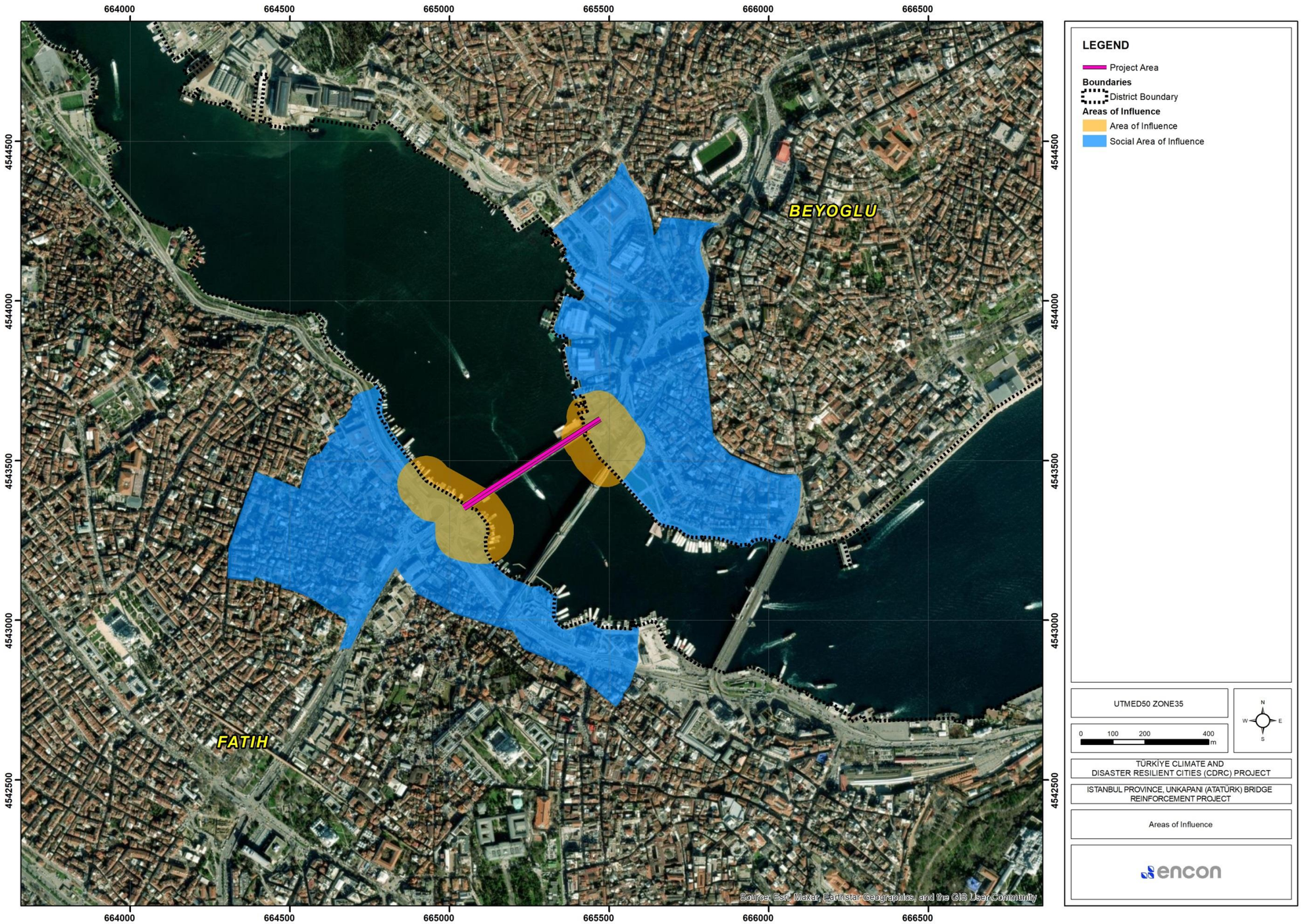


Figure 3 Environmental and Social Area of Influence

2.6 Environmental and Social Baseline

This section provides a comprehensive overview of the existing environmental and social environment, including natural resources, ecosystems, infrastructure and community dynamics, to understand the Subproject baseline. The baseline conditions help identify any weaknesses or vulnerabilities in the Subproject area.

On 6 March 2025, a site visit was carried out jointly by the environmental and social specialists. The assessment is primarily based on direct observations from this visit, complemented by desktop studies and information obtained from the İstanbul Metropolitan Municipality (IMM) and other stakeholders. In addition, dedicated reviews were conducted to strengthen the baseline, including:

- Environmental observations by environmental expert,
- Biodiversity assessment based on secondary data sources, literature review, and previous site surveys carried out in the same region by biodiversity expert
- Community and stakeholder interviews with local headmen and affected community members in June 2025 by social expert;
- Supplementary social observations carried out alongside stakeholder engagement activities in June 2025 by social expert.

During site recon survey, below people have been interviewed as given in Table 3:

Table 3 Site recon survey, people interviewed

No	Name	Stakeholder
1	Utkan Çorbacıoğlu	IMM, Teknik Mühendislik
2	Şeymanur Yıldırım	IMM, Teknik Mühendislik
3	The tenant of Dosthane Cafe	Dosthane Cafe
4	Mobile Fisherman	Dosthane Cafe

2.6.1 Physical Environment

2.6.1.1 Topography

The Unkapanı (Atatürk) Bridge is a crucial transportation structure connecting the Fatih and Beyoğlu districts on the European side of Istanbul. Spanning the waters of the Golden Horn, this bridge provides an uninterrupted link between the city's historical and commercial centers. It was designed to accommodate the distinct topographical features of both shores. The Fatih side has relatively flat terrain, offering easy access to commercial hubs like Eminönü, whereas the Beyoğlu side has a steeper slope, making the bridge a vital passage for facilitating transportation in the area.

The location of the bridge was carefully chosen to align with the natural structure of the Golden Horn, ensuring smooth traffic flow between the two shores. Its position at a narrow and winding section of the Golden Horn enhances its strategic importance, making it a crucial part of the city's road network. In addition to supporting daily urban transportation, the bridge plays a vital role in sustaining commercial and economic activities.

An analysis of the region's topography reveals that the bridge is surrounded by steep slopes, particularly on the western side, while the northern part, where the historical peninsula is located, has a relatively flatter landscape. This difference has been taken into account during the bridge's design to optimize pedestrian and vehicle traffic flow. The Unkapanı (Atatürk) Bridge remains a significant crossing point that integrates Istanbul’s historical, cultural, and economic fabric.

2.6.1.2 Geology

Drilling studies conducted in the southern Bosphorus, and the Golden Horn indicate that the region has undergone significant morphological transformations due to young tectonic movements. The resulting Holocene-period sediments are widely distributed across both the Golden Horn and the Bosphorus, forming laterally and vertically interbedded layers. While the Golden Horn bottom sediments suggest a relatively calm depositional environment, the upper layers of the Bosphorus sediments indicate a high-energy environment.

The geological structure of the Subproject area consists of several distinct formations:

- Thrace Formation (Ct): Comprising alternating sandstone, siltstone, shale, and conglomerates, this formation contains limestone intercalations and lenses in its lower sections. It is widespread from the European side of the Bosphorus to the Çekmece Lakes and has been extensively studied since the early 1900s under the name "Thrace Series." Within the Subproject area, the Kartaltepe Member is predominant, characterized by claystone and shale layers, which exhibit varying colors from dark ash to yellowish gray, with moderate hardness and strength.
- Volcanic Intrusion (Diabase): This unit represents Upper Cretaceous volcanic activity, observed as diabase and andesite intrusions within Paleozoic sequences throughout Istanbul. In the study area, it is associated with the Thrace Formation, indicating past magmatic events.
- Kuşdili Formation (Qkş): Found in the downstream sections of major rivers, this formation consists of clayey sand and silt deposits, with thicknesses reaching 70-80 meters in certain areas. It is predominantly observed in Kadıköy (Kurbağalı Creek), Küçüksu, and the Ayamama Stream basin. The formation contains organic-rich estuarine sediments, quartz, and mollusk shell fragments, indicating past coastal and estuarine influences.
- Alluvium (Alluvium): These recent sedimentary deposits develop along river valleys and the plains overlying the Kuşdili Formation. In Ayamama Stream and the Golden Horn, alluvium

consists of fine-grained sand-silt layers, while in steep coastal streams, the deposits are gravelly and blocky, reflecting high-energy erosion processes.

- Beach Sand (Qpk): Found along the Black Sea coastline and estuarine areas, these deposits consist of poorly sorted, coarse, and pebbly sands. Within the Subproject area, thin marine sand layers have been observed in shallow depositional environments.
- Old - Ancient Fill (Qad): These anthropogenic deposits consist of peat-rich plant remains, bone fragments, brick pieces, and modern shells, forming layers up to 15-20 meters thick. The unit is typically black to dark gray, loosely compacted, and sandy-gravelly in texture, indicating past human activities and depositional influences in the region.

2.6.1.3 Tectonics and Seismicity

Istanbul is located in a geologically complex region due to tectonic activity. The North Anatolian Fault Zone is only a few kilometers from the city center (see Figure 4). The area reflects the influence of multiple and diverse tectonic movements that occurred between the Carboniferous and Neogene periods. These movements caused the geological structures of the region to fold, fracture, and tilt through various mountain-building (orogenic) processes.

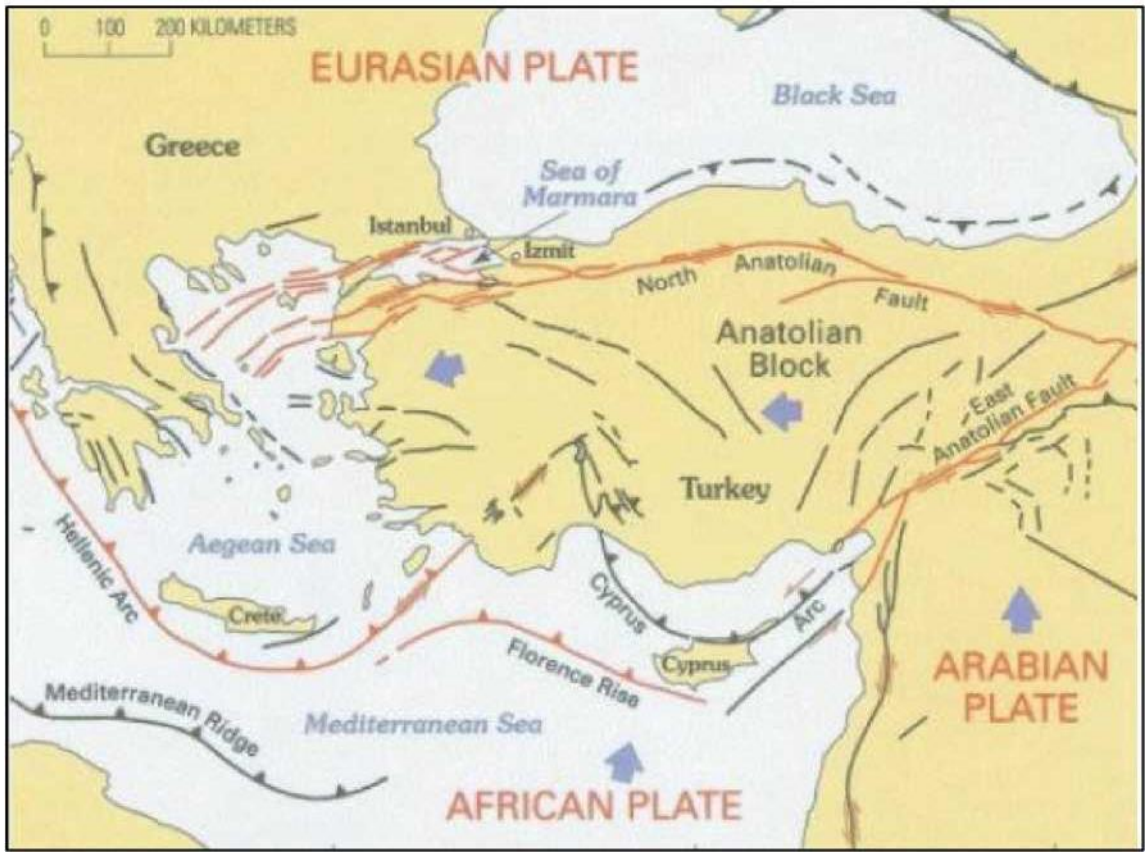


Figure 4 Tectonic Map of Türkiye
Source: Istanbul Province, Atatürk (Gazi) Bridge Reinforcement Project Feasibility Study Report, 2024

The presence of numerous slip faults throughout Istanbul—particularly on the Anatolian side—has long been recognized and studied. In areas where Paleozoic-aged rock formations are exposed, a notable concentration of faults with varying orientations (E-W, N-S, NE-SW, and NW-SE) is observed. These faults, visible in excavations, natural slopes, or detected through mapping contact

lines and structural boundaries, range from small-scale fractures to extensive regional faults stretching over kilometers. As highlighted on the geological map, there is a high density of vertical or steeply inclined faults trending NE-SW and NW-SE.

These discontinuities, including faults and joints, are believed to have formed due to compressional forces-oriented N-S during the Oligocene epoch. Furthermore, the region's main rivers—such as Alibey Creek, Kağıthane Creek, Riva Creek, tributaries of the Ömerli Dam, the Bosphorus, and the Golden Horn—exhibit a pronounced zigzag coastal morphology. This sharp, angular pattern, especially evident along both shores of the Bosphorus, aligns with NE-SW and NW-SE directions. Such morphological features likely developed as these water bodies followed pre-existing zones of weakness in the bedrock, such as faults and joints, along ancient river valleys.[5]

Istanbul is at risk of earthquakes, especially due to its proximity to the North Anatolian Fault Line. Istanbul has been impacted by numerous historical earthquakes, resulting in significant damage. Earthquakes that caused substantial loss of life and property in the Istanbul province are categorized by their date and intensity (Figure 5) and are displayed on the active fault maps of the Marmara Sea in Figure 6.

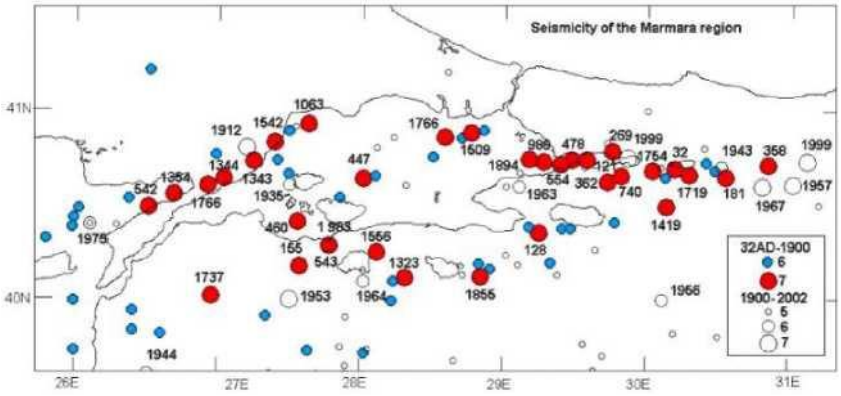


Figure 5. Seismicity of the Marmara Region
Source: Istanbul Province, Atatürk (Gazi) Bridge Reinforcement Project Feasibility Study Report, October 2024

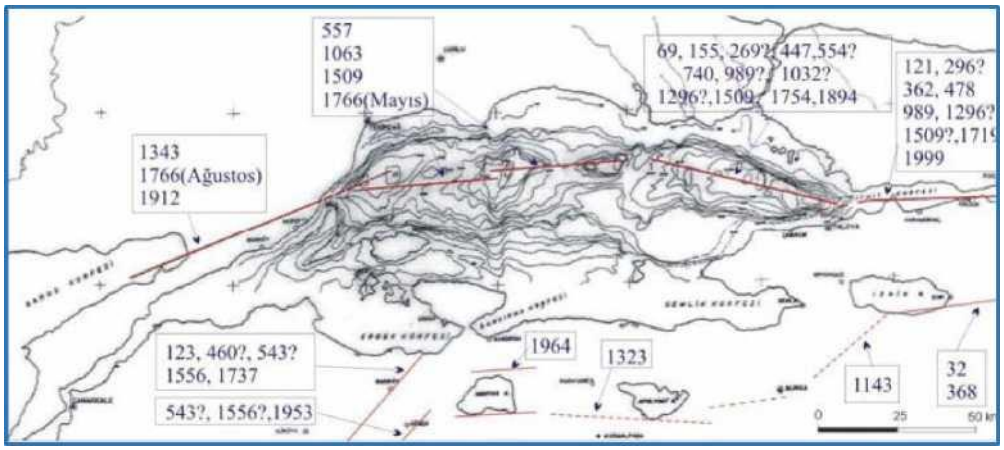


Figure 6. Active Faults and Earthquakes in the Marmara Sea and Surroundings, Date, Magnitude and Location
Source: Istanbul Province, Atatürk (Gazi) Bridge Reinforcement Project Feasibility Study Report, October 2024

[5] *This information is sourced from the "Istanbul Province, Atatürk (Gazi) Bridge Reinforcement Project Feasibility Study Report*

Different researchers have provided various definitions for the section of the North Anatolian Fault Zone within the Marmara Sea, based on data collected by the Le Suroit ship in 2001. The southern parts of Istanbul are particularly at risk of a major earthquake. As one moves from south to north, the earthquake risk in the Marmara region decreases due to the presence of faults and weaker rock and soil lithology. The earthquake risk map shown in general (see Figure 7) does not include specific details for local regions.

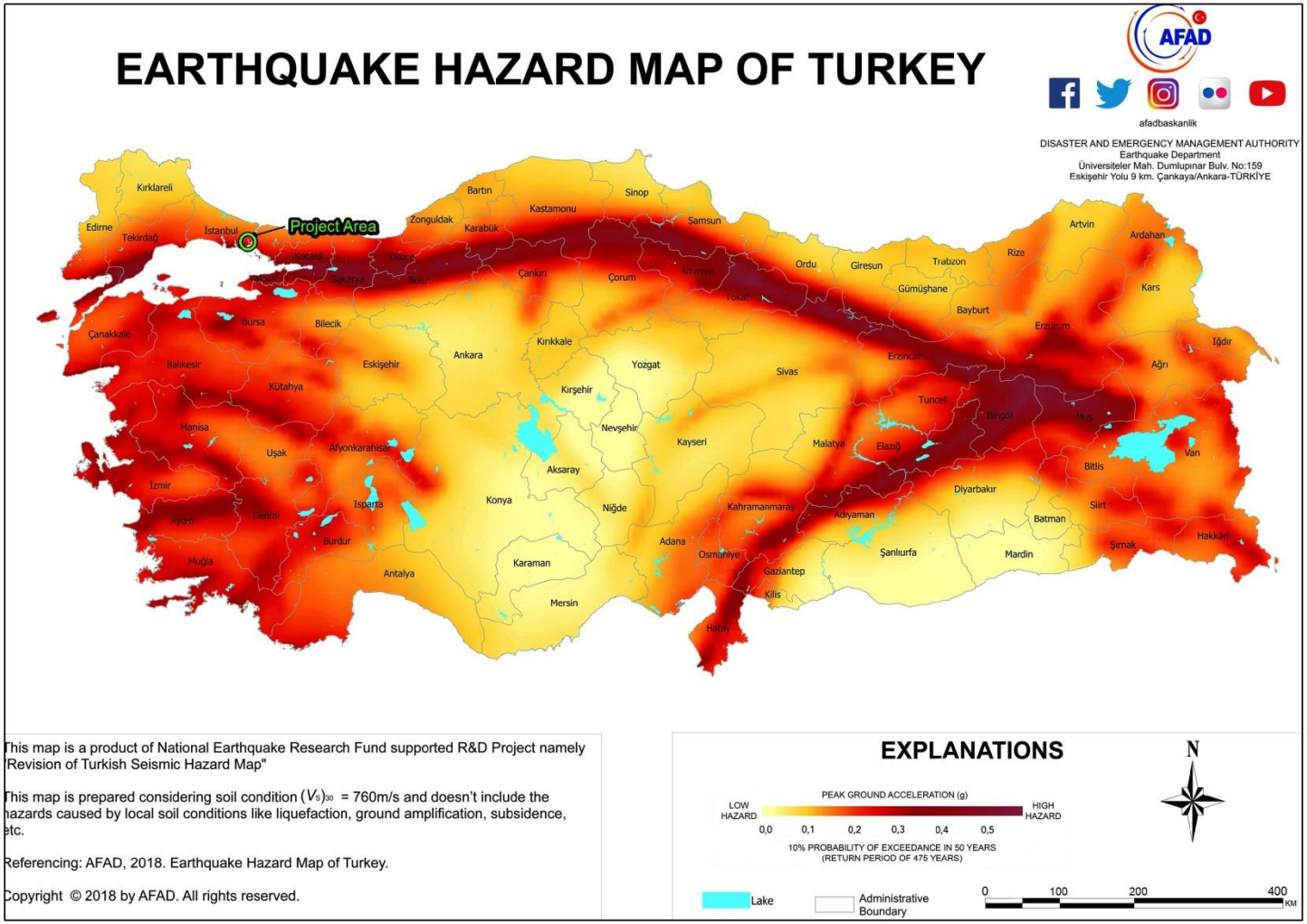


Figure 7. Istanbul Earthquake Risk Map (AFAD)
Source: Istanbul Province, Atatürk (Gazi) Bridge Reinforcement Project Feasibility Study Report, October 2024

2.6.1.4 Soil and Land Composition

According to the İstanbul Province Atatürk (Gazi) Bridge Reinforcement Project Feasibility Study Report (October, 2024), the local soil classification for the Subproject site has been identified as ZF based on site specific geotechnical investigations. (as per Table 4). This classification reflects the high liquefaction susceptibility of silty and sandy soils and the presence of a shallow groundwater table, both of which pose significant risks in the event of seismic activity.

The ZF classification is directly relevant to the Subproject site and provides essential input for the seismic design spectrum in accordance with the Turkish Seismic Code. These findings inform the structural reinforcement approach as well as environmental risk considerations within this ESMP.

Table 4 Local Soil Classes (TBER, 2018)[67]

Local Soil Class	Soil Type	Average in the upper 30 meters		
		(ü $_s$) $_{30}$ [m/s]	[impact /30 cm]	(Al)îû [kPa]
ZA	Solid, hard rocks	> 1500	-	-
ZB	Slightly weathered, moderately strong rocks	760-1500	-	-
ZC	Very dense sand, gravel and hard clay layers or weak, weathered, heavily fractured rocks	360-760	>50	>250
ZD	Medium dense - dense sand, gravel or very solid clay layers	180-360	15 50	70-250
ZE	Loose sand. gravel or soft - solid clay layers or clay layer ($c_{u)}$ thicker than 3 meters in total, satisfying the conditions *PI* > 20 and *w* > 40% Profiles containing (< 25 kPa)	< 180	< 15	<70
ZF	Soils requiring special investigation and assessment for seismic conditions: 1) Soils with potential settlement and collapse risk under earthquake effects (liquefiable soils, highly sensitive clays, weakly cemented collapsible soils, etc.), 2) Peat and/or clays with high organic content with a total thickness exceeding 3 meters, 3) High-plasticity clays (PI >50) with a total thickness exceeding 8 meters, 4) Very thick (> 35 m) soft or medium-stiff clays.			

The DD-2 Earthquake Ground Motion represents an infrequent seismic event, with a 10% probability of exceedance in 50 years and a recurrence period of 475 years. For the Unkapanı (Atatürk) Bridge, classified as an Importance Category 1: Important Bridge, this ground motion level is a crucial parameter for evaluating seismic performance and ensuring compliance with Türkiye Building Earthquake Regulation (TBER 2018) This level of ground motion is also referred to as the standard design earthquake ground motion.

According to the Türkiye Earthquake Hazard Map, the expected peak ground acceleration (PGA) at the rock outcrop for Earthquake Ground Motion Level - 2 (DD-2) in the study area has been determined as 0.382 g. The short-period design spectral acceleration coefficient (SDS) is calculated based on the local soil classification. Taking into account the site-specific soil conditions, the maximum expected ground acceleration (PGA_ground) is computed as:

$$\mathbf{PGA_{ground}} = 0.4 \times SDS = 0.4 \times 1.049 = 0.4196g$$

[6] *Türkiye Building Earthquake Regulation, Official Gazette No. 30364 dated 18.03.2018*

The PGA over rock (0.382 g) shows how the foundation rock unit will move during an earthquake, while the PGA over ground (0.4196 g) reveals that local ground conditions amplify earthquake waves. This difference clearly shows the ground's amplification effect on seismic waves. That is, the silty-sandy ground in the region can create more movement during an earthquake compared to rocky ground.

2.6.1.5 Meteorology and Climatic Characteristics

Istanbul's climate is transitional; it generally has a mild Marmara climate. However, as it is a transition point between the Black Sea and Mediterranean climates, variable weather conditions can occur. There can be significant differences in temperature and precipitation even in different parts of the city. For example, the Black Sea coast can be cooler and wetter, while the inland areas can be warmer. Long-term measurement results of temperature, precipitation and sunshine duration are given in Table 5.

Table 5 İstanbul Province Annual Temperature Measurements

İstanbul	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Measurement Period (1950 - 2023)													
Average Temperature (°C)	6.7	6.9	8.4	12.8	17.6	22.2	24.6	24.7	21.2	16.7	12.6	8.9	15.3
Average Highest Temperature (°C)	9.6	10.2	12.3	17.3	22.2	26.9	29.6	29.6	25.9	20.6	16.0	11.8	19.3
Average Lowest Temperature (°C)	4.2	4.2	5.4	9.2	13.6	18.0	20.4	20.7	17.6	13.7	9.8	6.4	11.9
Average Sunshine Duration (hours)	3.1	1.5	4.1	5.2	6.2	7.5	7.7	8.6	6.7	3.9	3.6	2.5	5
Average Number of Rainy Days	16.53	14.19	12.80	10.30	7.66	5.60	3.56	3.64	5.56	9.56	11.49	15.66	116.5
Monthly Average Total Precipitation (mm)	88.6	71.3	63.3	48.5	32.8	27.9	22.2	24.3	40.0	66.2	78.8	98.6	662.5
Measurement Period (1950 - 2023)													
Maximum Temperature (°C)	22.4	23.4	28.6	33.3	36.4	38.9	40.6	40.1	39.6	33.5	29.6	25.0	40.6
Minimum Temperature (°C)	-6.8	-9.0	-5.6	0.2	4.8	9.8	13.6	14.3	7.7	2.5	-2.0	-4.2	-9

Source: *General Directorate of Meteorology, Official Website*

The annual average temperature in Istanbul is 15.3°C, with the coldest months being January and February and the warmest months being July and August. The average annual sunshine duration is 5 hours per day, with the longest sunshine duration observed in July and August, and the shortest in December and February.

The average annual total precipitation is 662.5 mm, with the highest monthly average recorded in December and the lowest in July Rainfall is more frequent in winter, with the highest number of rainy days occurring in January and December, whereas the driest months are July and August.

2.6.1.6 Air Quality

National Air Quality Monitoring Network is carried out by the Ministry of Environment, Urbanization and Climate Change, General Directorate of Environmental Impact Assessment Permit and Inspection, Environmental Reference Laboratory Department. This network provides data from Air Quality Monitoring Points in Türkiye. In order to evaluate baseline of air quality, the average of daily concentration measurements was taken from İstanbul Çatladıkapı Air Quality Measurement station. The average of one year measurement results was taken from the Air Quality Monitoring Station between March 1, 2024, and March 1, 2025. Çatladıkapı Air Quality Measurement Station was chosen because it is the closest station to the Subproject area, and it is the station that will best convey the baseline conditions. The station is 3 km away from the Subproject Area. The map showing the station and project area is presented in Figure 8.

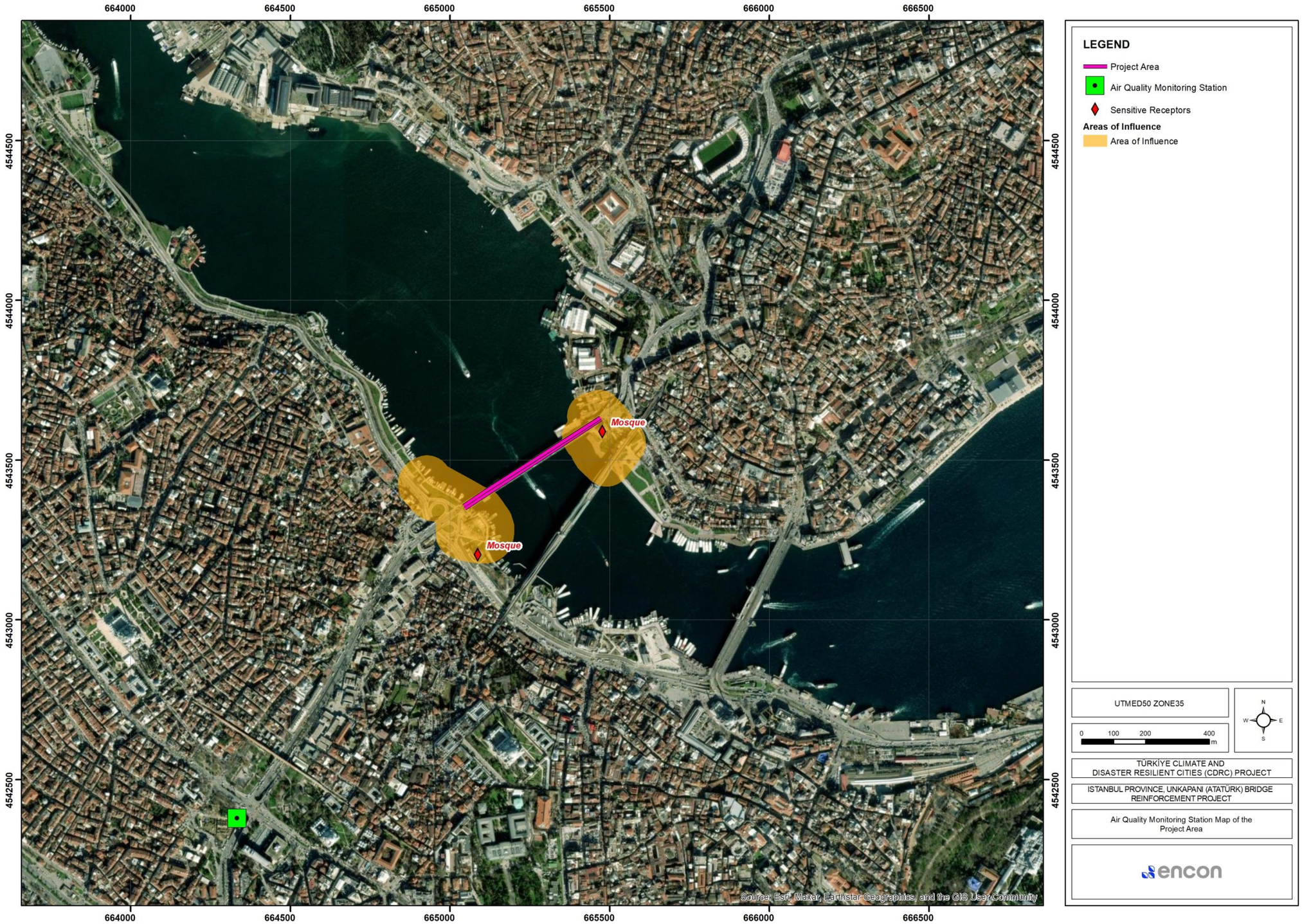


Figure 8 Air Quality Monitoring Station

Since the Subproject area is within the city, there are many sources that produce air emissions. However, when air quality measurements in the region are analyzed, the results are generally below the limit values. Since the project is to improve the bridge piers in Unkapanı and Azapkapı districts, the schools, mosques and cafes located near the bridge in these districts have been defined as sensitive receptors.

An assessment of the region's baseline air quality indicates that the measured parameters remain below both the national regulatory limits and the thresholds established by the World Bank ESS-3 standard.

Table 6 Air Quality Measurements Result[8]

Parameter	Averaging Period	WHO Ambient Air Quality Guidelines ($\mu g/m^3$)	Regulation on the Assessment and Management of Air Quality Limit Value in $\mu g/m^3$	Air Measurement Station
PM_{10}	24-Hour	50	50	24.55
	Annually	20	40	
PM2.5	24-Hour	25		17.6
	Annually	10		
SO_2	24-Hour	50	125	-
	Annually	20	20	
CO	8 hours	4000	-	608.5
	Annually	-	10,000	
NO_2	24-Hour	40	40	19.96
	10-Minute	200		
O_3	8 hours	100	120	25.41

When the baseline conditions of the Subproject area are evaluated, it is observed that it generally remains below the limit values.

2.6.1.7 Noise

The Unkapanı (Atatürk) Bridge is a key transportation structure connecting the Fatih and Beyoğlu districts over the Golden Horn. The bridge is located in a densely populated urban area with mixed residential, commercial, and industrial land uses, leading to high background noise levels primarily influenced by road traffic and human activities. Since the project is to improve the bridge piers in Unkapanı and Azapkapı districts, the schools, mosques and cafes located near the bridge in these districts have been defined as sensitive receptors.

Environmental noise in Türkiye is regulated by the Regulation on Environmental Noise Control (RENC), published in the Official Gazette dated 30.11.2022 and numbered 32029. This regulation aims to prevent disturbances and ensure the physical and mental well-being of individuals exposed to environmental noise. It sets requirements for noise mapping, acoustic reporting, noise exposure assessment, and action plans to mitigate negative impacts.

The environmental noise limit values presented in Table 7.

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

Table 7 Environmental Noise Limit Values

Noise Source	Measured Parameter	L_{dav} (dBA)	$L_{evening}$ (dBA)	L_{night} (dBA)
Industrial plants, transportation resources	LA_{eq}, S_{min}	65	60	55
Workplaces	$LA_{eq\ 63\text{-}250\ Hz}$	Background + 5 dB(A)		Background +3 dB(A)
In case of multiple workplaces	LA_{eq}, S_{min}	Background + 7 dB(A)		Background +3 dB(A)
All resources	LC_{max}	100 dB(C)		

WBG General EHS Guidelines

Noise limit levels are described under, WBG General EHS Guidelines: Environmental Noise. The noise limit values are based on WHO Guidelines for Community Noise. WBG General EHS Guidelines requires that noise impacts should not exceed the levels presented in Table 8 or result in a maximum increase in background noise levels of 3 dB at the nearest receptor (such as Dosthane Café, Mosque) location off-site.

Table 8 Noise Level Guidelines of WBG General EHS Guidelines

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

Unkapanı (Atatürk) Bridge is located in a heavily trafficked urban area connecting Fatih and Beyoğlu districts. The surrounding environment consists of residential, commercial and industrial land uses, resulting in significant background noise levels.

No site-specific noise measurements have been carried out as part of this ESMP study, but various data has been collected from IMM's noise maps for the districts and the map of Fatih district has been reviewed. These data are shared below.

According to the information obtained from the Highway Strategic Noise Maps prepared by TÜBİTAK MAM, the noise levels on the Unkapanı (Atatürk) Bridge are between 70-75 dB during the day due to traffic density. Levels of 80 dB and above were recorded at the bridge exits and intersections. In the evening hours, as traffic decreases, a decrease is observed in noise levels. A decrease of up to 60-70 dB is observed on the bridge and its surroundings. Levels of 75 dB are observed at intersections. Traffic levels are very low at night and the noise level is at its lowest level. The bridge and its surroundings are generally 55-65 dB. A decrease below 50 dB is observed as moved away from the main roads. During the site visit, it has been observed that due to the gaps created by the settlement at the junctions on the bridge, more noise is produced when vehicles pass.

Table 9 Noise Levels by Time Periods (dB)

Time Period	Over the Bridge	Crossroads	Near Neighborhood (Settlement)
Daytime (07:00-19:00)	70-75 dB	80+ dB	65-70 dB
Evening (19:00-23:00)	65-70 dB	75 dB	60-65 dB
Night (23:00-07:00)	55-65 dB	65-70 dB	50-55 dB

Source: *Istanbul Metropolitan Municipality, Highway Strategic Noise Maps, 2024 (*https://cevre.ibb.istanbul/istanbul-geneli-gurultu-haritalari/#tab-id-1*)*

2.6.1.8 Water Resources

There are no large-capacity rivers within the provincial borders of Istanbul. However, there are various streams that either flow into the sea or feed lakes and reservoirs used for drinking and domestic water supply. Due to their low and irregular flow rates, these streams are not suitable for activities such as transportation, shipping, or water sports. Some of them completely dry up during the summer, while others may cause floods following heavy rainfall in spring.

The Istanbul Water and Sewerage Administration (İSKİ) utilizes different water basins on both the European and Asian sides of the city to meet Istanbul's water demand. In total, there are seven major water collection basins supplying drinking water, four of which are located on the European side: Alibey, Terkos, Sazlıdere, and Büyükçekmece Reservoirs.

Since Fatih and Beyoğlu districts are located on the European side of Istanbul, their water supply primarily comes from Terkos, Büyükçekmece, and Melen basins. The Melen System is a critical resource, particularly during dry periods, ensuring water supply to Istanbul. Although it primarily serves the Asian side, it can also supplement the European side when necessary.

The Golden Horn is a key estuarine water body hydraulically connected to the Marmara Sea, located approximately 1.8 km downstream of the Subproject area. The project area is situated at the transition zone of the estuary where tidal exchange and urban runoff influence water quality and hydrodynamics exist. Although there are no direct freshwater inflow points within the immediate Project footprint, the Area of Influence covers the estuarine segment that receives surface water from upstream catchments and discharges towards the Marmara Sea. The Water Resources Map presented in Figure 9.

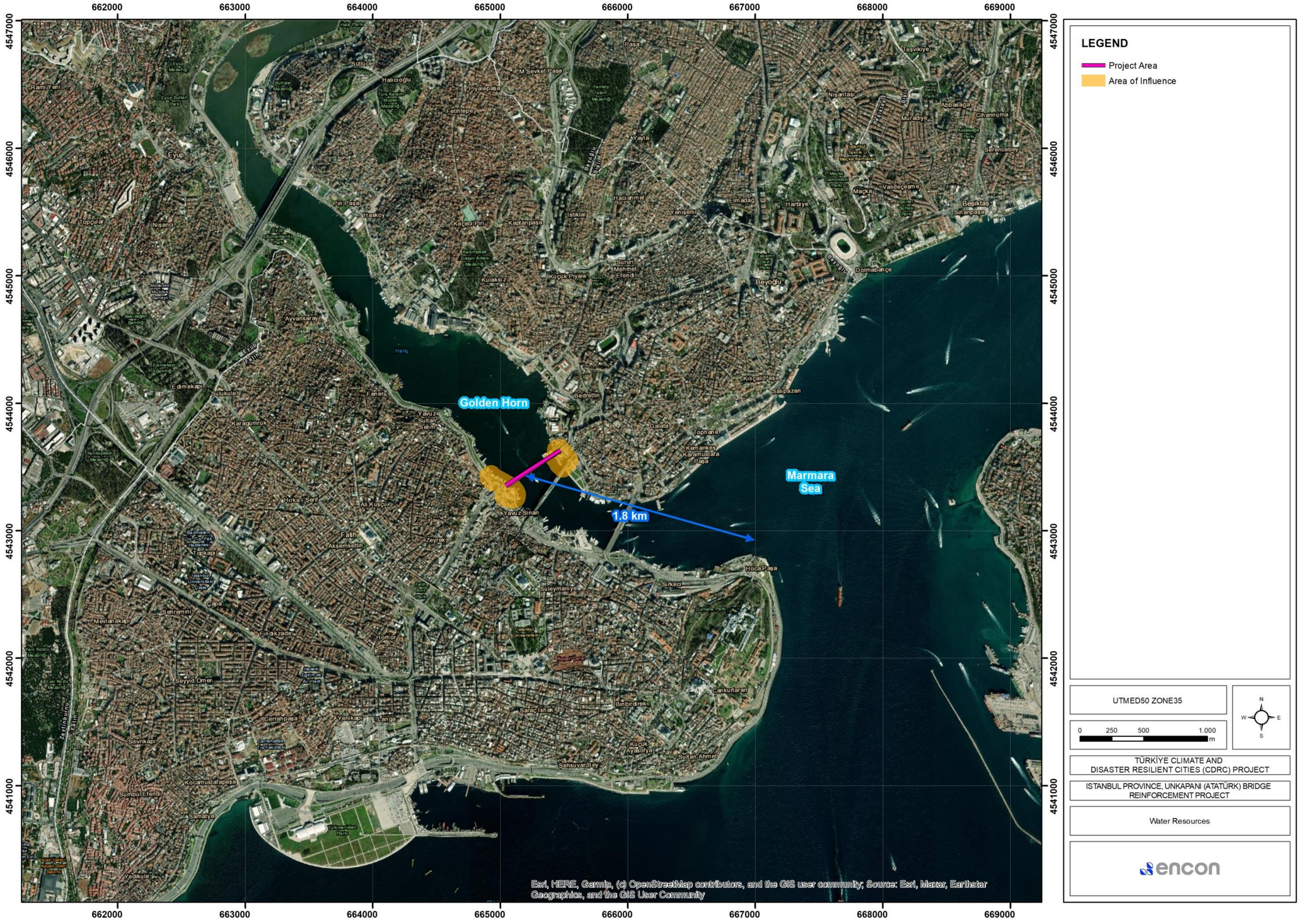


Figure 9 Water Resources

2.6.1.9 Solid Waste Management

Solid waste management in the Fatih and Beyoğlu districts of Istanbul is overseen by the Istanbul Metropolitan Municipality (IMM), which operates a structured system for waste collection, recycling, and disposal. The process begins with the regular collection of household waste, following schedules established by IMM. The collected waste in Fatih is transported to the Baruthane and Yenibosna transfer stations within the district. These stations serve as the first step in the transportation process, where waste is transferred into larger trucks that then direct it to Istanbul's primary solid waste disposal facilities.

Once at the disposal facilities, such as the Odayeri and Kömürcüoda regular storage areas, the waste is stored and processed. These two locations are the largest solid waste disposal facilities in the city. While waste is stored here, the facilities also employ a methane gas recovery system that converts waste into energy, helping to reduce the environmental impact of waste disposal and contributing to sustainable energy production. The Odayeri Landfill on Istanbul's European side is no longer operational as a landfill. It has been converted into a waste-to-energy facility, which processes landfill gas to generate electricity. The facility has a capacity of 50 MW/h, sufficient to supply electricity for approximately 200,000 families. Currently, the Seğmen Landfill, located in the Silivri district, serves as Istanbul's primary active landfill. It is managed by İSTAÇ, a subsidiary of the Istanbul Metropolitan Municipality. This facility handles a significant portion of the city's municipal solid waste.

Recycling is a crucial component of waste management in both districts. IMM and district municipalities have placed recycling bins in various locations to encourage citizens to separate their recyclable materials. However, waste collectors, particularly those focused on paper recycling, also play an important role in the recycling process, ensuring that materials are properly sorted before being sent to licensed recycling facilities. In addition to these efforts, IMM has set up Mobile Waste Collection Centers and Neighborhood Recycling Points, allowing residents to actively participate in waste sorting. Among the important facilities dedicated to recycling, the IMM's Waste Recycling and Compost Facility in Işıklar, Kemerburgaz stands out as a major sorting center.

The management of excavation waste in Istanbul is carried out comprehensively by the Istanbul Metropolitan Municipality (İBB) and its affiliated organizations, in line with environmental protection and sustainability principles. Excavation waste refers to materials such as soil, rocks, concrete, bricks, metals, and other debris resulting from construction, demolition, excavation, and filling activities. The management of this waste is crucial for preventing environmental pollution and conserving natural resources. Organisations involved in excavation waste activities in Istanbul are required to obtain an Excavation Soil and Construction/Demolition Waste Transportation and Acceptance Permit. This document is a legal requirement for the transportation and disposal of these wastes. Applications are submitted to the Istanbul Environmental Protection and Control Department, and necessary documents include vehicle details and compliance with the Vehicle Tracking System. Waste is transported by licensed waste management companies to designated disposal sites. These sites are specially designed to prevent environmental contamination. Various facilities in Istanbul accept excavation waste, including recycling and disposal areas. The nearest IMM landfill for excavation waste from the Unkapanı (Atatürk) Bridge construction site is the İSTAÇ Northern Istanbul Excavation Waste Disposal Site located in the Eyüp district. This facility is managed by İSTAÇ, a subsidiary of İBB, and is designed for the disposal of construction and demolition waste. The İSTAÇ Northern Istanbul Excavation Waste Disposal Site accepts excavation soil, construction debris, and similar materials. These wastes are processed and stored in compliance with environmental regulations.

Through these measures, IMM and local municipalities in Fatih and Beyoğlu strive to manage solid waste effectively, balancing waste collection, disposal, and recycling efforts while contributing to environmental sustainability.

2.6.1.10 Natural Hazards (such as flooding, landslides, fire)

The Subproject site is located along the Golden Horn (Haliç) shoreline and involves bridge and over-water construction activities. Based on site-specific assessments and historical data, the primary natural hazards relevant to the Subproject include:

Flooding: The Subproject area may experience localized flooding during extreme rainfall events or high sea levels. Hydrological assessments and historical records indicate that such events are infrequent, and the Subproject design incorporates drainage and structural measures to minimize flood-related risks.

Landslides: Given that the construction is largely on reinforced embankments and bridge foundations rather than steep slopes, the risk of landslides is considered negligible. Geotechnical studies confirm ground stability under current and projected conditions.

Fire: While fire risk is generally low in marine and bridge construction areas, potential sources include construction machinery, electrical systems, and temporary storage of combustible materials. Standard fire prevention measures, including emergency response plans, fire extinguishers, and staff training, are integrated into the Subproject's Environmental, Health, and Safety (EHS) procedures.

Overall, the likelihood of occurrence for these natural hazards is low to medium, and the Subproject design and operational procedures incorporate mitigation measures to minimize potential impacts on personnel, infrastructure, and the surrounding environment.

2.6.2 Biodiversity

Assessing biodiversity in the Subproject Area of Influence is essential to identify potential risks to species, habitats, and ecosystem services from construction activities such as pile driving, demolition, and marine works. Even in urbanized and modified environments, ecological communities may retain important functions that could be affected by such works.

The scope of works for the Subproject includes both terrestrial and marine interventions. Terrestrial activities comprise partial demolition of deteriorated structural elements, strengthening of bridge piers, renewal of the superstructure with new steel components, and improvements to operational facilities such as administrative and control buildings, maintenance areas, pedestrian access points, and upgraded lighting and security systems. Marine works will initially include demolition for the bridge foundations, lasting approximately 20 days, followed by sheet piling works, both completed within a total of 50 days. Subsequently, additional marine activities will include construction of rock-based fortifications behind the sheet piles, anchoring of pontoons using a chain and anchor system, and installation of a new bridge joint system. Once these marine works are completed, all remaining construction including reinforcement/replacement of bridge pier elements will be carried out on the terrestrial side, with no further interaction with the marine ecosystem.

Considering this sequence and the limited duration of marine activities, biodiversity impacts have been assessed for both terrestrial and aquatic ecosystems within the Subproject Area of Influence. The baseline was established through a combination of desk-based studies and existing field survey data previously collected for a related project in March, June, and September 2022–2023 by qualified ecologists and aquatic biodiversity experts. These data provide a representative understanding of current terrestrial and aquatic ecological conditions, forming the basis for the assessment of potential impacts. This evaluation aligns with national legislation and ESS6, and supports the identification of proportionate mitigation and monitoring measures to minimize potential adverse effects.

Regular monitoring results will be reported annually to identify potential changes or trends in biodiversity parameters.

2.6.2.1 Legally Protected and Internationally Recognized Areas

The Golden Horn, situated in the historic center of Istanbul, is not officially designated as a national park, natural reserve, or special environmental protection area under current Turkish environmental legislation. However, it lies adjacent to several urban conservation zones and registered cultural heritage areas, particularly within the Fatih and Beyoğlu districts, which are protected under national laws concerning the preservation of cultural and historical assets.

Following the mucilage crisis in 2021, the Marmara Sea and its coastal zones have been designated as Sensitive Water Bodies under the Regulation on Identification of Sensitive Water Bodies and the Improvement of Water Quality (Official Gazette No. 29927, repeated, dated 23.12.2016). Therefore, the project activities will be assessed considering potential indirect impacts on the Marmara Sea's water quality. However, as per the current project design, no dredging activities are planned in the Golden Horn, minimizing the risk of significant impacts on the sensitive water body status of the Marmara Sea.

Although dredging is not included in the current project design, marine-side construction activities will involve pile driving, partial demolition of deteriorated elements, and reinforcement or replacement of bridge pier components located within the Golden Horn. In addition, equipment and vessels operating over the water may present risks such as underwater noise, sediment resuspension, turbidity, accidental spills or leakages, and falling debris. These activities represent direct potential impacts on the aquatic environment and sensitive water body status of the Marmara Sea and are therefore explicitly evaluated in the impact assessment (see Section 4.2).

To address these risks, mitigation and monitoring measures will be implemented, including (i) deployment of silt curtains and debris nets to contain turbidity and materials, (ii) daily inspection of marine equipment with spill-prevention kits staged on site, (iii) scheduling of pile driving and demolition to avoid peak fish breeding periods, (iv) use of noise attenuation techniques where feasible, and (v) monitoring of water quality and aquatic receptors during marine works. With these controls in place, the residual risk is expected to be temporary, localized, and manageable.

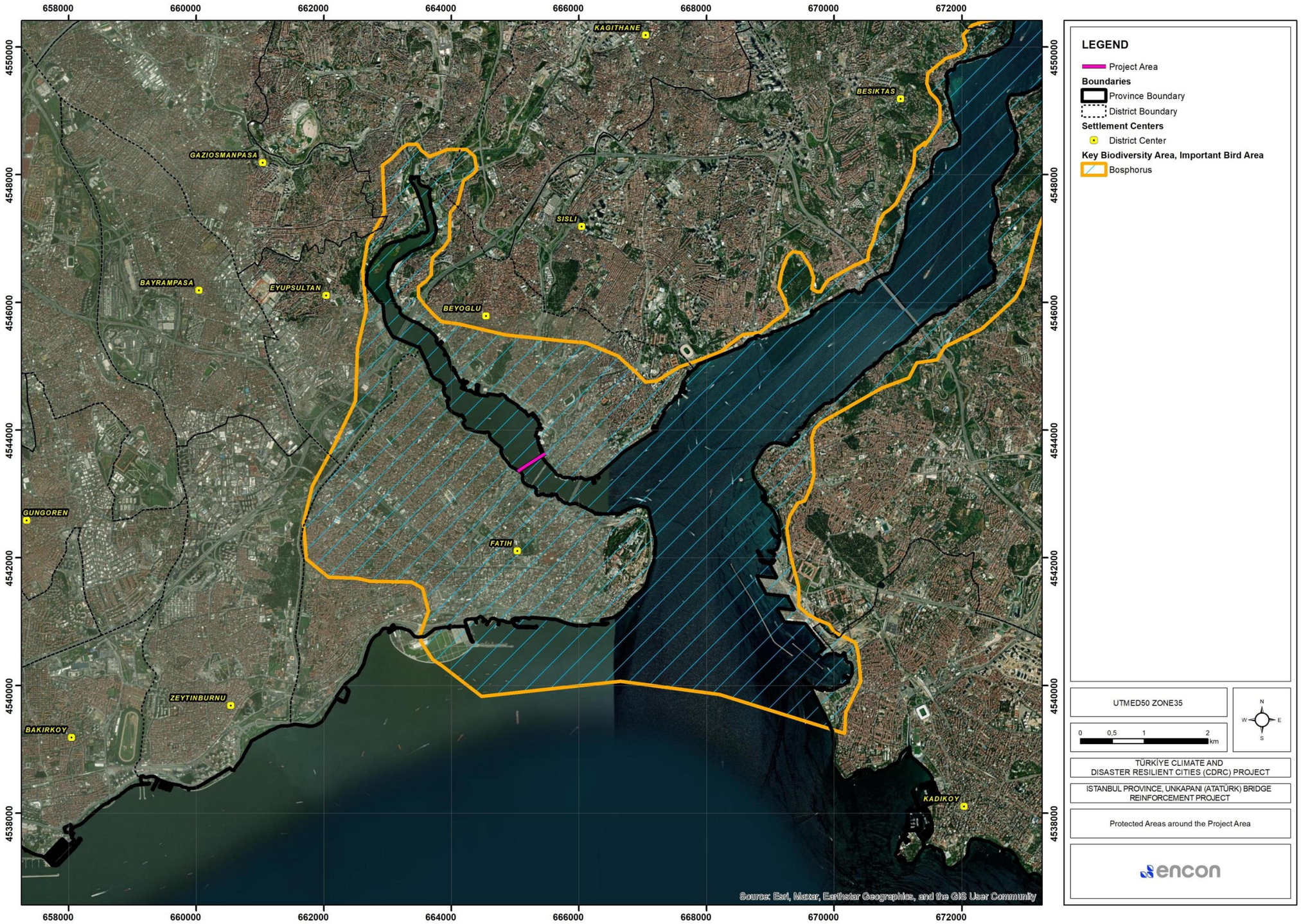


Figure 10 Internationally Recognised Areas

While the Golden Horn itself is not listed as a Ramsar Site, UNESCO World Heritage Site, or part of the Natura 2000 network, its surroundings fall within the UNESCO World Heritage buffer zone designated for the Historic Areas of Istanbul, which includes the city's peninsula and its surrounding water bodies. UNESCO World Heritage Map presented in Figure 10.

In terms of internationally recognized ecological importance, the Golden Horn is not classified as an Important Bird Area (IBA) or Key Biodiversity Area (KBA) by global conservation organizations.

2.6.2.2 Habitats

The Golden Horn, a historic estuarine inlet located in the heart of Istanbul, represents a transitional aquatic ecosystem characterized by varying salinity gradients, sediment types, and biological communities. Based on its geomorphological features, hydrological conditions, and faunal composition, the Golden Horn corresponds primarily to the EUNIS habitat type A2.31 - Polychaete/bivalve-dominated mid estuarine mud shores.

This classification includes fine sediments like silt and clay, forming mudflats in calm, sheltered estuary areas. These often have an anoxic layer below the surface due to high organic content and low oxygen diffusion.

The project Area of Influence (AoI) on the land side is located in a highly urbanized environment in central Istanbul, characterized by built-up areas, paved surfaces, road infrastructure, and urban parks along the coastal promenade. The dominant land cover consists of urban green spaces with ornamental vegetation, some scattered trees, and lawn areas, particularly along the coastal park areas near the bridge. No natural terrestrial habitats of high ecological value, protected areas, or significant biodiversity hotspots are present within the immediate vicinity of the project footprint. However, urban green areas contribute to local biodiversity by providing habitat for common urban bird species (e.g. pigeons, sparrows, magpies), small mammals (e.g. rodents), and invertebrates. The planned works will not involve removal of trees or excavation in green areas, thus no significant impact on terrestrial ecosystems is anticipated. Relevant management measures are provided in Section 4.2.

The Golden Horn (Haliç), a semi-enclosed estuarine system receiving input from the Alibey and Kağıthane streams, represents a brackish, eutrophic urban estuary. It has undergone substantial environmental transformation due to historical industrial discharge, eutrophication, and subsequent restoration efforts since the 1990s (Yilmaz et al., 2006; Balkis et al., 2010). Freshwater ınputs from tributaries and surface runoff map is presented in Figure 11.

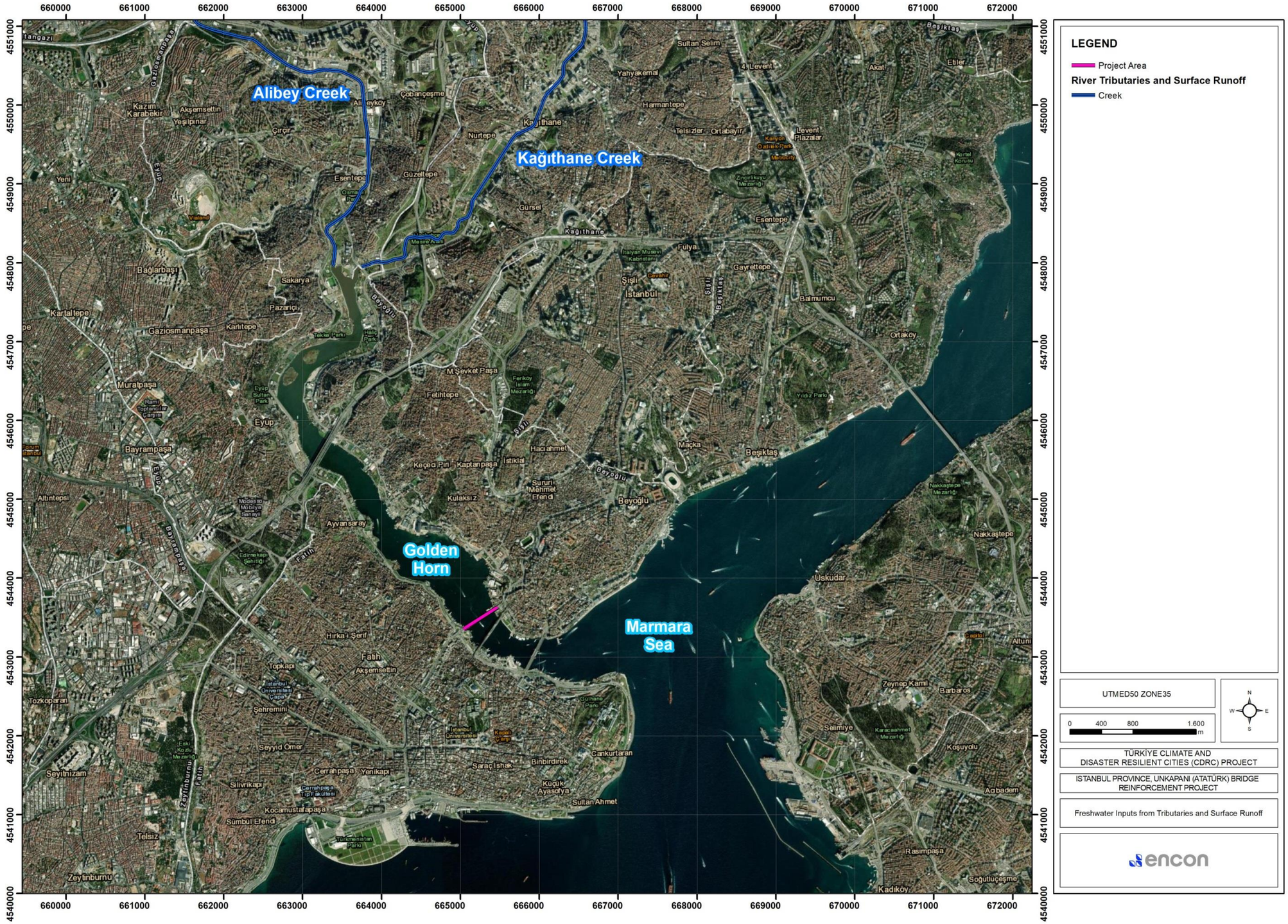


Figure 11 Freshwater Inputs from Tributaries and Surface Runoff

Today, based on sediment granulometry, benthic macrofauna composition, and water salinity patterns, the inner estuary segment where the Unkapanı Bridge is located can be classified under the EUNIS habitat type A2.31 - Polychaete/bivalve-dominated mid estuarine mud shores. This corresponds to fine silty and muddy sediments colonized predominantly by opportunistic polychaetes (*Capitella capitata*, *Polydora ciliata*) and bivalves (*Scrobicularia plana*), with patchy oligochaete and amphipod presence (Açıcı & Ergen, 2011).

Seasonal monitoring studies have shown elevated levels of total suspended solids (TSS) and low dissolved oxygen (DO) in the bottom layer, especially during summer months. Chlorophyll-a levels often exceed 15 µg/L during algal blooms, indicating high phytoplankton productivity and ongoing eutrophication (Orhon et al., 2009).

The estuary supports a limited but functionally important fish assemblage, primarily dominated by *Mugil cephalus* (grey mullet), *Atherina boyeri* (sand smelt), and seasonal occurrence of *Liza ramada*. These species utilize the calm, nutrient-rich environment for feeding and partial spawning, contributing to the trophic structure.

Although historically degraded, the benthic community shows signs of recovery, particularly in surface sediment oxygenation and diversity indices (Balkis et al., 2020). However, **no critical habitats**, as per ESS6 definitions (e.g., habitats supporting endangered or range-restricted species), are present within the immediate project AoI.

2.6.2.3 Species

The Golden Horn represents one of the most historically and scientifically examined estuarine systems in Türkiye having experienced a dramatic ecological trajectory from severe degradation to a gradual phase of biological recovery. Situated within a semi-enclosed topography and influenced by two urban streams, the system has long functioned as a brackish transitional ecosystem, with pronounced vertical and longitudinal gradients in salinity, sediment composition, and dissolved oxygen levels. Throughout the twentieth century, however, anthropogenic pressures including untreated industrial and domestic discharges, uncontrolled shoreline modifications, and heavy port traffic resulted in extreme eutrophication, sediment anoxia, and the collapse of native benthic and nektonic communities. Multiple studies between the late 1980s and early 2000s documented the near-complete loss of macrozoobenthic taxa, severe hypoxia below the surface sediment layer, and persistent sulfide-rich conditions—characteristics that rendered the estuary biologically depauperate and chemically unstable.

Following the initiation of a comprehensive restoration programme in the 1990s, including sediment dredging, aeration interventions, and the re-routing of major wastewater inflows through deep marine outfalls, the estuary has progressively exhibited signs of ecological rehabilitation. Longitudinal studies conducted in the post-restoration period (2005–2022) have revealed increasing faunal diversity and biomass in the benthic compartment, particularly within zones closest to the Bosphorus mouth where oxygenation and hydrodynamic flushing are relatively higher. Sediment cores taken at various stations along the estuary confirm a decrease in total organic carbon content and an upward trend in redox potential, indicating partial oxygen penetration and the reestablishment of microbial stratification. Meanwhile, water column measurements show seasonal fluctuations in chlorophyll-a concentrations, often exceeding eutrophic thresholds during summer months, yet accompanied by increasing planktonic diversity and trophic complexity compared to previous decades.

The area of influence (AoI) relevant to the current project encompasses the central reach of the estuary near the Unkapanı Bridge. This segment of the Golden Horn is situated within a dynamic transition zone where physicochemical recovery is underway, but ecological indicators still reflect legacy impacts. Benthic samples collected within this reach consistently show low to moderate diversity, dominated by opportunistic species with high tolerance to organic enrichment. While this assemblage suggests incomplete ecological succession, it nonetheless contrasts sharply with the azoic conditions reported in baseline studies from the 1980s and early 1990s. In terms of habitat classification, the AoI corresponds to

EUNIS habitat type A2.31, which includes estuarine mudflats dominated by polychaete and bivalve taxa associated with organically rich, anoxic or suboxic sediments. This habitat type is considered to be modified under ESS6, given the intensity of past human-induced disturbance and the current absence of endangered, endemic, or range-restricted aquatic species as defined by the IUCN Red List or national conservation frameworks.

In contrast to the aquatic domain, the land-based component of the AoI is shaped almost entirely by urban development, comprising paved surfaces, transportation corridors, and landscaped green strips adjacent to the estuarine margin. These terrestrial environments do not contain natural or semi-natural habitats and are excluded from critical habitat designation under IFC guidance. Vegetation present along the coastal promenade is primarily ornamental and maintained under municipal management regimes. Despite their anthropogenic origin, these narrow green corridors do contribute marginally to local ecological functions, including microclimatic regulation, pollinator support, and soil stabilization. The baseline for the Subproject was established through a combination of desk-based studies and existing field survey data previously collected for another project in March, June, and September 2022–2023 by qualified ecologists and aquatic biodiversity experts. According to these surveys, there has been no recorded the presence of any nationally protected or internationally listed plant species. Faunal presence within the terrestrial zone was limited to generalist taxa commonly associated with urbanized environments and disturbed habitats, with no evidence of roosting, nesting, or migratory congregation. Additionally, the AoI does not intersect any legally protected areas, designated ecological corridors, or Key Biodiversity Areas (KBAs), and no critical habitat triggers—such as the presence of endangered species, highly restricted distributions, or irreplaceable ecological services—were identified through literature review or field validation.

Taken together, the aquatic and terrestrial ecosystems within the Subproject's zone of influence exhibit low to moderate conservation value, primarily as a function of historical degradation and intensive land use. Nonetheless, the aquatic system displays a meaningful trajectory of ecological recovery, evidenced by improving sediment and water quality metrics, and the recolonization of foundational species within the estuarine food web. .
The bridge sits on a fully urbanized coastline bordered by hardscape and engineering structures on both sides; there is no natural coastal habitat. The fragmented, ornamental plantings and hardscape along the shoreline are classified as "modified habitat" and do not constitute functional natural habitat for the local flora and fauna. Therefore, no significant ecological impact on terrestrial/coastal habitat is expected; ecological concerns are primarily focused on aquatic and underwater components.

2.6.2.3.1 Flora

Within the Area of Influence (AoI) of the Unkapanı (Atatürk) Bridge Reinforcement Project, no natural aquatic vegetation or submerged macrophyte beds were observed during site-specific surveys conducted in March–April 2024. The aquatic flora is limited to planktonic communities typical of an urban estuarine system. The phytoplankton composition within the central reach of the Golden Horn, where the sub project is located, is characterized by seasonal blooms of diatoms and dinoflagellates, with occasional occurrences of chlorophytes in nutrient-enriched microzones.

These observations are consistent with published data from previous studies (Yılmaz et al., 2020; Balkis et al., 2017; Balcı et al., 2022), but no species of conservation concern or ecological sensitivity have been recorded within the sub project footprint. The area under the bridge is heavily modified and does not support rooted aquatic vegetation or marsh-type flora.

Phytoplankton forms the base of the aquatic food web and drive primary production and nutrient cycling. Their seasonal succession (e.g., diatoms in spring, dinoflagellates in summer) illustrates the estuary's dynamic nature and its response to ongoing environmental pressures.

In order to determine the composition and abundance of phytoplankton within the Subproject Area, phytoplankton samples were collected using a plankton net during field studies conducted on 6 June 2022, 9 September 2022, and 14–15 March 2023. The collected samples were fixed with Lugol's solution, stored in plastic bottles, and transported to the laboratory for further analysis. In addition, species lists

reported in previous studies conducted in the Golden Horn were also consulted to complement the site-specific dataset.

In the laboratory, algal samples were prepared as permanent slides and examined under a light microscope at 20×, 40×, and 100× magnifications. Quantitative analysis of phytoplankton abundance was conducted using a quadrat-counting method.

For taxonomic identification, the following reference works were used: Ettl (1983); Krammer & Lange-Bertalot (1991a, b); Komárek & Anagnostidis (1998); Krammer & Lange-Bertalot (1999a, b); John et al. (2002); Wehr & Sheath (2003); Riedl (1983). Species nomenclature was cross-checked using the Algaebase (2020) online database.

The trophic status of the Golden Horn, including the subproject site near the Unkapanı (Atatürk) Bridge, is generally classified as eutrophic to meso-eutrophic. Despite significant improvements since the 1990s due to rehabilitation efforts, nutrient concentrations (particularly total nitrogen and phosphorus) and chlorophyll-a levels still indicate moderate to high productivity in the water column. Periodic local eutrophic conditions are reported, especially in the upper estuary, but conditions in the mid and lower sections, including the Subproject area, are less pronounced and closer to mesotrophic levels. According to studies such as Yılmaz et al. (2020), Balkis et al. (2017), and ISKI Monitoring Reports (2022), the estuary continues to exhibit seasonal fluctuations in nutrient levels and phytoplankton biomass, reflecting its transitional estuarine nature.

“Although ecological conditions in the Golden Horn have improved markedly since extensive rehabilitation efforts began in the 1990s—including sediment dredging, wastewater treatment upgrades, and pollution control measures—the semi-enclosed nature of the estuary continues to make it highly vulnerable to nutrient enrichment from urban runoff. This morphological feature limits water exchange with the open sea, leading to prolonged water residence times and a tendency for pollutants and nutrients to accumulate (Turoğlu, 2000; Kırman et al., 2021). Studies have demonstrated that despite significant reductions in pollutant loads, total nitrogen and phosphorus levels can remain elevated, especially in the upper reaches of the estuary, fostering conditions conducive to eutrophication and periodic algal blooms (Balcı et al., 2022; Duran et al., 2021). Furthermore, the Golden Horn’s transitional salinity and nutrient gradients support a dynamic phytoplankton community that rapidly responds to environmental pressures, indicating the system’s sensitivity to even moderate increases in nutrient inputs (Yılmaz et al., 2020; Balkis et al., 2017). Therefore, continued and comprehensive phytoplankton and water quality monitoring are essential to detect early signs of re-eutrophication, guide management interventions, and ensure the long-term ecological sustainability of the estuarine ecosystem.

Current monitoring records indicate that continued phytoplankton monitoring remains important for the Golden Horn ecosystem, given its sensitivity to nutrient fluctuations.

Phytoplankton communities in the Golden Horn reflect the transitional nature of the estuary and include various diatom, dinoflagellate, chlorophyte, cyanobacteria, euglenophyte, and cryptophyte species. A detailed species list has been compiled based on several scientific studies (Yılmaz et al., 2020; Balkis et al., 2017; Balcı et al., 2022; ISKI, 2022; Kırman et al., 2021). According to current data, no alien or invasive alien phytoplankton species have been recorded in the Golden Horn. In this report, the term ‘alien species’ refers specifically to invasive alien species (IAS) with potential ecological risks. The full phytoplankton species list is provided as an Annex in the Biodiversity Management Plan (BMP).

2.6.2.3.2 Fauna

Zooplankton

Zooplankton, a diverse group of heterotrophic planktonic organisms, constitute a fundamental component of aquatic ecosystems, including estuarine environments such as the Golden Horn. These microscopic and macroscopic animals play a pivotal role in the transfer of energy and nutrients across trophic levels. In the

Golden Horn estuary, zooplankton dynamics are particularly important due to the transitional nature of the water body between freshwater inflows and marine influence from the Bosphorus Strait.

These zooplankton groups play a pivotal role in the aquatic food web, serving as a primary food source for higher trophic levels, including fish and other invertebrates. Their distribution and abundance also offer valuable insights into the health and water quality of the estuarine system, highlighting the interplay between natural environmental factors and human-induced stressors.

In the subproject area near the Unkapanı (Atatürk) Bridge, zooplankton communities reflect the estuarine transitional nature of the Golden Horn. Monitoring data indicate that copepods (mainly Cyclopoida), rotifers (such as Brachionus species), and cladocerans (including Bosmina species) are common components of the zooplankton assemblage. The moderate salinity conditions in this mid-estuary zone support a relatively diverse zooplankton community, though seasonal variations in abundance are influenced by nutrient levels and urban runoff. No alien or invasive zooplankton species have been recorded in the subproject area according to current literature and monitoring reports (Yılmaz et al., 2020; Balkis et al., 2017; ISKI, 2022). Overall, zooplankton presence indicates a moderately productive system with ongoing sensitivity to nutrient enrichment.

Maktobentic Fauna

The macrobenthic community, consisting of larger, bottom-dwelling invertebrates visible to the naked eye, plays a vital role in the structure and function of aquatic ecosystems. In the Golden Horn estuary—a semi-enclosed, brackish water body with a complex hydrological history—macrobenthic organisms serve as key indicators of environmental quality and drivers of ecological processes.

The pivotal role of macrobenthic communities as indicators of environmental quality in the Golden Horn estuary is well-documented in several studies, including Balkis et al. (2006), Balkis et al. (2015), Güneysu et al. (2015), and Turoğlu (2000).

Due to their sedentary nature and sensitivity to environmental stressors, macrobenthic communities are widely used in benthic biotic indices such as AMBI and BOPA to assess ecological status. Although site-specific AMBI or BOPA indices were not calculated in the scope of this assessment due to the lack of raw abundance data and standardized seasonal sampling, a proxy interpretation based on species composition, ecological tolerance profiles, and comparative literature values has been used to characterize the ecological condition of the AoI. Therefore, the baseline assessment relies on faunal structure and indicator species analysis, derived from field-based species presence and historical monitoring studies. These findings are directly relevant to the current ecological status of the Golden Horn and serve as a scientifically valid surrogate in the absence of formal index scoring.

The Golden Horn has undergone extensive anthropogenic pressures, including urban runoff, industrial discharges, and dredging activities, which historically led to biodiversity loss and habitat degradation. However, restoration programs initiated in the 1990s have resulted in partial recovery of the macrobenthic community, improving water quality and biological diversity in certain zones (Balkis et al., 2006; Balkis et al., 2015).

A detailed list of macrobenthic species recorded in the Golden Horn, including taxonomic groups and ecological notes, has been compiled based on scientific studies (Balkis et al., 2006; Balkis et al., 2015; Güneysu et al., 2015). No alien or invasive alien macrobenthic species have been reported in the subproject area according to current monitoring data. In this report, the term ‘alien species’ refers specifically to invasive alien species (IAS) posing ecological risks. The detailed macrobenthic species list is provided in the Biodiversity Management Plan (BMP) Annex.

The presence of non-native and potentially invasive species such as *Ficopomatus enigmaticus* (considered invasive), *Desdemona ornata* (non-native but not classified as invasive), and Streblospio gynobranchiata (potentially invasive under certain conditions) indicates ecological shifts in the Golden Horn ecosystem.

These species have been recorded in surveys conducted between 2002 and 2013 in the Golden Horn (Balkis et al., 2006; Balkis et al., 2015; Güneysu et al., 2015).

The diversity of polychaete species indicates a recovering benthic community structure in the Golden Horn, with species ranging from pollution-tolerant forms such as *Capitella capitata* and *Polydora ciliata*, to more sensitive species like *Glycera alba*, reflecting improving environmental conditions. This observation is supported by studies conducted in the Golden Horn between 2002 and 2013 (Balkis et al., 2006; Balkis et al., 2015; Güneysu et al., 2015). A map showing the spatial distribution of polychaete species within the Golden Horn is proposed for inclusion in the Biodiversity Management Plan (BMP), as precise recent mapping data is currently unavailable.

The occurrence of sensitive species such as Theodoxus fluviatilis (a freshwater gastropod) and Ephemera danica (a mayfly species) in the mid and lower sections of the Golden Horn estuary has been recorded in monitoring studies conducted between 2002 and 2013 (Balkis et al., 2006; Balkis et al., 2015). Their presence indicates localized improvements in water quality and reduced organic pollution in these areas.

Fish

Recent biological monitoring programs conducted between 2007 and 2022 by institutions such as Istanbul University, ISKI, and various scientific studies have documented the presence of more than 40 fish species in the Golden Horn estuary, comprising both resident and migratory species. Studies such as Demir et al. (2007), Aydın et al. (2010), Artüz & Fricke (2010), and Bilecenoğlu et al. (2014) have provided comprehensive species lists and highlighted seasonal fluctuations and habitat preferences of fish communities in this urban estuary. These findings confirm the estuary's role as an important transitional and feeding habitat for diverse ichthyofauna. The detailed species list is included as an Annex in the Biodiversity Management Plan (BMP).

Fish eggs and larvae of several taxa have been identified in plankton net surveys conducted in the Golden Horn estuary (Demir et al., 2007; Aydın et al., 2010; ISKI, 2022), indicating the estuarine environment's potential role as a spawning and nursery ground. However, within the specific Area of Influence (AoI) of the Atatürk Bridge, no persistent or spatially defined nursery zones have been identified based on historical or recent surveys. Moreover, no commercially important fish species (e.g., small pelagic or demersal stocks listed under Turkish fisheries regulations) have established spawning or juvenile development zones within the AoI. Due to historical pollution, residual organic load, and episodes of low dissolved oxygen, the water quality in the Golden Horn remains suboptimal for successful recruitment of many fish species. Therefore, the Golden Horn is currently not considered a significant nursery ground for commercial fish populations, as confirmed by multiple monitoring reports and scientific studies (Demir et al., 2007; Balkis et al., 2015; ISKI, 2022).

The Golden Horn harbors diverse fish communities and supports critical ecological functions such as spawning, feeding, and juvenile development. The planned infrastructure development, particularly under the Atatürk Bridge Reinforcement Project, must be sensitively integrated with ongoing conservation measures to ensure the sustainable coexistence of urban development and aquatic biodiversity.. Ongoing conservation measures in the estuary include: (i) regular water quality monitoring by ISKI to track nutrient levels, pollutants, and biological indicators; (ii) sediment management programs initiated since the 1990s to reduce organic load; (iii) operation of advanced wastewater treatment plants that prevent untreated discharges into the estuary; (iv) habitat restoration and shoreline improvement projects carried out by Istanbul Metropolitan Municipality to enhance ecological conditions; and (v) enforcement of national regulations under the Environmental Law and Water Pollution Control Regulation. These efforts aim to balance urban development, including projects such as the Atatürk Bridge Reinforcement Project, with the conservation of aquatic biodiversity in the Golden Horn (ISKI, 2022; Balkis et al., 2015; Artüz & Fricke, 2010).

2.6.2.3.3 Species and Monitoring Approach

Terrestrial/Coastal Ecosystems:

Within the Subproject's Area of Influence (AoI), the terrestrial and coastal environments are entirely urbanized and heavily modified. Shorelines are reinforced with retaining walls and paved embankments, and vegetation is limited to ornamental or ruderal species without ecological functionality. As such, terrestrial habitats are categorized as modified habitats under ESS6 and do not host conservation-relevant biodiversity. Therefore, no monitoring is proposed for the terrestrial component.

Aquatic Ecosystem and Species:

The Golden Horn Estuary, despite its long history of anthropogenic stress, is recognized as one of the most scientifically studied aquatic systems in Türkiye. Numerous studies have reported on water quality, planktonic communities, and benthic fauna, documenting both the historical degradation and the ecological recovery following rehabilitation programs initiated in the 1990s (Albayrak et al., 2010; Durmuş, 2023; Gönüllü et al., 2005).

Taken together, the aquatic and terrestrial ecosystems within the Subproject's zone of influence exhibit low to moderate conservation value, primarily as a function of historical degradation and intensive land use. Nonetheless, the aquatic system displays a meaningful trajectory of ecological recovery, evidenced by improving sediment and water quality metrics, and the recolonization of foundational species within the estuarine food web.

Monitoring Focus:

No species of conservation concern requiring targeted monitoring were identified within the AoI. Instead, the biodiversity monitoring will focus on benthic fauna communities (e.g., polychaetes, mollusks, opportunistic indicator species) and plankton assemblages (phytoplankton and zooplankton), which serve as sensitive bioindicators of water and sediment quality.

Monitoring Locations:

Four monitoring points were selected along the Golden Horn to represent both upstream and downstream gradients and to capture site-specific conditions around the bridge piers. These stations (

) are located as follows:

- BM 1 (Pier North): Adjacent to the northern pier of the bridge.
- BM 2 (Pier South): Adjacent to the southern pier of the bridge.
- BM 3 (Upstream Reference): ~100 m upstream of the bridge axis.
- BM 4 (Downstream Reference): ~100 m downstream of the bridge axis.

Figure 12 Biodiversity Monitoring Stations

Assessment Method:

Benthos: Sediment grab sampling (0–10 cm) with laboratory taxonomic analysis, focusing on indicator taxa (e.g., Streblospio gynobranchiata, Polydora cornuta).

Plankton: Vertical plankton net hauls and microscopic identification/abundance counts.

Water Quality Correlation: Turbidity, DO, and nutrient parameters will be measured simultaneously to establish ecological linkages.

2.6.2.4 Invasive Alien Species

Alien species are those introduced outside their native range, where invasive species are a subset of alien species that spread rapidly and cause ecological, economic, or social harm. In transitional habitats like estuaries, where natural resilience may be compromised due to eutrophication, pollution, and hydromorphological change, invasive species can rapidly dominate and displace native species.

Identified Alien/Invasive Species in the Golden Horn

The alien and invasive alien species identified in the Golden Horn are differentiated as follows:

Invasive Alien Species: Prorocentrum minimum, Microcystis aeruginosa, Mnemiopsis leidyi, Ficopomatus enigmaticus, Potamopyrgus antipodarum, Rapana venosa, Planiliza haematocheilus.
Alien Species (non-invasive): Oithona davisae, Polydora cornuta, Streblospio gynobranchiata, Balanus improvisus.
These classifications are based on ecological studies in the Sea of Marmara and Golden Horn regions, indicating the level of ecological impact and invasiveness of each species (Balkis et al., 2015; Artüz & Fricke, 2010; Bilecenoğlu et al., 2014).

2.6.2.5 Ecosystem Services

The estuary provides a wide range of ecosystem services (ES) that are vital for both biodiversity conservation and human well-being. Given that the Unkapanı (Atatürk) Bridge Reinforcement Project involves the structural renewal of an existing bridge rather than the development of a new facility, no land take, dredging, or new physical footprint will occur. Therefore, no significant adverse impacts on existing ecosystem services are anticipated as a result of the proposed works. Nevertheless, as per IFC GN11.1-c and World Bank ESS6, a review was conducted to ensure that all identified ecosystem services—especially those related to aquatic resource use, cultural values (e.g., visual access and public use of the shoreline), and regulating functions—are preserved during construction and operation phases. The ESMP Matrix (Chapter 4) includes references to relevant mitigation measures to ensure that these services remain functionally intact. Furthermore, no ecosystem service currently contributes to community livelihoods in a manner that would trigger compensatory action under the Livelihood Restoration Plan (LRP). In conclusion, the review confirms that there is no measurable disruption to ecosystem services that would necessitate compensatory measures under the LRP. Specifically, while recreational fishing is a commonly observed activity along the bridge, it does not constitute a livelihood-dependent use of aquatic resources. Moreover, as detailed in the LRP, alternative public fishing locations within walking distance are available and users will be informed about alternative locations. These measures ensure that access to cultural and provisioning ecosystem services remains uninterrupted and aligned with the World Bank's ESS5 requirements.

This assessment is aligned with both the Millennium Ecosystem Assessment (MEA) framework and the ESS6, which emphasizes the role of ecosystem services in supporting human well-being and managing project-related risks. As per ESS6, the identification of ecosystem services includes their relevance to community health and safety, livelihood dependence, cultural values, and ecological resilience. Where relevant, linkages with social risk pathways have been identified and addressed in the ESMP.

These services can be categorized into four major groups:

Provisioning Services

These include the direct material outputs of the ecosystem that benefit people:

- Fisheries and Aquatic Resources: The estuary serves as a nursery ground for several commercially valuable fish species such as *Dicentrarchus labrax* (European seabass) and *Mugil cephalus* (grey mullet). However, no critical nursery zones have been identified within the Area of Influence (AoI) of the project, and current use of these resources does not contribute directly to local livelihoods.
- Biomass and Organic Material: Detrital matter and benthic invertebrates contribute to nutrient transfer and support traditional small-scale fishing activities. While fishing is not practiced directly within the AoI, this service remains ecologically relevant at the wider estuarine scale.
- Genetic Resources: The unique mix of brackish water species and local adaptations offers potential for scientific and biotechnological research, especially under climate stress conditions.

Regulating Services

These services regulate environmental conditions and buffer against ecosystem disturbances:

- Water Purification: Macrobenthic organisms (e.g., *Tubifex*, *Cerastoderma*) and phytoplankton communities help filter organic pollutants and absorb excess nutrients, reducing the risk of eutrophication and algal blooms.
- Climate Regulation: Coastal vegetation and benthic microbial processes contribute to carbon sequestration, while phytoplankton regulate local CO_2 concentrations through photosynthesis.
- Flood Control: The estuary's natural geomorphology and wetlands (e.g., vegetated margins in upstream zones) act as buffers during storm surges and heavy rainfall events.

– Disease Regulation: Healthy aquatic biodiversity supports water quality and reduces the likelihood of disease vectors like mosquito outbreaks (*Culex pipiens* larvae thrive in polluted, stagnant waters).

Supporting Services

These are fundamental for all other services, sustaining ecosystem structure and function:

– Primary Production: Phytoplankton and benthic algae form the base of the estuarine food web, supporting higher trophic levels including zooplankton, fish, and birds.
– Nutrient Cycling: Through bioturbation and bioirrigation, macrobenthic fauna enhance sediment oxygenation and facilitate nitrogen and phosphorus recycling.
– Habitat Provisioning: The estuary provides structurally diverse habitats—mudflats, shallow bays, hard substrates (e.g., bridge pilings)—that support diverse biological communities, including migratory birds and spawning fish.

Cultural Services

These services relate to spiritual, recreational, and educational benefits:

– Recreation and Aesthetic Value: The Golden Horn shoreline is heavily used for urban recreation, including walking paths, fishing spots, and boating. The improvement in water quality and biodiversity has enhanced the visual and experiential quality of the area.
– Historical and Cultural Identity: The estuary is embedded in the cultural fabric of Istanbul, mentioned in Ottoman literature and travelogues, and continues to serve as a landscape of memory and heritage.
– Education and Research: Golden Horn provides a living laboratory for universities and NGOs conducting biodiversity monitoring, environmental restoration, and climate adaptation studies.

The Golden Horn estuary exemplifies how even heavily urbanized water bodies can deliver substantial ecosystem services if managed wisely. Ensuring their long-term provision will require cross-sectoral coordination, adaptive management, and sustained ecological investment.

In line with ESS6 and GN11.1-c, these ecosystem services have been reviewed not only for their ecological roles, but also for their potential links to human well-being, livelihood security, and community values. Although the Unkapanı Bridge Reinforcement Project is not expected to adversely affect any of the services listed above due to its limited footprint and nature of works, their presence has been systematically evaluated and integrated into project planning and mitigation frameworks as outlined in the ESMP.

2.6.3 Socio-Economic Environment

The Unkapanı (Atatürk) bridge is located in the Fatih and Beyoğlu districts. The geographical context of the bridge encompasses six distinct neighbourhoods: 3 in Fatih and 3 in Beyoğlu. These 6 neighborhoods are in the Direct Social Impact Area of the Subproject. The Direct Social Impact Area of the Subproject encompasses the Cibali, Sarıdemir, Bedrettin, and Arap Cami neighborhoods due to the direct impact from planned interventions around the bridge piers, as well as the Yavuz Sinan and Emekyemez neighborhoods owing to their proximity to key intersections connecting the bridge piers to the transportation network. The changes in accessibility, connectivity, and urban mobility patterns will directly affect these neighbourhoods.

However, due to the strategic connection function of the bridge, the Indirect Social Impact Area of the Subproject will extend across the entire city of Istanbul. Due to the interconnected nature of the urban transportation network, changes occurring at the bridge piers and their connection points will influence significant part of traffic flow in the city. While Beyoğlu and Fatih districts will experience these effects more due to their geographical and infrastructural proximity, the entire city will be impacted indirectly as part of Istanbul's broader mobility system. Consequently, while this section concentrates on baseline of

the subproject area, broader analyses covering the wider socio-economic impact zone of the subproject are provided in Annex H.

Methodology and Undertaken Activities

As part of the Subproject's ESMS requirements, a structured stakeholder engagement process was designed and implemented to ensure that potentially affected groups and vulnerable populations were adequately consulted.

On March 6, 2025, the Project team conducted an on-site field visit to the Atatürk Bridge construction area and its immediate surroundings. During this visit, in-person consultations were carried out with two key groups of economically vulnerable stakeholders:

- A local café business (Dosthane Café) situated directly adjacent to the bridge; and
- Fishermen using the bridge for rod fishing, as well as individuals engaged in recreational activities on the bridge.

Both groups were provided with information on the Subproject's general scope, planned construction activities, indicative timeline, and likely temporary impacts. Stakeholders were given the opportunity to raise their concerns and express expectations regarding potential disruptions.

In March and June 2025, follow-up phone consultations were conducted with the headmen of affected neighborhoods. These discussions aimed to better understand the socioeconomic profile of vulnerable groups likely to experience temporary challenges during the construction phase. The headmen identified elderly residents, seasonal or mobile vendors, and unemployed youth as groups potentially facing restricted access or mobility constraints. Their feedback helped refine the Subproject's stakeholder mapping and informed mitigation planning to address these groups' specific needs.

In June 2025, additional direct interviews were held with:

- The representative of the Küçükmustafapaşa Fisheries Cooperative, and
- The imam of Sokullu Mehmet Paşa Mosque, who also operates the nearby public toilet.

During the Stakeholder Engagement Meeting held on 22 January 2026, amateur fishermen, local residents, and marine users were identified as important users of the bridge and surrounding area. Their activities and potential sensitivities during the construction phase have been considered in the assessment of socio-economic conditions. Details of the Stakeholder Engagement Meeting held on 22 January 2026 are documented in the Stakeholder Engagement Plan and its annexes.

Baseline socio-economic conditions of the subproject area are defined in the following sub-sections, incorporating the outcomes of these studies.

2.6.3.1 Demography and Population

Population of Istanbul as largest metropolitan of Turkiye increased until 2022 but began to decline slightly due to rising living costs, remote work trends, and reverse migration. In Fatih and Beyoğlu, population decline has been more evident, especially after 2020, indicating a demographic shift from central districts toward outer parts of the city (Further details on Istanbul and district-level demographic dynamics are presented in Annex H).

The neighbourhoods of Arap Cami, Bedrettin, Emekyemez, Sarıdemir, Yavuz Sinan, and Cibali, located in the Beyoğlu and Fatih districts, generally show a declining population trend. Cibali and Bedrettin neighborhoods have experienced the most significant population loss, consistently decreasing from 2010 to 2024. Sarıdemir Neighborhood, already having a low population, has seen a further decline over time. Arap Cami and Emekyemez neighborhoods have experienced population growth in certain periods but have shown a decrease in recent years. Yavuz Sinan Neighborhood has a more stable population compared to the others and does not exhibit a significant decline. The overall population decline in these neighborhoods can be attributed to the reduction in residential settlements, particularly in areas where commercial activity is predominant. Specifically, Sarıdemir Neighborhood and the areas surrounding

Atatürk Bridge primarily serve commercial functions, resulting in a significant decrease in population density during evening hours. This indicates that nighttime construction or maintenance activities in these areas would have a comparatively lower social and environmental impact than in residential zones.

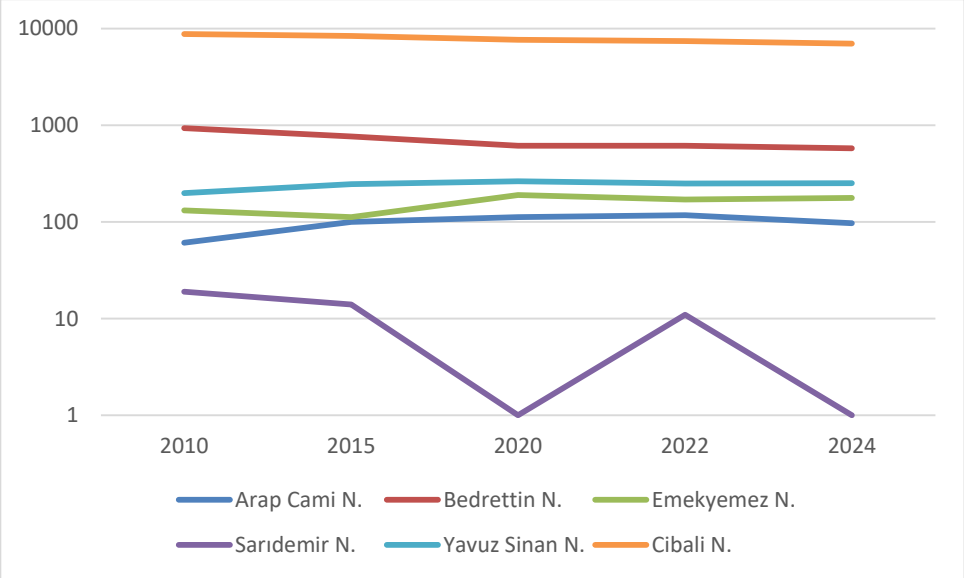


Figure 13 The Population of Direct Influence Area by Neighborhood
Source: *Turkish Statistical Institute (TÜİK). (2025). MEDAS – Address Based Population Registration System (ABPRS) Database. Turkish Statistical Institute. https://biruni.tuik.gov.tr/medas/?kn=95&locale=tr*

The analysis of population density suggests a clear relationship between lower residential density and increased commercial or service-oriented land use. Cibali neighborhood, with the highest density (252.78 p/ha), likely retains a strong residential character, accommodating a concentrated urban population. In contrast, neighborhoods with lower densities, such as the Arap Cami neighborhood (6.06 p/ha) may have a more prominent presence of commercial, office, or service-oriented functions.

This pattern aligns with typical urban dynamics, where lower residential density often coincides with an increase in mixed-use developments, historical sites, business districts, and public services. Sarıdemir neighborhood, showing zero residential population, likely consists of infrastructure, institutional buildings, or areas designated for trade and logistics. Similarly, Yavuz Sinan (50.51 p/ha), Emekyemez (28.12 p/ha), and Bedrettin (24.09 p/ha) neighborhoods, with moderate densities, may represent transitional zones that balance residential and commercial activities.

Table 10 Unkapanı (Atatürk) Bridge Subproject Influence Area Population by Neighbourhood

Neighborhood Name	Population	Population Density (p/ha)
Arap Cami	97	6.06
Bedrettin	576	24.09
Cibali	6,979	252.78
Emekyemez	177	28.12
Sarıdemir	0	0.00
Yavuz Sinan	251	50.51

Source: *Turkish Statistical Institute (TÜİK). (2025). MEDAS – Address Based Population Registration System (ABPRS) Database. Turkish Statistical Institute. https://biruni.tuik.gov.tr/medas/?kn=95&locale=tr*

2.6.3.2 Socio-Economic Development Level

The Socio-Economic Development Index (SEDI) studies support the evaluation of development levels in cities, districts, and regions, and provide a basis for comparative benchmarking. Istanbul ranks first in Türkiye in terms of socio-economic development, yet intra-urban disparities remain significant. Fatih and Beyoğlu are among the most developed districts, though certain neighborhoods within them face socio-

economic challenges (Further details on socio-economic indicators at the provincial and district levels are presented in Annex H).

Figure 14 and Figure 15 illustrate the socio-economic structure of the Fatih and Beyoğlu districts, highlighting income distribution and living standards. Figure 14 shows pink indicates higher-income areas, and green represents lower-income neighborhoods. The distribution suggests that while some parts of Fatih and Beyoğlu house high-income groups due to their central location and commercial activity, other neighborhoods accommodate lower-income residents. This disparity reflects the districts' mixed socio-economic structure, influenced by tourism, trade, and cultural activities.

Figure 15 provides a percentage breakdown of socio-economic groups in these districts. The A+ group (8%) represents the wealthiest segment, while the A group (35%) holds the largest share. The B group (24%) falls within the middle-income range, while the C group (23%) and D group (16%) indicate the presence of lower-income populations. The data shows that although a significant portion of the population belongs to middle and upper-income groups, a substantial 39% falls into the lower and middle-lower categories, highlighting economic disparity.

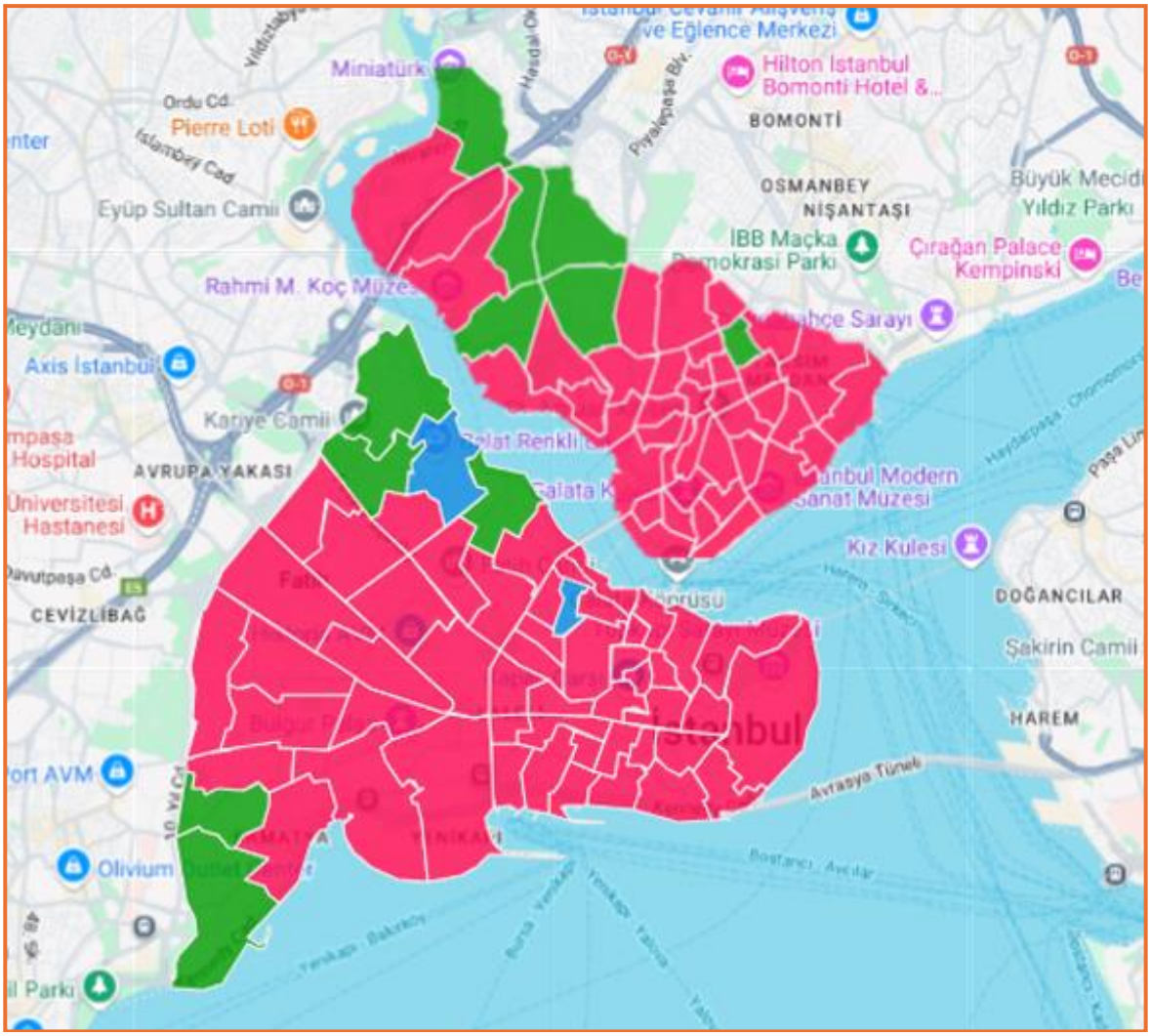


Figure 14 Socio-economic Status Map of Fatih and Beyoğlu
Source: **Endeksa. (2025). Fatih demografi analizi. https://www.endeksa.com/tr/analiz/turkiye/istanbul/fatih/demografi**

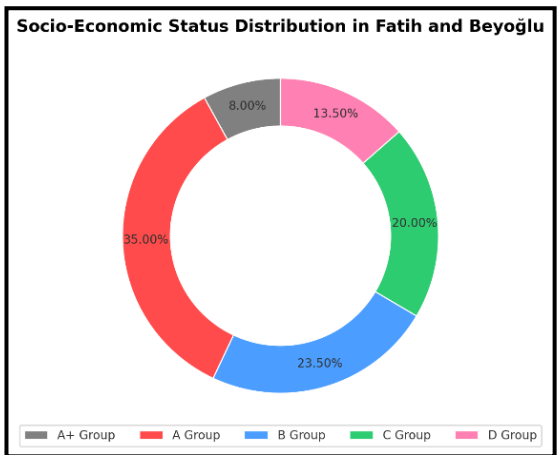


Figure 15 Socio-economic Status Rate of Fatih and Beyoğlu
Source: *Endeksa. (2025). Beyoğlu demografi analizi. https://www.endeksa.com/tr/analiz/turkiye/istanbul/beyoglu/demografi*

2.6.3.3 Land Ownership Status and Land Use by Affected People

As stated in the feasibility report[9], the Unkapanı (Atatürk) Bridge Reinforcement Subproject does not require any expropriation, as no private land is affected within the Subproject boundaries. The Subproject area consists primarily of cadastral voids and land under municipal ownership. Land ownership status in the Subproject area is provided in Figure 16. Before starting construction activities, property permit was obtained from Fatih Municipality (see Annex-I).

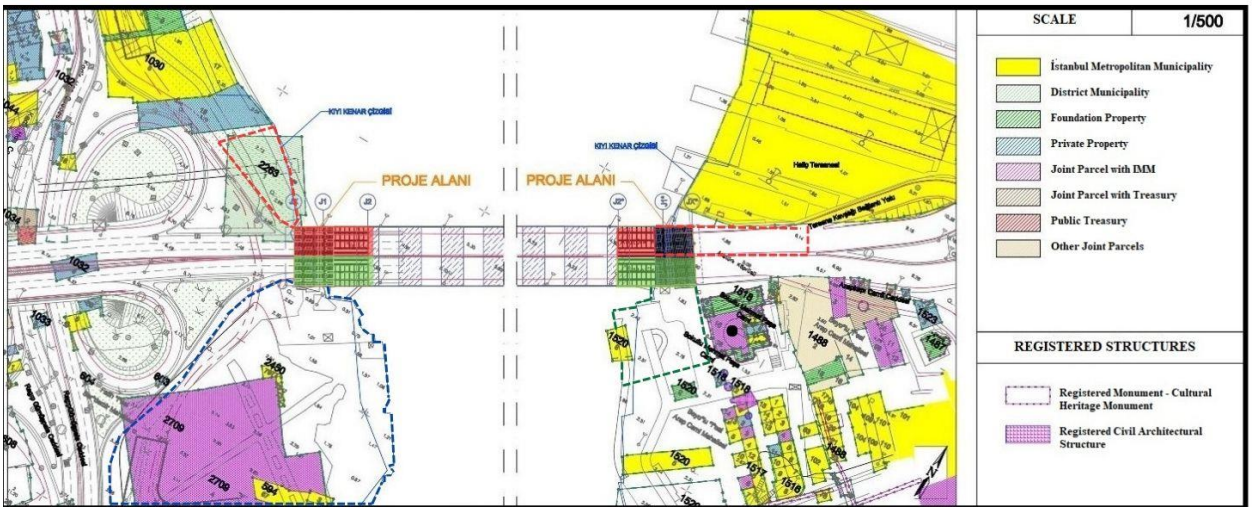


Figure 16 Unkapanı (Atatürk) Bridge Ownership Map
(Source: **Teknik Mühendislik)**

The Unkapanı Side of the bridge is partially located within a cadastral void and within an area allocated to the District Municipality (Fatih Municipality). As part of the Subproject, the necessary official correspondence with Fatih Municipality has been carried out. The Planning and Project Directorate of Fatih Municipality has provided an opinion on the Subproject, confirming the inclusion of the relevant abutments within the district's jurisdiction. The official letters (dated 04.11.2024 and 20.11.2024 numbered E-72583974-604.99-2024.1990682) confirm municipal awareness and coordination regarding the Subproject. Before starting construction activities, property permit was obtained from Fatih Municipality.

[9] Istanbul Metropolitan Municipality. (2025). Istanbul Ataturk (Gazi) Bridge Reinforcement Project Feasibility Study Report. Istanbul Metropolitan Municipality.

The Ministry of Culture and Tourism, Istanbul 2nd Regional Board for the Protection of Cultural Heritage, reviewed the geotechnical investigation activities conducted within the scope of the Unkapanı (Atatürk) Bridge Reinforcement Project, which is located within the Urban and Historical Site area in Beyoğlu District, Istanbul. According to the letter of Istanbul Metropolitan Municipality dated 11.11.2024 and numbered 2058578, as well as the attached plans indicating the borehole locations, it was confirmed that no cultural property was encountered during the drilling works. Accordingly, the Board decided that the implementation of the Unkapanı (Atatürk) Bridge Reinforcement Project does not pose any objection in terms of the provisions of Law No. 2863 on the Protection of Cultural and Natural Assets.

Furthermore, according to the decision of the Ministry of Culture and Tourism, Istanbul 4th Regional Board for the Protection of Cultural Heritage, dated 02.09.2025 and numbered 15575, regarding the design projects for the abutments of the Unkapanı (Atatürk) Bridge located in Fatih District (Cibali and Arıdemir neighborhoods, Block 2263, Parcel 1 and the adjacent cadastral gap area), it was concluded that the implementation of the project does not pose any objection under Law No. 2863. The decision requires that the implementation shall be carried out under the supervision of the relevant authorities and the Museum Directorate. The relevant decision texts are presented in the Annex I.

The Azapkapı Side of the bridge falls within the Golden Horn Regulation Area, the Urban Conservation Area, and the Zoning Implementation Plan Approval Boundary. The bridge is also within the Renewal Area Boundaries, ensuring compliance with historical and urban planning regulations.

Additionally, ownership verification was conducted by overlaying 1/1000 and 1/5000 scale zoning plans. Since there is no privately owned land in the Subproject area, no land acquisition or expropriation is required.

In Figure 17 the area marked with blue borders will be the main camp area for construction works, there will be storage areas and areas where employees can meet their needs. The areas marked with red borders are temporary camp areas to be used in the first phase of the bridge construction, the materials to be used in the construction phase will be temporarily stored in these areas and there will be areas for employee needs as in the main camp area. The temporary camp area on the Unkapanı side belongs to the Fatih Municipality and is also a coastal park area used by the Küçük Mustafa Paşa Fisheries Cooperative. Based on both field observations and direct interviews conducted with the Cooperative representatives, it was confirmed that the Cooperative currently has very limited membership and the area, used by the cooperative, is located approximately 400 meters away in a straight line from the construction site (Figure 18). Therefore, the activities of the Cooperative are not expected to be impacted by the Subproject. The boats currently observed near the construction zone are owned by individual citizens engaged in tourism activities, not by members of the cooperative. Since the shoreline is generally not crowded, the boats in the affected area will still be able to access and use the remaining sections of the coast. Finally, the area marked with green borders has been determined as the temporary camp area to be used in the second phase. This area is located on the coastal part of the Sokullu Mehmet Paşa Mosque courtyard. The mosque facilities will remain accessible throughout construction. Based on interviews conducted with the mosque imam, who also operates a mobile toilet business at the area where mosque facilities are located, it was noted that due to persistent infrastructure problems, the toilet has not been functioning efficiently. The operator has already decided to shut down operations, no matter what happens with the Subproject. Therefore, no direct adverse impact on the mobile toilet business is expected. Accordingly, the Subproject will not cause any additional economic displacement or livelihood impact. Nevertheless, communication will be maintained with the toilet operator throughout the construction period to ensure transparency, address any potential concerns, and confirm that no unforeseen impacts arise during project implementation.

Stage 2 Temporary Camp Site will be located in front of the front garden of the Dosthane Cafe business and therefore the outdoor seating areas will be limited (Figure 17). In Figure 17, the red and green marked areas are the areas where the bridge piers will be constructed. First, the red areas will be worked on as the 1st phase, then the shale areas will be worked on as the 2nd phase.

Figure 17 Unkapanı (Atatürk) Bridge Subproject Camp Sites
Source: Teknik Mühendislik

Figure 18 Sites used by the Küçük Mustafa Paşa Fisheries Cooperative

2.6.3.4 Employment and Means of Livelihood

The Unkapanı (Atatürk) Bridge Reinforcement Project is not expected to result in permanent employment changes or economic displacement. However, based on observations during the site visit, Dosthane Café in Sokullu Mehmet Paşa Mosque may experience temporary income loss.

There are mobile fishermen operating within the Project area under the current conditions. Mobile fishermen actively fishing from the bridge will experience temporary access restrictions. These people form a variable group engaged primarily in hobby-oriented activities, which complicates the verification

of any consistent economic dependency. No regular income-generating activity or commercial use has been observed. Based on observations during the site visit, it is estimated that daily approximately 150-200 mobile fishermen actively fish from the bridge. Based on site observations and consultation with stakeholders (fishermen using the bridge, representatives of the Küçükmustafapaşa Fisheries Cooperative, Imam of Sokullu Mehmet Paşa Mosque, Headmen of affected neighborhoods), it is concluded that the fishing activities on the bridge are not primary source of livelihood. During the construction phase of the Atatürk Bridge Reinforcement Project, fishermen will need to temporarily move to/use alternative fishing spots.

It is important to note that there are multiple alternative public fishing locations available within walking distance (30 minute by walking) of the Subproject area, ensuring that local fishermen can continue their activities without significant disruption during the construction period. These include the Balat shoreline and park area, the Karaköy Coastal Park and its surrounding pier zone, the iconic and frequently used Galata Bridge, and the Eminönü shoreline, which offers accessible and high-footfall fishing spots.

Figure 19 Site Photos, Mobile Fishermen

While accessibility and income continuity are important for assessing livelihood impacts, the availability of comparable nearby locations, indicates that informal users are not subject to involuntary economic displacement under ESSs. Accordingly, no livelihood restoration measures are considered necessary for local fishermen. However, as a good practice in inclusive and informed planning, visual signage will be placed to guide users to these alternative fishing locations during the construction phase.

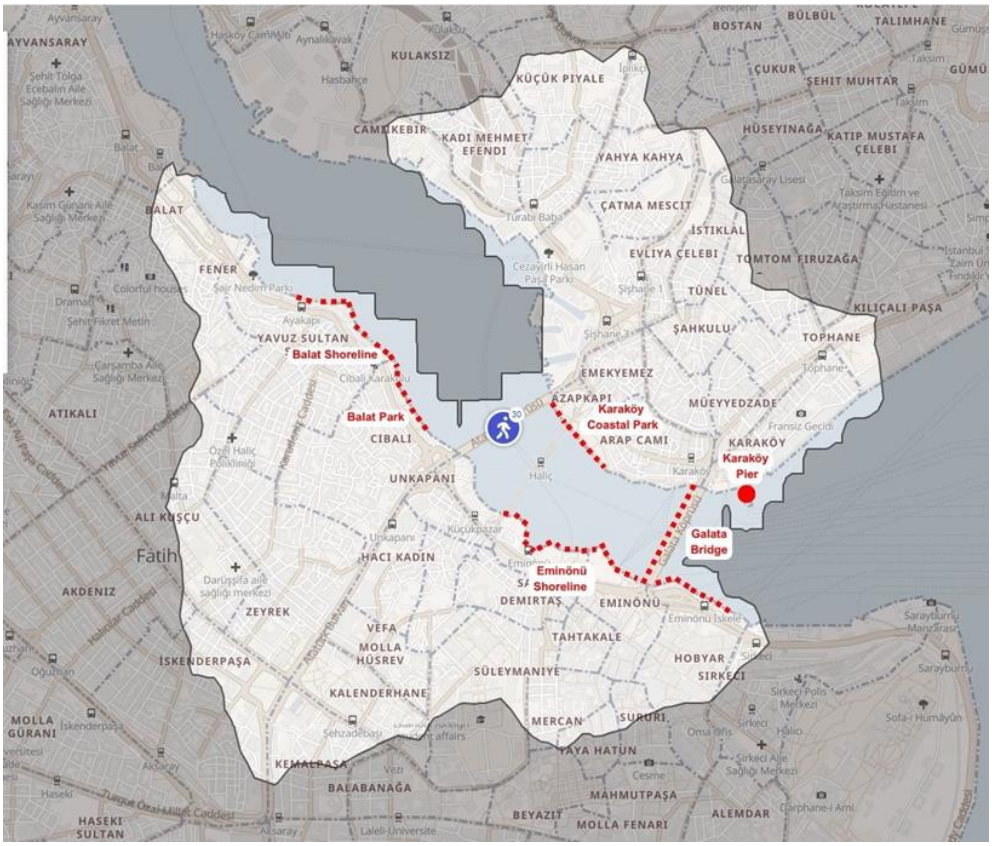


Figure 20 Alternative Public Fishing Locations[10]

The Subproject will also temporarily utilize the coastline area at the north part of Unkapanı side (marked in red in Figure 17). The area known as the Fener Ayakapı Shelter—classified as a fishing shore structure of unspecified type—is managed by the S.S. Küçükmustafapaşa Fisheries Cooperative. In addition to field observations, a direct consultation was held with representatives of the Küçükmustafapaşa Fisheries Cooperative in June 2025. During the interview, it was stated that the cooperative currently has 27 registered members; however, the shoreline that will be inaccessible is only 64 m from the bridge footing to the north is no longer actively used for fishing activities. It was further emphasized that the mooring area used by the cooperative is approximately 350 m and located at a distance from the Subproject's activities. The cooperative representative also noted that the boats currently seen near the construction area do not belong to cooperative members, but rather to individual citizens who use them for tourism purposes. Since the shoreline is generally not congested, boats in the affected area will be able to use the remaining shoreline. The temporary closure of a small area (sufficient for 3–4 boats) is not expected to cause any significant disruption. Therefore, the cooperative representatives expressed that they do not expect any adverse impact on their livelihoods or daily operations. This feedback further confirms the low level of risk associated with the use of the area during construction works. Nevertheless, individuals who currently have boats moored in the area need to be informed prior to the commencement of construction activities.

[10] İBB. (2017). Yeni Başlayanlar İçin Olta Balıkçılığı, İstanbul Olta Balıkçılığı. Tarım ve Su Ürünleri Müdürlüğü.

Figure 21 Temporarily Construction

Figure 22 A View from Temporarily Construction Area at the Coastline (North of Unkapanı Side)

Dosthane Café is located on the basement floor of the Sokullu Mehmet Paşa Mosque (Figure 23), a property owned by the General Directorate of Foundations. The café has been operated since 2016 by a tenant who has rented the space from the Directorate. During the site visit conducted on March 6, the café was visited and an interview was held with one of the café's partners.

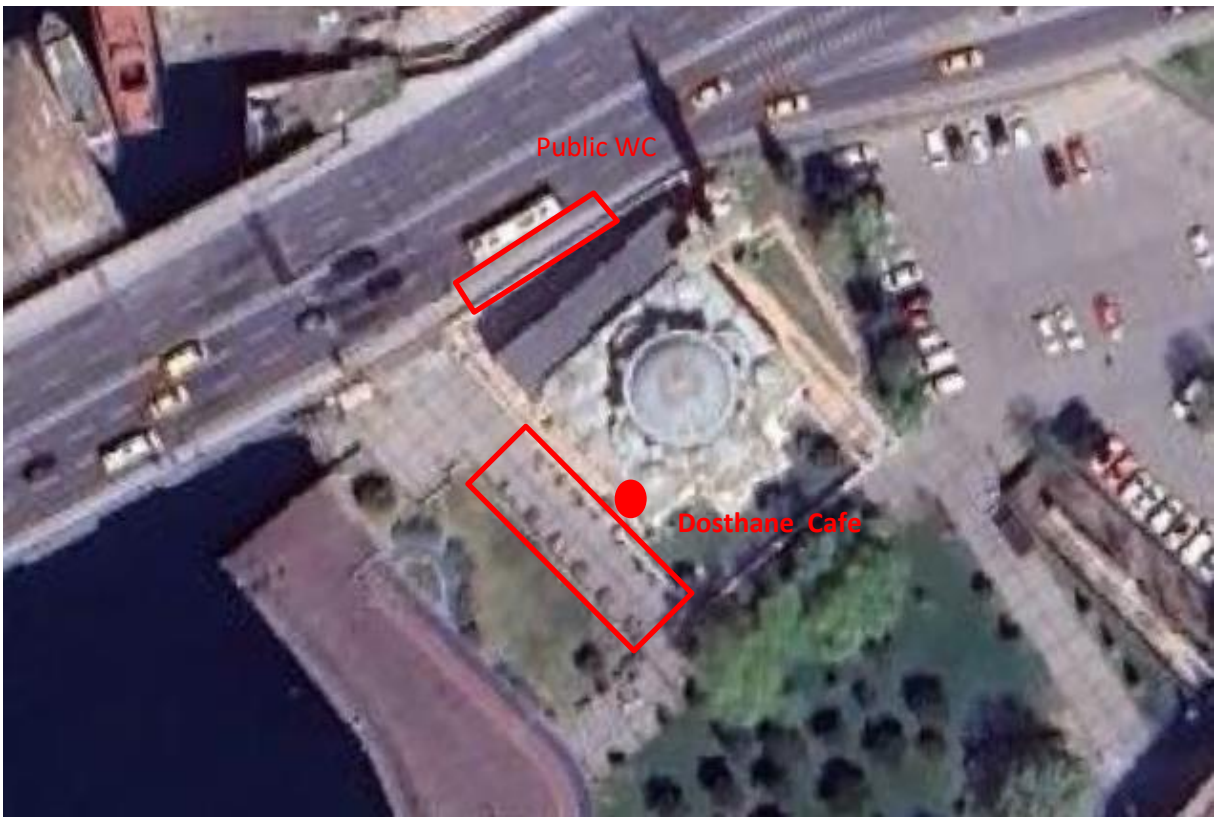


Figure 23 Location of Dosthane Cafe and Public Toilet

Figure 24 A view to Dosthane Café from the Bridge

There will be no restrictions on access to this business during project construction.According to information provided by one of the café's partners, the Dosthane Café has been operating since 2016, with a predominantly regular customer base. According to verbal statements, the café experiences a substantial increase in customer volume during the summer months compared to winter, with particularly high activity on weekends. Staffing levels are adjusted seasonally, with more personnel employed in the summer to meet demand. The business also indicated that operational expenses rise significantly in the summer, primarily due to increased staffing costs. These statements are self-reported and unverified.

Concerns have been raised regarding the reliability of the figures provided. Expert analysis suggests that the reported data may not accurately reflect the actual conditions. At the time of the interview, the business was undergoing renovation; however, the declared figures do not appear to consider this circumstance. Additionally, given the relatively limited physical capacity of the café, the reported customer volume, staffing levels, and financial expenditures appear disproportionate.

During the interview, it was mentioned that the business expects a decline in customer numbers and revenue due to the Subproject. However, given that the café was already under renovation with reduced staffing at the time of the interview, the claim of significant financial losses appears inconsistent with the current operational situation.

In light of these inconsistencies, it is recommended that the subsequent phases of the study will be supported by a more detailed analysis based on official and verifiable data. To ensure the accuracy and reliability of the findings, the assessment will be grounded in documented financial records, official customer figures, and verified staffing information provided by the business. LRP will be updated based on verified official written data and imlemented. These actions will be completed prior to the start of mobilisation to guarantee that all measures are informed by accurate and reliable information.

It was reported that the café hosts approximately 300-400 customers daily on weekdays and 2,000 customers on weekends during the winter months. In the summer months, these figures are reported to increase significantly, reaching 1,000 customers daily on weekdays and 3,000-4,000 customers on weekends. Additionally, it was stated that the business employs 13 staff members during the winter months and 25-30 staff members during the summer months.

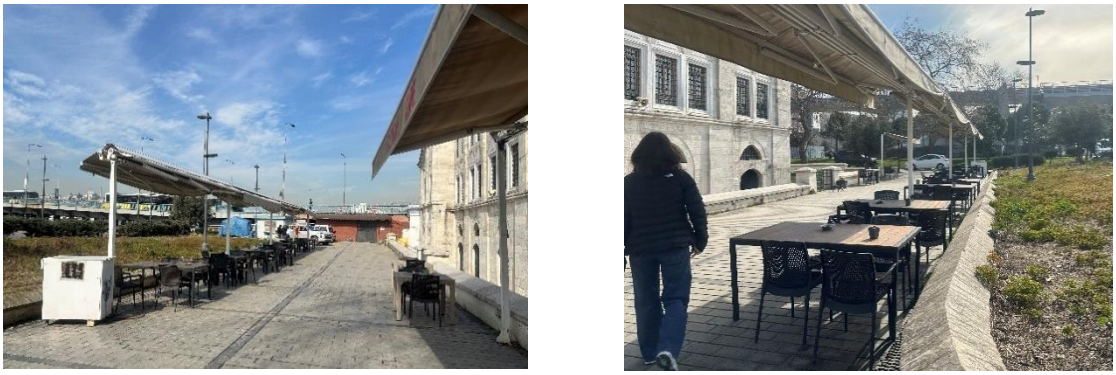


Figure 25 Site Photos, Dosthane Café

Additionally, it has been determined that the public toilet located near the bridge abutment will not experience any economic loss due to the Subproject. The toilet is operated by the Sokullu Mehmet Paşa mosque imam and there are no other employees working at the facility. Based on interviews conducted with the mosque imam, who also operates the toilet, it was noted that due to persistent infrastructure problems, the toilet has not been functioning efficiently. The operator has already decided to shut down operations, no matter what happens with the Subproject. Therefore, no direct adverse impact on the mobile toilet business is expected. The facility is expected to remain operational throughout the construction period, and no disruptions to its revenue stream or customer accessibility have been identified.

Furthermore, in a consultation conducted in June 2025 with the mosque imam, who also operates the public toilet, it was stated that the facility has not been actively used due to ongoing infrastructure problems. Although no specific data was shared regarding the number of daily users, the operator indicated that the toilet was already planned to be closed down due to inadequate infrastructure, as the income generated every 15 days was insufficient to cover the costs of resolving the recurring blockages and improving the sanitation system. Therefore, no adverse impact on income or business is anticipated.

Figure 26 Site Photos, Public Restroom Facility

2.6.3.5 Land Use, Function of the Area

The land use map around Unkapanı (Atatürk) Bridge and its surroundings reflects a transition from dense residential areas to mixed-use and commercial functions. Cibali neighborhood, with its high population density (252.78 p/ha), is predominantly residential but also contains public and service functions. Moving towards the bridge, Yavuz Sinan and Sarıdemir neighborhoods show a lower population density, indicating a shift towards commercial and infrastructure-related uses, particularly due to their proximity to major transit corridors.

On the opposite side of the bridge, Arap Cami and Emekyemez neighborhoods have significantly lower residential densities, aligning with their land use, which includes commercial, office, and service activities. The Bedrettin neighborhood, though still partly residential, has a moderate density, suggesting a mixed character. The Unkapanı (Atatürk) bridge acts as a major urban connector, reinforcing economic activities in the lower-density areas while maintaining residential continuity in denser neighborhoods like Cibali. The influence of the bridge and transportation network creates a functional gradient, where land use shifts from residential-dominated areas to commercial, service, and transit-related spaces as one moves closer to the waterfront and the primary road network. (Further details on land use at the provincial and district levels are presented in Annex H).

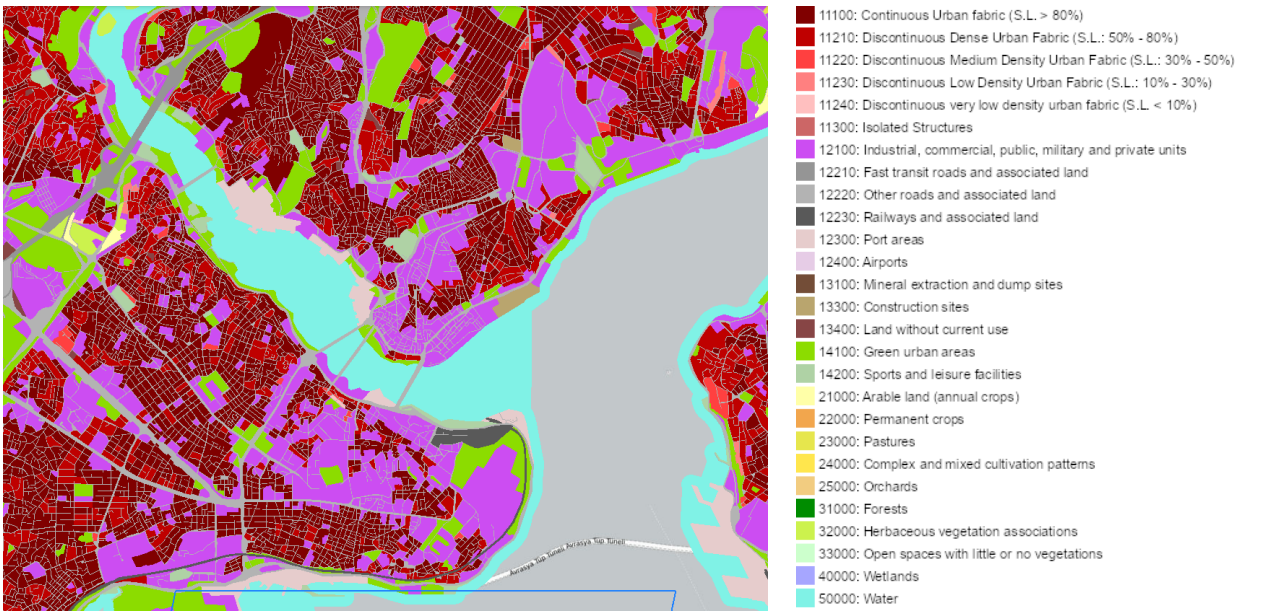


Figure 27 Land Use Map of Beyoğlu and Fatih Districts by Urban Atlas
Source: *European Environment Agency (EEA). (2020). Urban Atlas 2018: Land use and land cover data for European cities. European Environment Agency. https://www.eea.europa.eu/data-and-maps/data/urban-atlas*

2.6.3.6 Education and Health Services

The Subproject area is predominantly an area with intense commercial and cultural activities and is not a densely populated residential area. For this reason, the number of schools located close to the bridge is relatively small. However, there are educational areas located at the certain intervals near the Beyoğlu exit of the bridge, including the Beyoğlu Tersane-i Amire Anatolian High School and Kasımpaşa Anatolian High School (approximately 281 meters to bridge, straight-line distance). There are a total of three educational institutions in this area (Ayşe Ege Multi-Program Anatolian High School and Beyoğlu Dr. Tevfik Sağlam Secondary School), all located approximately 680 meters away to bridge in straight-line distance.

Besides Medipol University Haliç Campus (approximately 310 meters to bridge, straight-line distance), Kadir Has University (approximately 400 meters to bridge, straight-line distance) and Istanbul Galata University Faculty of Arts and Social Sciences (approximately 440 meters to bridge, straight-line distance) are located in the Direct Social Impact Area of the Subproject. There is no health facility in the Direct Social Impact Area of the Subproject (Figure 28).

The Unkapanı (Atatürk) Bridge and its surroundings are historically and culturally important areas of Istanbul. The nearest cultural building (Mimar Sinan Statue) is 184 meters away from the bridge. Figure 28 shows structures serving sensitive groups such as health facilities, schools, administrative buildings, cultural structures, and places of worship. Since this area is densely populated in terms of both settlement and trade, the location and accessibility of social facilities are of great importance. In particular, educational institutions, places of worship, and health facilities are among the elements that directly affect the daily lives of the region's residents.

There are several mosques and schools around the foot of the Unkapanı (Atatürk) Bridge. These structures make a significant contribution to the education and worship services in the region. The five closest mosques to the bridge include Sokullu Mustafa Paşa Mosque (approximately 14 meters away), Süleyman Subaşı Mosque (approximately 153 meters), Yavuz Ersinan Mosque (approximately 168 meters), Haraççı Karamehmet Mosque (approximately 215 meters), and Şazeli Tekke Mosque (approximately 228 meters), all measured as straight-line distances. Their proximity highlights the importance of maintaining uninterrupted access to worship services, particularly for especially vulnerable populations such as the elderly, who may rely on these facilities on a daily basis.

When the distribution of schools for disabled and special care groups is examined, it is seen that they are especially concentrated in the central Fatih area. The fact that there are several in the direct impact area around the Unkapanı (Atatürk) Bridge shows that the access needs of these groups should be taken into account.

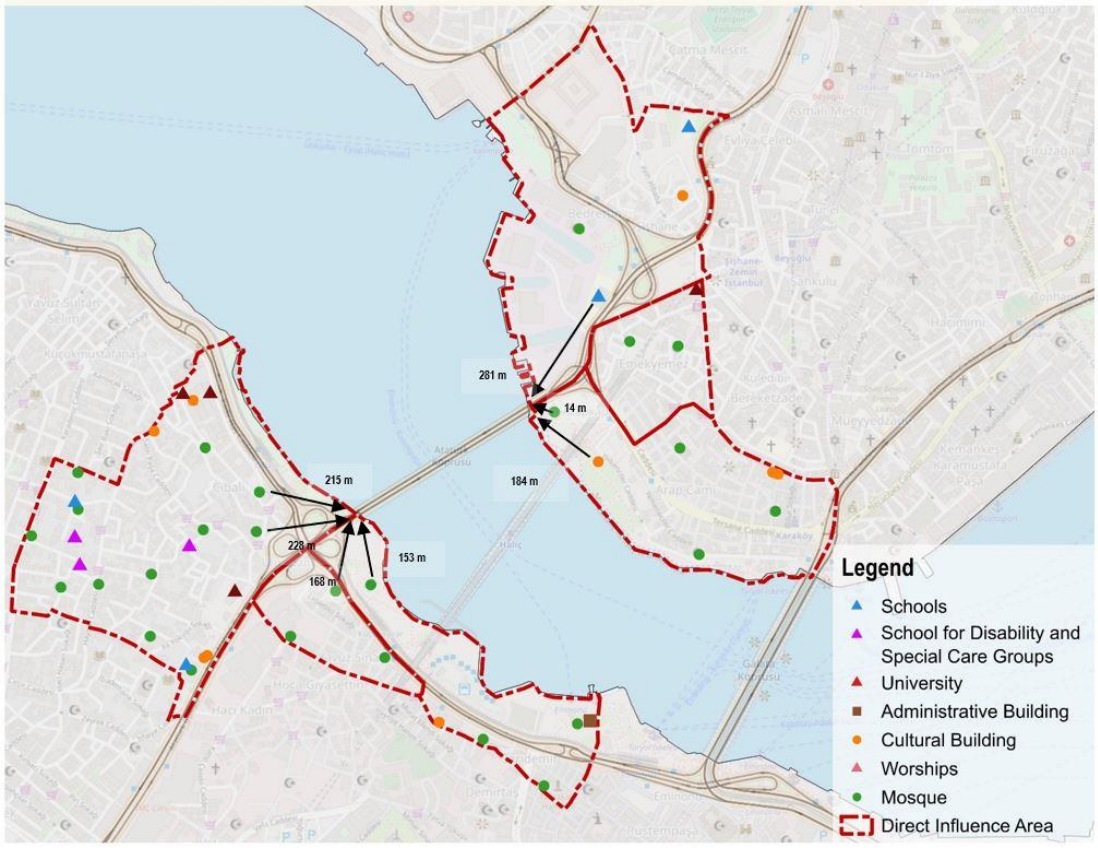


Figure 28 Distribution of Sensitive Receptors

Source: *StraSpace Geodatabase. (2025). Sensitive Receptors [Point data set]. and Bulurum. (2025). Okullar - Bedensel ve Zihinsel Engelliler [Schools – Physically and Mentally Disabled]. Bulurum. https://www.bulurum.com/search/Okullar-Bedensel-ve-Zihinsel-Engelliler/28,90966415405273/40,997067038083756/29,045276641845703/41,0479645499144?mapSearch=true*

2.6.3.7 Infrastructure Services

As stated in the feasibility report[11], there is no infrastructure service in the Subproject area. The region where the Unkapanı (Atatürk) Bridge Reinforcement Project will be carried out is not directly connected to any infrastructure network such as electricity, water, sewage, telecommunications or natural gas.

2.6.3.8 Transportation and Traffic

According to the Traffic Index ranking[12], İstanbul ranks 141st globally with a congestion level of 41%. The average travel time per 10 km is 22 minutes and 25 seconds, which increased by 20 seconds compared to 2023. Additionally, drivers lose 96 hours annually due to traffic congestion, highlighting its significant impact on time efficiency. İstanbul ranks 35th globally in terms of overall traffic congestion.
According to the Feasibility Report[13], the Unkapanı (Atatürk) Bridge is one of Istanbul's busiest traffic arteries, carrying approximately 100,000 vehicles per day. Given that Istanbul's traffic cannot withstand a

[11] Istanbul Metropolitan Municipality. (2025). Istanbul Ataturk (Gazi) Bridge Reinforcement Project Feasibility Study Report. Istanbul Metropolitan Municipality.
[12] TomTom. (2025). TomTom Traffic Index: Ranking. https://www.tomtom.com/traffic-index/ranking/
[13] Istanbul Metropolitan Municipality. (2025). Istanbul Ataturk (Gazi) Bridge Reinforcement Project Feasibility Study Report. Istanbul Metropolitan Municipality.

complete closure, the bridge reinforcement Subproject will be carried out in phases over 18 months to ensure continued traffic flow. Instead of full closure, lane-based traffic adjustments will be implemented, with specific lane shifts during peak morning and evening hours to minimize disruption. Additionally, alternative routes such as the Haliç and Galata Bridges will help distribute traffic load. This strategic approach aims to enhance the bridge's seismic resilience and extend its structural lifespan while maintaining the city's vital transportation network.

There are 65 IETT bus lines that utilize the Unkapanı (Atatürk) Bridge. Among these, 26 lines operate in both directions across the bridge, while the remaining lines use it in a single direction only. The single-direction use is generally in the Unkapanı – Şişhane direction. These bus routes provide access to well-known districts and stops across Istanbul, including Eminönü, Taksim, Şişli, Yenikapı, Gaziosmanpaşa, Cevatpaşa, Feriköy, Kasımpaşa, Kâğıthane, Kocamustafapaşa, Kazlıçeşme, Alibeyköy, Zeytinburnu, Kuyumcukent, Giyimkent, Bahçeşehir, Beylikdüzü, Esenkent, Florya, Ataköy, and Yenibosna. According to data obtained from the Istanbul Metropolitan Municipality's open data portal[14], the total average daily number of passengers using these bus lines is approximately 275,000. The bus routes and passenger density are visualized on the map shown in Figure 29.

As illustrated in Figure 29, the Unkapanı (Atatürk) Bridge is heavily utilized by IETT services, and this usage extends across a large portion of Istanbul. This widespread distribution can be considered as an indirect influence area. (Further details on transportation and traffic at the provincial and district levels are presented in Annex H).

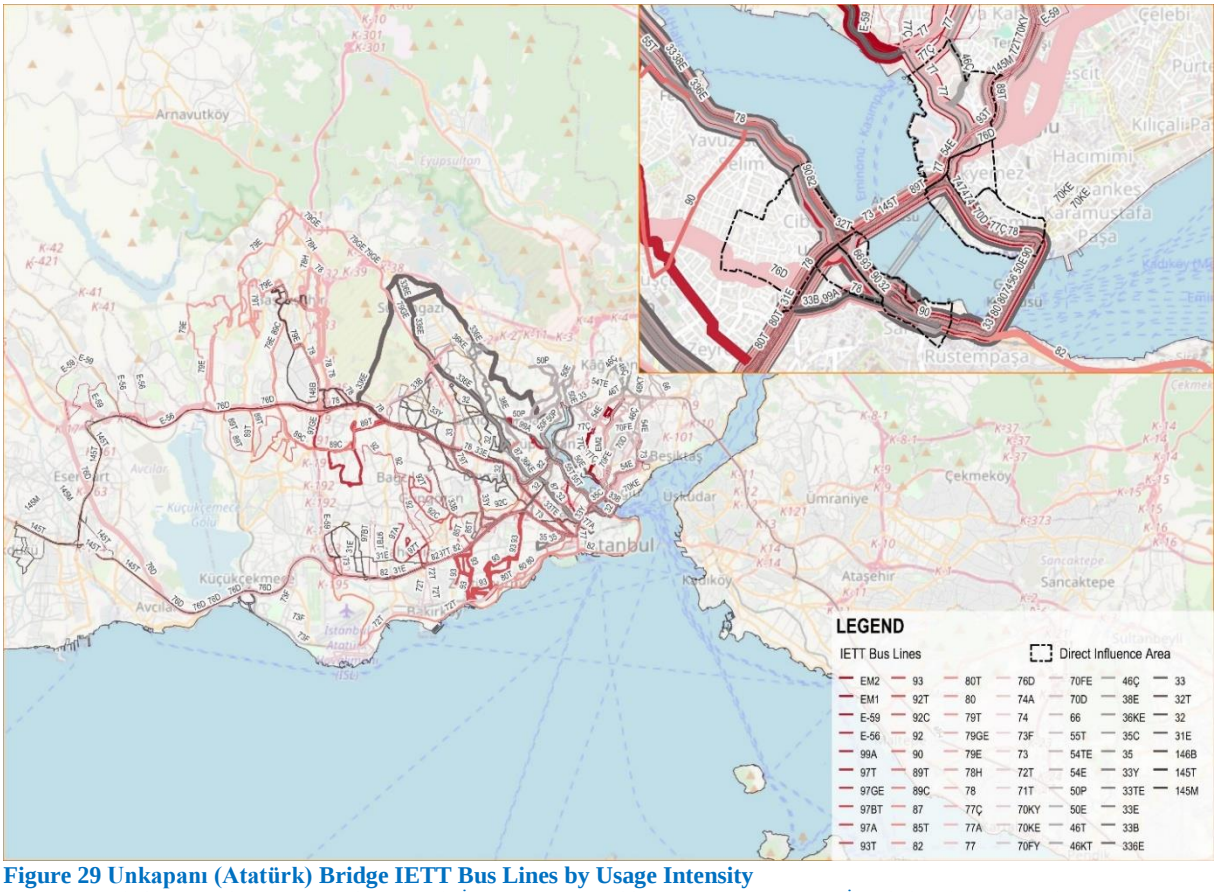


Figure 29 Unkapanı (Atatürk) Bridge IETT Bus Lines by Usage Intensity
Source: *Istanbul Metropolitan Municipality. (2025). İETT Hat Güzergahları [IETT Route Lines]. İstanbul Açık Veri Portalı. https://data.ibb.gov.tr/dataset/iett-hat-guzergahlari*

As provided in Annex H, although the vehicle traffic on the Atatürk Bridge is generally balanced between the directions, there are directional differences in hourly and daily changes. The Şişhane-Unkapanı

[14] Istanbul Metropolitan Municipality. (2023). IETT bus line routes [Data set]. Open Data Portal. https://data.ibb.gov.tr/dataset/iett-hat-guzergahlari/resource/4ccb4d29-c2b6-414a-b324-d2c9962b18e2

direction is busier on weekdays. In the morning hours, the Şişhane direction (going to work) is more dominant, and in the evening hours, the Unkapanı direction (returning home) is more dominant.

2.6.3.9 Disadvantaged or Vulnerable Individuals or Groups

According to WB ESF, social risks and impacts, including risks that Subproject impacts fall disproportionately on individuals or groups who, because of their circumstances, may be disadvantaged or vulnerable should be taken into account.

Disadvantaged or vulnerable refers to those who may be more likely to be adversely affected by the Subproject impacts and/or more limited than others in their ability to take advantage of a Subproject's benefits. Such an individual/group is also more likely to be excluded from/unable to participate fully in the mainstream consultation process and as such may require specific measures and/or assistance to do so. This will take into account considerations relating to age, including the elderly and minors, and including in circumstances where they may be separated from their family, the community or other individuals upon whom they depend (WB ESF)

Within the Subproject, vulnerable or disadvantaged groups may include but are not limited to the following:

- Individuals over 65 years of age living alone;
- Physically or mentally handicapped;
- People who have a chronic illness or are bedridden;
- Women heads of households;
- Poor people who live on state or association aid;
- Persons who are economically dependent on unique natural resources;
- Peasants who do not own land and work daily on other people's land;
- Refugees.

Based on local headmen interviews on June 2025, information regarding the presence of disadvantaged and vulnerable groups within the Subproject area was collected. The categorization of vulnerable and disadvantaged groups was developed in alignment with the definitions provided under ESS10. Efforts were made to reach out to all six neighbourhoods in the AoI; however, the headmen of Emekyemez and Arap Cami neighborhoods either could not be reached or declined to provide data. During the interviews, all categories of vulnerable groups identified under the WB ESF framework were inquired. It was confirmed that there are no child-headed households, refugees, landless agricultural workers, or individuals dependent on unique natural resources within the Subproject area. The only categories identified through consultations were poor households, female-headed households, and individuals with physical disabilities. The remaining three headmen provided responses, and the site-specific information gathered is presented in the table below.

Table 11 Summary of Vulnerable Groups in the Subproject Area

District	Neighborhood	Population, 2024	Number of Poor Households	Female-headed Households	Physically Disabled People
Beyoğlu	Bedrettin	576	100	50	2
	Emekyemez	177	*	*	*
	Arap Cami	97	*	*	*
	Total	**850**	**100**	**50**	**2**
Fatih	Cibali	6,979	740	32	10-11
	Sarıdemir	1	0	0	0
	Yavuz Sinan	251	50	0	5-10
	Total	**7,231**	**790**	**32**	**15-21**

Source: StraSpace Headmen Interviews. (2025).
Source: *Turkish Statistical Institute (TÜİK). (2025). MEDAS – Address Based Population Registration System (ABPRS) Database. Turkish Statistical Institute. https://biruni.tuik.gov.tr/medas/?kn=95&locale=tr*
*** No Data**

According to headmen interviews conducted in June 2025, several insights were obtained regarding the presence of disadvantaged or vulnerable individuals and households within the Subproject area. In Bedrettin (population: 576), the headman reported that approximately 100 households belong to poor groups, including 50 female-headed households and 2 physically disabled individuals. In Yavuz Sinan (population: 251), an estimated 50 households were identified as poor, while 5–10 residents have physical disabilities. Cibali (population: 6,979) showed the highest vulnerability levels: around 740 residents were reported to receive aid due to poverty, 32 households are headed by women, and 10–11 physically disabled individuals were recorded, all of whom are provided with electric wheelchairs by the municipality.

In Sarıdemir (population: officially 1 according to TurkStat, though the headman claimed 10–15 residents), no disadvantaged or vulnerable individuals were identified. The headmen of Emekyemez and Arap Cami neighborhoods either could not be reached or declined to provide data. Across all neighborhoods, no cases of child-headed households or refugees were reported. Thus, the primary disadvantaged groups identified in the Subproject area include poor households, female-headed households, and people with physical disabilities.

Also, according to data obtained from the Istanbul Metropolitan Municipality's open data portal[15], the neighborhoods of Arap Cami, Bedrettin, Cibali, Emekyemez, and Yavuz Sinan are among the most socially vulnerable areas within the Subproject area due to their low socioeconomic status and consistent receipt of aid. According to the data obtained from the IMM open data portal[16], Cibali received the highest number of households supports among the neighborhoods, while Bedrettin and Yavuz Sinan received limited aid, support to Arap Cami and Emekyemez decreased over time, and no assistance was provided to Sarıdemir between 2021 and 2023 (Further details on Istanbul and district-level (Fatih and Beyoğlu) are presented in the Annex H).

2.6.3.10 Complaints and Requests

Between January 2023 and February 2025, a total of 15 complaints and suggestions were submitted through the external complaint mechanism regarding Unkapanı (Atatürk) Bridge. Of these, 11 were requested for an accessible ramp, while the remaining ones concerned the bridge and the city square. All complaints and requests were forwarded to the Infrastructure Projects Directorate.

Table 12 List of Complaints and Requests

Main Issue	Sub-Title	District	Complaint Channel	Complaint Status	Date Range	Response Time (days)	Solution
Complaints							
Pedestrian safety issue	Bridge/Viaduct	Beyoğlu	Headmen Communication and Solidarity Meeting	Closed	13.09.2024/ 26.11.2024	74	Will be evaluated after feasibility study.
Infrastructure inadequacy	Bridge/Viaduct	Fatih	Phone	Closed	08.01.2025/	15	Included in

[15] Istanbul Metropolitan Municipality. (2023). Distribution numbers of aid packages by neighborhood headships [Data set]. Open Data Portal. https://data.ibb.gov.tr/dataset/muhtarliklar-yardim-kolisi-dagitim-sayilari

[16] Istanbul Metropolitan Municipality. (2025). Number of households receiving social aid by neighborhood dataset. https://data.ibb.gov.tr/dataset/mahallelere-gore-sosyal-yardim-alan-hane-sayisi

					23.01.2025		investment program, will be evaluated in tender scope.
Urban aesthetic issue	Landscape Planning	Beyoğlu	WhatsApp	Closed	06.05.2024/ 27.05.2024	21	Will be implemented within the street improvement project.
Accessibility issue	Urban Square	Beyoğlu	Phone	Closed	13.06.2024/ 11.07.2024	28	Will be evaluated together with the bridge project.
Requests							
Pedestrian safety	Disabled Ramp	Fatih	E-Mail	Closed	08.12.2023/ 02.01.2024	25	Will be evaluated within the investment program.
One-way access issue	Disabled Ramp	Fatih	Phone	Closed	17.01.2023/ 02.02.2023	16	At-grade crossing suggested.
Ramp standardization	Disabled Ramp	Fatih	Phone	Closed	04.10.2023/ 12.12.2023	69	Included in 2024 investment program.
Bridge–underpass access	Disabled Ramp	Fatih	Phone	Closed	05.01.2024/ 16.01.2024	11	Will be reviewed within the project scope.
Infrastructure	Disabled Ramp	Fatih	Phone	Closed	16.01.2024/ 22.02.2024	37	Strengthening project will be implemented.
Electricity-related hazard	Disabled Ramp	Fatih	Phone	Closed	16.01.2024/ 26.02.2024	41	Included in strengthening tender.
Accessibility (for disabled, kids)	Disabled Ramp	Fatih	Phone	Closed	15.02.2025/ 25.02.2025	10	At-grade crossings should be used.
Urban aesthetics	Disabled	Eyüpsultan*	Web	Closed	04.08.2023/	7	Renewal projects are

	Ramp				11.08.2023		being prepared.
Urban aesthetics	Disabled Ramp	Fatih	Web	Closed	16.06.2023/ 07.07.2023	21	Included in the project scope for urban improvement.
Public transport and accessibility	Disabled Ramp	Fatih	Web	Closed	01.04.2024/ 13.06.2024	73	Works ongoing requests have been forwarded.
Accessibility (for disabled, kids)	Disabled Ramp	Fatih	WhatsApp	Closed	07.02.2024/ 05.03.2024	27	Not feasible due to lack of space.

* Eyüpsultan is not within the Subproject's area (which covers Fatih and Beyoğlu districts); however, a request submitted from this district concerns the Atatürk (Unkapanı) Bridge and has therefore been included in the table.

The complaints were submitted through various channels, including phone, WhatsApp, web, email, and the Headmen Communication and Solidarity Meeting. All cases have been resolved, with an average resolution time of 31 days. However, although all complaints have been resolved, an average resolution time of 31 days is considerably high.

It is important to note that the requests for an accessible ramp refer to an underpass that is located outside the construction site boundaries. Therefore, these requests do not fall within the scope of the current Subproject and cannot be addressed as part of it.

In Figure 48 in Annex J, the orange-shaded area indicates the construction site of the Subproject, while the red rectangle marks the location of the underpass mentioned in the complaints. As seen, the underpass is located outside the boundaries of the construction site, and therefore, does not fall within the scope of the ongoing Subproject. These complaints and requests were submitted via multiple channels, such as phone, WhatsApp, email, web form, and governance meetings, in line with the Grievance Mechanism (GM) structure defined in Section 6 of the SEP. The GM is designed in compliance with ILBANK's GM, where all grievances received by IMM departments, contractors, subcontractors, or via national platforms (e.g. CIMER) are to be compiled in a centralized database managed by the Project Implementation Unit (PIU). As per the SEP, the PIU is responsible for coordination and timely resolution, while IMM's Infrastructure Projects Directorate directly follows up on grievances related to the Subproject activities.

2.6.3.11 Labour and Working Conditions

This section has been prepared in accordance with the Subproject-specific Labor Management Plan (LMP), which was developed in line with the Project-level Labor Management Procedure disclosed on ILBANK's official website and in compliance with the World Bank's Environmental and Social Standard 2 (ESS2).

2.6.3.11.1 Work Force

As outlined in the Manning Schedule[17] and the Feasibility Report[18], the Subproject is expected to employ an average of 75 personnel per month over a 18-month implementation period, amounting to approximately 1,200 man-months in total. This workforce will include skilled and unskilled site workers, technical staff, and dedicated HSE personnel. Labour will be sourced primarily through the Contractor and subcontractors, with recruitment expected to occur locally. At the baseline stage, no workers have been mobilized on-site.

Based on information provided by the designer and İBB, the workforce will primarily reside in Istanbul. There will not be camp site for accommodation. Instead, daily transportation will be provided via shuttle services which will be arranged for blue-collar (about 40) workers, and vehicles will be made available for white-collar staff when necessary. A designated on-site dining and basic needs area will be established to serve meals and provide access to hygiene and sanitary facilities during working hours within the temporary construction zones planned for the Subproject. .This arrangement minimizes the potential social and environmental impacts commonly associated with large-scale worker accommodations, such as waste generation, water usage, and disruption to local communities.

2.6.3.11.2 Human Resources Policies and Working Relationships

As of the time of this assessment, formalized human resource policies for the Subproject are in draft form. The Contractor's internal procedures will provide initial guidance on employment conditions, including provisions for written employment contracts, working hours, and payment of wages. Labour records will be maintained on-site in accordance with Turkish law. While workers have not yet been hired, future working relationships will be shaped through onboarding, safety inductions, and scheduled toolbox meetings. A grievance mechanism is referenced in the draft OHS documentation, though details on accessibility and confidentiality measures will need to be confirmed during implementation.

2.6.3.11.3 Child and Forced Labour

The employment of individuals under the age of 18 or the use of any form of forced labour is strictly prohibited under Turkish law and will be prohibited under all contractor and subcontractor agreements. The Subproject’s risk of child or forced labour is considered low given the nature of the work and the formal contractual environment. Nonetheless, standard procedures will include age verification at the time of hiring and contractual clauses that commit all parties to compliance with national and international labour standards.

2.6.3.11.4 Non-Discrimination and Equal Opportunity

Equal access to employment will be promoted regardless of gender, ethnicity, religion, age, or disability. While the construction sector typically presents gender disparities, measures such as inclusive job postings, anti-harassment training, and monitoring of recruitment practices will be introduced to improve gender equity. The Contractor will be contractually required to maintain records of workforce composition and to report on the implementation of equal opportunity measures throughout the construction period.

[17] DRAFT Manning Schedule.

[18] Istanbul Metropolitan Municipality (2025). Istanbul Atatürk (Gazi) Bridge Reinforcement Project Feasibility Study Report.

2.6.3.12 Occupational Health and Safety

2.6.3.12.1 Existing Physical Conditions Summary

As of the time of this assessment, no active construction activities are underway at the Unkapanı (Atatürk) Bridge site. Nonetheless, the location presents several inherent OHS risks due to its physical and contextual attributes. The bridge is situated in a densely urbanized area, with constant vehicular and pedestrian movement, and it directly spans the Golden Horn waterway. These characteristics result in heightened exposure to safety hazards even during routine maintenance.

Routine operations carried out by the IMM[19], such as minor structural inspections, lighting maintenance, cleaning, and surface repairs, involve intermittent work at heights, operation near live traffic, and work in proximity to the water's edge. The IMM has an established Occupational Health and Safety Directorate (Isg.ibb.istanbul), which oversees risk assessments, emergency preparedness, employee health monitoring, and training activities across municipal operations.

Specifically, the Occupational Health Services Division (Is Sagligi Hizmetleri Şefliği) conducts periodic health screenings, assesses job suitability, and contributes to emergency action planning. The Emergency Response Division (Acil Durum Şefliği) is responsible for organizing emergency drills, delivering awareness training, and coordinating with other institutions to improve readiness and response capacity.
Although these municipal-level systems are in place, the assessment found that the Atatürk Bridge site itself does not currently maintain permanent, Subproject-specific OHS infrastructure, such as designated first aid points or full-time safety personnel. Work zones are often marked with temporary measures, and access control or physical barriers are applied ad hoc depending on the maintenance task. This emphasizes the need to transition from general municipal systems to a tailored, site-specific OHS framework ahead of the planned reinforcement works.

2.6.3.12.2 Existing OHS Policies, Manuals and Records Review

The Subproject has established a foundational framework for OHS management through a series of draft documents. These documents are aligned with Turkish Law No. 6331[20] on Occupational Health and Safety and are designed to meet international standards, particularly the World Bank's Environmental and Social Standard ESS2 (Labour and Working Conditions).
Key documents include:

- Draft HSETC Plan[21], which outlines site-wide protocols for health, safety, environmental, and traffic control measures;
- Draft OHS Internal Directive[22], detailing internal procedures for incident reporting, PPE use, emergency response, and safety committee operations;
- Draft Zero Tolerance Policy[23], establishing mandatory disciplinary action for high-risk safety violations;
- Draft Risk Analysis[24], identifying and evaluating site-specific hazards based on likelihood, severity, and exposure;
- Draft PPE Handover Form[25], providing a mechanism to track the distribution and assignment of protective equipment.

[19] Istanbul Metropolitan Municipality Occupational Health and Safety Directorate. (2025). *About Us*. Retrieved from https://isg.ibb.istanbul/hakkimizda.
[20] Republic of Türkiye. (2012). Law No. 6331 on Occupational Health and Safety. Official Gazette No. 28339, dated June 30, 2012.
[21] Health, Safety, Environment and Traffic Control Plan (DRAFT 2.5.2 HSETC Plan). Occupational Safety and Health Authority, "Internal Directive Guidelines", 2023
[22] İş Sağlığı ve Güvenliği İç Yönergesi (DRAFT 2.5.5a). Occupational Safety and Health Authority, "Internal Directive Guidelines", 2023
[23] Sıfır Tolerans Politikası (DRAFT 2.5.5b). National Safety Council, "Zero Tolerance Safety Policy Framework", 2022
[24] Risk Analizi Raporu (DRAFT 2.5.1a). International Labour Organization (ILO), "Risk Assessment in Construction Sites", 2023
[25] Kişisel Koruyucu Donanım Zimmet Formu (DRAFT 2.5.1b). European Agency for Safety and Health at Work, "PPE Distribution and Accountability Standards", 2023

These documents collectively form a strong administrative base. However, they are in preparatory status and have not yet been implemented on-site, as construction activities have not commenced. Their effectiveness will depend on consistent application, field-level monitoring, and periodic updates throughout the Subproject lifecycle.

2.6.3.12.3 Comparison to Subproject Standards: Key Differences between Turkish OHS Legislation and World Bank Standards

The OHS framework in Türkiye is primarily governed by Law No. 6331 on Occupational Health and Safety, which outlines employer responsibilities, risk assessment procedures, training requirements, and enforcement mechanisms. While this legislation establishes a solid regulatory baseline, several differences exist when compared with the World Bank's Environmental and Social Standard 2 (ESS2) on Labour and Working Conditions.

Table 13 Comparison of Turkish legislation and World Bank Standards

Topic	Turkish Legislation (Law No. 6331)	World Bank ESS2
Scope of Application	Applies primarily to formal workplaces and registered employees	Applies to direct, contracted, community, and primary supply workers
Grievance Mechanism	Not mandatory under national law	Requires an accessible, confidential, and documented grievance mechanism
Labour Management Procedures	Not required as a standalone document	LMP must be developed and maintained throughout the Subproject lifecycle
OHS Performance Monitoring	Based on inspections by public authorities	Requires continuous monitoring and reporting to the Bank
Worker Representation	Allows for union participation, no direct site-level mandate	Encourages worker committees and dialogue on-site
Non-Discrimination	Covered generally in labour law	Must be explicitly addressed in hiring, remuneration, and working conditions
Gender and Vulnerability	Not specifically emphasized	Requires consideration of vulnerable groups, including women and migrant workers

According to Turkish Law No. 6331 on Occupational Health and Safety, employers may either provide OHS services in-house or receive them from external providers, depending on the workplace risk level and number of employees. Under the Subproject, OHS services will be delivered in-house by dedicated personnel within the PIU to be established by the Istanbul Metropolitan Municipality. Subborower has in-house capacity for management of OHS services as described in Section 5.1.

While Türkiye's legislation provides a strong foundation for OHS compliance, the World Bank standards demand a more proactive, inclusive, and participatory approach. To ensure full alignment, the Subproject will adopt additional measures such as establishing a formal grievance mechanism, site-specific LMP, and regular OHS performance reporting to meet World Bank requirements. Related risks and impacts concerning labor and working conditions and occupational health and safety are discussed in Sections 4.1.5 and 4.1.6, respectively.

2.6.3.13 Cultural Heritage (Tangible[26] and Intangible[27])

The Unkapanı (Atatürk) Bridge connects the Fatih and Beyoğlu districts of Istanbul, creating an important connection both physically and culturally. Atatürk Bridge is a continuous girder bridge supported by pontoons, spanning the Golden Horn and linking Unkapanı in Fatih to Azapkapı in Beyoğlu. It is the fourth bridge constructed at this location, with its foundation laid on September 6, 1936, and it has been operational since its inauguration on October 29, 1939.

Tangible Cultural Heritage:

The Subproject is the Unkapanı (Atatürk) Bridge, which is already a tangible cultural heritage element. Built in the 1930s, the bridge is one of the transportation projects of Istanbul's early Republican period. Its architectural structure is valuable in terms of period technology and engineering. Especially in the Fatih district, traditional Ottoman-era street structures can be seen in locations close to the bridge.

The structures such as Mimar Sinan's Süleymaniye Mosque, Zeyrek Mosque, Golden Horn Shipyard, Galata Mevlevi Lodge (shown in Figure 30) located around the bridge are important tangible cultural values. In addition, the Sokullu Mehmet Paşa Mosque located at the foot of the bridge is also a cultural heritage element. The subproject is also located next to the Golden Horn shipyard. However, there will be no work in the cultural heritage area.

The Subproject area located in the Beyoğlu district includes a main transmission pipe of the Hamidiye Waterways and a historical fountain connected to this system and historical fountain connected to Hamidiye waterways. According to the decision numbered 15775 of the Istanbul Fourth Cultural Heritage Protection Board, dated September 2, 2025, of the Ministry of Culture and Tourism, there are no historical waterways or structures within the Subproject area, located in the Fatih district (see Annex-I).

Hamidiye waterways were registered as cultural assets requiring protection with the decision of Istanbul Number 2 Cultural and Natural Assets Protection Regional Board dated 16.06.2010 and numbered 3556. The map showing the location of the Hamidiye Waterways and historical fountain is presented in Figure 31.

The decision of the Istanbul 2nd Regional Board for the Protection of Cultural Heritage confirmed that no cultural property was encountered during the drilling works within the Unkapanı (Atatürk) Bridge Reinforcement Project and that the implementation poses no objection under Law No. 2863; the official decision is presented in Annex I

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

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

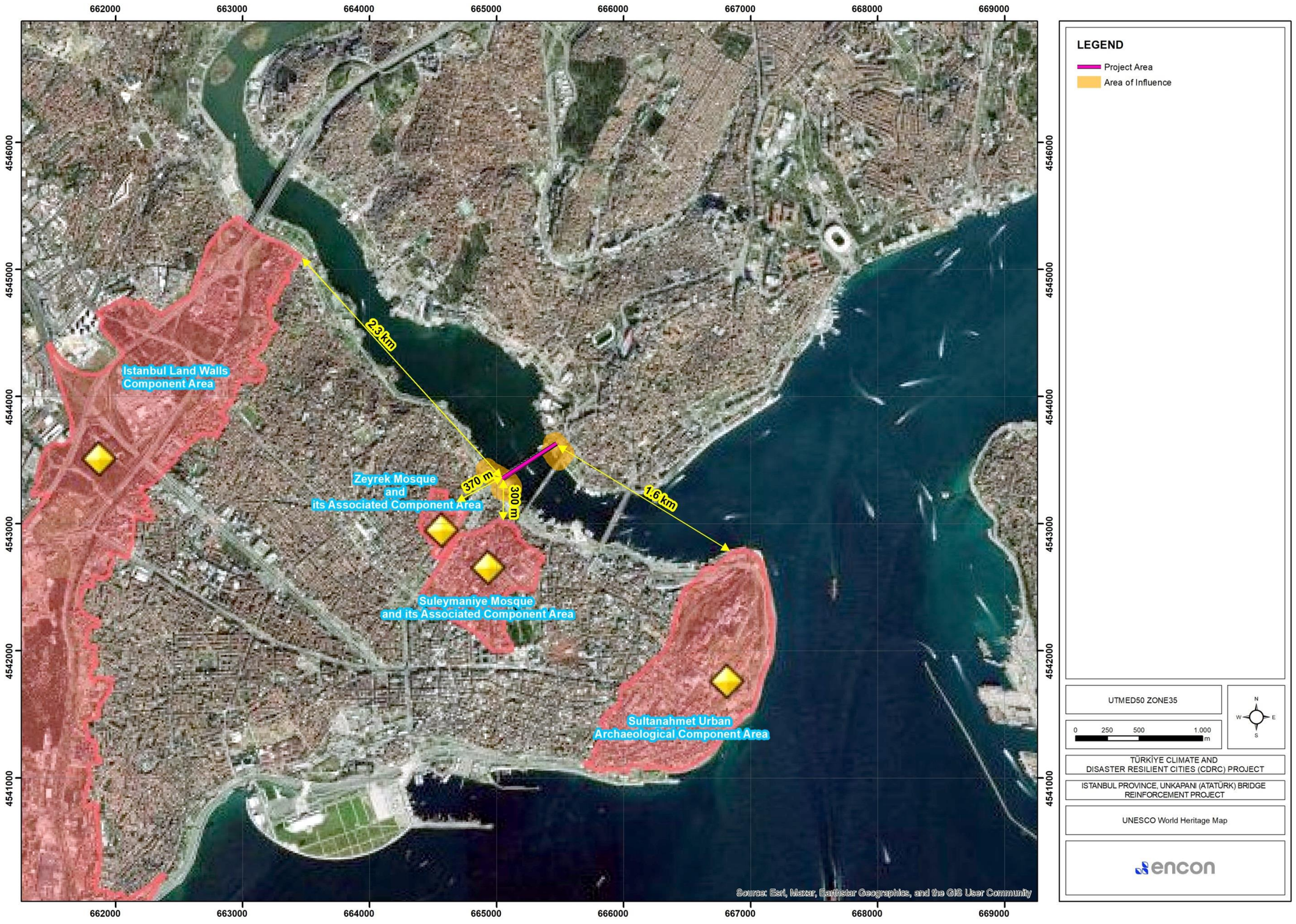


Figure 30 UNESCO World Heritage Map

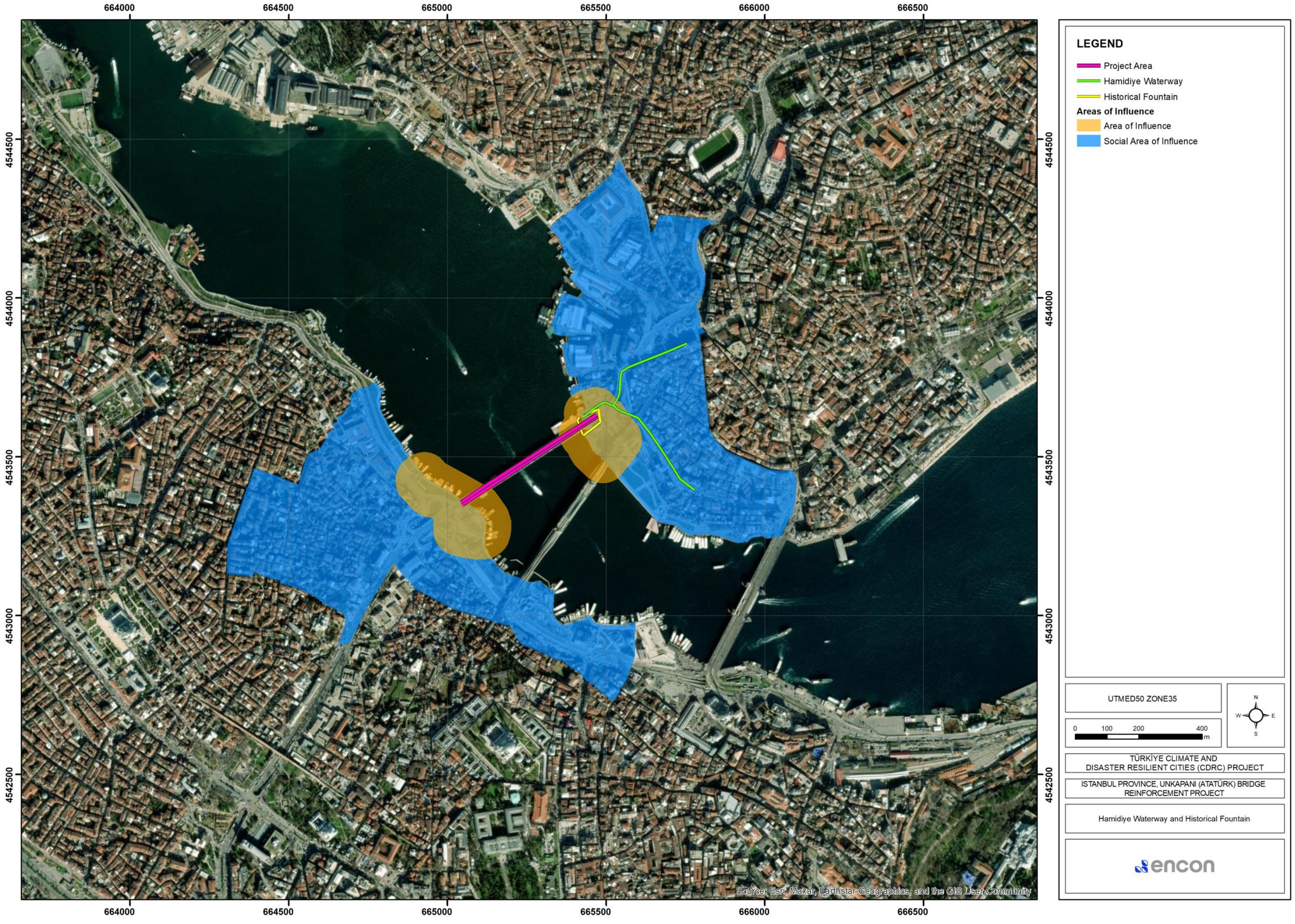


Figure 31 Hamidiye Waterway and Historical Fountain

Intangible Cultural Heritage:

The Unkapanı (Atatürk) Bridge, connecting the Fatih and Beyoğlu districts of Istanbul over the Golden Horn, is not only a vital infrastructural element but also a symbolic link between distinct cultural, social, and historical identities. The area surrounding the bridge hosts a variety of intangible cultural heritage values, shaped by centuries of urban life, music traditions, social practices, and collective memory.

The Unkapanı district has historically served as the heart of Türkiye's music industry. The traditions of oral transmission, song-writing, and musical collaboration remain embedded in the cultural fabric of the area.

The Unkapanı (Atatürk) Bridge itself functions as a unique social space. The daily presence of fishermen, street musicians, and vendors reflects a longstanding tradition of informal social and economic interaction. Fishing from the bridge is not only a source of livelihood for some residents but also a well-established leisure activity that forms part of the local identity.

Traditional forms of commerce, especially within surrounding marketplaces and small-scale businesses, sustain long-established trade practices and social relationships. These contribute to the preservation of cultural expressions linked to food, textiles, and craftsmanship.

The Unkapanı (Atatürk) Bridge and its surroundings are deeply embedded in the collective memory of Istanbul's residents. The area frequently appears in Turkish literature, poetry, cinema, and music as a setting that evokes nostalgia, transformation, and everyday life in Istanbul.

3 SUBPROJECT ACTIVITIES

3.1 Construction Phase

3.1.1 Construction Activities

Construction activities will be completed in 18 months. Detailed implementation schedule envisaged for the construction phase activities (including provisional acceptance) is presented in Chapter 6.
Construction phase activities are briefly described below.

- Pre-construction activities:

During the pre-construction phase, within the scope of the renovation works of the Unkapanı (Atatürk) Bridge, detailed technical examinations and structural evaluations of the existing bridge structure are carried out. Geological, geotechnical and hydrological studies are carried out, ground conditions are analysed.

Prior to the construction activities, planned construction site will be cleared and the site will be prepared for construction work. The number of lanes will be reduced within the scope of the Subproject and there will be no new road construction or temporary road construction. There will be a construction site office and storage areas within the scope of Subproject activities. No accommodation facility will be established for workers. Workers will be employed from within the province of Istanbul. The main element of bridge construction is the pile driving process.

The Subproject includes the renewal of the existing side abutment structures that have not been socketed into the rock ground and have collapsed, rotated and settled, the renewal of the opening and closing function of the bridge, the connection of the pontoons to the seabed with a chain and anchor system and the renewal of the bridge joint areas.

The construction phase activities are:

- Detailed Design Works
- Survey Works
- Bridge Bearing Control, Maintenance and Revisions
- Bridge Road Level Expansions and Connection Joints Control, Maintenance and Revisions
- Reinforced Concrete Element Works
- Mechanical Items Control, Maintenance and Revisions
- Steel Structure Repair and Maintenance Works
- Pontoon Anchoring Repairing Works
- Construction Works of Inspection Walkway
- Renewal of the Drainage System
- Corrosion Protection by Cathodic Protection Construction Work
- Pontoon Fender System Construction Works
- Construction of Cable Tray System
- New Approach Bridge Construction

The construction methodology of the Unkapanı (Atatürk) Bridge Reinforcement Project is divided into activities carried out on the terrestrial sides (land abutments) and the marine sides (in-water foundations and adjacent areas).

Terrestrial (Land-Side) Works:

At the terrestrial sides, construction works will involve sequential activities starting with traffic management and site preparation. Demolition of deteriorated structural components will be undertaken, followed by excavation and dewatering where required. Ground improvement techniques (e.g., jet

grouting, soil replacement, or compaction) will be applied to stabilize the foundation soils. Subsequently, barrette pile installation and foundation construction will be carried out to ensure structural stability. Once the substructure is completed, the superstructure, including the bridge piers and abutments, will be constructed. The process will continue with the staged installation of steel deck segments, followed by pavement, waterproofing, guardrails, and lighting works.

Marine (Sea-Side) Works:

On the marine sides, construction works will primarily focus on underwater and nearshore foundation reinforcement. Dewatering or cofferdam systems may be established around the pier zones to allow dry working conditions. Ground improvement measures will be implemented to enhance soil bearing capacity, followed by barrette pile construction beneath the waterline. Structural foundations and pier shafts will then be built within the confined areas, with continuous monitoring to avoid turbidity and water quality impacts. The installation of steel deck elements across the water span will be performed in staged sections, using barges or floating cranes where necessary. Final works will include the connection of marine and terrestrial structures, alignment of the deck, and reinstatement of disturbed shoreline areas.

This stepwise methodology ensures that both land-based and marine-based works are executed under controlled conditions, with appropriate environmental and safety measures integrated into the ESMP to minimize potential impacts on terrestrial and aquatic environments.

During the construction phase, several critical tasks will be carried out to ensure the successful completion of the bridge works. Initially, traffic will be diverted from the north line (Golden Horn Side) to the south line (Bosphorus Side) and managed until the remedial works are completed. The first two spans of the bridge will be cut and removed on both sides simultaneously. To facilitate the construction of new foundation structures and anchorage components, dewatering operations will be required in excavated zones. Dewatering will be performed following sheet piling installation at two critical locations, first at Azapkapı, then at Unkapanı, where below-ground construction activities such as diaphragm wall (D-Wall) construction will take place. Wellpoint or deep well dewatering systems will be used depending on the soil permeability and groundwater table conditions.

The purpose of dewatering is to maintain a dry and stable excavation area for safe and effective construction. However, uncontrolled dewatering may lead to ground settlement, drawdown of the local water table, and potential impacts on adjacent historical structures and surface water quality. Therefore, the dewatering system will be designed with appropriate monitoring and mitigation measures, such as:

- Installing piezometers to monitor groundwater levels;
- Using sedimentation tanks or silt traps to prevent turbid water discharge;
- Ensuring that discharge is conducted in accordance with water quality standards and does not affect the Golden Horn ecosystem.

Following dewatering, partial demolition of the existing anchorage will take place, followed by the construction of diaphragm walls and new anchorage components, starting at Azapkapı and progressing to Unkapanı.

As part of the structural work, steel segments for the bridge deck will be fabricated in the workshop, and once the new substructure is completed, the prefabricated deck segments will be installed using two cranes. Rebar arrangements and concrete casting for slabs will be completed, and once the slab work is finished, traffic will be transferred to the newly constructed section. This method will be replicated on the south side (Bosphorus Side), from the cutting and removal of spans to the installation of the new deck segments and slab work.

To minimize the risk of pollution to the marine environment during dismantling or demolition activities, the following mitigation measures will be implemented:

- Floating silt curtains or turbidity barriers will be deployed around the work area to contain debris and prevent sediment dispersion into the Golden Horn.
- Protective catch platforms or nets will be installed under the dismantled segments to prevent construction debris from falling into the water.
- All dismantling and lifting operations will be conducted under the supervision of a marine environmental specialist and according to a site-specific method statement.
- Equipment used over water will be inspected daily for oil leaks, and spill kits will be readily available at all working barges and platforms.
- Waste materials will be immediately collected and disposed of according to the project's Waste Management Plan, ensuring no materials are allowed to enter the waterbody.

Works will be scheduled to avoid peak fish breeding seasons, particularly the spring–early summer period (March to June), when most species spawn in the Golden Horn and adjacent Marmara Sea waters, and in coordination with local authorities if necessary.

During construction, in the mornings, two lanes will be open for traffic from Unkapanı to Azapkapı, while in the evenings, the flow will be reversed, with two lanes available from Azapkapı to Unkapanı. The renovation work will be carried out in three different stages. First, the first abutment of the bridge on the Unkapanı side will be renewed, then the Azapkapı abutment will be renewed. To facilitate dewatering and establish a temporary platform for production activities, sheet piling and jet grouting will be performed. Once the required filling work is completed, barrette foundations will be constructed to ensure that they are securely embedded in the rock soil profile. Following the completion of barrette foundation construction, insulation work will be carried out, and the foundation for the new side abutment structure will be completed. The construction of side abutment walls and flooring will follow, along with the installation of embedded support elements. Steel piles will be used for deep foundations and old piles will be removed. There will be deep excavation activities and soil improvement works will be carried out.

The steel superstructure, with its roof already manufactured, will be assembled, after which composite flooring will be installed, and concrete casting will take place. The process will be mirrored on the other section, followed by the construction of transverse supports in the central part. New modular expansion joints will also be installed.

Beyond the side abutment renovation, additional work will be carried out across Unkapanı (Atatürk) Bridge, including:

- Improvement of bridge joints,
- Upgrading mechanical equipment,
- Enhancing pontoon structures,
- Increasing the durability of reinforced concrete structures,
- Construction of a maintenance and inspection platform,
- Installation of a drainage system,
- Corrosion protection for steel components (complete sandblasting and painting),
- Cable tray fabrication.

Construction items including the quantities of the demolished/renovated features during construction activities and detailed construction work schedule is given in Table 14 and Table 15 respectively.

Table 14 Construction Items

No	Construction Items	Unit	Quantity
1	Breaking, Loading, Transportation of Existing Reinforced Concrete Structures to the Casting Site Outside the Construction Site	m^3	1.200,00
2	Removal, Breaking, Transportation of Existing Vaults Outside the Construction Site	m^3	279
3	Construction of fortifications in the sea with stones from quarry stone (2 - 6 tons category)	ton	972
4	Construction of fortifications in the sea with stones from quarry stone (0,400 - 2 tons category)	ton	1.458,00
5	Construction of Fortifications in the Sea with Stones from Quarry Stone (0 - 0,400 Ton Category)	ton	2.431,00
6	Excavation and Removal of Existing Stone Fortification Embankment in the Sea	m^3	8.750,00
7	Sheet piling (Onshore)	m^2	3.400,00
8	Sheet Pile Removal (Onshore)	m^2	3.400,00
9	Dismantling, Loading and Transportation of Existing Bridge Steel Structure to the Administration Warehouse	kg	3.949.196,00
10	Dismantling, Loading and Delivery of Existing Bollards to the Administration Warehouse	kg	1.369.760,00
11	Dismantling, Loading and Delivery of Existing Chain and Anchor Systems to the Administration Warehouse	kg	102.476,00
12	Plastic Pile Works (Ø100)	mt	24.000,00
13	Barret Pile Works (120 cm)	m^2	2.218,00
14	60 cm Diameter Jet Grout Column Manufacturing (Under Seabed)	mt	39.000,00
15	Construction of Reinforced Concrete Side Abutment (C 30/37)	m^3	2.000,00
16	Ribbed Steel Supply and Workmanship for Reinforced Concrete	ton	1.150,00
17	Splicing of Ø 28 Mm Rebar with Coupler for Reinforced Concrete	pcs	2.000,00
18	Splicing of Ø 32 Mm Rebar with Coupler for Reinforced Concrete	pcs	3.000,00
19	Construction of new vaults placing them in place	m^3	279
20	Excavation (on land)	m^3	40.000,00
21	Filling with Crushed Stone (0-30 mm) Material (On Land)	m^3	10.000,00
22	Filling with Stabilized Material (On Land)	m^3	12.500,00
23	Quarry Stone Backfill for Soil Improvement (Onshore)	m^3	20.000,00

No	Construction Items	Unit	Quantity
24	Supply, installation and balancing of new pontoons	kg	1.486.190,00
25	Supply and Installation of anchoring systems of new pontoons with connection chains	kg	133.424,00
26	Steel Construction of the New Bridge	ton	3.820,00
27	Epoxy Painting of New Bridge Steel Construction	m^2	382
28	Supply and Installation of New Bearings	kg	129.000,00
29	New Bridge Deck Concrete Construction	m^3	1.820,00
30	Construction of Protection Concrete Under New Bridge Decking	m^3	297
31	Construction of 3 layers of MMA insulation and 5cm thick mastic asphalt on the new bridge deck	m^2	9.580,00
32	Removal of the existing pedestrian railing, construction and replacement of new hot-dip galvanized pedestrian railing	kg	52.690,00
33	Construction of Expansion Joints	mt	100
34	Drawing Road Lines with Thermoplastic Paint	m^2	575
35	Construction of Bridge Stormwater Descents with Ø 200 Hard PVC Plastic Water Pipe	mt	960
36	Temporary Traffic Marking in Road Maintenance and Repairs, Taking Safety Measures	day	730
37	Galvanized Cable Pan Manufacturing	kg	6.058,00
38	Breaking of Field, Road and Wall Concrete	m^3	5.216,00
39	Construction of Field, Wall and Road Concrete Pavement (C 25/30)	m^3	3.099,00
40	Construction of Middle Refuge Guardrail System	mt	479
41	Construction of Garguy for Drainage	kg	1.632,00
42	Manufacturing of Fender	pcs	172
43	Paving with 8 cm thick granite stone	m^2	8.000,00
44	Paving with 8 cm thick basalt stone	m^2	1.000,00
45	8 cm thick granite slab covering with granite slab stone	m^2	1.000,00
46	Inclinometer Tube, Accessories, Mounting Equipment and Plant, Taking the Reference Reading	mt	280
47	Inclinometer Reading Equipment and Equipment Transportation (Round Trip)	Exped.	5

No	Construction Items	Unit	Quantity
48	Reading, Recording and Evaluation of Inclinometer Measurements	mt	1.400,00
49	Applying Protective Insulation Material Under the Concrete Slab of the Bridge	m^2	11.975,00
50	Work Scaffolding Installation	m^3	47.900,00
51	Carrier Scaffolding Erection	m^3	47.900,00
52	Stainless Drainage System Under Expansion Joints	kg	800
53	Precast Kerb Construction on Bridge	mt	958
54	Supply and Installation of Chain Tensioning and Pulley System	pc	2
55	Installation of Cathodic Protection System for the Protection of Pontoons Against Corrosion	LS	1
56	Lighting and Sewerage Manufacturing	LS	1
57	Construction of Fire Extinguishing System on Bridge	LS	1

Table 15 Construction Schedule

Work Item	Period	Preparatory Works		Year 1				Year 2			
	Month	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Detailed Design Works	6 months										
Survey Works	1 month										
Bridge Bearing Control, Maintenance and Revisions	13 months										
Bridge Road Level Expansions and Connection Joints Control, Maintenance and Revisions	9 months										
Reinforced Concrete Element Works	12 months										
Mechanical Items Control, Maintenance and Revisions	11 months										
Steel Structure Repair and Maintenance Works	4 months										
Pontoon Anchoring Repairing Works	6 months										
Construction Works of Inspection Walkway	3 months										

Work Item	Period	Preparatory Works		Year 1				Year 2			
	Month	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Renewal of the Drainage System	5 months										
Corrosion Protection by Cathodic Protection Construction Work	3 months										
Pontoon Fender System Construction Works	2 months										
Construction of Cable Tray System	2 months										
New Approach Bridge Construction	10 Months										

- Construction machinery and equipment:

The list of machinery and equipment to be used during the construction phase of the Subproject t is presented in the Table 16.

Table 16. Equipment List

Equipment Name	Piece	Capacity
Hydraulic Jack Set	14	200t vertical, 20t horizontal jack
100t Hydraulic Jack	28	100t
Mobile Crane	2	120t
Forklift	4	2t
Rough Terrain Crane	2	50t
Truck Mounted type Crane	1	10t
Truck Mounted type Crane	1	30t
Material Warehouse	2	500 m^2
Silo	1	4m x 4m x 4m
Barette Pile Machine	1	50t
Sheet piling machine	1	50t
Concrete Mixers	2	12m3

Since the workers in the construction phase of the Subproject will be from Istanbul, an accommodation camp will not be established. .However, basic daily facilities such as toilets and a cafeteria will be provided on-site to meet the needs of the workforce. The bridge deck steel segments will be manufactured in the workshop. Steel segments, reinforcement materials, and materials to be used for concrete production will be stored in the Subproject area (blue area in Figure 32) within the camp site area boundaries .

Cranes, pile drivers and other heavy construction machinery will be kept at pre-determined locations in the Subproject area.

- Water use and wastewater management:

During the construction phase, employees' needs will create water supply requirement. The utility water used will be supplied by obtaining a construction site subscription from the İSKİ network by the Contractor. Bottled water will be used for the drinking water needs of the personnel. The drinking water needs of employees will be met by bottled water to be purchased from the local market. 100 m^3 of water will be used daily for concrete curing site works and cleaning. Water will be provided through a network connection from İSKİ. Detailed calculations are described in Section 4.1.

As a result of water usage during construction activities, domestic wastewater will also be generated primarily from the use of toilets and dining areas. Portable toilets will be available on-site, and all domestic wastewater will be safely discharged to the municipal sewer network managed by İSKİ. Wastewater discharge will be carried out in accordance with national regulations and relevant municipal infrastructure standards.

- Waste and hazardous materials management:

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

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

- Municipal solid waste,
- Packaging waste such as wood, paper, cardboard and plastic, etc.,
- Hazardous and special waste that may be generated within the scope of the land preparation, construction and operation phases of the Subproject can be listed as contaminated vessels, cloths and overheads, waste batteries and accumulators, waste oils, etc.,
- Brick, stone and rubble waste,
- Iron, steel and aluminium parts (beams, railings, nails, etc.),
- Paints and solvents (during the removal of old surfaces or the application of new paints),
- Steel piles (steel pipe piles that have rusted or lost their structural integrity),
- Excavation material on land,
- Demolishment wastes from old abutments.

Detailed waste types and estimated quantities are given in Section 4.1.

- Supply and use of other resources and materials:

There will be a generator in the area for electricity use.

- Supply of materials and equipment:

Crushed stone fill, stabilized material fill, and quarry stone fill for ground improvement purposes will be supplied from the Cendere Aggregate Quarry and Crushing and Screening Facility, which is licensed and currently operational under the relevant Turkish environmental and mining legislation. The facility is located approximately 25 kilometers north of the Subproject site. The planned transportation route will follow Cendere Street – Kağıthane Tunnel – Tarlabaşı Boulevard – Atatürk Boulevard – Subproject access road, thereby minimizing the use of narrow urban streets and avoiding densely populated residential zones. In the reinforced concrete productions to be carried out within the scope of the Subproject, concrete will be supplied from licensed ready-mixed concrete facilities. On-site cement production will not be carried out. Instead, ready-mixed concrete will be delivered to the construction site by transit mixers and transferred to the casting areas using concrete pumps. Curing processes will be conducted to ensure proper concrete strength. As a result, the use of bagged cement storage and manual mixing will be avoided, and this will significantly reduce dust emissions, waste generation, and occupational health risks at the site.

- Decommissioning of temporary construction facilities

There will be a camp area for workers' daily needs during the construction phase. There will be no accommodation in this area.

3.1.2 Construction Facilities

Construction facilities to be used during construction activities are listed in Table 17. There will be no associated facility within the scope of the Subproject.

Table 17. Construction Facilities

Type	On-site or Off-site	Temporary or Permanent	List of Facilities
Construction Camp Site	On-site	Temporary	○ Cafeteria ○ Toilet ○ Rest area ○ Generators
Temporary Storage Area	On-site	Temporary	○ Waste Storage Area ○ Material Storage Area

Figure 32 presents the layout of the construction camp site.

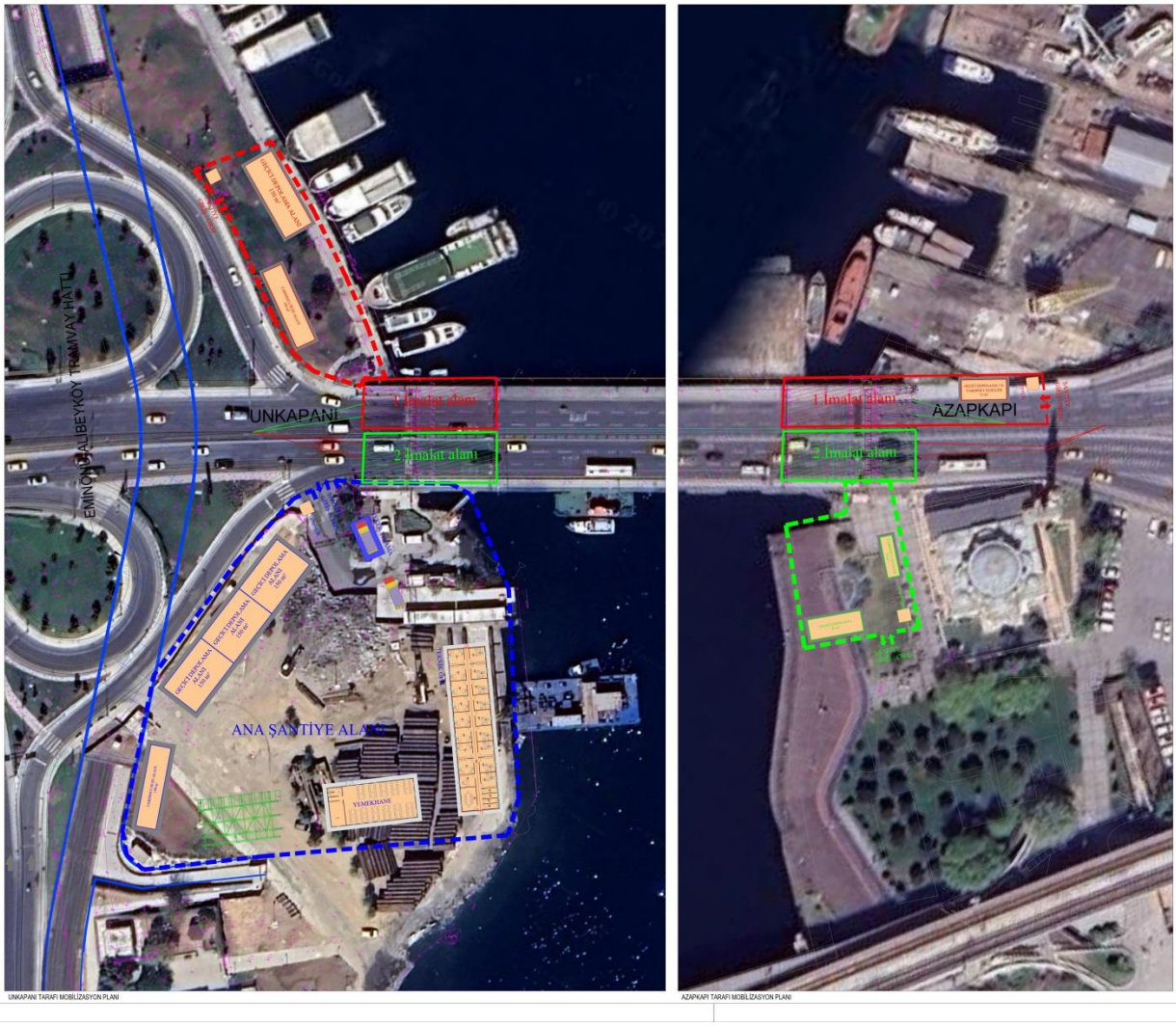


Figure 32 Construction Camp Site Layout

The area shown in blue in the figure above will be the Main Construction Site. This area will include a temporary storage area of 450 m² and an auxiliary facility area of 100 m². A cafeteria and a technical office will also be located within this area. Security will also be stationed at the entrance to this blue area to monitor site entrances and exits. The area shown in red will include a 150 m² storage area and a 100 m² auxiliary facility area. Since this area will be 3-4 meters behind the shoreline, it will not affect pedestrian access or boat use. The area shown in green will include a 30 m² auxiliary facility area and a 65 m² temporary storage area.

The construction area, mobilization area, and main camp area are located in the area shown in Blue in Figure 32 above. The areas shown in Red indicate those that will be demolished and rebuilt in the first stage. There will be a construction site and mobilization area adjacent to these red zones.

In the first stage, the shipyard will not be entered; only the road segment in front of the shipyard will be temporarily closed for mobilization activities.

Although the image shows the presence of boats in front of the red area, no dredging will be conducted, and no physical impact or access restriction is expected for shipyard operations. The red zone will be kept 2-3 meters back from the shore, and a walkway will be provided. This will allow boats to continue to use the area. There will be no loss of access, disruption to ongoing activities, or economic displacement affecting the shipyard.

There will be social facilities (toilet, rest area, etc.), temporary storage area, security cabin, and a small office to meet the daily needs of the personnel in the construction site areas. These auxiliary facilities will be located in each construction site area. If there is a need for electricity, auxiliary facilities will also be in this area.

The red area will be closed after the manufacturing is completed. Mobilization will take place in the area shown in Green. The construction area shown in Green will be closed at the final stage. The construction works will be undertaken in two sequential phases.

Phase 1 – Red Area (Months 1–5): This area will be closed first following mobilization. Within this area, traffic will be diverted as described in Table 25, and works will include (i) cutting and removal of bridge spans, (ii) sheet pile installation and dewatering (Azapkapı first, then Unkapanı), (iii) partial demolition and reconstruction of anchorage, (iv) diaphragm wall construction, (v) erection of prefabricated deck steel segments, and (vi) rebar and concrete casting of slabs. Upon completion of these works, the red area will be reopened to traffic.

Phase 2 – Green Area (Months 5–10): After the red area is completed and reopened, the same sequence of works will be applied to the green area. The green area will remain closed only during its respective construction phase and will be reopened upon completion.

This sequential approach ensures that one part of the bridge remains operational while works progress in the other, thereby minimizing traffic disruption and maintaining safety during construction.A slope will be given to the area where the demolished abutment is located. Heavy construction vehicles will descend with a slope to the lower elevation, and manufacturing will be carried out at the location of the demolished abutment.

There will be no road closures at the construction site entrances. However, public access to the work sites will be restricted through the use of fencing, signage, and security personnel to ensure safety. Controlled access measures will be implemented to prevent unauthorized entry into active construction zones.

3.2 Operation Phase

3.2.1 Operation Activities

During the operation phase of the Subproject, the Environmental, Health and Safety Guidelines (2007) published by the World Bank Group for "Toll Roads" will be taken into consideration along with the General EHSG. In this context, issues such as air quality and noise effects that may arise from vehicle traffic, traffic safety and possible hazardous material transportation will be monitored, and necessary measures will be taken. In addition, regular and non-routine maintenance and environmental monitoring activities will be carried out to protect the structural integrity of the bridge. Routine maintenance tasks will include inspections, surface cleaning, minor repairs, corrosion checks, lighting maintenance, and repainting. Non-routine activities may involve structural strengthening, pontoon replacements, mechanical system overhauls, and large-scale repairs.

At the marine side, maintenance will cover piers, piles, pontoons, fenders, and underwater elements. These works may involve diver-supported inspections, cleaning, anti-corrosion treatment, and repair or replacement of submerged components.

During marine maintenance, vessel traffic will be managed through temporary navigational restrictions, early warning signage, and coordination with the Istanbul Port Authority. Safety protocols will include signaling and the deployment of support boats during high-risk activities.

Materials and equipment used may include anti-corrosion coatings, sealants, cleaning solvents, scaffolding, access platforms, lifting equipment, and personal protective gear (PPE). These will be handled according to manufacturer instructions and relevant environmental and OHS standards.

The Sub-borrower will be responsible for overseeing these activities, but specific maintenance tasks — particularly underwater works — may be contracted to specialized service providers. If external contractors are engaged for marine-related works, their roles and responsibilities will be incorporated into the ESMP and SEP accordingly.

Sub-borrower will also ensure that all operational processes are monitored and reported in accordance with legal regulations. Operation activities are:

- Regular monitoring and control,
- Maintenance work,
- Traffic management
- Environmental monitoring,
- Safety measures and maintenance,
- Registration and reporting,
- Coordination with Emergency Services

3.2.2 Operation Facilities

Various infrastructure and equipment will be provided for the efficient operation of the bridge. As the bridge is a pontoon (floating) structure, various maintenance activities are required to be carried out periodically. In this context, in order to ensure the structural integrity and functional operation of the bridge, the expansion joints will be cleaned regularly, and the bearings exposed to wear will be lubricated using special lubricants as necessary. In addition, the opening and closing units of the bridge will be cleaned regularly, and the lubrication of sensitive mechanical components will be carried out in accordance with the technical specifications. The operational facilities and maintenance infrastructure will be located within or adjacent to the bridge area, including designated maintenance zones at both ends of the bridge and near the control room. Specific locations have been selected to allow easy access for maintenance teams, minimize disruption to traffic, and ensure efficient monitoring of key mechanical systems. These operational facilities will be designed and equipped with the necessary equipment to

support the regular maintenance, traffic management, safety and general operation of the bridge. All these facilities will be continuously monitored and managed to maintain the long-term performance of the bridge and to ensure user safety. The operational facilities and components of the Subproject will be as follows. Features of these facilities were previously summarized in Table 2.

There will be no associated facilities (AFs) during the operation phase of the Subproject.

3.3 Labour Requirements

Number of workers (at peak) that will work on site during the construction and operation phases of the Subproject are provided in Table 18.

Table 18. Labor Requirements of the Subproject

Phase	Number of Workers (including contractors and subcontractors)	Planned Accommodation Arrangement
Construction Workers (at peak)	75	There will be no accommodation.
Operation Workers (at peak)	7	

In this ESMP report, the environmental impacts caused by the Subproject ‘s workforce during both the construction and operation phases will be evaluated based on these employee numbers.

3.4 Land Acquisition Status

As stated in the feasibility report[28], the Unkapanı (Atatürk) Bridge Reinforcement Project does not involve any land acquisition or resettlement activities. The Subproject is designed to rehabilitate and reinforce the existing bridge structure within its current alignment and footprint. There will be no expansion of the bridge or modification to its surrounding land boundaries that would require the expropriation of private property or displacement of residents.

All construction and reinforcement activities will be carried out within the existing right-of-way owned by the Sub-borrower, which has full administrative authority over the bridge and adjacent areas. The Subproject site falls entirely within public land designated for transportation infrastructure, and municipal property, and some areas are classified as cadastral voids—meaning they are unregistered lands without private ownership or formal parcel designation. As documented in the official letter from Fatih Municipality dated 20.11.2024 (Annex I), it is confirmed that the Municipality was informed about the Subproject and acknowledged the scope and location of the planned works.

Moreover, due to the bridge's central location and the urbanized nature of its surroundings, no informal settlements, businesses, or other land uses are expected to be physically affected; therefore, no physical displacement is anticipated. However, temporary economic impacts on businesses may occur during construction, for which compensation measures will be applied in line with ESS5 requirements. In particular, temporary access restrictions are expected to affect the operations of Dosthane Café, as well as fishing boats operating in the area and fishermen using the bridge for rod fishing during the construction phase. These potential impacts have been addressed in detail under Section 4.1.4. Social Risks and Impacts of the ESMP and are further elaborated in the Livelihood Restoration Plan (LRP), which has been specifically prepared to assess and mitigate these issues. Mitigation measures—such as informing the

[28] Istanbul Metropolitan Municipality. (2025). Istanbul Ataturk (Gazi) Bridge Reinforcement Project Feasibility Study Report. Istanbul Metropolitan Municipality.

public, particularly current rod fishermen, about alternative fishing locations—are included in line with the SEP to minimize disruptions related to access during the construction period..

3.5 Permitting Status

During the preparation of the Subproject layout plans, ownership screening was conducted by overlaying the 1/1000 scale Implementation Plan and the 1/5000 scale Master Plan. Although a large portion of the proposed bridge falls within areas without defined cadastral ownership, part of the pier located in Unkapanı, Fatih, lies within an area allocated to the district municipality as part of the strengthening works for the Unkapanı (Atatürk) Bridge. The Fatih Municipality Directorate of Planning and Projects was consulted regarding the Subproject, and their opinion was obtained along with relevant maps and reports, as the pier in question is under the ownership of the Fatih District Municipality. All permits obtained have been submitted by Sub-borrower to İLBANK. In addition to the approvals of the Istanbul 2nd and 4th Regional Boards for the Protection of Cultural Heritage, it is noted that the correspondence also concerns information sharing between relevant institutions. The construction activities will therefore proceed under both the supervision of the authorized cultural heritage boards and with the formal consent of the municipality, as stipulated by Law No 2863. Official institution correspondence within the scope of the project is presented in Annex-I.

There will be no involuntary physical resettlement, as the parcels planned for the Subproject do not include any private land and no expropriation will be required. . The fishermen on the Atatürk Bridge were also assessed in the context of ESS 5 based on pre-site interviews and observations conducted prior to fieldwork. As they do not have permanent stalls at this location and operate as mobile vendors, they can easily relocate to another bridge due to the ongoing construction on the current one. The subproject does not result in physical displacement

Furthermore, the availability of alternative bridges where they can continue their activities, the fact that all locations are within the same marine environment, and the absence of any barriers to access those alternatives exclude their situation from the scope of involuntary economic displacement.

Institutional opinions within the scope of the Subproject are presented in Table 19.

Table 19. Status of Permits for the Construction Phase

Institution	Date-Status (In place, Not in place)	Remarks/ Notes
Beyoğlu Municipality	04.11.2024 **(In place)**	The part of the Unkapanı (Atatürk) Bridge Reinforcement Project that remains within the borders of Beyoğlu district is included in the 1st Degree Urban and Regional Roads legend in the 1/1000 scale Beyoğlu Urban Protected Area Conservation Plan, approved on 21.12.2010.
Turkish Electricity Transmission Corporation (TEİAŞ)	04.11.2024 **(In place)**	There are no existing or planned facilities in the area where the Subproject will be built and its immediate surroundings.
Istanbul Metropolitan Municipality (IMM) Real Estate Management Department Expropriation	06.11.2024 **(In place)**	According to the investigation, there is no current expropriation plans in the Subproject area.

Branch Directorate		
Ministry of Energy and Natural Resources	21.11.2024 (**In place)**	There is no natural gas pipeline in the Subproject area.
Istanbul Water and Sewerage Administration (İSKİ)	16.12.2024 (**In place)**	The Subproject area located in the Beyoğlu district includes a main transmission pipe of the Hamidiye Waterways and a historical fountain connected to this system and historical fountain connected to Hamidiye waterways. There is no historical waterway or water structure in the subproject area located in Fatih district. Hamidiye waterways were registered as cultural assets requiring protection with the decision of Istanbul Number 2 Cultural and Natural Assets Protection Regional Board dated 16.06.2010 and numbered 3556. Before any work in question, the approval of Istanbul Number 2 Cultural and Natural Assets Protection Regional Board Directorate should be obtained and historical structures should not be damaged.
Ministry of Culture and Tourism (MoCT)	20.12.2024 (**In place)**	Since the area in question is located in the Urban Protected Area and in the neighborhood of the registered Sokullu Mehmet Pasha Mosque, located on island 1518, parcel 2, and Kapı-Haliç Shipyard, located on island 916, parcel 1, permission must be obtained from the Regional Conservation Board before any construction and physical application to be made on the property.
Ministry of Culture and Tourism (MoCT)	20.12.2024 (**In place)**	No cultural asset record was found in the examination of the area where the Unkapanı (Atatürk) Bridge piers coincide with the Fatih district border.
Istanbul Metropolitan Municipality Parks and Gardens Department Urban Ecological Systems Branch Directorate	20.11.2024 (**In place)**	In the project works to be carried out, any waste, residue (excavation, rubble, solid waste, etc.) should not be thrown away, the natural bottom topography of the sea should not be changed by dredging, and the benthic zone should not be damaged.
Ministry of Environment, Urbanization and Climate Change	19.11.2024	The Sub-Project was deemed "out of scope" because it was not included in Annex 1 and Annex 2 of the EIA Regulation, which was published in the Official Gazette No. 31907 dated 29.07.2022.
Ministry of Culture and Tourism, Istanbul 2nd Regional Board for the Protection of Cultural Heritage	11.11.2024	No cultural property encountered during drilling works; project implementation poses no objection under Law No. 2863.
Ministry of Culture and Tourism, Istanbul 4th	02.09.2025	Project implementation poses no objection under Law No. 2863; to be carried out under the supervision of relevant authorities and the Museum Directorate.

Regional Board for the Protection of Cultural Heritage		
Fatih Municipality	29.10.2025	The property use permit for the area remaining in the 2263/1 parcel, which is owned by Fatih Municipality, was given by Fatih Municipality.

Following preliminary technical assessments and due to existing geotechnical conditions and lessons learned from past projects in the Golden Horn (Haliç), it has been confirmed that no dredging activities will be conducted under this Subproject. Therefore, permits from the Ministry of Environment, Urbanization and Climate Change (MoEUCC) and the Ministry of Agriculture and Forestry (MoAF) specific to dredging operations are not applicable and are not required for this Project.

4 ESMP MATRIX: RISK AND IMPACTS, MITIGATION AND MONITORING

4.1 E&S Risk and Impacts of the Subproject

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

- Construction ESMP Matrix
- Operation ESMP Matrix

Implementation arrangements for the ESMP are outlined in Section 1.5. The Contractor's E&S management plans and procedures, which support the implementation of the E&S assessment documents, are listed in Section 4.5. The roles and responsibilities for implementing this ESMP are defined in Chapter 5.

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

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

The identification of environmental and social risks and impacts has been informed by site investigations, technical studies, and stakeholder feedback obtained during the Stakeholder Engagement Meeting held on 22 January 2026. Stakeholder concerns and recommendations have been used to refine mitigation and monitoring measures included in this ESMP. The assessment of environmental and social impacts/risks has been done based on the criteria provided below using mainly expert judgement, relevant standards and guidelines:

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

The magnitude and severity of the adverse impacts have been assessed based on the criteria given above and significance of the impacts has been determined based on this assessment and sensitivity of the receiver/source exposed to the impact, as much as possible. The matrix given in Table 20 combines the sensitivity information with the magnitude of impacts. The significance of the impact is first designated without mitigation measures and then evaluated with proposed mitigation measures. This evaluation serves to determine the significance of the residual impacts (impact left after employing mitigation measures).

Table 20 Impact Significance Matrix*

Sensitivity of	Magnitude of Impact

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

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

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

The anticipated impacts for each phase of the Subproject are presented in this section. The Subproject has been prepared according to WB ESS requirements and the relevant ESSs are listed in the Table 21.

Table 21 ESS List Concerning the Subproject

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

Table 22 Environmental and Social Attributes Impact Levels Identification Matrix

No	*Environmental and Social Attributes*	*Impact*																			
		Nature		*Type*			*Extent/area*				*Duration*				*Likelihood of Occurrence*			*Sensitivity of the Receptor*	*Magnitude of the Impact*	*Impact Significance without ESMP*	*Impact Significance with ESMP*
		Positive (+)	**Negative (-)**	**Direct**	**Indirect**	**Cumulative**	**On-site/ Project footprint**	**Local**	**Regional**	**National**	**Short term**	**Mid-term**	**Long term**	**Permanent**	**Very likely/ certain**	**Likely**	**Unlikely**	**High**	**High**	**High**	**High**
																		Medium	**Medium**	**Medium**	**Medium**
																		Low	**Low**	**Low**	**Low**
																		Negligible/ None	**Negligible/ None**	**Negligible/ None**	**Negligible/ None**
A. CONSTRUCTION PHASE																					
1. Air Quality																					
1	Increase in dust concentration		✓	✓			✓				✓				✓			**Medium**	**Low**	**Low**	**Low**
2	Exhaust emissions (SO_2 PM, NO_x)		✓	✓			✓				✓				✓			**Medium**	**Low**	**Low**	**Low**
3	GHG emissions (CO_2, CH_4, N_2O)		✓	✓						✓	✓				✓			**Medium**	**Low**	**Low**	**Low**
2. Soil Quality																					
1	Erosion potential		✓	✓			✓						✓			✓		**Medium**	**Medium**	**Medium**	**Low**
2	Contamination of soil		✓	✓			✓						✓			✓		**Medium**	**Medium**	**Medium**	**Low**
3. Water Resources																					
1	Sediment and suspended solids increase		✓	✓			✓				✓				✓			**High**	**Medium**	**Medium**	**Low**
2	Fuel, oil, and chemical leaks		✓	✓			✓				✓					✓		**High**	**Medium**	**Medium**	**Low**
3	Wastewater discharges from construction site		✓	✓			✓				✓					✓		**Medium**	**Low**	**Low**	**Low**
4. Noise and Vibration																					
1	Noise from heavy machinery and pile driving		✓	✓				✓			✓				✓			**High**	**High**	**High**	**Medium**
2	Vibration from construction activities		✓	✓				✓			✓					✓		**High**	**High**	**High**	**Medium**
5. Resources and Waste																					
1	Resources used during works		✓	✓				✓			✓				✓			**Medium**	**Low**	**Low**	**Low**
2	Improper waste management		✓	✓				✓			✓					✓		**Medium**	**Low**	**Low**	**Low**

No	Environmental and Social Attributes	Impact																			
		Nature		Type			Extent/area				Duration				Likelihood of Occurrence			Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without ESMP	Impact Significance with ESMP
		Positive (+)	Negative (-)	Direct	Indirect	Cumulative	On-site/ Project footprint	Local	Regional	National	Short term	Mid-term	Long term	Permanent	Very likely/ certain	Likely	Unlikely	High	High	High	High
																		Medium	Medium	Medium	Medium
																		Low	Low	Low	Low
																		Negligible/ None	Negligible/ None	Negligible/ None	Negligible/ None
6. Landscape and Visual (Aesthetics)																					
1	Temporary visual disturbance from construction activities		✓	✓				✓			✓					✓		Medium	Medium	Medium	Low
2	Alteration of natural landscape due to construction equipment and materials		✓	✓				✓			✓					✓		Medium	Low	Low	Low
7. Biological Environment																					
1	Terrestrial Flora and Fauna		✓	✓			✓	✓			✓					✓		Low	Low	Low	Negligible
2	Aquatic Flora and Fauna		✓	✓			✓	✓			✓					✓		Low	Low	Low	Negligible
8. Socioeconomic Environment																					
1	Community Health and Safety		✓		✓		✓				✓					✓		Low	Low	Low	Negligible
2	Traffic Safety		✓			✓			✓		✓				✓			Medium	Medium	Medium	Negligible
3	Loss of Land and Livelihoods		✓		✓			✓			✓						✓	Low	Low	Low	Negligible
4	Disadvantaged and Vulnerable Individuals or Groups		✓			✓		✓			✓					✓		Low	Low	Low	Negligible
9. Cultural Heritage																					
1	Cultural Heritage		✓		✓			✓			✓					✓		High	High	High	Medium
2	Sensitive Receptors		✓	✓				✓		✓				✓	Low	Low	Low	Negligible			
10. Labor and Working Conditions																					
1	Working conditions and protecting the workforce			✓			✓				✓					✓		Medium	Low	Low	Negligible

No	Environmental and Social Attributes	Impact																			
		Nature		Type			Extent/area				Duration				Likelihood of Occurrence			Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without ESMP	Impact Significance with ESMP
		Positive (+)	Negative (-)	Direct	Indirect	Cumulative	On-site/ Project footprint	Local	Regional	National	Short term	Mid-term	Long term	Permanent	Very likely/ certain	Likely	Unlikely				
																		High	High	High	High
																		Medium	Medium	Medium	Medium
																		Low	Low	Low	Low
																		Negligible/ None	Negligible/ None	Negligible/ None	Negligible/ None
2	Workers' exposure to work-related occupational health and safety (OHS) risks		✓	✓			✓				✓					✓		Medium	Low	Low	Negligible
3	Workers Engaged by Third Parties and the Supply Chain		✓	✓				✓			✓					✓		Medium	Low	Low	Negligible
B. OPERATION PHASE																					
1. Air Quality																					
1	Exhaust emissions (SO_2 PM, NO_x)		✓	✓			✓				✓				✓			Medium	Medium	Medium	Low
2	GHG emissions		✓	✓					✓		✓				✓			Medium	Medium	Medium	Low
2. Soil Quality																					
1	Erosion potential		✓	✓			✓						✓			✓		Medium	Medium	Medium	Low
2	Contamination of soil		✓	✓			✓						✓			✓		Low	Low	Low	Low
3. Water Resources																					
1	Runoff pollution from bridge surface (oils, heavy metals)		✓		✓		✓						✓			✓		High	Medium	Medium	Low
4. Noise and Vibration																					
1	Traffic noise from vehicles		✓	✓				✓					✓			✓		Low	Low	Low	Negligible
2	Vibration from heavy traffic and maintenance works		✓	✓				✓					✓			✓		Low	Low	Low	Negligible
5. Resources and Waste																					
1	Waste generation from bridge maintenance activities		✓	✓			✓						✓			✓		Medium	Medium	Medium	Low

No	Environmental and Social Attributes	Impact																			
		Nature		Type			Extent/area				Duration				Likelihood of Occurrence			Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without ESMP	Impact Significance with ESMP
		Positive (+)	Negative (-)	Direct	Indirect	Cumulative	On-site/ Project footprint	Local	Regional	National	Short term	Mid-term	Long term	Permanent	Very likely/ certain	Likely	Unlikely				
																		High	**High**	**High**	**High**
																		Medium	**Medium**	**Medium**	**Medium**
																		Low	**Low**	**Low**	**Low**
																		Negligible/ None	**Negligible/ None**	**Negligible/ None**	**Negligible/ None**
2	Consumption of materials for bridge maintenance and repairs		✓	✓					✓				✓			✓		**Medium**	**Low**	**Low**	**Low**
7. Biological Environment																					
1	Terrestrial Flora and Fauna		✓		✓			✓					✓			✓		**Low**	**Low**	**Low**	**Negligible**
2	Aquatic Flora and Fauna		✓		✓			✓					✓			✓		**Low**	**Low**	**Low**	**Negligible**
8. Socioeconomic Environment																					
1	Community Health and Safety		✓	✓			✓				✓						✓	**Low**	**Low**	**Low**	**Negligible**
2	Traffic Safety	✓			✓		✓						✓			✓		**Negligible**			
9. Labor and Working Conditions																					
1	Working conditions and protecting the workforce		✓	✓			✓				✓				✓			**Medium**	**Low**	**Low**	**Low**
2	Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)		✓	✓				✓					✓			✓		**Low**	**Low**	**Low**	**Low**
3	Workers' exposure to work-related occupational health and safety (OHS) risks		✓	✓			✓				✓				✓			**Medium**	**Medium**	**Medium**	**Low**
4	Workers Engaged by Third Parties and the Supply Chain		✓	✓			✓				✓				✓			**Medium**	**Low**	**Low**	**Low**

The "✓" symbol indicates that the corresponding environmental or social impact is expected to be triggered during the relevant phase of the Subproject (e.g., construction or operation).

4.1.1 Environmental Risks and Impacts

4.1.1.1 Geology

Construction Phase

The Subproject is located in a highly urbanized and geologically complex region of Istanbul, where construction activities—especially those involving deep foundations and pier reinforcement—may interact with local geological features. The area includes alluvial deposits along the Golden Horn and older sedimentary rock formations beneath urban fill.

Excavation, drilling, and pile driving may disturb subsurface stratigraphy, particularly in areas with unconsolidated alluvial deposits or urban fill, potentially leading to differential settlement or instability. These activities present a medium level of impact, given the nature of the soil conditions and the scale of construction works.

The region is located in a seismically active zone, and geological conditions such as loose or unconsolidated sediments can amplify seismic waves. While these geotechnical conditions present structural and engineering challenges—such as potential settlement or instability—they are not considered environmental impacts within the scope of the ESMP.

However, since the primary objective of the Subproject is to enhance the seismic resilience of critical infrastructure and emergency evacuation routes, the bridge renovation works will be designed to account for these geological risks. The design will be based on detailed site-specific geotechnical investigations and will comply with national and international engineering standards for seismic safety. Therefore, such risks are addressed through engineering measures rather than environmental mitigation actions.

Operation Phase

Necessary measures should be taken against the risk of ground liquefaction. Impacts caused by the Subproject, related to geology for operation phase are minimal thus assessed as negligible in significance. Operation phase of the Subproject will meet the requirements of ESS1 and ESS3 in terms of geology.

4.1.1.2 Soil Erosion, Loss and Contamination

During the process of renewing existing bridge piers and removing old piles, soil quality can be affected in various ways. During the construction and operation phases, effects such as erosion, contamination, soil compaction and sediment transport can be observed. These impacts will be managed within the World Bank's ESS3 and ESS6 framework.

Construction Phase

The construction activities, particularly excavation and in-water foundation works, may temporarily impact soil quality in and around the Subproject site. Although the area is largely urbanized, the physical and chemical integrity of soil in the vicinity of the Golden Horn is still important for both structural stability and environmental protection.

Use of heavy machinery and excavation near bridge piers can lead to compaction and erosion.
Accidental spills or leakage of fuel, oil, or construction chemicals (e.g., concrete additives, solvents) may contaminate surface soils or underlying sediment layers, especially in the work zones closest to the Golden Horn (Haliç).

Construction activities such as excavation, piling, and site preparation may lead to:

- Soil erosion during rainfall events or near water bodies, particularly in sloped areas,

- Loss of topsoil and compaction, reducing soil fertility and permeability,
- Accidental contamination of soil due to potential spills of oil, fuel, or construction chemicals,
- Mobilization of pre-existing contaminants, if encountered in urban fill layers.

These risks are considered moderate in significance due to the proximity to the Golden Horn and the scale of ground-disturbing activities.

Improper storage or disposal of excavated soil, especially if contaminated with construction materials or sediment from water, may cause local pollution or affect the stability of adjacent areas.

Operation Phase

Once construction is completed, the potential for direct impact on soil quality is significantly reduced. However, long-term structural and environmental factors may still influence soil conditions around the bridge piers and approach areas.

Over time, the load-bearing structures and traffic may contribute to soil compaction and minor settlement, particularly in access zones or where soil was previously disturbed.

If minor contamination occurred during construction and was not fully remediated, it could persist in the subsurface and potentially affect nearby vegetation or storm water drainage.

Periodic maintenance of the bridge or surrounding infrastructure (e.g., road resurfacing, cleaning with chemical agents) may result in small-scale soil exposure or pollution if not properly managed.

4.1.1.3 Natural Disaster Potential

İstanbul province is located in an area of high earthquake risk. Construction of the bridge will be in accordance with the Building Earthquake Regulations. Given the scope and nature of the Subproject, it will not trigger any natural disaster. The Subproject is designed specifically to enhance seismic resilience, particularly for emergency evacuation routes.

Considering the Subproject's scale, the Subproject's impacts alone are not sufficiently affecting its environment to trigger or significantly contribute to another trigger of any natural disaster, therefore assessed as negligible in significance on natural disasters. All phases of the Subproject will meet the requirements of ESS1 in term of natural disaster potential.

Construction Phase

During the construction phase, the Subproject is not expected to trigger any natural hazards such as earthquakes, floods, or landslides. However, due to the region's geological and climatic characteristics, certain natural hazards may pose operational and occupational safety risks, which will be addressed through engineering controls and construction planning.

Given that the Subproject involves structural reinforcement of bridge piers located in or above a water body, these risks need to be carefully mitigated to ensure the safety of both workers and infrastructure. OHS assessments are presented in section 4.1.6 and mitigation measures are presented in ESMP Matrix tables.

The Subproject site, located in the central part of Istanbul between the Fatih and Beyoğlu districts, is exposed primarily to seismic risk due to the region's proximity to the North Anatolian Fault Zone. This seismic risk is addressed through structural design and does not constitute a direct environmental impact of the Subproject. Although other natural hazards such as flooding and localized landslides are less prominent in this urban setting, they are still considered during the construction phase.

Istanbul is a high-seismic-risk area, and construction activities such as deep foundation works, drilling, and heavy equipment operation carry additional safety risks during a potential seismic event. Temporary scaffolding and support structures must be designed to withstand possible ground motions.
While the Golden Horn and surrounding areas are not typically prone to large-scale flooding, localized surface runoff during heavy rainfalls may temporarily affect the construction area. This is expected to have only minor and localized environmental effects, such as temporary increases in turbidity or erosion risks, which will be mitigated by runoff and sediment control measures in line with the ESMP.

Operation Phase

Following construction, the bridge will remain exposed to several natural hazard risks during its operational lifespan, most notably seismic activity, given Istanbul's location near the North Anatolian Fault Zone. While the bridge is designed in accordance with national and international structural codes to withstand seismic events, the potential consequences of a major earthquake remain significant due to the critical connectivity the bridge provides between the Fatih and Beyoğlu districts.

The primary risk during the operational phase is a major seismic event. Strong ground shaking could lead to structural damage, compromise the integrity of the bridge, or disrupt traffic and emergency response routes. Even moderate seismic activity may necessitate temporary closure for inspection and safety verification.

Although the bridge is not in a high flood-risk zone, intense rainfall and potential rise in water levels at the Golden Horn may affect supporting infrastructure, such as approach roads, drainage systems, and pedestrian underpasses. Climate change may increase the frequency and intensity of such events.

As the structure spans a water body, long-term impacts of sea level rise should be considered in future resilience planning, particularly with respect to the durability of foundations and corrosion risks from increased salinity and moisture.

4.1.1.4 Dust and Exhaust Gases Emission

Construction Phase

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

Gases such as carbon monoxide (CO), nitrogen oxides (NOx), sulfur dioxide (SO_2), volatile organic compounds (VOC) and carbon dioxide (CO_2) are emitted from construction machinery (excavators, cranes, trucks, etc.) and transport vehicles. VOC emissions occur during hot asphalt applications. Volatile organic compounds may be emitted during the use of substances such as paint, coating and insulation materials.

Table 23 Dust Emission Factor

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

Source: Industrial Air Pollution Control Regulation, Appendix 12.

Construction waste is assumed to be an average of 1 tons/m^3 based on general estimates provided in the European Commission's Construction and Demolition Waste Management Protocol (2016) and Turkish national guidelines on construction waste management.

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

The Subproject activities are defined in detail in Chapter 3. Activities that will have an impact on air quality during the construction phase are summarized in Table 24.

Table 24 Volumes of Activity

Activities	Volume (m^3)
Material to be transported off the construction site	1,200
Dismantling and moving of existing vaults	279
Excavation	40,000
Breaking asphalt roads and concrete walls	5,216

The material will be transported outside the construction site with a 1.2 km round trip distance. General formulae to calculate the emissions from the operation of the equipment is given as below:

- Emission (kg) = Volume (m^3) x Density (ton/m^3) x Emission Factor (kg/ton)

Formulae to calculate the emissions form transportation is given as below:

- Emission (kg) = Volume (m^3) x Density (ton/m^3) x Distance (km) x Emission Factor (kg/km-ton)

Table 25 Vault Dismantling and Transport (279 m^3)

Activity	Uncontrolled Emission (kg)	Controlled Emission (kg)
Dismantling	6.95	3.49
Loading	2.79	1.4
Unloading	2.79	1.4
Storage	1,618.2	809.1
Transportation	234.1	117.05
Total	**1,865.12**	**932.56**

Table 26 Excavation (40,000 m^3)

Activity	Uncontrolled Emission (kg)	Controlled Emission (kg)
Dismantling	1,000.00	500.00
Loading	400.00	200.00
Unloading	400.00	200.00
Storage	232,000.00	116,000.00
Transportation	33,600	16,800.00
Total	**267,400.00**	**133,700.00**

Table 27 Road and Wall Concrete Dismantling (5,216 m^3)

Activity	Uncontrolled Emission (kg)	Controlled Emission (kg)
Dismantling	130.40	65.2
Loading	52.16	26.08
Unloading	52.16	26.08
Storage	30,252.8	15,126.4
Transportation	4,381.44	2,190.72
Total	**34,868.96**	**17,434.48**

Dust and gas emission from vehicles are calculated as below. The emission factors for CO, SO_2, NOx, PM and particulate matter are given in Table 28.

Table 28 Emission Factors for 1 L Diesel Consumption

Pollutant	Emission Factor (g/L)
CO	0.49
SO_2	0.01
NOx	3.0
PM	0.12

Table 29 Equipment List to be Used During Construction Phase

Equipment Name	Piece
Mobile Crane	2
Forklift	4
Rough Terrain Crane	2
Truck Mounted type Crane	2
Barette Pile Machine	1
Sheet piling machine	1

Concrete mixer	2

The diesel consumption by each construction vehicle is assumed as 25 L/hour. Total diesel consumption for 14 construction vehicles given in

Table 29 is 275 L/hour. The results of calculation by using emission factors and diesel consumption of construction vehicles are as:

For CO: 350L/h x 0.49 g/L = **0.1715 kg/h**
For SO_2: 350 L/h x 0.01 g/L = **0.0035 kg/h**
For NO_x: 350 L/h x 3.0 g/L = **1.05 kg/h**
For PM: 350 L/h x 0.12 g/L = **0.042 kg/h**

Operation Phase

During the operation phase, air emissions are expected to be minimal and limited to periodic maintenance and repair activities. These activities will involve only a small number of vehicles and equipment (e.g., two maintenance trucks) and are not anticipated to cause significant or continuous deterioration in air quality.

Given the low frequency, limited scope, and short duration of these activities, a regular air quality monitoring program is not deemed necessary. Instead, air quality measurements will be carried out on a grievance basis, if and when complaints are received from the public through the Grievance Mechanism.

During the operation phase, exhaust emissions are expected only during maintenance and repair activities. It is anticipated that less equipment will be used compared to construction. If the use of 2 maintenance and repair vehicles is assumed, the emission calculation will be as follows:

For CO:50 L/h x 0.49 g/L = **0.0245 kg/h**
For SO_2: 50 L/h x 0.01 g/L = **0.0005 kg/h**
For NO_x: 50 L/h x 3.0 g/L = **0.015 kg/h**
For PM: 50 L/h x 0.12 g/L = **0.006 kg/h**

The impacts on air quality that will occur during the operation phase of the Subproject will be low and they will be managed/prevented with mitigation measures. Operation phase of the Subproject will meet the requirements of ESS1 and ESS3 in terms of air quality.

4.1.1.5 Climate Change and Greenhouse Gas (GHG) Emissions

Construction Phase

Heavy machinery and transportation vehicles will be used during the construction phase of the Subproject and these vehicles will produce CO_2, CH_4, N_2O emissions. Heavy machinery, trucks and cranes are used in the process of removing old bridge piles, transporting them and bringing in new materials. Since these machines consume diesel fuel, they directly cause CO_2, CH_4 and N_2O emissions.

Underwater works required for the removal of old bridge piers and the installation of new foundations may cause temporary disturbance to marine sediments. This can lead to the release of sediment-bound carbon and may slightly reduce the short-term carbon sequestration capacity of the coastal ecosystem. However, the scale and duration of these activities are very limited, and the anticipated contribution to greenhouse gas emissions is considered negligible.

Given the limited project footprint and the localized nature of the marine works, no significant impact on the global carbon cycle is expected. Furthermore, sediment dispersion will be managed through best practice construction methods (e.g., use of silt curtains, staged excavation), reducing the release of suspended solids and minimizing ecological disturbance.

There will be a temporary increase in emissions due to material transportation and energy use. There will also be temporary energy consumption due to construction activities. The use of diesel fuelled equipment, and generators will cause a carbon footprint. Operating generators for excavation, drilling and piling operations results in additional carbon emissions.

Based on preliminary estimates, total greenhouse gas emissions during the construction phase of the Subproject are expected to range between approximately 150 and 300 tCO_2e. This estimate is based on indicative fuel consumption rates of heavy construction equipment (e.g., 15–30 liters/hour), approximate operating hours, and average emission factors provided by the IPCC Guidelines for National Greenhouse Gas Inventories (2006).

These emissions are considered relatively low in magnitude and limited to the duration of construction. No significant operational emissions are anticipated, as the bridge will not involve continuous fuel or energy consumption beyond periodic maintenance.

Cranes, underwater cutting machines and other electrical equipment on the construction site require high energy consumption. Since electricity will be supplied from the grid, fossil fuels used in energy production create indirect carbon emissions.

The production and transportation of materials such as concrete and steel used on the construction site increases the carbon footprint. Cement production, in particular, is one of the most critical processes in terms of CO_2 emissions.

Failure to properly recycle piles or storing them in open areas can lead to the release of greenhouse gases such as methane (CH_4).

Issues such as greenhouse gas emissions, energy consumption, water pollution, and resistance to extreme weather events that will occur during the renewal of bridge piers and removal of piles will be managed within the scope of the World Bank's ESS1, ESS3, ESS4, ESS6 and ESS10 standards.

In this Subproject, a total of 14 construction vehicles are estimated to be in operation during peak construction activities. Each vehicle is assumed to consume approximately 25 liters of diesel fuel per hour, resulting in a total diesel consumption of 350 liters per hour for all vehicles combined.

To estimate greenhouse gas (GHG) emissions, the most relevant and commonly calculated gas is carbon dioxide (CO_2), which is emitted directly from the combustion of diesel fuel. The CO_2 emission factor for diesel fuel, based on IPCC guidelines and widely accepted emission inventories, is 2.68 kg CO_2 per liter of diesel.

Table 30 Emission Factors per Liter of Diesel Combusted

Pollutant	Emission Factor (g/L)	Global Warming Potential (GWP, 100-year)	CO_2 Equivalent (g CO_2e/L)	Total Emissions per Hour (350L/h diesel consumption)
CO_2	2680	1	2680	938 kg/h
CH_4	0.13	27	3.51	1.22kg CO_2e/h
N_2O	0.026	273	7.10	2.485kg CO_2e/h

Source: IPCC 5th Assessment Report (AR5) GWP values

In accordance with the IPCC Guidelines (2006) and various emission inventories, diesel combustion in construction equipment emits not only CO_2 but also smaller amounts of CH_4 (methane) and N_2O (nitrous oxide), both of which have significantly higher global warming potentials (GWPs) than CO_2.

Based on emission factors provided by international sources (IPCC), the total estimated greenhouse gas emissions from the use of 14 construction vehicles amount to approximately 941,705 kilograms of CO_2 equivalent per hour (kg CO_2e/h).

While CO_2 constitutes the majority of emissions, CH_4 and N_2O—despite their low quantities—contribute more significantly per gram due to their higher GWP.

Table 31 GHG Emissions from Equipments

Equipment Name	Piece	Total working hours
Mobile Crane	2	75
Forklift	4	250
Rough Terrain Crane	2	45
Truck Mounted type Crane	2	30
Barette Drill Driver	1	60
Sheet piling machine	1	50
Concrete mixer	2	50
	Total working hours	560 hr

Total emissions of construction equipment = 527,354.8 kg CO_2e = 527.35 t CO_2e (excl. transportation)
Assuming a total of 2,400 m^3 concrete to be supplied concrete mixers supply the concrete from a batching plant with a distance to construction is 150 km, then total emissions from transportation is calculated as follows:

2.68 kg CO_2e x 90 l fuel (for 300km/trip) x 200 trip = 48.240 kg CO_2e = 48.24 tCO_2e
Total GHG emissions = 527,35 + 48,24 = 575.59 tCO_2 from operation of construction equipment incl. transportation of concrete.

Operation Phase

Greenhouse gases such as CO_2, CH_4 and N_2O will be released into the atmosphere from vehicles passing over the bridge. As traffic density increases, these emissions will also increase, increasing air quality and the regional carbon footprint.

The machines, generators and materials used during the maintenance and repair activities of the bridge indirectly cause greenhouse gas emissions. During the operation phase, bridge lighting, security systems and maintenance activities cause energy consumption. Rising sea levels and extreme weather events due to climate change may threaten the structural integrity of the bridge.

In this context, climate change impacts during the operation phase will need to be managed within the framework of the World Bank's ESS1, ESS3, ESS4 and ESS6 standards.

4.1.1.6 Environmental Noise

Construction Phase

Bridge construction projects potentially generate noise, impacting both the immediate environment and nearby communities. Common sources of noise include heavy machinery, construction equipment, activities and traffic. The noise can lead to disturbances, affecting the well-being of local residents and wildlife. Potential impacts include increased stress levels, sleep disturbances, and interference with daily activities.

Construction machinery operation and vehicle traffic may cause temporary but significant noise disturbances, particularly during daytime working hours. This may affect nearby residents, businesses, and pedestrians. The proximity of the Subproject to densely populated urban areas, sensitive receptors such as residences, schools, mosque, a café necessitates careful monitoring and mitigation during construction to manage noise impacts.

The total equivalent noise level created by noise sources is calculated with the help of the formula given below.

$$L_{wT} = 10 \times \log \sum_{i=1}^{n} 10^{\frac{L_{wi}}{10}} \qquad (1)\ (METU, 2023).$$

Where;

n: Number of noise sources
Lwi: Noise level (dBA) of each source
LwT: Total equivalent noise level

The noise level originating from the machine/equipment and reaching a certain distance is calculated by the formula below.

$$L_p = L_{wT} + 10 \times \log \frac{Q}{4\pi r^2} \qquad (2)\ (SRL,1988).$$

Where;

Q: 1
r: Distance (m)
Lp: Noise level (dBA)

Table 32 Noise Levels of Machinery/Equipment

Equipment	Number	Lwi
Mobile Crane	2	105
Rough Terrain Crane	2	104
Truck Mounted Crane	2	107
Barette Pile Machine	1	120
Sheet Piling Machine	1	115
Concrete Mixer	2	102

Not all construction machinery and equipment will work at the same time. The working scenarios in two different scenarios are as follows:

- Rough Terrain Crane and Sheet Pile will work at the same time,
- Mobile Crane, Concrete mixer and truck mounted type crane will work at the same time,
- The Barette Pile Machine will operate.
  Total =(6.31+5.02+10.00+31.6). 10^{10}=52.93^{10}
  Lw = 117.2 dB(A)

According to the information obtained from the noise maps published by Istanbul Metropolitan Municipality, the Subproject area is already located in an area that is already noisy due to heavy traffic. The baseline condition is 70 dB. According to IFC EHS Guidelines, the additional noise criterion of a Subproject t should not cause an increase of more than 5 dB(A) compared to the existing background noise, especially in commercial areas.

$LA_{eq} = L_w - 20 \cdot \log_{10}(r) - A_{atm} - D$[29]
Lw: Sound power level (dB)
r: Distance (meters)
A_{atm}: Atmospheric attenuation (negligible for most short distances)
D: Constant (taken as ~+/- 8 dB) including factors such as reflection, direction, topography

In case of simultaneous operation of construction machines emitting high noise such as mobile cranes, truck cranes, rotary drilling rigs and sheet piling machines to be used within the scope of the Subproject, the total sound power level is calculated as approximately 117.2 dB(A). Accordingly, these equipments will be positioned at least 65 meters away from commercial areas in order to provide the noise increase limit of +5 dB(A) over the existing ambient noise according to WB ESS3 and IFC Environmental, Health and Safety Guidelines.

Operation Phase

During the operation phase, potential noise sources may include mechanical equipment such as generators, HVAC systems, pumps, and occasional vehicle traffic related to logistics and maintenance activities. Although the overall noise levels during operation are expected to be lower than those generated during construction, the operational noise may be continuous in nature. Noise levels will be managed in accordance with the applicable limits defined in the World Bank Environmental and Social Standard 3 (ESS3) and the IFC Environmental, Health and Safety Guidelines.

4.1.1.7 Vibration

Construction Phase

Construction activities associated with the reinforcement of bridge piers—especially those involving heavy machinery, drilling, piling, and transportation—are expected to generate elevated levels of ground-borne vibrations. The Subproject construction area directly includes two cultural heritage structures located at the Azapkapı abutment side: (i) the wall at the shipyard side and (ii) the Sokullu Mehmet Paşa Mosque at the Azapkapı side. As these structures are within or adjacent to the Subproject footprint, careful monitoring and mitigation during construction will be required. Vibration-intensive activities such as piling or drilling in the water or near abutments may cause ground vibrations that could affect these historically sensitive structures.

Vibration-intensive activities such as piling or drilling in the water or near abutments may cause ground vibrations that could affect adjacent buildings, including historically sensitive structures more specifically the wall (“wall”) at the shipyard side and Sokullu Mehmet Paşa Mosque (“mosque”) the Azapkapı side.

[29] *ISO 9613-2 – Standard used for outdoor noise emissions*

Calculation Methodology for Vibrational Impact Assessment

The Peak Particle Velocity (PPV) formula is used to assess the vibrational impact of construction equipment, specifically those that generate vibrations through dynamic movements or operations, such as cranes, piling machines, or trucks. The formula calculates the magnitude of vibration that propagates from the source to a specific distance, which can then be compared against established threshold values for structural safety.

The purpose of using this formula is to estimate the vibration intensity that a construction equipment, such as a mobile crane, rough terrain crane, or concrete mixer truck, exerts on nearby structures during operation. It is important to assess these vibrations because excessive vibrations can lead to structural damage, especially in sensitive or older buildings.

The formula applied to calculate the Peak Particle Velocity (PPV) is:

$$PPV = \frac{A}{R^n}$$

Where:

PPV = Peak Particle Velocity (m/s) — the maximum speed of vibration at the measurement point.

A = Vibration magnitude from the equipment (m/s) — an estimated value based on the equipment type and operational characteristics.

R = Distance from the equipment to the measurement point (m) — the distance over which the vibration propagates.

n = Propagation factor — a constant that represents how vibration intensity decreases with distance and depends on the type of ground or substrate.

Vibration Magnitude (A): This value is based on the estimated vibration output of the specific piece of equipment. It varies depending on the equipment's size, weight, and operational force. For example, a large crane or piling machine typically produces higher vibrations than a smaller vehicle.

Distance (R): The formula takes into account the distance between the equipment and the measurement point (usually a nearby building or structure). The farther the distance from the vibration source, the lower the PPV value will be, reflecting the attenuation of the vibration over distance.

Propagation Factor (n): This value determines how rapidly the vibration intensity diminishes with distance.

A higher n value would represent a situation where vibration spreads more effectively through the ground (e.g., softer or more resonant soils), and a lower n value indicates that the ground is more resistant to vibration propagation. According to geotechnical studies, Subproject ground has been defined as “alluvial and artificial fill soil”. In such ground conditions, the value of n generally ranges between 1.5 and 2. So that n is taken as 1.8 in the calculations where the working ground is seabed. In solid grounds, the value of n typically ranges between 1.0 and 1.5. So that n is taken as 1.5 in the calculations.

By calculating the PPV, the level of vibrational impact on a structure is estimated.

According to the methodology explained above, the construction equipment that may pose vibrational impact on the potential receptor structures are evaluated and summarised in the below Table 33:

Table 33 Vibrational Impact Assessment of the Construction Equipments:

Equipment Name	Capacity	Receptor	Vibration magnitude from the equipment (m/s), A*	Propagation factor of Ground, n**	Distance to Receptor, R (m)	Peak Particle Velocity (mm/s) — the maximum speed of the vibration ***	Vibration Risk**
Mobile Crane	120t	Wall	0,6	1,1	15	30.51	High risk, potential for structural damage.
		Mosque		1,1	25	17.39	High risk, potential for structural damage.
Rough Terrain Crane	50t	Wall	0,5	1,1	15	25.43	High risk, potential for structural damage.
		Mosque		1,1	25	14.50	High risk, potential for structural damage.
Truck Mounted Crane	10t	Wall	0,3	1,1	15	15.26	High risk, potential for structural damage.
		Mosque		1,1	25	8.70	Low risk, but caution is needed.
Truck Mounted Crane	30t	Wall	0,5	1,1	15	25.43	High risk, potential for structural damage.
		Mosque		1,1	25	14.50	High risk, potential for structural damage.
50-ton barrette drilling rig	50t	Wall	0,5	1,5	15	8.61	Low risk, but caution is needed.
		Mosque		1,5	25	4.00	Low risk of damage.
Sheet Piling Machine	50t	Wall	1	1,5	15	17.21	High risk, potential for structural damage.
		Mosque		1,5	25	8.00	Low risk, but caution is needed.

*****Since data has not been obtained from the Subborrower for the type and model of the machinery, these values are approximate values accepted in the construction sector for the relevant construction equipment.

***** Source:*** *Transportation and Construction Vibration Guidance Manual, Caltrans 2020 (California Department of Transportation Division of Environmental Analysis Environmental Engineering Hazardous Waste, Air, Noise, Paleontology Office)*

**** Calculation methodology is obtained from **"Source"** above.*

Table 34 Other Construction Equipments' Vibrational Impacts:

Equipment Name	Capacity	Vibration Risk	Remarks
Hydraulic Jack Set	200t vertical, 20t horizontal	Low	Primarily applies pressure; limited vibration.
100t Hydraulic Jack	100t	Low	Minimal vibration, mainly static pressure.
Concrete Mixer Truck	120t	Low	Concrete mixer trucks are vehicles that typically rotate and carry loads. And the vibration level of a concrete mixer is low.
Forklift	2t	Low	Minor, temporary vibration from movement.

Operation Phase

During the operational phase, vibration effects may occur from the periodic mechanical operation of moving bridge components, including hydraulic systems, motors, and gear trains, as well as opening and closing mechanisms. Additionally, vehicular traffic (especially heavy vehicles) may cause dynamic loading that contributes to structural vibrations. While these effects are expected to be short-term and localized, mechanical systems should be properly maintained to minimize potential long-term effects related to vibration.

4.1.1.8 Water Resource and Use

During the construction and construction phases, employees' needs will create water supply requirement. The utility water used will be supplied by obtaining a construction site subscription from the İSKİ network by the Contractor. The total amount of daily water requirement is calculated based on the multiplication of the number of employees that will be working at the peak time of the phase and the daily water requirement for a person, which is 190 L/cap/day (TurkStat, 2022).

Potential impacts on water resources during the construction phase are associated primarily with demolition works, in-water activities, and the handling of construction materials. Although no dredging is planned, limited in-water works may lead to sediment disturbance, which could temporarily increase turbidity in the Golden Horn. This effect is expected to be local and short-term but requires monitoring to avoid adverse impacts on aquatic habitats.

There is also a risk of contamination from construction materials (e.g., cement, fuels, lubricants, paints) in case of accidental spills or improper handling. Such contamination could degrade water quality and affect aquatic organisms if not properly managed.

During demolition and superstructure renewal, debris or waste materials may accidentally enter the water, creating localized pollution or navigational hazards. Similarly, in-water structural works (e.g., reinforcement of pontoons and foundations) may generate suspended solids and noise/vibration, potentially affecting aquatic life.

In addition to the above, localized dewatering activities may be required during the reinforcement of bridge foundations and pontoons. Dewatering can temporarily lower groundwater levels in the immediate construction zone and generate discharge water that must be carefully managed.

Potential receptors of dewatering impacts include the Golden Horn surface water body, nearby commercial activities located along the shoreline (e.g., cafés, small businesses), and fishermen operating in the area. Based on the information currently available, there are no registered wells or private groundwater abstractions within or adjacent to the Subproject footprint, and therefore no impacts on household or community water supply are anticipated.

Mitigation measures outlined in the ESMP include strict implementation of spill prevention and response protocols, controlled storage and transfer of hazardous materials away from the water, installation of silt curtains or barriers where feasible to contain turbidity, and proper collection and disposal of demolition waste. With these measures in place, impacts on water resources and quality are expected to remain low, temporary, and manageable.

The calculations regarding water usage mentioned above are given in the following sub-sections for the pre-construction, construction and operation phases. All phases of the Subproject will meet ESS1 and ESS3 in terms of water resources and use.

Construction Phase

The average number of personnel required for the construction phase is determined as 75. Therefore, the daily water requirement of employees during the pre-construction phase will be;

- 75 employees x 0,190 m^3/cap/day= 14,25 m^3/day

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

During the pre-construction phase, employees' needs will create water supply requirements. The drinking water needs of employees will be met by bottled water to be purchased from the local market.

100 m^3 of water will be used daily for concrete curing site works and cleaning. Water will be provided through a network connection from İSKİ.

Operation Phase

During the operation phase of the Subproject, part of the water supply requirement will arise due to employee needs. The number of personnel required is determined as 7. Therefore, the daily water requirement of employees during the construction phase will be;

- 7 employees x 0.19 m3/cap/day = 1.33 m^3/day

Water usage during bridge maintenance and repair is anticipated to be low and is not continuous. An estimated monthly water usage of 0.1-0.2 m^3/day is anticipated for cleaning metal and concrete surfaces.

4.1.1.9 Wastewater

Wastewater will be generated during the construction and operation phases of the Subproject. Domestic wastewater from employees will consist of facilities such as dining areas and toilets where the needs of employees are met. Portable toilets will be available for employees during the construction phase of the Subproject. Wastewater will be directly connected to the city's sewer system.

According to 2022 TurkStat data, the Daily Wastewater Amount of the Municipality is 0.256 m^3/day. The calculations regarding the above-mentioned wastewater production are given in the following subsections

for the pre-construction, construction and operation phases. All phases of the Subproject will meet ESS1 and ESS3 in terms of wastewater management.

Construction Phase

The average number of personnel required for the construction phase is determined as 75. Therefore, the daily wastewater generation of employees during the pre-construction phase will be;

- 75 employees* 0.256 m3/day = 19,20 m^3/day

The wastewater generated will consist entirely of domestic wastewater, as no process water or industrial-type effluents are expected during this phase.

To minimize environmental impact, wastewater management will be regularly monitored and controlled in accordance with national legislation and good construction practices.

Operation Phase

In the operation phase of the Subproject, the water demand and subsequent wastewater generation will significantly decrease compared to the construction phase, due to the reduced number of on-site personnel. A total of 7 personnel are expected to be employed for operational, maintenance, and monitoring purposes.

Based on the same TurkStat data for domestic wastewater generation (0.256 m³/person/day), the projected daily wastewater volume is:

- 7 employees × 0.256 m³/person/day = 1.79 m³/day

This wastewater will also be domestic in nature, originating from sanitary and hygiene-related activities such as restroom and handwashing use. No industrial or process wastewater is anticipated during the operation phase of the Subproject.

All wastewater will be safely and directly discharged into the İSKİ municipal sewer network through a properly designed and permitted connection. The discharge will comply with relevant national regulations and municipal infrastructure standards.

No direct discharge to surface water bodies or infiltration into the ground will occur.

4.1.1.10 Waste

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

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

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

- Municipal solid waste,
- Packaging waste such as wood, paper, cardboard and plastic, etc.,
- Hazardous and special waste that may be generated within the scope of the land preparation, construction and operation phases of the Subproject can be listed as

contaminated vessels, cloths and overheads, waste batteries and accumulators, waste oils, etc.,
- Brick, stone and rubble waste,
- Iron, steel and aluminium parts (beams, railings, nails, etc.),
- Paints and solvents (during the removal of old surfaces or the application of new paints),
- Steel piles (steel pipe piles that have rusted or lost their structural integrity)
- Excavation material on land
- Demolishment wastes from old abutments

Demolition of the old abutments will mainly generate inert wastes such as concrete and steel. Based on available information, the presence of asbestos-containing materials (ACMs) is not expected. Nevertheless, in line with good international practice, a visual inspection will be conducted prior to demolition, and if any ACMs are unexpectedly identified, they will be managed in accordance with national regulations and disposed of at licensed hazardous waste facilities.

Waste to be generated in the scope of the Subproject activities will be managed in accordance with the waste management hierarchy as given in Figure 33. In this respect, waste generation will be avoided/prevented at the source. In cases where prevention is not possible at the source, respectively; minimization of waste generation, selection of materials that will not cause generation of hazardous waste as much as possible, separate collection of waste according to their type (hazardous, non-hazardous, recyclable, etc.), reuse of generated waste at the site as much as possible, assessment of alternatives such as recycling and energy recovery for waste (where reuse is not possible) will be considered. The final step in the hierarchy of waste management involves the final disposal of waste in accordance with relevant regulations, where reuse, recycling and energy recovery options are not possible. All phases of the Subproject will meet the requirements of ESS1 and ESS3 in terms of waste management.

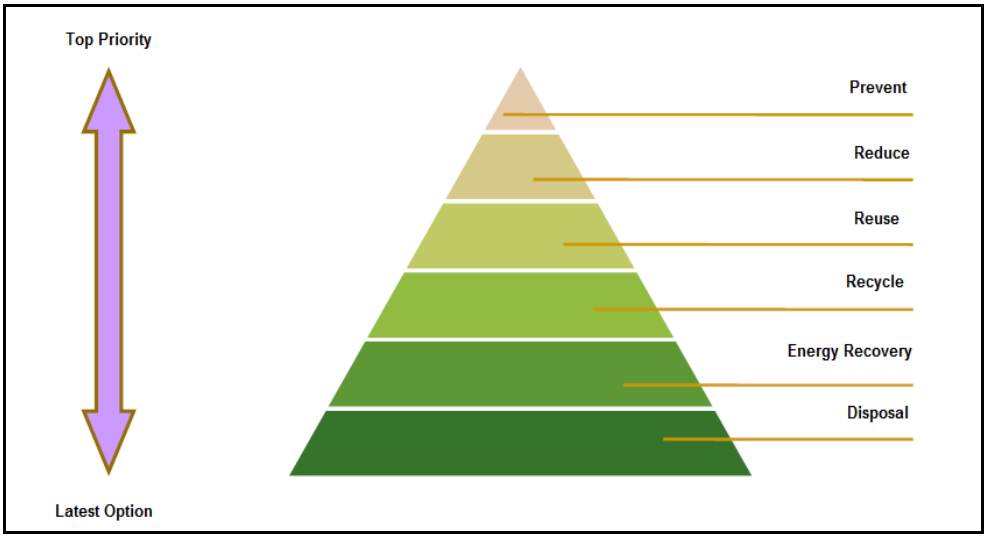


Figure 33 Waste Management Hierarchy

Construction Phase

To mitigate the negative environmental effects, it's crucial to implement sustainable construction practices, adhere to environmental regulations, and continuously monitor and improve processes throughout the Subproject lifecycle. Environmental impact assessments and comprehensive planning during the pre-construction phase play a key role in achieving a balance between construction needs and environmental conservation.

Hazardous waste will be stored in special compartments in the Temporary Storage Area allocated for this purpose, in containers, separated from the non-hazardous waste as indicated in Waste Management

Regulation. This area will have an impermeable base/ground and will be protected from the surface flows and rain. Additionally, necessary drainage for the area will be provided. Hazardous wastes will be collected and disposed of by licensed companies. IMM, will be responsible for selecting a company licensed by the MoEUCC to transfer hazardous wastes.

Table 35 lists the types of waste that can be generated during the pre-construction phase and construction phase of the Subproject and their waste codes according to the waste lists given in the annexes of the Waste Management Regulation dated 02.04. 2015 Official Gazette dated 02.04.2015 and numbered 29314.

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Table 35 List of Possible Waste Types to be generated during Construction Phase of the Subproject

Waste Code	Definition of Waste Code
13	**Oil Wastes and Liquid Fuel Waste (Excluding Edible Oils, 05 and 12)**
13 02	Waste Engine, Transmission and Lubrication Oils
15	**Waste Packages, Unspecified Absorbents, Wipes, Filter Materials and Protective Clothing**
15 01	Packaging Waste (Including Packaging Waste Separately Collected by the Municipality)
15 02	Absorbents, Filter Materials, Cleaning Cloths and Protective Clothing
16	**Waste Not Specified Otherwise in the List**
16 06	Batteries and Accumulators
17	**Construction and Demolition Waste (Including Excavations from Contaminated Sites)**
17 01	Concrete, Brick, Tile and Ceramic
17 02	Wood, Glass and Plastic
17 03 01*	Tar and pitch residues
17 04	Metals (Including Alloys)
17 05	Soil (Including Excavations from Contaminated Sites), Stones and Dredging Sludge
17 09	Other Construction and Demolition Waste
08 01 11*	Old lead-based paints and solvents
20	**Municipal Waste Including Separately Collected Fractions (Domestic and Similar Commercial, Industrial and Institutional Waste)**
20 01	Separately Collected Fractions (Except 15 01)
20 03	Other Municipal Waste

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

In order to determine the amount of municipal waste to be generated at site, the average daily municipal waste per person is taken as 1.03 kg according to the most recent municipal waste statistics of TurkStat (TurkStat, 2022). The estimated amount of municipal waste to be generated during the construction phase of the Subproject, based on the number of people working, is given below. This amount includes also separately collected fractions such as paper, cardboard, glass, metal, plastic, etc. together with biodegradable wastes:

- 75 people x 1.03 kg/person/day= 77,25 kg/day

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

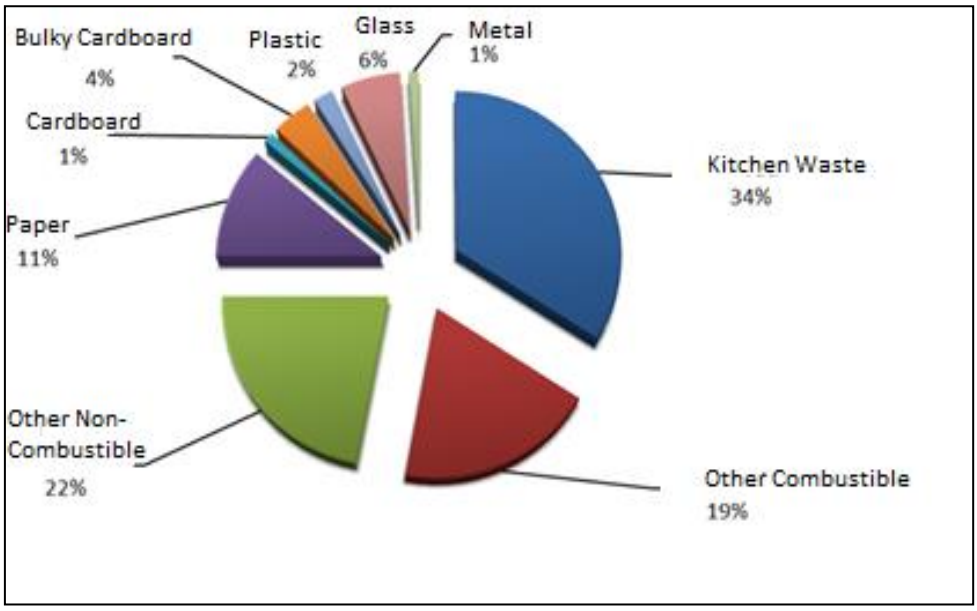

Figure 34 Composition of Municipal Waste (former Ministry of Science, Industry and Technology, 2014)

Considering the information provided in Figure 34, it is also valid for the municipal waste to be generated within the scope of the Subproject. By reflecting this and the assumption of only 34% kitchen waste, the composition of the municipal waste will be as follows:

- KitchenWaste : 34%
- Other Combustible : 27%
- Other Non-combustible : 31%
- Paper : 16%
- Cardboard : 2%
- Bulky Cardboard : 6%
- Plastic : 3%
- Glass : 8%
- Metal : 2%

The total amount of municipal solid waste generated is estimated to be approximately 84.75 kilograms per day. Based on the waste composition data, the daily quantities of each waste type are as follows: food waste accounts for approximately 4.24 kg, other combustible materials make up 22.88 kg, and other non-combustible materials constitute 26.27 kg. Paper waste is estimated at 13.56 kg per day, while cardboard and bulky cardboard contribute 1.70 kg and 5.09 kg respectively. Additionally, plastic waste amounts to 2.54 kg, glass to 6.78 kg, and metal waste to around 1.70 kg per day.

The nearest IMM landfill for excavation waste generated by the Atatürk Bridge construction site is the İSTAÇ Northern Istanbul Excavation Waste Disposal Site, located in the Eyüp district. This facility, managed by İSTAÇ (a subsidiary of IMM), is specifically designed for the controlled disposal of excavation soil and construction/demolition debris.

The management of excavation material is not regulated under the Waste Management Regulation (Official Gazette No. 29314, 2015), but instead falls under the "Regulation on the Control of Excavation Soil, Construction and Demolition Waste" (Official Gazette No. 25406, 2004), and relevant IMM municipal directives.

The İSTAÇ Northern Istanbul Excavation Waste Disposal Site accepts excavation soil, construction debris, and similar materials. These wastes are processed and stored in compliance with environmental

regulations. Due to its proximity to the Atatürk Bridge, this site will be a suitable option for disposal of excavation waste generated from the bridge's construction activities.

However, it is important to note that an Excavation Soil, Construction, and Demolition Waste Transportation Permit is required for the transportation and disposal of these dredging wastes. This permit ensures that the waste is handled according to legal and environmental standards. Accordingly, necessary permits will be taken.

In terms of receiving capacity, İSTAÇ currently manages approximately 40 million tons of excavation soil annually across its licensed storage and rehabilitation sites. Monthly excavation waste volumes in Istanbul are around 3 million tons. These materials are primarily used to rehabilitate exhausted mining sites in accordance with environmental legislation. Given this operational scale, it is expected that the İSTAÇ Northern Istanbul site will have sufficient capacity to accommodate the excavation waste generated by the bridge construction project. Nonetheless, a formal confirmation will be obtained from İSTAÇ to ensure compatibility with the site's current utilization and operational limits.

Operation Phase

In the operation phase, there will be waste generation resulting from damaged, malfunctioned or end-of-life equipment and material that could be replaced or controlled during maintenance and repair activities to be performed periodically or in case of a breakdown. Also, procurement of new equipment, pieces and others will also result in the generation of packaging waste. Besides, personal protective equipment, clothes and rags used during maintenance and repair activities might result in a limited amount of waste generation.

Table 36 lists the waste types and waste codes that may occur during the operational phase of the Subproject, according to the waste lists given in the Waste Management Regulation's Annex.

Table 36 List of Possible Waste Types to be generated during Operation Phase

Waste Code	Definition of Waste Code
13	**Oil Wastes and Liquid Fuel Waste (Excluding Edible Oils, 05 and 12)**
13 02	Waste Engine, Transmission and Lubrication Oils
16	**Waste Not Specified Otherwise in the List**
16 06	Batteries and Accumulators
16 07*	Oil filters
17	**Construction and Demolition Waste (Including Excavations from Contaminated Sites)**
17 01	Concrete, Brick, Tile and Ceramic
20 01 21 *	Fluorescent tubes and other mercury-containing waste
20 01 35*	Discarded electrical and electronic equipment containing hazardous components
20	**Municipal Waste Including Separately Collected Fractions (Domestic and Similar Commercial, Industrial and Institutional Waste)**
20 03	Other Municipal Waste

7 workers are expected to be employed in the Subproject 's operation phase. Therefore, municipal waste generation will be 7.91 kg/day and using the same approach as in construction, it can be determined that the recyclable portion this waste and the amount of food waste will be 2.93 kg/day and 0.4 kg/day, respectively.

4.1.2 Biodiversity Risks and Impacts

The Golden Horn supports a diverse array of biological communities including. Due to its transitional nature and historic urbanization, biodiversity in the Golden Horn is highly sensitive to anthropogenic interventions. However, effective environmental management and rehabilitation efforts over the past three decades have significantly improved water quality and supported the return of sensitive species.

To understand the biodiversity risks and impacts, the baseline study for the Subproject was conducted through a combination of desk-based studies together with the site-specific data that has been collected previously for another project in the same region in March, June, and September 2022–2023 by qualified terrestrial ecologists and aquatic biodiversity experts, Prof. Dr. Erdoğan Çiçek, Doç. Dr. Sevil Sungur and Dr. Burak Seçer. These studies confirm the absence of critical habitats or protected species within the Area of Influence (AoI). The estuarine segment near the bridge is characterized by an already modified benthic environment with low naturalness, and no nesting, spawning, or foraging habitats of conservation importance have been recorded in the vicinity of the construction zone.

Construction Phase

The proposed Unkapanı (Atatürk) Bridge Reinforcement Project will be implemented entirely within the existing infrastructure footprint and does not involve any dredging, land reclamation, or expansion into aquatic or terrestrial habitats.

The Subproject includes limited marine construction activities during the initial phase, consisting of demolition for bridge foundations (approximately 20 days) followed by sheet piling works, completed within a total of 50 days. Subsequent marine works involve construction of rock-based fortifications behind the sheet piles, anchoring of pontoons using a chain and anchor system, and installation of a new bridge joint system. After completion of these activities, all remaining construction will take place on the terrestrial side, with no further interaction with the marine environment.

Potential impacts on the marine ecosystem are temporary, localized, and limited due to the short duration and controlled nature of the works. These include:

- Physical disturbance to the seabed and benthic substrates adjacent to demolished pier foundations and sheet piling;
- Noise and vibrations impact on aquatic fauna from machinery and sheetpiling operation;
- Increased turbidity and sedimentation during demolishment and sheetpiling;
- Potential spill incidents may cause spill contamination.

Mitigation measures are outlined in Section 4.2 (Impact Assessment and Mitigation Measures). The main mitigation measure will be the careful scheduling of marine activities, ensuring that they are carried out during the October–March period, which is out of the breeding and spawning season of the aquatic species. Considering these mitigation measures, residual impact on the marine ecosystem will be low, temporary, and reversible, with no long-term degradation of aquatic habitats expected.

Operation Phase

After the construction phase, the infrastructure will transition into the Operation Phase. This phase primarily involves the use and maintenance of the reinforced structure without further in-water construction or sediment disturbance. As such, Operation Phase is not expected to exert significant impacts on the marine and estuarine biodiversity of the Golden Horn.

Given the passive nature of the operational phase (i.e., absence of active marine works), no direct physical disturbance to aquatic habitats or communities is expected. However, indirect or cumulative effects may still merit monitoring, such as;

- Shading Effects: Even though the current design footprint is not anticipated to significantly alter light availability, there's possibility of limited light availability for algal and macrophyte growth.
- Surface Runoff and Pollution: If unmanaged, stormwater runoff from the bridge surface could transport hydrocarbons, heavy metals, or debris into the estuary.
- Noise and Vibration: Vehicular movement generates minimal underwater acoustic disturbance, unlikely to affect fish behavior or migration.
- Traffic Emissions: While atmospheric pollutants from vehicles may deposit into the estuary over time, their contribution is negligible compared to past industrial pollution and is not expected to affect aquatic biodiversity
- Maintenance Activities: Periodic inspections or minor repairs (e.g., paint, cleaning) could introduce short-term pollutants if not environmentally controlled.

4.1.3 Cultural Heritage Risks and Impacts

Construction Phase

The planned construction activities near Sokullu Mehmet Paşa Mosque Garden and the historical fountain and the wall at the shipyard side and Hamidiye Waterways have been assessed in accordance with ESS8 requirements with the available data. Accordingly, the vibration impact of construction equipment on these features is foreseen as high. Since the assessment is done with limited data, the assessment has been carried out with the worst case scenario. A comprehensive assessment will be conducted once the construction equipment and methodology are defined in detail, prior to site mobilization. This assessment includes:

- Comparison of predicted vibration levels against international and national standards to evaluate potential impacts on the identified cultural heritage structures.
- Development of mitigation and monitoring measures, including the use of vibration-damping technologies, scheduling of high-vibration activities, and on-site vibration monitoring with alarm thresholds.
- Coordination with relevant cultural heritage authorities and, where required, involvement of independent experts to verify the assessment and proposed mitigation measures. Regional Conservation Board approval has already been issued (see Annex-I).
- The results of this comprehensive assessment will be documented in a standalone technical report and integrated into the Contractor's Environmental and Social Management Plan for implementation and monitoring.

During the Stakeholder Engagement Meeting held on 22 January 2026, concerns were raised regarding the protection of the Sokullu Mehmet Paşa Mosque and surrounding historic structures during construction. In response, monitoring and protection measures for the mosque and adjacent cultural heritage elements (such as historic fountains and walls) have been incorporated into the project design and construction planning. Coordination with relevant authorities, including conservation boards and local representatives, will be maintained throughout the construction phase.

Operation Phase

In the operation phase, no adverse impacts on the Sokullu Mehmet Pasha Mosque Garden, the Historical Fountain, the Hamidiye Waterways or other nearby cultural heritage sites are anticipated. Since the drilling activities are limited to the construction phase and are being carried out with strict control measures, there will be no ongoing sources of vibration, noise, or dust during operation.
Additionally, the completed infrastructure is not expected to create any pressure or disturbance that could negatively affect the structural integrity or visual integrity of surrounding historical assets. Therefore, the operation phase is considered to pose no risk to the preservation of cultural heritage elements in the area.

4.1.4 Social Risks and Impacts

Construction Phase

The reinforcement work on the bridge will last 18 months, during which the bridge will not be completely closed, but only three lanes will be open, and the two lanes will serve different directions in the morning and evening hours depending on traffic density. For safety purposes, pedestrian access to the bridge will be temporarily suspended throughout the construction period.

Operation Phase

Since the bridge will operate in the same way as it does now after it is strengthened, no impact other than the current impacts is foreseen. However, it should be noted that routine maintenance activities will continue during the operation phase, potentially causing temporary disruptions. These activities may temporarily affect local users by causing partial access restrictions, increased noise levels, or short-term dust emissions. Although these works will not significantly alter the use of the bridge, such periodic interventions may create minor and short-term disturbances, particularly for pedestrians, drivers, and sensitive receptors in the Subproject area.

4.1.4.1 Community Health and Safety

Community Health and Safety falls under the scope of the World Bank ESF in ESS4. This standard focuses on identifying and managing risks related to health, safety, and security that may affect communities impacted by a Subproject. It emphasizes the responsibility of Borrowers to prevent or reduce these risks, especially for individuals who may be more vulnerable due to specific circumstances.

4.1.4.1.1 Physical Safety Risks

Open Trenches and Excavation Sites

Exposed or inadequately secured infrastructure elements within construction zones pose significant safety risks for both workers and the general public. Open pits, trenches, uncovered manholes can easily go unnoticed, especially in low-light or high-traffic conditions, leading to falls, injuries, or equipment damage. To mitigate these risks, proactive safety measures will be taken to secure or visibly mark all such infrastructure, ensuring a safer environment throughout the duration of the construction activities.

Fallen Object

The risk of falling objects is a critical concern in construction areas, particularly where elevated work is being performed, or materials and equipment are stored at height. Loose tools, unsecured construction materials, or structural components dislodged during reinforcement activities can fall unexpectedly, posing a serious threat to workers operating below, as well as to nearby pedestrians or passing vehicles. In areas with exposed infrastructure or ongoing structural modifications, even minor vibrations or weather conditions like wind can trigger such incidents.

Insufficient Lighting

Insufficient lighting in bridge reinforcement Subprojects can lead to several serious risks. Poor visibility increases the likelihood of worker accidents, as it becomes more difficult to handle tools, machinery, and materials safely. This can result in injuries or operational errors that may compromise the overall structural integrity of the bridge.

For pedestrians, particularly tourists passing near the bridge, inadequate lighting makes it harder to see falling debris, temporary obstacles, or uneven surfaces, increasing the risk of trips, slips, and accidents.

Similarly, drivers navigating through dimly lit construction zones may not notice road barriers or machinery.
In emergency situations, poor lighting can obstruct response efforts, making it difficult for emergency vehicles to safely navigate through the construction area. Additionally, insufficient lighting increases security risks, as it can encourage unauthorized entry, vandalism, or theft of construction materials and equipment, further endangering both workers and the public.

Heavy Machinery Operations

The use of heavy vehicles in the bridge reinforcement Subproject poses significant risks to both traffic flow and workers. Heavy vehicles can contribute to traffic congestion, especially if they occupy lanes for extended periods. The maneuverability of these vehicles is also limited, increasing the risk of sudden stops or difficult turns that may disrupt regular traffic flow and lead to accidents.
The transportation and lifting of heavy construction materials further increase the risk. The use of cranes to move materials above street level creates the possibility of objects falling onto roads or pedestrian walkways.

Operation Phase

During the operation phase, physical safety concerns may still arise for pedestrians and road users if routine maintenance is not adequately performed. In particular, insufficient lighting, damaged pedestrian pathways, or deteriorated safety railings could lead to accidents involving both local residents and visitors. To mitigate such risks, regular inspection and timely maintenance of public access infrastructure, including signage and lighting systems, will be essential.

4.1.4.1.2 Public Health Risks

Construction Phase

Airborne Dust and Particulates

During construction activities, dust and fumes may be generated, posing health risks for individuals with respiratory conditions such as asthma, allergies, or shortness of breath. Additionally, these factors can impact air quality, potentially triggering similar health issues among the local population.

In addition, increased traffic congestion can lead to increased air pollution and fuel consumption.

Noise Pollution

The construction activities and heavy vehicles involved in the Subproject may generate loud noises and excessive noise pollution, potentially causing hearing issues for residents and tourists in the vicinity. Night-time operations can further disrupt the community by leading to sleep disturbances or waking individuals from their rest; however, since there is not a high density of residential buildings in the area, this impact may not be experienced by many people.

Ecosystem Services and Water Quality

The Golden Horn area provides ecosystem services such as water purification, urban cooling, and recreational fishing. Any construction, sediment disturbance, or accidental spill may temporarily disrupt water quality, affecting aquatic life and indirect human uses. These risks must be minimized via best environmental practices, including silt curtains, sediment monitoring, and controlled material handling.

Operation Phase

The operation of the bridge, particularly during maintenance activities, may lead to temporary traffic congestion, which in turn can contribute to localized air pollution and driver frustration. Increased idling

times could elevate emissions, especially during peak traffic hours. Informing the public in advance about bridge operation times and ensuring proper traffic management will help reduce these indirect health risks.

4.1.4.1.3 Social and Psychological Impacts

Construction Phase

Stress and Anxiety

The Subproject may have some social and psychological effects on people, particularly those pedestrians and drivers passing through the area. One of the main psychological effects could be increased stress and discomfort due to changes in daily routines. The presence of heavy construction vehicles, noise, and temporary road or sidewalk closures may cause minor frustration, especially for residents and commuters who frequently use the area. The inconvenience of detours, traffic congestion, or longer walking routes could lead to temporary irritation.

For drivers, unexpected lane changes, detours, or slow-moving construction vehicles might cause some momentary stress or impatience, particularly during peak traffic hours. Pedestrians, especially tourists unfamiliar with the area, may experience unease when navigating through modified pathways.

Operation Phase

In the absence of clear signage or updated information, both pedestrians and drivers may experience confusion or stress when navigating the area. Tourists in particular may feel uncertain when trying to cross the bridge if wayfinding is inadequate. Ensuring consistent communication through visual aids and keeping the GRM active and visible will help alleviate public concern and address complaints effectively.

4.1.4.2 Traffic Safety

The fact that the bridge will serve in both directions with 3 lanes for 18 months as part of the improvement will make access difficult to these areas. For safety purposes, pedestrian access to the bridge will be temporarily suspended throughout the construction period. Although there are alternative transportation routes, this situation may cause the transportation time to be extended and daily mobility to change, especially for pedestrians and public transportation users.

Construction Phase

Traffic Diversions

Traffic congestion will be inevitable during the construction phase of the Atatürk Bridge Strengthening Subproject. The bridge will operate below its usual capacity, leading to slower traffic flow, especially during peak hours. This will increase congestion not only on the bridge but also on connecting roads and alternative routes.

Istanbul already struggles with severe traffic problems, and any reduction in road capacity can exacerbate congestion citywide. Lane reductions, temporary closures, and the movement of construction vehicles will likely cause further delays, leading to longer travel times for drivers. Increased congestion may also contribute to higher fuel consumption and air pollution.
Public transportation may face overcrowding and route adjustments, potentially causing service disruptions.

Pedestrian Safety

For safety purposes, pedestrian access to the bridge will be temporarily suspended throughout the construction period. This situation shows that there will be no impact on pedestrian safety.

As vehicles are redirected and traffic patterns shift, pedestrians may face increased exposure to fast-moving or unpredictable traffic, especially at intersections and temporary crossings. The absence of designated pedestrian zones in some areas could force people to walk near roadways or cross streets in unsafe locations, raising the risk of accidents.

Disruptions in Accessibility to Sensitive Receptors

Due to road diversions, pedestrians may need to take longer or unfamiliar routes to reach their destinations. This can lead to overcrowding on certain sidewalks, pedestrian crossings, and public transport stations, particularly near the high school, university, and metro station. Pedestrians may need to navigate more congested walkways, increasing travel times and fatigue.

Accessibility Issues for Vulnerable Groups

Individuals with disabilities, elderly pedestrians, and those with mobility impairments may experience heightened difficulties due to increased walking distances, or a lack of clear signage for safe alternative routes. Also, based on the interview conducted with local headmen, it was confirmed that vulnerable individuals do not actively use the Atatürk Bridge as pedestrians or travel alone. Therefore, no specific or disproportionate impact is anticipated for these groups due to temporary access restrictions. This topic is examined in detail under the title Disadvantaged and Vulnerable Individuals or Groups.

Operation Phase

Once the bridge becomes fully operational, ongoing traffic safety considerations will remain relevant. Sudden technical issues or insufficient public notification during planned maintenance activities may cause confusion and unsafe driving behavior. In particular, vehicles approaching the bridge without prior knowledge of temporary closures may attempt last-minute diversions, increasing the risk of accidents or traffic build-up.

4.1.4.3 Loss of Land and Livelihoods

One of the groups that will be affected by the Subproject is the mobile fishermen operating on the bridge. These fishermen be directed to alternative areas. The accessibility of these areas for fishermen and their suitability to maintain their income levels are critical issues. However, there are several alternative fishing locations within walking distance, ensuring that their activities remain unaffected. Some of the key alternative fishing locations include:

- Haliç Shoreline (Unkapanı and Azapkapı areas) – Provides multiple fishing spots along the Golden Horn.
- Galata Bridge – A popular and well-known fishing area frequently used by local fishermen.
- Eminönü Shoreline – A busy fishing spot near the historical peninsula, attracting both locals and tourists.

As these locations are situated along the same water body and remain easily accessible, fishermen will not experience involuntary economic displacement.

Stakeholder feedback received during the Stakeholder Engagement Meeting held on 22 January 2026 highlighted potential temporary impacts on amateur fishing activities and recreational use of the bridge during construction. While amateur fishing is considered a recreational activity, measures such as advance information disclosure and guidance towards alternative fishing locations have been included to minimise inconvenience to affected users.

The Subproject will also temporarily utilize the coastline area at the north part of Unkapanı side some part of Fener Ayakapı Shelter. Although this area is designated as a coastal structure managed by the S.S.

Küçükmustafapaşa Fisheries Cooperative, during a consultation conducted with cooperative representatives in June 2025, it was stated that the area is no longer actively used, the Cooperative currently has only 27 registered members, and fishing activities have not taken place there for some time. Furthermore, given that the mooring area used by the cooperative is approximately 350 m and located at a considerable distance from Subproject activities, no adverse impact on the Cooperative's operations or income is expected.

The cooperative representative also noted that the boats currently seen near the construction area do not belong to cooperative members, but rather to individual citizens who use them for tourism purposes. Since the shoreline is generally not congested, boats in the affected area will be able to use the remaining shoreline. The temporary closure of a small area (sufficient for 3–4 boats) is not expected to cause any significant disruption. Nevertheless, individuals who currently have boats moored in the area need to be informed prior to the commencement of construction activities.

Dosthane Cafe may experience a loss of customers and a decrease in revenue during the Subproject's construction phase. Restricting customer access temporarily during the Subproject may negatively affect the cafe's daily turnover and profitability. Since there is high customer traffic, especially during the summer months, the construction process coinciding with this period could increase the loss of revenue for the business.

The area marked in green in Figure 35, designated as a temporary construction site, directly connects with the cafe's front garden and through a temporary road the parking area in front of the mosque. During the Subproject, materials will be transported from the parking area to the construction site, creating a new traffic situation that did not previously exist. This change may hinder access for customers who wish to use the cafe's front garden, reducing the cafe's appeal.

In terms of staff employment, a decrease in the number of customers may lead to a temporary reduction in the number of employees. This situation may cause temporary staff employed, especially during the summer months, to experience job loss.

Additionally, considering the possible effects on customer habits, long-term access restrictions may cause regular customers to turn to alternative venues. This situation may create a risk of a permanent loss of the customer base, even after the Subproject is completed.

In conclusion, the most significant impacts of the Subproject process on Dosthane Cafe will be income loss, a decrease in customers, and temporary job losses. However, the actual extent of the reported economic losses should be assessed considering the scale, current capacity of the business and official documents based on construction schedule.

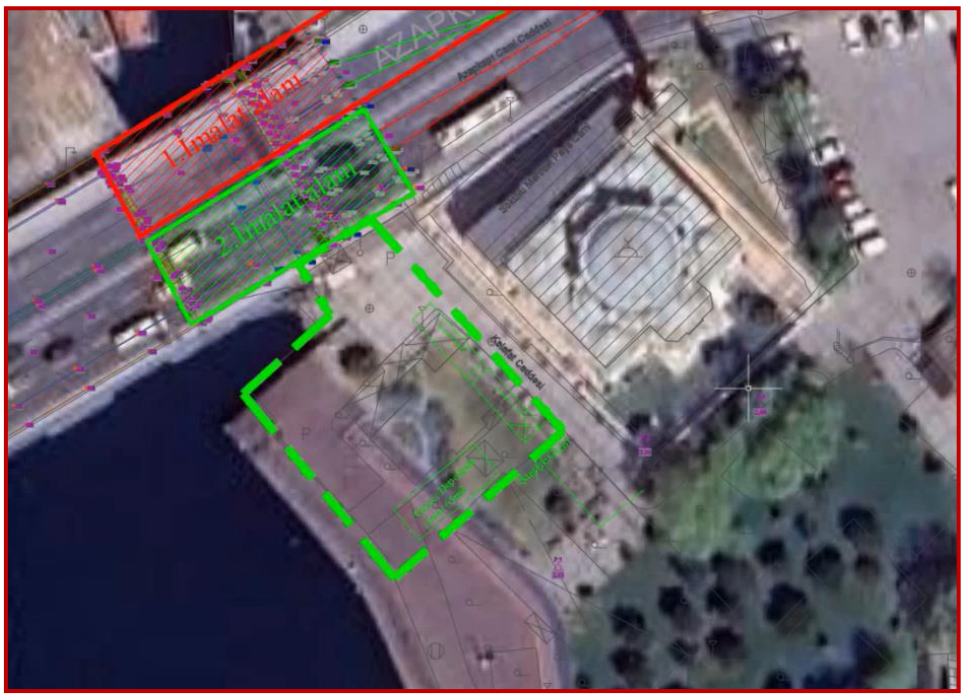

Figure 35 Temporary Construction Site and Dosthane Café

Additionally, a public toilet facility located near the bridge pier will not experience any economic loss due to the Subproject. However, during a consultation held in June 2025 with the toilet operator, who is also the mosque imam, it was stated that the facility had not been functioning efficiently due to ongoing infrastructure issues, and the operator intended to shut it down regardless of the Subproject. Therefore, no income loss or adverse impact is anticipated as a result of Subproject activities.

However, during the construction phase, temporary job opportunities may arise, particularly in sectors such as construction, engineering, and Subproject management. These short-term employment opportunities can provide income for local workers and contribute to the local economy.

Furthermore, the manning schedule estimates that 75 workers which are categorized as blue-collar workers (manual labor and site staff) 55 employees, white-collar workers (office and management staff) 20 employees will be employed during the construction phase and 7 workers are categorized as blue-collar workers 6 employees, white-collar workers 1 employees will be employed during the operation phase of the Subproject. This workforce is expected to include engineers, technical staff, and laborers specializing in infrastructure Subprojects. The employment of local workers will not only contribute to the Subproject's progress but also provide economic benefits to the surrounding communities.

Operation Phase

Since the bridge will operate as it does currently, no additional impacts are anticipated during the operation phase. However, it should be noted that routine maintenance activities will continue during the operation phase, potentially causing temporary disruptions. In such cases, local communities and road users will be informed in advance through appropriate communication channels to minimize inconvenience.

4.1.4.4 Disadvantaged and Vulnerable Individuals or Groups

The Subproject may have a disproportionate impact on disadvantaged and vulnerable individuals, particularly those who already face mobility challenges. Increased traffic congestion, temporary route changes, and accessibility restrictions may further limit their ability to navigate the area safely and efficiently.

Elderly Individuals and Children

Elderly individuals and children are particularly vulnerable to environmental and logistical disruptions during construction activities. Increased noise and dust levels may pose health risks, especially for these sensitive groups. Although the Subproject area itself does not host a high density of residential buildings, headmen interviews indicate that certain directly affected neighborhoods, particularly Cibali and Bedrettin, have a high proportion of elderly residents. For instance, approximately 90% of the population in Cibali consists of elderly individuals. As such, this group remains at elevated risk from mobility disruptions, altered pedestrian routes, and longer travel times during construction. On the other hand, changes in traffic circulation and public transport routes can lead to longer travel times, which may affect not only the Subproject area but the wider urban population across Istanbul. This can particularly challenge individuals who rely on timely access to essential services such as healthcare, education, or social facilities.

Disabled and Special Care Needs Group

Individuals with disabilities are likely to face increased challenges related to traffic disruptions during the construction phase. Changes in road layouts, traffic congestion, and rerouted public transportation can significantly hinder their ability to move independently within the city. Based on interviews with local headmen, there are approximately 10–11 individuals with physical disabilities in Cibali, 2 in Bedrettin, and around 5–10 in Yavuz Sinan neighborhoods. While many of these individuals benefit from electric mobility equipment (such as wheelchair) provided by municipal or local authorities, it was also confirmed during headmen interviews that disabled individuals do not typically use the Atatürk Bridge in their daily routines. Therefore, while the Subproject may pose general accessibility risks, its direct impact on disabled individuals residing in the Project area is expected to be minimal.

Low-Income Groups

No different impact can be defined according to income group.

Operation Phase

Since the bridge will operate as it does currently, no additional impacts are anticipated during the operation phase. However, it should be noted that routine maintenance activities will continue during the operation phase, potentially causing temporary disruptions. In such cases, local communities and road users will be informed in advance through appropriate communication channels to minimize inconvenience.

4.1.4.5 Sensitive Receptors

Construction Phase

Reduced Accessibility of Sensitive Receptors

The reduced accessibility to sensitive receptors due to the Subproject is expected to have localized impacts, particularly on institutions and public spaces near the bridge connections. While the area does not have a high concentration of sensitive receptors, the presence of including High School, Secondary Schools, Universities and mosques, it includes educational institutions and places of worship located

within 300 meters of the Atatürk Bridge. These include Beyoğlu Tersane-i Amire Anatolian High School (281 m), Medipol University Haliç Campus (310 m), and multiple mosques such as Sokullu Mustafa Paşa Mosque (14 m), Süleyman Subaşı Mosque (153 m), and Yavuz Ersinan Mosque (168 m) — all measured as straight-line distances. Their immediate proximity makes them more vulnerable to reduced accessibility and increased travel time.

Since health facilities are quite limited in the Subproject area and its surroundings, no significant negative impact on health services is expected during the process of strengthening the Atatürk (Gazi) Bridge. No significant change is foreseen in access to hospitals or polyclinics.
When considering the traffic arrangements on the bridge in terms of emergency health services, it may be suggested that a special arrangement be made for emergency transportation vehicles such as ambulances to pass over the bridge. However, in general, it can be said that it will not have a significant impact on access to health services.

However, in order to be prepared for emergencies and to provide rapid intervention, it is important to determine the institutions that provide emergency health services closest to the bridge. The closest and most equipped health centers to the Subproject area are T.C. Istanbul University Istanbul Faculty of Medicine Esnaf Hospital and Private Fatih Hospital.

Increased traffic congestion and partial road restrictions will likely result in longer travel times for students, faculty, and worshippers. Delays in public transportation routes and heavier pedestrian traffic near detours may also contribute to accessibility challenges. Students and staff commuting to high school and university may experience difficulties reaching their institutions on time, especially during peak hours. Similarly, people who attend daily prayers or Friday prayers at the mosques could face delays due to traffic congestion around the area.

For safety purposes, pedestrian access to the bridge will be temporarily suspended throughout the construction period, which may affect the daily routines of residents and visitors. Those crossing the bridge on foot will be affected by this situation. However, the metro station (Haliç metro) in the area offers a practical alternative although it may require additional walking as it does not provide direct access to their destinations, it remains a more reliable and efficient option compared to buses or private vehicles. By reducing the time lost in traffic, the metro may lessen the negative effects of restricted accessibility.
This situation will temporarily affect the touristic identity of the region.

Operation Phase

Since the bridge will operate in the same way as it does now after it is strengthened, no impact other than the current impacts is foreseen. However, it should be noted that routine maintenance activities will continue during the operation phase, potentially causing temporary disruptions. In such cases, local communities and road users will be informed in advance through appropriate communication channels to minimize inconvenience

4.1.5 Labor and Working Conditions

The Subproject involves both direct and contracted workers during the construction and operation phases and therefore is subject to labor-related obligations under the World Bank’s Environmental and Social Framework (ESF), particularly Environmental and Social Standard 2 (ESS2): Labor and Working Conditions.

4.1.5.1 Labor and Workforce Related Impacts

Construction Phase

During the construction phase, the employment of approximately 75 workers is anticipated. This will have a direct influence on worker-management relations. If not accompanied by formal contracts and communication channels, there may be a risk of misunderstandings or perceived unfairness among workers. Such risks may be exacerbated in the absence of formalized employment terms and effective communication mechanisms.

Operation Phase

During the operation phase, no major changes in labor requirements are anticipated. Existing staff of the IMM are expected to carry out routine maintenance and monitoring activities. No major increase in workforce is anticipated. IMM's existing staff will handle maintenance activities. Labor-related risks are minimal but continued compliance with labor standards and municipal protocols is essential.

4.1.5.2 Grievance Related Issues

Construction Phase

A GRM has been developed for Subproject workers and will be operationalized prior to construction. Lack of clear grievance procedures may result in unresolved labor disputes and dissatisfaction among workers.

Operation Phase

During the operation phase, no major changes in labor requirements are anticipated. Existing staff of the IMM are expected to carry out routine maintenance and monitoring activities. The GRM will remain active for municipal staff. Although fewer risks are expected, the availability of grievance channels ensures long-term responsiveness.

4.1.5.3 Child and Forced Labor Risks

Construction Phase

The Subproject strictly prohibits employment of individuals under 18 years and will conduct necessary screening to prevent any forms of forced or child labor. This is in line with Turkish Labor Law and ESS2. If not properly managed, there is a risk of accidental non-compliance with minimum labor age requirements or other labor standards.

Operation Phase

During the operation phase, no major changes in labor requirements are anticipated. Existing staff of the IMM are expected to carry out routine maintenance and monitoring activities. While no new recruitment is foreseen, ongoing awareness and compliance with child labor laws and fair labor standards will be maintained for municipal staff.

4.1.5.4 Workers' Accommodation Conditions

Construction Phase

No centralized accommodation will be provided. Workers will commute from within the city via transport organized by the contractor. This reduces social isolation but introduces dependency on reliable transportation.

Operation Phase

During the operation phase, no major changes in labor requirements are anticipated. Existing staff of the IMM are expected to carry out routine maintenance and monitoring activities. No accommodation needs are expected, as existing IMM personnel will continue to operate from within the city under standard working conditions.

4.1.6 Occupational Health and Safety

The Subproject poses significant OHS risks, including the potential for accidents that may lead to serious injuries or fatalities, as well as disruptions to workforce continuity. In accordance with the World Bank's ESF, particularly ESS2, the Subproject is required to maintain a safe and healthy work environment and to adopt preventive and protective measures in line with GIIP.

Construction Phase

During the construction phase of the Atatürk Bridge Reinforcement Subproject, key activities such as localized excavation, backfilling, scaffolding works, and use of cranes and other heavy machinery are planned. Given the nature of these tasks in a densely built urban environment, there are significant occupational health and safety (OHS) risks associated with the work environment. These include risks from physical conditions, ergonomic strain, and chemical exposure. The Subproject's location over open water and adjacent to high-traffic roads amplifies the potential severity of incidents.

Operation Phase

Since the bridge will remain structurally stable and functionally unchanged after the reinforcement works, no significant changes to OHS risks are expected during the operation phase. However, routine and non-routine maintenance activities may still involve short-term work at height, over water, or adjacent to live traffic. These tasks pose potential risks such as falls, drowning, or accidents involving moving vehicles, and require careful planning and control. Ongoing compliance with OHS standards will therefore remain essential during the operation phase, particularly during routine and non-routine maintenance activities.

4.1.6.1 Psychosocial Hazards

Construction Phase

Psychosocial risks are considered general occupational health and safety (OHS) hazards and may emerge due to long working hours, high workloads, and demanding environmental conditions, which may lead to stress and fatigue among workers.

- Workplace Stress: Long working hours, high workloads, and adverse environmental conditions may contribute to increased stress levels and mental health concerns.
- Fatigue: Extended shifts and physically demanding tasks can lead to fatigue, impairing attention and increasing the likelihood of accidents.

Operation Phase

During the operation phase, psychosocial hazards are expected to be minimal. Routine or non-routine maintenance and monitoring activities will be conducted by IMM personnel under standard working hours and conditions. Given the limited scope and frequency of such tasks, no significant psychosocial risks, such as stress or fatigue, are anticipated.

4.1.6.2 Noise and Vibration Hazards

Construction Phase

Noise and vibration are also categorized as general OHS hazards, expected due to continuous use of heavy machinery and vibrating tools on site.

- Prolonged Exposure to Noise: Continuous exposure to high noise levels from construction machinery can result in hearing impairment if not adequately managed through personal protective equipment (PPE) and administrative controls.
- Vibration Hazards: Regular use of vibrating tools can lead to health conditions such as hand-arm vibration syndrome, requiring both engineering controls and worker rotation policies.

Operation Phase

During the operation phase, noise and vibration hazards are expected to be minimal. Routine and non-routine maintenance works may involve limited use of tools or equipment that generate temporary noise or vibration. These activities will be short in duration and conducted during off-peak hours to reduce disturbance.

4.1.6.3 Physical Hazards

Construction Phase

The following physical hazards are considered workplace-related and are expected to arise from site layout conditions, equipment operations, and elevated work areas during construction.

- Trenching and Excavation Risks: Although deep excavation is not a major component of this Subproject, even shallow or localized digging poses risk of slips, trips or collapse without appropriate shoring and barricades.
- Working at Height: Activities on scaffolding and bridge decks over water require fall prevention systems (e.g., full-body harnesses, guardrails, and safety nets).
- Vehicular Movements and Equipment Operation: The movement of construction vehicles and machinery (e.g., mobile cranes, concrete pumps) within the confined bridge zone poses collision and run-over risks to workers and nearby pedestrians.
- Slips, Trips and Falls: Risk is elevated due to exposed rebar, uneven ground, construction debris, and potential wet surfaces from precipitation or washing activities.
- Exposure to Hazardous Substances: Although no hazardous materials have been identified at this stage, upcoming works may involve the use of adhesives, sealants, or cleaning agents. Inhalation or skin contact risks must be anticipated.
- Dust Generation and Air Quality: Operations such as grinding, cutting or demolition may create dust that could impair visibility and affect respiratory health, especially in windy conditions on the bridge deck.

Operation Phase

During the operation phase, minor physical hazards may arise from routine or emergency maintenance activities carried out on and around the bridge. Key risks include:

- Working at Heights: Maintenance tasks on elevated bridge components pose a risk of falls, especially in windy or low-visibility conditions.
- Exposure to Vehicular Traffic: Maintenance works performed near active traffic lanes may lead to collision risks between workers and passing vehicles.
- Working Over Water: Tasks conducted above or adjacent to the water surface carry a risk of accidental falls into the water, particularly during adverse weather or slippery surface conditions.

4.1.6.4 Ergonomic Hazards:

Construction Phase

The following ergonomic hazards are considered workplace-related and are expected to arise from manual material handling and repetitive tasks during site operations.

- Manual Handling and Lifting: Lifting and carrying reinforcement bars, formwork, or small equipment may result in musculoskeletal injuries if not managed through proper lifting techniques or mechanical aids.
- Static Postures or Repetitive Motions: Tasks such as welding, grinding or prolonged standing during structural reinforcement can lead to repetitive strain injuries if not rotated adequately.

Operation Phase

No major ergonomic risks are anticipated during the operation phase. However, certain maintenance tasks may require manual handling of tools or involve repetitive or awkward postures. If not managed properly, these could result in minor musculoskeletal strain over time.

4.1.6.5 Chemical Hazards

Construction Phase

The following chemical hazards are considered workplace-related and are expected to arise from exposure to construction materials and airborne particulates generated during site activities

- Exposure to Construction Materials: Contact with solvents, fuels, adhesives and other chemical substances (e.g., epoxy-based bonding agents for reinforcement) may lead to skin, respiratory or eye irritation.
- Dust and Emissions: While no large-scale earthworks are planned, cutting or grinding of concrete can generate fine particulates. Regular watering and dust suppression will be required.

Operation Phase

No significant chemical hazards are anticipated during the operation phase. However, occasional exposure to maintenance-related substances such as cleaning agents, lubricants, or protective coatings may pose minor risks if not handled with appropriate precautions.

4.1.6.6 Emergency Related Hazards

Construction Phase

Emergencies such as fire, accidents, equipment malfunction, or natural hazards (e.g., earthquake, flooding) may occur during the construction phases of the Unkapanı (Atatürk) Bridge Reinforcement Project. If not properly managed, such events can pose serious risks to the health and safety of both Subproject personnel and nearby communities.

Due to the Subproject's location over the Golden Horn on an active bridge and its proximity to residential and commercial areas, it is necessary to assess and manage risks that may extend beyond the immediate worksite and affect local communities.

Examples of emergency risks considered include:

- Flammable Materials: Use of fuels or flammable construction chemicals may pose fire or explosion hazards if stored or handled improperly.
- Faulty Equipment: Malfunctioning electrical or mechanical tools may lead to shocks, sparks, or small-scale fires.
- Earthquake Risk Context: Considering Istanbul's high seismic risk and Subproject main purpose, construction safety measures—especially for scaffolding, suspended materials, and equipment storage—should be reviewed to ensure earthquake resilience.

Operation Phase

During the operation phase, emergency-related hazards are considered minimal but still relevant. Maintenance activities may involve elevated or confined spaces, work near traffic, or the use of tools and electrical equipment—each of which carries a potential risk of injury, fire, or equipment malfunction. Additionally, due to the bridge's location over water and Istanbul's known seismic activity, emergency preparedness must be maintained to address risks such as earthquakes, worker accidents, or fire incidents during maintenance works.

4.1.6.7 Site Access and Infrastructure-Related Issues

Construction Phase

The existing infrastructure presents additional risks:

- Traffic Interface Risks: Movement of construction vehicles and materials in the narrow bridge area may endanger workers if not controlled through clearly designated pathways.

Operation Phase

During the operation phase, site access and infrastructure-related issues are expected to remain minimal, as no large-scale construction or excavation will occur. However, maintenance teams may occasionally work at night or in live traffic conditions, particularly when inspecting or repairing parts of the bridge. This can create potential risks such as slips, trips, and falls on narrow walkways, or near-miss incidents involving vehicles if proper access control and traffic diversion measures are not in place.

4.1.1 Protecting the Work Force

The Subproject will protect all categories of workers in line with World Bank ESS2 and in full compliance with Turkish Labor Law No. 4857 and related regulations. Fair treatment, non-discrimination, and a safe working environment will be core principles throughout implementation.

Non-Discrimination and Equal Opportunity

All employment decisions- recruitment, compensation, role assignments, and dismissals- will be made on the basis of merit and capability, regardless of gender, age, ethnicity, disability, or religion. This aligns with Article 5 of the Turkish Labour Law, which enforces the principle of equal treatment. Discriminatory practices based on gender, age, ethnicity, disability, or religion may lead to unequal access to job opportunities or workplace benefits. Lack of gender-sensitive facilities and policies may disproportionately affect the participation and comfort of women workers, particularly in field-based roles

Young and Vulnerable Workers

Employment of individuals under the age of 18 is strictly prohibited in accordance with Article 71 of the Labour Law. Young workers (aged 18–24) may be more exposed to physical and psychosocial risks due to

inexperience, limited familiarity with safety procedures, and physical demands of construction tasks. Workers with limited literacy may have difficulty understanding written safety instructions or warning signage, which can increase accident potential.

Freedom of Association

All workers will have the right to organize and join unions or worker committees of their choice, as per the Law on Trade Unions and Collective Agreements (No. 6356). Lack of awareness about rights or insufficient communication channels may result in underrepresentation of workers in workplace decision-making or conflict resolution. Inadequate worker voice may hinder early identification of workplace concerns or grievances

Occupational Health and Safety (OHS)

All personnel will be equipped with appropriate PPE and trained in accordance with Law No. 6331 on Occupational Health and Safety. Occupational risks such as exposure to noise, dust, vibration, and physical strain may be amplified for certain groups (e.g., women, young workers) due to biological, physiological, or task-specific factors. Lack of gender-responsive work arrangements may result in indirect exclusion of women from certain construction activities.

Work Hours and Psychosocial Support

The Subproject will observe the legal 45-hour weekly work limit, with mandatory rest breaks and leave entitlements as defined in Turkish law. Extended working hours and high workloads may lead to fatigue, mental stress, or burnout. In regions recently impacted by natural disasters, workers may be more susceptible to psychological distress or trauma-related symptoms if not addressed.

Grievance Redress Mechanism (GRM)

A gender-sensitive, anonymous grievance mechanism will be implemented to address any workplace-related complaints. All grievances will be investigated promptly, with strict non-retaliation provisions. The absence of a confidential and accessible grievance channel may prevent workers, especially women and vulnerable groups, from reporting concerns, increasing the risk of unresolved conflicts or unsafe practices.

4.1.2 Sub-Contractor and Supplier Management

IMM will ensure that subcontractors are reputable, legally compliant entities with an established Environmental and Social Management System (ESMS) that aligns with the labor standards upheld by the Municipality. During the subcontractor and supplier selection process, IMM will consider performance in areas such as worker management, labor rights, health and safety.

IMM will support subcontractors and suppliers in maintaining labor and working conditions that comply with national legislation. Regular monitoring will be conducted to ensure that human rights policies and workers' rights are upheld, and contracts will include appropriate non-compliance provisions. IMM will also oversee the primary supply chain for safety-related issues concerning supply chain workers. Identified risks such as poor working conditions or non-compliance with labor laws will be subject to further assessment and corrective action, as detailed in the ESMP Matrix.

Subcontractor workers will have access to the grievance mechanism established for the Subproject. A Contractor Management Plan has been developed by ENCON and will be adopted by IMM prior to contractor engagement.

The Subproject will prioritize the hiring of local workers and the procurement of goods and services from local businesses, followed by national companies. Relevant procurement and hiring approaches are summarized in the ESMP Matrix.

PIU holds the responsibility for ensuring that labor practices are in line with national and international standards. The PIU will:

- Guarantee Equal Opportunities: Uphold equal opportunities and non-discrimination practices in all labor relations, eliminating any form of bias based on language, race, sex, political views, religion, or other factors.
- Freedom of Association: Acknowledge the workers' right to freedom of association and collective bargaining, allowing for union formation and negotiations without fear of reprisal.
- Fair Employment Conditions: Facilitate an environment of mutual respect and fair treatment through transparent dialogue between employers and employees.
- Compliance with Labor Laws: Ensure adherence to all labor-related laws, including compliance with the Labor Management Plan (LMP), Labor Management (LM) Plan and ILO Conventions regarding working hours, minimum wages and decent living standards.
- Grievance Mechanism: The establishment and implementation of a grievance mechanism are addressed in the ESMP Matrix.
- Written Employment Contracts: Provision of contracts and associated employment documentation is addressed through ESMP measures.
- Minimize Disruption to Local Communities: Mitigation measures related to worker-community interaction are included in the ESMP Matrix.
- Human Rights Policy: Development and enforcement of human rights policies are outlined in the Contractor Management Plan and ESMP Matrix.
- Contractor's Responsibilities.

The Contractor will be responsible for the effective implementation of the Labor Management Plan (LMP) and ensuring compliance with labor-related provisions throughout the construction phase. Mitigation and implementation responsibilities related to the following items are detailed in the ESMP Matrix:

- Stakeholder Communication
- Labor Management Plan Development
- Environmental Monitoring Communication
- Transparency and Awareness
- Grievance Mechanism (GM)
- Compliance with International Standards

Operation Phase

During the operation phase, no significant occupational health and safety (OHS) risks beyond those currently present are expected, as the Subproject involves reinforcement of an existing bridge structure without altering its operational configuration. OHS risks are expected to remain low and localized**.** Relevant protocols, responsibilities, and mitigation actions are described in the Operation ESMP Matrix. No permanent staff will be stationed at the bridge, and no additional OHS risks are anticipated beyond baseline conditions.

4.2 Construction ESMP Matrix

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
ESS2 - Labor and Working Conditions					
1	**Risks associated with labor and working conditions**	All personnel working on the Subproject	**General Measures** • Implement a Subproject-specific Labor Management Plan (LMP), Emergency Preparedness and Response Plan (EPRP), Occupational Health and Safety Management Plan (OHSMP), Stakeholder Engagement Plan (SEP) and Contractor Management Plan (CMP). • Ensure that the Subproject workers are provided with information and documentation that is clear and understandable regarding their terms and conditions of employment. The information and documentation will set out their rights under national labor and employment law (which will include any applicable collective agreements), including their rights related to hours of work, wages, overtime, compensation and benefits, as well as those arising from the requirements of ESS2. • Ensure that information and documentation regarding employees' terms and conditions of employment is provided at the beginning of the working relationship and when any material changes to the terms or conditions of employment occur. • Ensure that the Subproject workers are paid on a regular basis as required by national legislation and the Subproject-specific LMP. • Ensure that the Subproject workers are provided with adequate periods of rest per week, annual holiday and sick, maternity and family leave, as required by national legislation and the Subproject-specific LMP. • Ensure that the decisions relating to the employment or treatment of Subproject workers are not made on the basis of personal characteristics unrelated to inherent job requirements. • Ensure that the employment of Subproject workers is based on the principle of equal opportunity and fair treatment, and there will be no discrimination with respect to any aspects of the employment relationship, such as recruitment and hiring, compensation (including wages and benefits),	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• Labour Management Plan (LMP), • Contractor Management Plan (CMP), • Stakeholder Engagement Plan (SEP) • Emergency Preparedness and Response Plan (EPRP) • Occupational Health and Safety Management Plan (OHSMP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, or disciplinary practices. • Measures will be taken to prevent employment or engagement of children under the minimum age established in CDRC Project's Labor Management Plan • Measures will be taken in accordance with the Subproject specific Labor Management Plan to prevent use of forced labor in connection with the Subproject. **Site-specific Measures** • No onsite accommodation will be provided. Workers transportation to the site from the city will be provided by the contractor. • Facilities on-site will ensure gender-sensitive arrangements, such as separate sanitation units and private rest areas for women. • Periodic toolbox trainings will include key topics such as OHS, workers' rights, grievance mechanisms, and codes of conduct. • GBVH and SEA/SH awareness modules will be integrated into mandatory induction trainings for all workers and subcontractors.		
2	**Risks associated with management of employee grievances**	All personnel working on the Subproject	**Site-specific Measures** • Develop and implement a Subproject-specific Labor Management Plan, including grievance mechanism for Subproject employees (covering all direct and contracted workers) to raise workplace concerns during the construction phase. • Ensure that all direct and contracted workers are informed of the grievance mechanisms at the time of recruitment and the measures put in place to protect them against any reprisal for its use. • Ensure that measures are put in place to make the grievance mechanism easily accessible to all Subproject employees. • Designate on-site grievance focal points (e.g., safety officer or HR representative) who can receive and escalate complaints confidentially and in a timely manner. • Display grievance procedure information at prominent locations in the worksite, such as rest areas, site entrances,	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• LMP, • CMP, • SEP • GM Procedures

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			and PPE stations — using clear visuals and multiple languages where needed. • Include grievance awareness in induction training, particularly for subcontractor staff and workers with low literacy or limited language skills. • Implement grievance data tracking and reporting, with regular updates shared anonymously to workers to improve transparency and trust in the mechanism. • Ensure gender-sensitive access to grievance channels, such as having female focal points or optional anonymous submission methods for sensitive topics (e.g. harassment).		
3	**OHS - General OHS Considerations and Workplace Conditions**	Project employees	**General Measures** • A subproject-specific OHS Management Plan – aligned with WB ESS2 and the WB Group's General and Industry-specific EHS Guidelines – including management measures for handling asbestos containing materials will be prepared by the contractor, prior to site mobilization and be implemented throughout the construction phase. • The construction works under marine environment will be detailed and clarified via related "method statement of works (MSoW)" which will be prepared by the contractor prior to construction. The Contractor's OHS Management Plan will ensure that all necessary precautions and measures are included with respect to the construction works which will be conducted under sea. • Hazardous materials will be replaced with a less hazardous substitute whenever feasible, especially during surface protection and painting applications. • Engineering and administrative control measures will be performed in order to prevent or reduce the release of hazardous materials into the work site. Level of exposure will be kept below internationally established or recognized limits, particularly during works such as steel cutting, painting, and cleaning of old surfaces. • Hazardous materials will be labelled and marked properly considering national and international regulations and guidelines. Materials Safety Data Sheets (MSDS) will be prepared. All written communication will be readable and available to workers to be exposed and first-aid personnel.	• Sub-borrower • Contractor	• LMP, • CMP, • **SEP** • OHSMP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			• Workers will be trained in use of information related to hazardous materials (MSDSs etc.), safe work practices and appropriate use of PPE. • Lead-containing paint will be avoided and appropriate respiratory protection will be used when cutting galvanized steel or during paint removal on steel bridge elements. • Necessary precautions will be taken before tasks to ensure that the number of workers exposed to potential OHS risks and hazards is minimized, especially in confined or elevated work zones. • Safe work zone will be established to separate workers on foot from the traffic, especially in areas close to the bridge abutments and approach roads. • For the construction works to be conducted at location where traffic exists, safe work zones will be established by taking relevant measures (closure of roads, diversion of traffic, use of protective barriers, cones, warning lights, etc.) • Hoisting and lifting equipment will be rated and properly maintained and operators trained in their use. Elevating platforms will be maintained and operated according to established safety procedures including use of fall protection measures (e.g. railings), equipment movement protocols (e.g. movement only when the lift is in a retracted position), repair by qualified individuals and installation of locks to avoid unauthorized use by untrained individuals. • Ladders will be used according to pre-established safety procedures for proper placement, climbing, standing, as well as the use of extensions, especially during abutment wall works and installation of drainage or platform components. • When working at height, proper fall protection measures will be implemented. Fixtures will be installed on bridge components. Safety belts with proper thickness and of suitable materials ensuring sufficient strength will be used. Rope safety belts will be replaced before signs of aging or fraying of fibers become evident. When operating power tools at height, workers will use a second (backup) safety strap. • Personnel exposed to high levels of noise will be required to use personal hearing protection devices/equipment that		

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			will be provided by the Contractor at no cost. Where required for specific works, work rotation programs will be implemented to reduce cumulative exposure. • Weather forecasts will be monitored for outdoor work to provide advance warning of extreme weather and schedule the work accordingly. Protective clothing will be used where required. • Properly maintained construction machinery, equipment and vehicles will be used to minimize exhaust emissions. Engine idling time will be reduced in construction sites. Direct diesel exhaust will be properly redirected to minimize exposure of the operators. • Indoor working areas where vehicles or engines are operated will be ventilated or the exhaust gases will be properly diverted. At work sites where dust levels are excessive, dust masks will be used by relevant personnel.		
4	**OHS - Emergency Preparedness and Response**	-Subproject Area -Subproject employees	**General Measures** • A clear communication system (e.g., communication lists, public address systems) will be established to notify workers and visitors of emergencies promptly. Contact information for emergency services (fire department, ambulance and police) will be prominently displayed and readily available at work zones. • Fire extinguishers and first aid kits will be installed and maintained at strategic locations such as site offices, material storage areas and active work zones. Safe assembly points will be designated and marked with clear signage. • A system for reporting, documenting and investigating emergency incidents will be developed and implemented to prevent recurrence. Lessons learned will be integrated into the EPRP. • Emergency response procedures, evacuation routes and safety guidelines will be displayed at visible locations within the construction area. Responsibilities will be assigned to trained emergency coordinators. • Workers will be trained on emergency response procedures, including evacuation, first aid and fire control. Regular emergency drills (e.g., fire and evacuation) will be	• Sub-borrower • Contractor	• OHSMP • LMP, • CMP, SEP EPRP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			conducted during the construction period. • Emergency systems (e.g., alarms, extinguishers, kits) will be regularly inspected and tested. The EPRP will be updated based on changes in project activities or lessons learned from drills or actual events. **Site-specific Measures** • Develop and implement a Subproject-specific Emergency Preparedness and Response Plan (EPRP) addressing emergency events relevant to the construction phase of the Subproject. • A detailed risk assessment will be conducted to identify potential emergencies (e.g., fires, explosions, natural disasters). According to this assessment, EPRP will be tailored, implemented and updated as necessary.		
ESS3 - Resource Efficiency and Pollution Prevention and Management					
Resource Efficiency (Energy Use, Water Use and Raw Material Use)					
1	**Energy Use, Water Use and Raw Material Use**	• Natural Resources and Ecosystems, • Local Communities and Utility Infrastructure	**General Measures** • Ensure implementation of technically and financially feasible measures for improving efficient consumption of energy, water and raw materials, as well as other resources in the Subproject. • Where possible, ensure maximization of the reuse of excess excavated, non-contaminated soil material, either as aggregate (e.g. reclaimed asphalt pavement or reclaimed concrete material) or as a base. **Site-specific Measures** • Sub-borrower will ensure that the Contractor will continue to comply with the Water Resources Management Plan which will be prepared by the Contractor in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific) before the commencement of the works. The Contractor will ensure that all employees involved in mobilization, site preparation, excavation, foundation works, material handling, and other water-related construction activities are trained on the Water Resources Management Plan prior to commencing such works. Refresher trainings will be conducted periodically or	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• ESMP, • Water Resources Management Plan

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures

			when there are changes in site conditions, workforce, or plan updates. This requirement will be explicitly included in the Contractor's contract and monitored as part of environmental compliance.
			• Activities should not affect the availability of water for drinking and hygienic purposes.
			• To minimize localized impacts during temporary in-water works, the Contractor will ensure that appropriate mitigation measures are in place, such as:
			  ○ Maintaining the natural flow of water during pier demolition and reconstruction using cofferdams or phased construction methods;
			  ○ Avoiding blockage of water channels with construction materials or equipment;
			  ○ Implementing site drainage management plans to prevent surface runoff and sediment from entering the waterbody.
			  ○ These measures will be part of the Contractor's Water Resources Management Plan, and compliance will be monitored throughout the construction phase.		

Management of Soil Resources					
1	**Soil Disturbance and Erosion**	• Topsoil and Underlying Soil Layers, • Nearby Water Bodies, • Drainage Infrastructure	**General Measures** • Minimizing disturbance to vegetation and soils. • Reducing or preventing erosion by scheduling to avoid heavy rainfall periods (i.e., during the dry season) to the extent practical; contouring and minimizing length and steepness of slopes; mulching to stabilize exposed areas; re-vegetating areas promptly; designing channels and ditches for post-construction flows; and/or lining steep channel and slopes. • Modifying or suspending activities during extreme rainfall and high winds to the extent practical. • Segregating or diverting clean water runoff to prevent it mixing with water from construction sites containing a high solids content.	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• ESMP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			• Limiting access road gradients to reduce runoff-induced erosion. • Providing adequate road drainage based on road width, surface material, compaction, and maintenance. • Providing effective short term measures for slope stabilization, sediment control and subsidence control until long term measures for the operational phase can be implemented. • Providing adequate drainage systems to minimize and control infiltration. **Site-specific Measures** • Wellpoint or deep well dewatering systems will be used depending on the soil permeability and groundwater table conditions. • The contractor will take additional mitigation measures, such as soil sampling, in case of a requirement revealed by the monitoring and/or any complaint. • The disturbed areas and soil stock piles will be kept moist to avoid wind erosion of soil and the pile height will not be higher than 2 m. • Topography will be restored to provide stabilization immediately after the completion of construction at each location. • Construction activities (especially excavation works) will be undertaken in the dry weather condition as much as possible to avoid surface runoff effects on excavated soil. • Wellpoint or deep well dewatering systems will be used depending on the soil permeability and groundwater table conditions.		
2	**Impacts on soil contamination**	• Topsoil and Subsoil Layers, • Surface Water Bodies,	**Site-specific Measures** • Sub-borrower will ensure that the Contractor will continue to comply with the Soil Management Plan which will be prepared by the Contractor in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific) before the commencement of the works.	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• ESMP • Soil Management Plan

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			• In order to minimize the impacts on soil environment, the amount of soil that could be subject to compaction and contamination/pollution will be minimized by ensuring the use of only the designated work sites and routes for the construction machinery and equipment and field personnel; • The fuel required for the construction equipment and vehicles to be used within the site during construction phase will be supplied primarily from the nearest station; if deemed necessary, fuels that may possibly be stored at site will be stored in the areas where necessary impermeability precautions (including secondary containment) are taken; • Machinery and equipment will be checked regularly for leaking oil and fuel; • The provisions of the Regulation on the Control of Excavation Soil, Construction and Demolition Wastes shall be complied with during construction phase of the Project; • Provisions of the Regulation on the Control of Soil Pollution and Sites Contaminated by Point Sources shall be complied with within the scope of the Project; • Wastes and wastewater to be generated during the construction phase of the Project will be stored and disposed in a controlled manner in accordance with the Waste Management Regulation and Regulation on the Control of Excavation, Construction and Demolition Wastes, WB ESS1, WBG General EHS Guidelines and in line with the management practices described in this report; • According to requirements specified in the Regulation on the Control Soil Pollution and Sites Contaminated by the Point Source, in terms of a possible soil contamination in the area, IMM is obliged to notify the MoEUCC on possible soil pollution in the Project Area according to the procedure defined in the regulation. Based on the inspections that will be carried out by the MoEUCC, if the site will be defined as a contaminated site that needs to be cleaned up, the site will be cleaned up by firms authorized by the MoEUCC and IMM will be the responsible entity to ensure clean up. Within the scope of cleanup activities, the following measures will be taken for the contaminated areas during the construction phase: ○ Vehicles containing any excavated soil will be		

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			suitably covered to limit potential dust emissions and truck bodies and tailgates will be sealed to prevent any discharge during transport; ○ Only licensed waste haulers will be used to collect and transport contaminated soil to an appropriate treatment/disposal site and illegal disposal of the soil will be prohibited; • Speed control for the trucks carrying contaminated soil will be enforced; The use of contaminated soil for landscaping will be prohibited.		
Management of Air Pollution					
1	Emissions to air during construction	• Local communities in Unkapanı and Azapkapı districts, local communities in the settlement, people using Dosthane Cafe, Sokullu Mehmet Paşa Mosque, • Sensitive Receptors, • Cultural and Historical Sites	**General Measures** • Use of dust control methods, such as covers, water suppression, or increased moisture content for open storage piles. • Use of water suppression for control of loose materials on paved or unpaved road surfaces. • Selectively removing potential hazardous air pollutants, such as asbestos, from existing infrastructure prior to demolition **Site-specific Measures** • Sub-borrower will ensure that the contractor will prepare and implement an Air Quality and Emissions Management Plan that is in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific). The Air Quality and Emissions Management Plan will be prepared by the Contractor 30 days prior to commencement of the works to ensure; The employees will be trained on the Air Quality and Emissions Management Plan; • Dust will be minimized from open area sources, including storage piles, by using control measures such as installing enclosures and covers and increasing the moisture content; • Speed limitations will be defined and obeyed for construction vehicles; • The drop height of potentially dust generating materials will be kept as low as possible; • Dust suppression methods will be applied at construction sites to mitigate Project-related dust emissions. In this	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• ESMP, • Air Quality and Emissions Management Plan

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			respect, the upper layers of the work sites/materials will be kept at a humidity level of about 10%. Watering will be applied at any time necessary including night time, weekends or off-days by using pressurized distribution or spraying systems that would ensure even distribution of water; • If there is traffic flow on the existing roads near the work sites, dust suppression measures will be continuously applied to ensure traffic safety. If there is no traffic existing in the local roads, dust suppression measures will be applied only at local residential areas; • All vehicles to be used in transportation activities will obey the speed limits set out in the Regulation on Highway Traffic. Vehicle speeds are proposed to be limited to 30 km/h on unpaved surfaces; • When there will be windy weather conditions (wind speed is above 30 km/hour) in the Subproject Area, excavation will not be carried out or additional measures such as placement of wind shields/barriers will be taken to prevent dust dispersion; • Loading and unloading operations will be performed without throwing/scattering; • Wind shields/barriers will be placed at work sites such as material storage areas to prevent dust dispersion where necessary; • Solid screens or barriers that are at least as high as any stockpiles on site will be erected at the boundaries of the construction site adjacent to the crops and/or field; • Any damage caused by insufficient or lack of dust suppression (transportation of dust to a residential area, wind borne dust deposits etc.) measures will be compensated by the contractor. • The asphalt roads will be used as much as possible, • Compliance with the air emission limit values stipulated in national legislation and WBG General EHS Guidelines will be ensured. • Dust measurements will be conducted if any grievance regarding dust generation is received and mitigation measures will be enhanced in this respect such as increasing wet suppression/watering activities, further reducing speed/traffic if deemed necessary, considering		

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			both national and WBG EHS Guidelines limit values. • Compliance with the air emission limit values stipulated in national legislation and WB Compliance with the air emission limit values stipulated in national legislation and WB		
Management of Wastes					
1	Generation of non-hazardous and hazardous waste during construction	• Soil and Land, • Local Communities, • Waste Disposal Sites	**General Measures** • Establish waste management priorities at the outset of activities based on an understanding of potential Environmental, Health, and Safety (EHS) risks and impacts and considering waste generation and its consequences • Ensure that a waste management hierarchy is established that considers prevention, reduction, reuse, recovery, recycling, removal and finally disposal of waste • Ensure that waste segregation and storage in temporary waste storage areas is managed according to the standards set out in the GIIP and relevant legislation • Ensure that waste is classified and labeled according to waste codes. • Ensure that data and information is collected on waste streams generated under the Subproject, including characterization of waste streams by type, quantity and potential use/disposal. • Ensure that raw materials or inputs are substituted with less hazardous or toxic materials or with materials for which processing produces lower waste volumes. • Ensure that good housekeeping and operational practices, including inventory control, are established to reduce the amount of waste from materials that are outdated, out-of-specification, contaminated, damaged or in excess of facility needs • Ensure that the generation of hazardous waste is minimized by implementing strict waste segregation to avoid mixing of non-hazardous and hazardous waste to be managed. • Ensure that contractors handling, treating, and disposing of hazardous waste are reputable and legitimate enterprises, licensed by the relevant regulatory agencies and following GIIP for the waste being handled. • Ensure that waste is stored in a manner that prevents the commingling or contact between incompatible wastes, and	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• ESMP, • Waste Management Plan

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			allows for inspection between containers to monitor leaks or spills (Examples include sufficient space between incompatibles or physical separation such as walls or containment curbs). • Ensure storage in closed containers/area away from direct sunlight, wind and rain. • Ensure construction of secondary containment systems with materials appropriate for the wastes being contained and adequate to prevent loss to the environment. • Ensure that secondary containment is included wherever liquid wastes are stored in volumes greater than 220 liters. The available volume of secondary containment will be at least 110 percent of the largest storage container, or 25 percent of the total storage capacity (whichever is greater), in that specific location. • Ensure that adequate ventilation is provided where volatile wastes are stored. • Access to hazardous waste storage areas will be limited to employees who have received proper training • The area will be clearly identified (labeled) and demarcated including documentation of its location on a facility map or site plan. • Periodic inspections of waste storage areas will be conducted and the findings will be documented. **Site-specific Measures** • Sub-borrower will ensure that the Contractor will continue to comply with the Waste Management Plan which will prepared by the Contractor in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific) including the management of asbestos containing materials from demolition of existing bridge infrastructurebefore the commencement of the works. The Contractor will ensure all the employees are trained on the Waste Management Plan and renew the training if necessary. • Waste batteries from construction site and accumulators from vehicles will be disposed of in compliance with the consumer responsibilities specified in Article 13 of the "Regulation on Control of Waste Batteries and Accumulators". Accordingly, used batteries will be collected separately (from municipal wastes) and		

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			transferred to the TAP battery collection center • All other hazardous materials will be disposed of in accordance with the Waste Management Regulation; • Hazardous or non-hazardous inscription, waste code, stored waste amount and storage date will be indicated/labelled on waste temporarily stored by classifying according to their properties. The reaction of waste with each other will be prevented by the measures taken in the Temporary Storage Area, which will have impermeable ground, proper drainage for accidental leaks/spills, top cover and designated rooms for different types of waste, etc. The permit for the temporary Waste Storage Area will be taken from the Provincial Directorate of Environment, Urbanization and Climate Change. • Spill kits will be available at the Temporary Storage Area and necessary precautions will be taken against possible fires such as provision of appropriate firefighting equipment. • Good international practice, a visual inspection will be conducted prior to demolition, and if any ACMs are unexpectedly identified, they will be managed in accordance with national regulations and disposed of at licensed hazardous waste facilities.		
Management of Wastewater					
1	Wastewater generation (such domestic wastewater, wastewater from construction sites, etc.)	• Waste Disposal Sites, • Soil Contamination,, • Local Communities, • Aquatic Ecosystems (Marine life), • Wastewater Treatment Infrastructure	**General Measures** • Ensure water is used efficiently to reduce the amount of wastewater generation • Ensure that waste minimization and process modification, including reduction of the use of hazardous substances, is carried out to reduce the load of pollutants requiring treatment. • If non-leaking septic systems are to be used for wastewater disposal and treatment, ensure that the following requirements are met: o Properly designed and installed in accordance with national legislation and guidance to prevent any hazard to public health or contamination of land, surface or groundwater.	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• ESMP • Water Resources Management Plan, • Pollution Prevention Plan

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			○ Well maintained to allow effective operation. **Site-specific Measures** • Sub-borrower will ensure that the Contractor will continue to comply with the Water Resources Management Plan which will be prepared in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific) before the commencement of the works. This condition will be included in Contractor's Contract. The Contractor will ensure all the employees are trained on the Water Resources Management Plan and renew the training if necessary; • Sub-borrower will ensure that the contractor is complying with the Pollution Prevention Plan that is prepared in line with WB ESS1 and WBG EHS Guidelines (both general and sectorial) before the commencement of the works. The Contractor will ensure all the employees are trained on the Pollution Prevention Plan and renew the training if necessary. • Surface runoff resulted from rain/storm water or wastewater generation due to dust suppression activities will be prevented; • The water to be used for dust suppression will be monitored and recorded in m^3; • The units of the Project that are in touch with water, wastewater and chemicals will be constructed using concrete with appropriate cement ratio and durability in order to provide basement impermeability. Thus, no leakages to soil and groundwater will occur during the operation phase of the Project; • To minimize the risk of pollution to the marine environment during dismantling or demolition activities, the following mitigation measures will be implemented: ○ Floating silt curtains or turbidity barriers will be deployed around the work area to contain debris and prevent sediment dispersion into the Golden Horn. ○ Protective catch platforms or nets will be installed under the dismantled segments to prevent construction debris from falling into the water.		

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			○ All dismantling and lifting operations will be conducted under the supervision of a marine environmental specialist and according to a site-specific method statement. ○ Equipment used over water will be inspected daily for oil leaks, and spill kits will be readily available at all working barges and platforms. ○ Waste materials will be immediately collected and disposed of according to the project's Waste Management Plan, ensuring no materials are allowed to enter the waterbody. ○ Works will be scheduled to avoid peak fish breeding seasons and in coordination with local authorities if necessary. • To prevent pollution of the Golden Horn, all dewatering effluents will be directed to sedimentation ponds. Visual inspections will be conducted to detect any potential spill contamination, and if observed, appropriate spill containment measures (e.g., boom or pillow-type spill kits) will be deployed prior to discharge. Discharge locations and conditions will be defined in coordination with the İstanbul Metropolitan Municipality and will comply with national water quality standards.		
Management of Chemicals and Hazardous Materials					
1	Release of hazardous materials in the event of accidents during construction	• Waste Management and Disposal Sites	**General Measures** • Where practicable, avoiding or minimizing the use of hazardous materials. • Preventing uncontrolled releases of hazardous materials to the environment or uncontrolled reactions that might result in fire or explosion. • Identify the types and the quantities of hazardous substances present in the Subproject. This information will be recorded and will include a summary table with the following information:	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• ESMP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			○ Name and description (e.g. composition of a mixture) of the hazardous materials ○ Classification (e.g. code, class or division) of the hazardous materials ○ Internationally accepted regulatory reporting threshold quantity or national equivalent of the hazardous materials ○ Quantity of hazardous materials used per month ○ Characteristic(s) that make(s) the materials hazardous (e.g. flammability, toxicity) • Ensure that the potential for uncontrolled reactions such as fire and explosion is analyzed. • Ensure that operators are trained on release prevention, including drills specific to hazardous materials as part of emergency preparedness response training • Ensure a description of response activities in the event of a spill, release or other chemical emergency, including: ○ Internal and external notification procedures ○ Specific responsibilities of individuals or groups ○ Decision process for assessing severity of the release, and determining appropriate actions ○ Facility evacuation routes ○ Post-event activities such as clean-up and disposal, incident investigation, employee re-entry, and restoration of spill response equipment. **Site-specific Measures** • Soil sampling at the spill location and surrounding areas to check for hydrocarbon or chemical contamination, • Surface water or groundwater sampling, if the spill occurs near the water body or drains to the Golden Horn, • Air quality measurements, if volatile compounds are involved (e.g., paint thinners, solvents),		

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			• Visual inspection and pH/EC screening, particularly in case of spills on unpaved ground		
Management of Environmental Noise and Vibration					
1	Noise and vibration generation during construction	• Local Communities, • Aquatic Ecosystems, • Cultural Heritage Sites, • Workers on-site • Senstivie Receptors (Dosthane Café, Arap Cami, Bedrettin, Cibali, Emekyemez, Sarıdemir, Yavuz Sinan Negihbourhoods)	**General Measures** • Manage the potential impact of noise, selecting equipment with lower sound power levels • Plan activities in consultation with communities so that noisiest activities are undertaken during periods that will result in least disturbance. • Use when needed and feasible noise-control methods such as fences, barriers or deflectors. • Minimize Subproject-related transportation through community areas. • Ensure implementation of Subproject-specific SEP in order to address any noise-related grievance and plan/take corrective actions, where necessary. • Ensure consultation with Project Affected People (PAP) prior to the start of and during the construction activities to be conducted at this location in order to inform stakeholders about the scope and duration of the activities and mitigate the potential impacts for the period of construction **Site-specific Measures** • Sub-borrower will ensure that the contractor will prepare and implement a Noise and Vibration Management Plan that is in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific) prior to the construction works and the employees will be trained on the Plan. The Plan will include: o Assessment of impact levels based on equipment type, construction activities (e.g., pile driving, demolition), duration and proximity to sensitive areas, o Mitigation measures such as use of low-noise equipment,	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• ESMP, • SEP, • Noise and Vibration Management Plan

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			scheduling of high-noise activities outside sensitive hours, and physical noise barriers, ○ Monitoring strategy consistent with national regulations and IFC/WBG guidance, ○ Training of workers involved in noise and vibration-generating activities • Pre-construction structural assessment of the cultural heritage buildings located near the Azapkapı abutment to establish baseline conditions and assess vulnerability; • Real-time vibration monitoring during piling, drilling, and heavy machinery operation, particularly in areas within close proximity (e.g., within 50 meters) to cultural heritage sites, • The machinery and equipment to be used during the construction phase will not be operated at the same point/location but homogeneously distributed in the site if possible; • During vehicle and equipment procuring/leasing process for the Subroject, item with lower noise levels than equivalent ones will be preferred, if feasible; • The maintenance of the construction machinery and equipment will be carried out regularly and periodically. Daily maintenance will be carried out in each shift; and the working time of each vehicle will be registered by the operator in order to follow the total working hours for periodic maintenance. Periodic maintenance will be conducted at every 50, 250, 500, 1000, 2000 working hours. Maintenance forms will be filled out regularly; • All vehicles to be used in transportation activities will obey the speed limits set out in the Regulation on Highway Traffic; • Noise measurements will be conducted by an authorized environmental laboratory in case of any grievance and mitigation measures will be enhanced in this respect such as use of noise barriers;		

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			• All construction activities will be carried out in compliance with the noise limits set out in the Regulation on Environmental Noise Control (RENC) and WBG EHS Guidelines and the contractor will take additional mitigation measures in case of a requirement revealed by the monitoring; • The work schedule will be adjusted by communicating with sensitive receptors. • Instrumental vibration measurements will be carried out during the construction phase for monitoring the construction equipment impact on the sensitive receptors. A formal grievance mechanism shall be established. Grievances shall be monitored and responded in a timely and transparent manner		
ESS4 - Community Health and Safety					
Infrastructure design and safety					
1	**Risks posed to the public while accessing Subproject facilities (such as physical trauma associated with failure of structures, burns and smoke inhalation from fire, injuries suffered as a consequence of falls or contact with heavy equipment, etc.)**	• Local people and project workers in and around the Subproject Area • Subproject Area and its surroundings	**General Measures** • The public, nearby institutions, organizations, hospitals, and schools defined as sensitive receptors in the SEP, will be notified at least two days in advance of any repair or maintenance work that may cause disturbances. • The grievance mechanism officer will be introduced to the local community, and regular updates about the grievance mechanism will be shared. If any documents are updated, the revised information will be communicated to the community through the relevant headman's office. • Construction sites will be secured using fencing and striping to prevent physical hazards. Restricted areas will be clearly marked, and access will be controlled to minimize unauthorized entry. Flagger personnel will be employed to enforce these measures. These personnel will direct the entry and exit of heavy vehicles into the construction area and will be responsible for the security of the area.	• Sub-borrower, • Contractor, • Construction Supervision Consultant	EPRP • SEP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			• To address potential language barriers, multilingual signage will be used, and flagger personnel will receive the necessary training to communicate effectively with workers and visitors. • In case of any unauthorized individual entering construction sites, a detailed and informative warning will be given to communicate potential dangers, site security measures, and risks associated with ongoing construction activities. • Safety instructions, emergency contact details, and hazard warnings will be prominently displayed across the construction site through strategically positioned signage. • Regular evaluations of security risks will be conducted throughout the project's lifecycle to ensure that security arrangements remain effective and responsive to any emerging risks or changes in the operating environment. • During construction work, while transporting materials, the truck and its surroundings will be separated from the pedestrian and vehicle path at a sufficient distance to prevent any possibility of accidents. • Ensure emergency lighting systems can operate for at least 2 hours during power failures. • Maintain clearly visible illuminated exit signs and emergency pathways. • Implement reflective safety signs and barriers to improve visibility at night. • Ensure construction equipment has restricted movement areas to avoid pedestrian conflicts. **Site-specific Measures** • Temporary scaffolding and access platforms used on the bridge will be certified by a licensed structural engineer and inspected weekly to avoid collapse or imbalance risks for workers and passing vehicles. • Fire prevention features (e.g., extinguishers, signage, escape		

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			routes) will be installed at all temporary construction site offices and material storage units. • Underdeck works will require the use of tethered tools and tool nets to prevent accidental dropping of materials onto public roads or pedestrian areas below the bridge. • Safety inspections will be conducted before reopening any bridge lane to public traffic after partial closures, ensuring temporary works does not pose hazards to vehicles or pedestrians. • Emergency scenarios (e.g., structural failure, fire, injury) will be managed in line with the Emergency Preparedness and Response Plan (EPRP), including public safety protocols and coordination with first responders		
2	**Public Health: Airborne Dust and Particulates**	• Local people and project workers in and around the Subproject Area • Subproject Area and its surroundings	**General Measures** • Vehicle movement will be controlled with dust suppression techniques, including the application of water or safe, non-toxic chemical solutions. • Trucks carrying materials will be enclosed or covered to prevent dust dispersal. Excess materials are removed, and the area is cleaned once work is completed. Protective barriers (such as New Jersey barrier.) or curtains will be used in zones with high dust activity. • Loading and unloading operations will be carefully managed to prevent material from scattering into the environment. • Construction machinery and vehicles will meet the required emission standards by using modern equipment. • All vehicles will hold valid exhaust emission certifications and undergo regular maintenance checks. The contractor will inspect machinery and vehicles to ensure compliance with emission regulations and the proper functioning of exhaust systems. **Site-specific Measures** To minimize dust exposure for pedestrians using the shoreline walkway and nearby public transportation stops, localized dust	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• SEP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			screens and directional signage will be installed in high-traffic pedestrian zones during construction phase.		
3	**Public Health: Noise Pollution**	• Local people and project workers in and around the Subproject Area • Subproject Area and its surroundings	**General Measures** • Construction activities will be coordinated with local stakeholders, scheduling operations with higher noise levels during times that minimize disturbance. • Noise mitigation measures, including barriers, deflectors, and exhaust silencers for combustion engines, will be employed to limit the impact of noise. • External equipment and vehicles will undergo regular maintenance to ensure efficient and quiet operation. • Whenever possible, "low noise" equipment will be prioritized, and acoustic covers or enclosures will be used where necessary, ensuring they remain sealed during use. • Machinery not in use will be either powered down or set to the lowest operational level to reduce unnecessary noise. • Vibrations will be monitored if concerns arise, and corrective measures will be taken if vibration thresholds are exceeded. • The project will adhere to noise limits specified in national and international regulations. **Site-specific Measures** • Noise-buffer curtains will be temporarily installed around the shoreline seating areas and café garden closest to the construction site to reduce auditory disturbance for customers and nearby pedestrians during peak construction activities.	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• SEP
4	**Social and Psychological Impacts: Stress and Anxiety** **Potential Community Disturbance**	• Local people and Subproject workers in and around the Subproject Area • Subproject Area and its surroundings	**Site-specific Measures** • Communication will be provided through announcements, brochures digital platforms, or the mobile application to inform local people and relevant stakeholders in advance about the planned works, their durations, and potential impacts. • Depending on the status of the project information will be updated regularly to include the start and end dates of the planned works and their potential impacts. • Mitigation for dust, air pollution, and noise pollution are reported under airborne dust and particulates and noise pollution headings.	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• SEP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			• People can use the municipality's phone line, e-mail address, online platform, or the mobile application to convey their complaints and suggestions. • Incoming complaints will be recorded, and a solution will be provided as soon as possible, and feedback will be provided. • Mitigation for vulnerable and disadvantaged groups is given below in heading vulnerable and disadvantaged groups.		
6	**Vulnerable and Disadvantaged Individuals and Groups**	• Children, Elderly, Disabled and Special Care Needs Group in and around the Subproject Area	**General Measures** • Implement the Subproject-specific Stakeholder Engagement Plan (SEP) during the construction phase. • Disclose Subproject information in line with the SEP to allow stakeholders to understand the risks and impacts of the Subproject , and potential opportunities. • Install multilingual and pictogram-based signage near pedestrian areas, business entrances, mosque gates, and metro access points to ensure clear communication regardless of literacy level or language. **Site-specific Measures** • All open trenches, excavation areas, and construction zones must be clearly marked and secured with robust and high barriers to prevent accidents. Barriers will be of a height that children cannot climb over. • Reflective tapes and illuminated warning signs will be used to make construction areas visible at night. • Security personnel will be present on-site to ensure continuous monitoring of the area. • Alternative routes will be arranged to ensure easy access to essential services such as schools, healthcare facilities, and markets. • To ensure the safe passage of vulnerable groups (children, elderly, people with disabilities), temporary ramps with non-slip surfaces and wide crossing points should be established. • The slope of ramps should be suitable for wheelchair users and the elderly (maximum slope of 5%). Pathways should be wide, flat, and as unobstructed as possible. • Clear and informative signs should be placed at the beginning, middle, and end of temporary routes.	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• SEP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			• Tactile surfaces and audio guidance devices should be used for people with visual impairments. • Information should be disseminated through social media, community boards, local government channels, and the "İstanbul Senin" mobile application. • Collaboration with local schools, healthcare facilities, and community centers is essential to ensure information reaches all affected groups. • Security personnel and site workers should receive training on effective communication with vulnerable groups. • Periodic reviews of safety measures should be conducted to ensure their effectiveness, and adjustments should be made as necessary.		
Traffic and Road Safety					
1	**Traffic and road safety risks during construction (such as traffic related injuries and fatalities due to traffic accidents, collisions, etc.)**	• Local people and Subproject workers in and around the Subproject Area • Subproject Area and its surroundings	**General Measures** • Manage the potential impact of increase in traffic, coordination with emergency responders to ensure that appropriate first aid is provided in the event of accidents • Ensure use of locally sourced materials, whenever possible, to minimize transport distances. Locating temporary on-site service areas such as break and hygiene facilities close to the construction area, and arranging shuttle services for workers will help minimize external traffic. • Ensure employing safe traffic control measures, including road signs and flag persons to warn of dangerous conditions • The Sub-Project-specific SEP will be implemented to address any construction transport/traffic related grievance and plan/take corrective actions in line with the Grievance Mechanisms, where necessary. As part of SEP, local communities will be informed about the construction sites, traffic restrictions to be applied for health and safety purposes and duration of such restrictions. • Emphasizing safety aspects among drivers • Improving driving skills and requiring licensing of drivers • Adopting limits for trip duration and arranging driver rosters to	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• Traffic Management Plan (TMP) • SEP • EPRP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			avoid overtiredness • Avoiding dangerous routes and times of day to reduce the risk of accidents • Ensure use of speed control devices (governors) on trucks, and remote monitoring of driver actions • Scheduling of traffic will be undertaken to avoid the peak hours on the local road network wherever practicable (e.g. early in the morning with the daylight). Scheduling information and planned traffic disruptions will be communicated well in advance to all related parties including authorities, local communities and nearby businesses **Site-specific Measures** • Develop and implement an Emergency Preparedness and Response Plan (EPRP) including traffic accidents within the construction site. • The Traffic Management Plan (TMP) include: - construction plan by phases, - beginning and duration of work, - overview of the existing conditions near the construction sites, - identification of affected areas, - identification of sensitive receptors in affected areas, - mitigation measures, - Traffic diversion strategies, including entry and exit points, material transport routes, turnaround zones, parking areas, and intersections with other roads. - Temporary pathways for pedestrians and vehicles. - Traffic control measures, including placement of barriers (such as the New Jersey barrier), pathways, signage, and warning systems, with visual examples. - Requirements for specialized vehicles, such as oversized vehicles. - Access routes for construction activities, including ramps, and loading/unloading zones. - Roads for supply vehicles and locations for material storage.		

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			- Anticipated interactions between pedestrians and vehicles and related safety measures. - Responsibilities of on-site personnel regarding traffic management. - Procedures for managing traffic and responding to emergency situations. • Traffic near the mosque, Dosthane Cafe, and pedestrian areas will be managed using clearly marked temporary barriers, warning signs, and flag personnel to prevent vehicle–pedestrian conflict. • Traffic will be diverted from the north line (Golden Horn Side) to the south line (Bosphorus Side) and managed until the remedial works are completed.		
2	**Pedestrian safety risks during operation (e.g. serious injury from collisions with moving vehicles, etc.)**	• Local people and project workers in and around the Subproject Area • Subproject Area and its surroundings	**General Measures** • The Traffic Management Plan, addresses pedestrian safety risks during construction. • Minimize pedestrian interaction with construction vehicles and routes. • Provision of safe corridors along the road alignment and construction areas for pedestrians and bicyclists during construction. • Installation and maintenance of speed control and traffic calming devices at pedestrian crossing areas during construction. • Ensure collaboration with local communities and responsible authorities to improve signage, visibility and overall safety of roads, particularly along stretches located near schools or other locations where children may be present. Collaborating with local communities on education about traffic and pedestrian safety (e.g. school education campaigns). • Installation and maintenance of all signs, signals, markings, and other devices used to regulate traffic, specifically those related to pedestrian facilities or bikeways during construction.	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• TMP • SEP • (EPRP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			Site-specific Measures • Pedestrian access to the bridge will be temporarily suspended throughout the construction period. • Establish safe pedestrian access routes within and around the construction site. • Ensure construction site entry and exit points are well-lit and visible to pedestrians and vehicle operators. • Construct separate pedestrian pathways away from heavy machinery and construction zones. • Install protected walkways (e.g., barricades, fencing) and overhead footbridges where necessary. • Provide clearly marked and signal-controlled pedestrian crossings in high-traffic areas. • Ensure clear pedestrian walkways to public transport hubs (metro stations, bus stops) remain accessible throughout construction. • Use reflective road markings and high-visibility signage to guide pedestrians safely. • Inform residents, schools, and businesses about construction activities and potential pedestrian risks specifically targeting stakeholders identified in the SEP, including residents and users of the six affected neighbourhoods (Arap Cami, Bedrettin, Cibali, Emekyemez, Sarıdemir, Yavuz Sinan), mobile fishermen using the bridge, Dosthane Café and sensitive receptors such as Tersane-i Amire Anatolian High School and Medipol University. • Information provided to vulnerable groups (e.g., persons with disabilities or those who are illiterate) about alternative fishing areas will be adapted to address their specific accessibility needs. • Train all site personnel and vehicle operators on pedestrian right-of-way rules and safety measures.		

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			• Provide temporary pedestrian bridges or tunnels in areas with high construction-related risks. • Provide additional lighting near high-risk pedestrian areas, such as school zones and public transport stops.		
Emergency Preparedness and Response					
1	Risks and impacts on communities due to potential emergency events during construction (unanticipated incidents, arising from both natural and man-made hazards, typically in the form of fire, explosions, leaks or spills, which may occur for a variety of different reasons, including failure to implement operating procedures that are designed to prevent their occurrence, extreme weather or lack of early warning, traffic accidents, structural failures, etc.).	• Local people and project workers in and around the Subproject Area • • Subproject Area and its surroundings	**General Measures** • Emergency response protocols for fire, structural failure, or traffic incidents will be clearly communicated to the public through signage, visual instructions, and coordination with local emergency services. • Safe pedestrian zones and escape routes will be maintained during construction, with visible signs and physical barriers where needed. • Nearby institutions and community members will be informed in advance about high-risk construction activities, especially those that may temporarily affect access or safety. **Site-specific Measures** • Implement a Subproject-specific Emergency Preparedness and Response Plan addressing emergency events relevant to the construction phase of the Subproject. • A detailed risk assessment will be conducted to identify potential emergencies (e.g., fires, explosions, natural disasters). According to this assessment, Emergency Preparedness and Response Plan (EPRP) will be tailored, implemented and updated as necessary. • Emergency systems (e.g., alarms, extinguishers, kits) will be regularly inspected and tested. The EPRP will be updated based on changes in subproject activities or lessons learned from drills or actual events.	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• EPRP • TMP • SEP
Security Personnel					
1	**Risks posed by these security arrangements to**	Local people and project workers in	**General Measures** • Ensure that the risks posed by the security arrangements to	• Sub-borrower, • Contractor,	• SEP • EPRP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
	those within and outside the Subproject site during construction	and around the Subproject Area	those within and outside the Subproject site are assessed when direct or contracted workers are retained to provide security to safeguard Subproject-related personnel and properties. • Ensure that security arrangements of the Subproject are guided by the principles of proportionality and GIIP, and by applicable national legislation, in relation to hiring, rules of conduct, training, equipping, and monitoring of such security workers. • Ensure that the use of force by direct or contracted workers is not sanctioned in providing security except when used for preventive and defensive purposes in proportion to the nature and extent of the threat. • Ensure that (i) reasonable inquiries are made to verify that the direct or contracted workers retained within the scope of the Subproject to provide security are not implicated in past abuses; (ii) security personnel are trained adequately (or determine that they are properly trained) in the use of force (and where applicable, firearms), and appropriate conduct toward workers and affected communities; and (iii) security personnel are required to act within the applicable national legislation and any requirements set out in Project's ESCP and Subproject's ESAP. • Ensure that all allegations of unlawful or abusive acts of security personnel are reviewed, necessary actions are taken by appropriate parties to prevent recurrence and, where necessary, unlawful and abusive acts are reported to the relevant authorities. **Site-specific Measures** • A security code of conduct will be displayed at visible points at the bridge access areas and pedestrian detour paths, summarizing rights of community members and limits of security authority. • Security personnel at construction entry points, especially near the mosque parking area and Dosthane Cafe, will be trained to	Construction Supervision Consultant	• LMP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			manage public interaction respectfully and without the use of force unless there is a direct physical threat. • All security staff will be clearly identifiable with uniforms, ID badges, and multilingual signage at checkpoints, especially in areas frequented by tourists, students, and elderly pedestrians. • Public complaints about security personnel will be incorporated into the project's grievance mechanism (GM), and complaints can be submitted anonymously via the İstanbul Senin app or suggestion boxes at nearby community access points		
Economic Displacement					
1	**Economic and Employment**	• Dosthane Cafe owner and employees • Mobile fishermen • Public Toilet Operator • Fishing Shelter Users	**Site-specific Measures** • The Livelihood Restoration Plan (LRP) will be updated based on verified official written data and imlemented. • Ensure that local workers are prioritized for employment during the construction phase to support the local economy. • Communicate potential disruptions with local businesses in advance to allow them to plan for reduced customer access. • Plan temporary pathways or signage to guide customers to the cafe during the construction phase. • Regularly update customers on access changes via social media and community boards. • A temporary access corridor will be maintained between the construction site and the cafe's front garden, allowing partial customer access during active works. • The construction staging area near Dosthane Cafe will be reconfigured to avoid full blockage of its front garden. If partial restriction is unavoidable, a temporary side entrance will be arranged for customers and staff. • Ensure that a clear passage with the width of a pedestrian path is left along the coastline area at the north part of Unkapanı side (part of Fener Ayakapı Fisheries Shelter). in order not to	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• Livelihood Restoration Plan (LRP) • SEP • GM Procedures

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			block access to boats from land the plan should be revised, allowing a pedestrian path between the sea and construction camp site. • Provide clear information and assistance for mobile fishermen to access alternative fishing spots during the construction period. • Engage with fishermen to ensure that the alternative areas are accessible. • Information provided to vulnerable groups (e.g., persons with disabilities or those who are illiterate) about alternative fishing areas will be adapted to address their specific accessibility needs. • Regularly inspect the designated passage to ensure it remains unobstructed during the construction period. Take corrective measures immediately if any blockage occurs. • Install clear signage indicating the designated pedestrian and access path. Provide information on any temporary changes to the path, if applicable. • Inform registered members of the S.S. Küçükmustafapaşa Fisheries Cooperative in advance of construction commencement, ensuring they are aware of temporary land use arrangements and that no fishing-related activities will be impacted. • To ensure transparency, address potential concerns, and confirm that no unforeseen impacts arise during project implementation, communication will be maintained with the toilet operator throughout the construction period.		
3	**Grievance management**	All affected people, business and vulnerable groups	**General Measures** • Ensure that a grievance mechanism for the Subproject is in place, in accordance with ESS10 as early as possible in project development to address specific concerns about compensation,	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• SEP • GM Procedures

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			relocation or livelihood restoration measures raised by displaced persons (or others) in a timely fashion. Where possible, such grievance mechanisms will utilize existing formal or informal grievance mechanisms suitable for project purposes, supplemented as needed with Subproject-specific arrangements designed to resolve disputes in an impartial manner. **Site-specific Measures** • Complaint and request submissions are collected through multiple channels including telephone, web portal or email. • All complaints related to the Subproject are managed through the grievance mechanism established under İMM's coordination and logged within the municipal system in accordance with the SEP. • On-site visibility of the grievance mechanism will be ensured through posted signage at construction zones, including contact details and steps to file a complaint.		
ESS6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources					
1	Impacts on aquatic habitats	Estuarine benthic habitats (EUNIS habitat type A2.31 – Macroinvertebrates: Polychaete/bivalve-dominated mid estuarine mud shores.). Project footprint limited to reinforced zones.	**General Measures** • Confine works to the existing infrastructure area to minimize disturbance on adjacent aquatic habitats. • Underwater noise suppression (bubble curtain or isolation casing) to minimize underwater noise and vibration. **Site-specific Measures** • No-go zones for equipment in undisturbed habitats.Contractor will prepare method statement for undersea works (MS0W) prior to construction works and BMP to be reviewed and revised accordingly by a specialized team. Contractor will engage with universities that are already performing in-situ research. Also, Contractor will engage with İSKİ for their online monitoring including invasive alien species. • The construction works under sea will be supervised by marine	• Sub-borrower, • Contractor, Construction Supervision Consultant	• ESMP, • BMP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			experts/coastal engineers. The MSoW, revised BMP and supervision experts will be provided to ILBANK for review and approval and after that the construction works can commence. • Implement a dewatering management system with continuous groundwater level monitoring (via piezometers), use of sedimentation/silt traps to control turbidity, and compliant discharge to prevent adverse impacts on the Golden Horn ecosystem.		
2	Impacts on aquatic flora species	Phytoplankton community, Potamogeton spp., Myriophyllum spicatum.	**General Measures** • Minimize sediment run-off into aquatic flora zones. **Site-specific Measures** • Restrict works during peak phytoplankton bloom (April–June).	• Sub-borrower, • Contractor • Construction Supervision Consultant	• ESMP • BMP
3	Impacts on terrestrial flora species	No natural riparian or terrestrial vegetation has been recorded within the project footprint or its immediate vicinity. The area is predominantly urbanized, with paved surfaces and artificial embankments, offering no suitable habitat conditions for native plant communities..	**General Measures** • None **Site-specific Measures** **Not applicable.** • As no natural flora is present, no direct mitigation is required. However, all site activities will remain confined to previously disturbed or built-up areas to avoid indirect impacts on any potential nearby vegetation.	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• ESMP, • BMP
4	Impacts on aquatic fauna species	Fish fauna	**General Measures** • Avoid demolishment and sheetpiling during the potential fish spawning period (April – July) **Site-specific Measures**	• Sub-borrower, • Contractor, Construction Supervision Consultant	• ESMP, • BMP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			• Install silt curtains to protect fish eggs, during works at sea (demolishment and sheetpiling activities) • Install fauna-friendly underwater lighting (yellow/red spectrum), if nighttime works are necessary underwater.		
5	Invasive alien species	*Mnemiopsis leidyi*, *Rapana venosa*, *Ficopomatus enigmaticus* in the estuary.	**General Measures** • Avoid transporting invasive species during construction. In practice, construction vehicles, barges, and equipment previously used in other marine/coastal areas will be inspected and cleaned prior to mobilization. This includes removal of any sediment, biofouling organisms, or residual water that may carry benthic or planktonic species. Ballast water or bilge discharges will not be permitted within the project area. These procedures will ensure that no benthic contamination or aquatic organisms are unintentionally introduced into the Golden Horn. • Clean and inspect machinery before/after water entry. **Site-specific Measures** • Conduct IAS survey pre- and post-construction. • Develop an on-site rapid response protocol for IAS detection. • BMP will be updated by Contractor's specialized team of experts considering the MSoW and all the related works will be supervised by a marine expert/coastal engineer.	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• ESMP, • BMP
	Establishment and operation of temporary construction camp in the coastal park	Physical damage or loss of existing park trees and green areas; soil compaction; disturbance to urban biodiversity	**General Measures** • Avoid trespassing • Avoid any trees and green areas **Site-specific Measures** There will be no tree cutting or excavation in green areas within the scope of the planned works.	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• ESMP, • BMP
6	Impacts on ecosystem services	Primary productivity (via phytoplankton) Fish nursery	**General Measures** • Schedule in-water activities that disturb the estuarine substrate (e.g., pile driving, cofferdam installation, debris removal) during low-flow periods to minimize sediment resuspension	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• ESMP, • BMP

No	Risk and Impact Description		Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			grounds Water purification via benthic filter feeders Temporary	and turbidity dispersion. • Maintain suspended solids below critical thresholdsMaintain turbidity levels within +10–20 NTU above baseline, consistent with IFC EHS Guidelines and international best practice. • Suspend works if turbidity exceeds +30 NTU, and implement corrective measures prior to resumption.. **Site-specific Measures** • None		
ESS8 - Cultural Heritage						
1	Impacts on tangible cultural heritage		• Golden Horn Shipyard, Historical fountain, Hamidiye Waterways, • Sokullu Mehmet Paşa Mosque	**Site-specific Measures** • For mitigating the vibration impacts on the sensitive receptors (wall near the shipyard and the mosque), regular vibration monitoring during operation of construction equipment that may have high vibration risk will be carried out and accordingly vibration reduction measures will be taken like: Installation of wave barrier to reflect or absorb wave energy. Mitigation measures defined in the CHMP will be followed. • Upon technical analysis so far, the drilling equipment, which will create a borehole of approximately 7.6 cm in diameter, has been specifically selected for low vibration and low noise output. • Sheet piles will also play as a vibration barrier on the sensitive receptors. • During construction, regular monitoring shall be carried out to maintain vibration levels to remain within safe limits to avoid any adverse impact on nearby historical structures. • Jet grouting will be done, and this will reduce the vibration impact. Jetting produces less vibration compared to impact pile driving, which can generate significant vibrations at or near the surface, potentially causing damage to nearby structures. Additionally, jet grouting stabilizes the ground by improving its strength and compaction, which further reduces the vibrations during the pile installation process. • To reduce the vibration impact, predrilling will bedone prior to piling operation. Predrilling a hole for a pile can be used to	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• ESMP, • CHMP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			place the pile at or near its ultimate depth, thereby eliminating most or all impact driving. Regardless of its degree of importance, in case of encountering any cultural heritage; Subproject activities in the finding area shall be stopped immediately. For tangible cultural heritage, relevant Museum Directorate, for intangible cultural heritage, relevant Provincial Directorates of Culture and Tourism should be notified within 3 days in line with the legislation. • Provide cultural heritage sensitivity training to all site personnel and ensure constant supervision by site managers • Coordinate with cultural heritage authorities early in the planning phase to prevent bureaucratic delays • Since the Sub-Project area is adjacent to the Sokullu Mehmet Pasha Mosque located on island 1518, parcel 2, and the Kapı-Haliç Shipyard located on island 916, parcel 1, any construction activity to be carried out on the property will require permission from the Conservation Regional Directorate. The necessary permits have been obtained from the Regional Directorate of Conservation.		
2	Impacts on intangible cultural heritage	• Local Communities and Cultural Practitioners	**Site-specific Measures** • Establish a formal grievance mechanism; monitor and respond to complaints in a timely and transparent • Awareness and induction training for construction personnel on the importance and sensitivities of intangible cultural heritage in the AoI, including codes of conduct to prevent disrespectful behavior • Establishment of a chance find protocol for intangible cultural heritage practices, ensuring that if previously undocumented cultural events, rituals, or practices are encountered during construction, work is temporarily halted and heritage experts consulted. • Scheduling and coordination of construction works to avoid disruption of cultural gatherings, festivals, or other community events linked to intangible heritage.	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• ESMP, • CHMP
3	Chance finds	Chance Finds to be encountered	**General Measures** • Implement the Subproject-specific Chance Finds Procedure (presented in Annex F) if previously unknown cultural heritage	• Sub-borrower, • Contractor, Construction Supervision	• Chance Find Procedure

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			is encountered during Subproject activities. • Include the Subproject-specific Chance Finds Procedure in all contracts relating to construction of the Subproject, including excavations, demolition, movement of earth, or other changes in the physical environment. • Ensure that the Subproject personnel are trained on the Subproject-specific Chance Finds Procedure. **Site-specific Measures** • Please see the Subproject-specific Chance Finds Procedure (presented in Annex F)	Consultant	
ESS10 - Stakeholder Engagement and Information Disclosure					
1	**Risks associated with stakeholder engagement**	• Local people and project workers in and around the Subproject Area	**Site-specific Measures** • Implement the Subproject-specific Stakeholder Engagement Plan (SEP) during the construction phase. • Disclose Subproject information in line with the SEP to allow stakeholders to understand the risks and impacts of the Subproject , and potential opportunities. • Install multilingual and pictogram-based signage near pedestrian areas, business entrances, mosque gates, and metro access points to ensure clear communication regardless of literacy level or language. • Organize targeted stakeholder meetings with sensitive groups (e.g., fishermen, cafe owners) before major construction phases to gather feedback and adjust plans where needed. • Distribute physical brochures or bulletins through headmen offices, mosques, and cafes detailing project updates, especially where digital access is limited. • Maintain a visible community notice board near the project site to display up-to-date information, maps of detours, safety measures, and contact details of the community liaison. • Document and respond to feedback received during stakeholder engagement activities and public information sessions through	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• SEP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			an engagement log, feeding into adaptive project management.		
2	**Risks associated with grievance management**	Local people and project workers in and around the Subproject Area	**Site-specific Measures** • Implement the Subproject-specific Grievance Mechanism developed as part of the SEP. • Establish a functional, accessible grievance mechanism early in the project and make it available to all stakeholder groups, including vulnerable individuals. • Ensure multiple channels for grievance submission, including anonymous options: – Locked suggestion boxes near metro station, mosque, café – Email and phone hotline • Appoint a grievance focal point who will monitor, document, and coordinate the resolution of complaints, and introduce them to the community through signs and public communication. • Ensure that all grievances are logged, categorized, and responded to within pre-defined timeframes (e.g., 7 days for acknowledgement, 30 days for resolution). • Provide feedback to complainants, including explanation of action taken or justification if no action is required. • Conduct regular audits of grievance handling, and adjust procedures based on recurring complaints or stakeholder feedback. • Raise awareness among all project-affected people, workers, and community members about the grievance mechanism, their rights, and how to access the system.	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• SEP

4.3 Operation ESMP Matrix

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
ESS2 - Labor and Working Conditions					
1	**Occupational Health and Safety:** **Emergency Preparedness and Response** **Emergencies such as accidents, fires, natural hazards, etc.**	All personnel working on the Subproject	**General Measures** • A detailed risk assessment will be conducted to identify potential emergencies (e.g., fires, explosions, natural disasters). According to this assessment, EPRP will be tailored, implemented, and updated as necessary. • A clear communication system (e.g., communication lists, public address systems) will be established to notify workers and visitors of emergencies promptly. Contact information for emergency services (fire department, ambulance and police) will be prominently displayed and readily available. • Fire extinguishers, fire suppression systems and smoke detectors will be installed and maintained at strategic locations. Work sites will be equipped with first aid kits, stretchers and spill control materials. Safe assembly points will be designated and signage will be provided to guide evacuation routes. • A system for reporting, documenting and investigating emergency incidents will be developed and implemented to prevent recurrence. Corrective actions from previous emergencies will be incorporated into the EPRP. • Emergency response procedures, evacuation routes and safety guidelines will be prominently displayed at the workplace. Roles and responsibilities will be assigned to specific workers as emergency coordinators or responders. • Workers and relevant personnel will be trained on emergency response procedures, including evacuation, first aid, and fire control. Regular emergency drills, including fire and evacuation drills, will be conducted to ensure preparedness and identify gaps in response protocols. • Emergency systems (alarms, extinguishers, detectors, kits) will be regularly inspected and tested to ensure functionality. The EPRP will be periodically reviewed and updated based on changes in site activities, hazards or lessons learned from past incidents. **Site-specific Measures** • All routine and non-routine maintenance work will be carried out by IMM personnel trained in OHS procedures and equipped with necessary PPE.	• Sub-borrower	• LMP, • Contractor Management Plan, • SEP • EPRP

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
			• Workers will use fall arrest systems (e.g. full-body harness, anchor points) during tasks such as lighting maintenance or railing inspection. • Life vests will be mandatory for any maintenance task performed over or near water (e.g. pier inspections). • Temporary traffic control measures (e.g. warning signs, lane closures) will be implemented during maintenance to protect workers. • All personnel will wear high-visibility clothing and receive training in traffic-aware safe behavior. • Working hours will be managed to avoid excessive overtime. Rest periods and adequate breaks will be ensured to reduce fatigue and stress among workers. Psychological support or counseling will be made available if needed. • Workers exposed to high noise levels will be provided with hearing protection (e.g. earplugs, earmuffs), and noisy equipment will be operated within designated timeframes to minimize exposure. • Mechanical aids (e.g. trolleys, lifts) will be provided for material handling. Job rotation will be applied for tasks involving repetitive motions to minimize ergonomic strain. • Work areas will be kept free of debris, and walking paths will be clearly marked. Anti-slip surfaces and proper lighting will be provided in high-risk zones.		
ESS3 - Resource Efficiency and Pollution Prevention and Management					
Management of Air Pollution					
1	**Emissions to air during operation**	• Local air quality, • Bridge users, • Urban flora and fauna, • Surrounding residential areas	**General Measures** • Well and adequately maintained vehicles will be used. Regular maintenance of machinery and equipment will be ensured; • Exhaust systems of the vehicles will be controlled regularly (daily and periodically); • All vehicles to be used in transportation activities will be issued an emission control stamp; • Operation phase vehicles will not be permitted to keep engines running while waiting or standing by for duty. • Relevant provisions of the Regulation on Air Pollution Control	• Sub-borrower	• ESMP

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
			Sourced from Industry, the Regulation on Exhaust Gas Emission Control and Regulation on the Assessment and Management of Air Quality will be complied with to minimize air emissions sourced from machinery, equipment, and vehicles that are used in operation phase; • Speed restrictions will be adopted by operation phase vehicles and optimal use of operation phase equipment to optimize fuel efficiency; • Regular maintenance of operation phase vehicles and equipment will be applied; • Energy uses associated with operation phase vehicles and equipment will be monitored; • Training will be performed for project personnel regarding energy efficiency.		
Management of Wastes					
	Generation of non-hazardous and hazardous waste during operation	• Municipality / Waste management system, • Bridge users, • Local communities	**General Measures** • Maximizing the rate of recycling of road resurfacing waste either in the aggregate (e.g. reclaimed asphalt pavement or reclaimed concrete material) or as a base. • Incorporating recyclable materials (e.g. glass, scrap tires, certain types of slag and ashes) to reduce the volume and cost of new asphalt and concrete mixes. • Collecting road litter or illegally dumped waste and managing it according to the national Waste Management Regulation and GIIPs. • Manage chemicals inventories (e.g. paint, etc.) to avoid having to dispose of large quantities of unused product; manage any obsolete products as hazardous waste in accordance with the national Waste Management Regulation and GIIPs. • Collecting animal carcasses in a timely manner and disposing through prompt burial or other environmentally safe methods. • Composting of vegetation waste for reuse as a landscaping	• Sub-borrower	• ESMP

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
			fertilizer. • Managing sediment and sludge removed from storm drainage systems maintenance activities as a hazardous or non-hazardous waste in accordance with the national Waste Management Regulation and GIIPs based on an assessment of its characteristics. • Management of all removed paint materials suspected or confirmed of containing lead as a hazardous waste. • Use of a system to collect paint waste when removing old paint containing lead. **Site-specific Measures** • Waste Management Plan will be updated by İMM to reflect the operation phase conditions before commencement of the operation phase. Relevant measures defined for the construction phase also apply also to the operation phase.		
Management of Stormwater					
1	**Stormwater runoff, contaminated with oil and grease, metals, particulate matter, deicing salts, and other pollutants released by vehicles on road, leading to pollution of water resources**	• Soil, • Watercourses, • Municipal drainage system	**General Measures** • Use of stormwater management practices that slow peak runoff flow, reduce sediment load, and increase infiltration • Regular inspection and maintenance of permanent erosion and runoff control features. • Paving in dry weather to prevent runoff of asphalt or cement materials. • Reducing the amount of water used to control dust, and using sweeping practices rather than washing. Collecting and returning swept material to aggregate base or disposing as solid waste. • Avoiding the generation of contaminated runoff from cleaning of asphalt equipment by substituting diesel with vegetable oil as a release and cleaning agent; containing cleaning products and contaminated asphalt residues; scraping before cleaning; and conducting cleaning activities away from surface water features or drainage structures.	• Sub-borrower	• ESMP

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
			Site-specific Measures • Installation of oil-water separators near drainage outfalls. • Additional sediment traps in areas with steep gradients. • Use of pervious pavement in pedestrian walkways where applicable.		
Management of Chemicals and Hazardous Materials					
1	**Release of hazardous materials in the event of accidents during operation**	• Surface water bodies, • Soil, • Stormwater drainage, • Air quality, • Bridge users, • Nearby communities	**General Measures** • Develop and implement an Emergency Response Plan (ERP) specific to hazardous material spills. • Equip the site with spill containment kits and train maintenance personnel on spill response procedures. • Conduct regular drills and coordination with emergency services. • Design drainage systems with isolation mechanisms to contain accidental spills before reaching surface waters. • Implement traffic safety measures (e.g., signage, speed limits, barriers) to reduce accident risk. • Localized contamination of sensitive receptors • Surface water, vegetation, aquatic life **Site-specific Measures:** • Install oil-water separators at key drainage outfalls. • Identify high-risk zones (e.g., sharp turns, steep slopes) and provide additional containment systems (e.g., absorbent booms, emergency shut-off valves). • Ensure accident-prone areas are clearly marked and illuminated.	• Sub-borrower	• ESMP, • ERP
Management of Environmental Noise and Vibration					
1	**Noise and vibration generation during operation**	• Bridge users, • Nearby infrastructure, utilities, and	**General Measures** • Enforcement of speed limits and restrictions for heavy vehicles during night hours. • Regular maintenance of expansion joints and pavement to reduce	• Sub-borrower	• ESMP,

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
		historical structures	noise and vibration. • Installation of noise barriers where feasible. **Site-specific Measures:** • Installation of vibration dampers or isolation pads in sections near sensitive receptors (e.g. cultural heritage structures or old buildings). • Periodic structural health monitoring of the bridge and adjacent buildings. • Use of quiet zone signage near residential sections of the bridge.		
ESS4 - Community Health and Safety					
Structural Safety of Subproject Infrastructure					
1	**Social Life:** **Potential Community Disturbance**	Local people and project workers in and around the Subproject Area Subproject Area and its surroundings	**Site-specific Measures** • Establish a routine maintenance program, maintenance activities should be planned during off-peak hours (night-time or weekends). • A Maintenance Traffic Management Plan (TMP) should be prepared and publicly disclosed. • Advance notification should be given to the public through digital platforms and local media. Clear signage and temporary barriers should be used to ensure safety and traffic flow.	• Sub-borrower	• SEP • TMP
2	**Physical Safety: Risks of Infrastructure Failures**	Local people and project workers in and around the Subproject Area Subproject Area and its surroundings	**Site-specific Measures** • Establish a routine inspection and preventive maintenance program, with biannual inspections aligned with international bridge safety standards. • Immediately address any identified defects to avoid escalation. • Maintain emergency energy, lighting and communication systems. • Ensure that all safety signage, CCTV, and monitoring systems are operational. • Coordinate with local emergency response services to review and update the emergency response plan annually.	• Sub-borrower	• SEP • TMP
3	**Traffic and Road Safety Risks:**	Local people and	**Site-specific Measures**	• Sub-borrower	• SEP

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
	Maintenance of the Bridge	project workers in and around the Subproject Area Subproject Area and its surroundings	• Maintenance activities should be planned during off-peak hours (night-time or weekends). • A Maintenance Traffic Management Plan (TMP) should be prepared and publicly disclosed. • All maintenance works shall be announced at least 48 hours in advance via the Istanbul Metropolitan Municipality's (IMM) official website, mobile app (e.g., *Istanbul Senin*), local media, and on-site digital signage. • Notifications shall include: type of work, start/end times, affected lanes, alternative routes, and changes to public transport if any. • A phased implementation approach should be used where feasible (e.g., one-lane closure instead of full closure) to maintain flow. • Temporary signage, cones, and barriers (e.g., New Jersey barriers) will be used to safely reroute traffic and protect work zones. • Alternative routes must be identified and signposted clearly prior to work commencement. • Safe and clearly marked temporary pedestrian routes will be maintained with adequate lighting and tactile indicators where necessary. • Crossing points and sidewalks will be physically separated from active work areas to prevent accidents. • IMM shall coordinate with emergency responders (ambulance, fire brigade, police) to ensure uninterrupted access routes are maintained during works. • An Emergency Access Plan shall be activated during critical works to enable rapid response if needed. • On-site safety officers will conduct regular inspections during works to assess traffic flow and public safety.		• TMP
ESS6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources					
1	Biodiversity	• Local conservation-sensitive habitats	**General Measures** • Promote and maintain improved water quality through regular inspection and maintenance of drainage and runoff management systems. • Ensure the continuation of fish monitoring programs during the operation phase to assess ecological health and inform adaptive	• Sub-borrower	• ESMP, • BMP

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
			management actions. **Site-specific Measures** • Regular monitoring of aquatic biodiversity indicators (e.g., fish, plankton, macroinvertebrates) in the immediate vicinity of the bridge piers, particularly near previously disturbed areas.		
ESS8 - Cultural Heritage					
1	No impacts are anticipated during the operation phase of the Subproject.	Not applicable.	The Subproject operation will comply with the applicable requirements set by the national cultural heritage authorities.	Not applicable.	Not applicable.
ESS10 - Stakeholder Engagement and Information Disclosure					
1	**Inadequate stakeholder communication and information disclosure**	• Local people and project workers in and around the Subproject Area • • Subproject Area and its surroundings	**Site-specific Measures** • The IMM will continue to update and disclose relevant operational information through official digital platforms such as the IMM website and the "İstanbul Senin" mobile application. These updates will include details such as pedestrian access routes, any ongoing maintenance-related restrictions, and safety advisories. • Community information boards located at key entry points to the bridge (e.g., metro exits, mosque area) will be maintained and updated with operation-related announcements. • A permanent communication channel (e.g. hotline or feedback email) will be made available for local stakeholders to submit inquiries or concerns regarding the use of the bridge.	• Sub-borrower	• SEP

4.4 Monitoring and Reporting

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

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

Table 37 Key Performance Indicators for Both Construction and Operation Phases of the Subproject

Monitoring Focus	KPI
Documentation	
Following ESMP Project specific plans will be developed and be in place.	Full compliance with Subproject's ESMP
Air Quality	
Air Quality incidents	Minimization and continued improvement in the number of the reported air quality related incidents.
Non-Compliance with air quality standards	Zero grievances per year
Community grievances	Minimization and continued improvement in the number of air quality related community grievances
Noise and Vibration	
Noise and Vibration incidents	Minimize and continued improvement in number of reported noise and vibration related incidents
Non-Compliance with Project standards	Zero Non-Compliance Reports (NCRs) per year
Number of noise and vibration-related community grievances	Zero grievances per year
Community grievances	Minimization and continued improvement in the number of noise related community grievances
Cultural Heritage Sites (historical fountain, Sokullu Mehmet Paşa Mosque and Hamidiye Waterways)	Preventing damage to Cultural Heritage Sites
Water / Wastewater	
Spill incident	Minimization and continued improvement in the number of the reported water quality related incidents.
Non-Compliance with Subproject standards	Zero NCRs per year
Wastewater collection system	Zero grievances per year
Flood incidents	No infrastructure damage and damage to loads/humans
Wastewater and Water loss records in network	Sustainable low wastewater and water loss records

Monitoring Focus	KPI
Waste	
Waste Generation	Minimization of total waste generated Decrease in the ratio of hazardous waste generated to total waste (by contamination + by generation)
Waste Disposal	Increase in the ratio of recovered/reused/recycled waste to total waste generated
Biodiversity	
Monitoring of aquatic biodiversity indicators (fish, plankton, macroinvertebrates)	Regular monitoring results reported annually; zero major decline trend..
Invasive alien species (IAS) control	Zero introduction or spread of IAS due to project activities; monitoring of IAS presence and mitigation effectiveness.
Nephelometric Turbidity Unit (NTU)	Turbidity levels will be monitored (maintain +10–20 NTU above baseline)
Soil Quality	
Spill incident	Minimization and continued improvement in the number of the reported soil quality related incidents
Non-Compliance with Subproject standards	Zero NCRs per year
Soil quality accidents	Zero accident per year
Number of soil-related community grievances	Zero grievances per year
Traffic	
Number of non-compliances against the mitigation controls identified in Traffic Management Plan	Decreasing number/ continuous improvement in number of reported non-compliances
Number of drivers found to be exceeding speed limits or driving unsafely	Zero exceedance per year
Number of road traffic accidents involving: Accidental injuries and deaths, Spillages (such as cargo or fuel), Wildlife-vehicle collisions.	Zero accidents per year
Number of traffic-related grievances	Zero grievances per year
Health, Safety and Environment	
% of scheduled HSE Inspection	>90
% of attendance at HSE meetings	>90
% of closing of NCRs	100
Reporting safe observations	100%
Reporting unsafe observations	100%
Reporting near misses	100%
Reporting number of incidents	100%
Reporting number of accidents	100%
Reporting day-loss	100%
% of Toolbox attending	>90
% of Risk Assessment compliance	>90
% of Legal Requirements compliance	100%
Results of scheduled audits	>85
HSE training carried out to training matrix > 90% of all training to matrix	>90
% of attendance at scheduled trainings	>90
Engagement in HSE program by individual managers and supervisors	>90
Engagement in HSE program by contractor's	>90
Labor and Working Conditions	

Monitoring Focus	KPI
Number of worker grievances closed out within the target timeframe	100% compliance with labor laws and regulations Zero unresolved health and safety incidents within the target timeframe 100% availability of required PPE 90% or higher worker satisfaction rate
Age verification prior to recruitment	100% of workers' age verified before employment Zero incidents per year Zero unresolved grievances
Number of reported GBV and SEA/SH incidents, grievances received, and toolbox talks conducted on prevention and awareness.	Zero unresolved grievances
Community Health and Safety	
Number of communicable and non-communicable diseases and injuries.	Negative Trend/No significant increase in communicable and non-communicable disease and injury rates per 1,000 residents per annum.
Number of community health safety & security grievances from local communities as recorded in the grievance management system.	Decreasing number/ continuous improvement in number of grievances
Number of reported community health & safety incidents	Zero incidents per year
Number of reported air quality or noise incidents	Decreasing number/ continuous improvement in number of grievances
Direct and indirect threats posed by construction activities against traffic and pedestrians	Zero number of drivers found to be exceeding speed limits or driving unsafely Zero accidental injuries and deaths, Zero traffic-related grievances
Access to the Construction Site - Security Fence/ Protection Tape	Zero Number of unauthorized accesses to the Subproject area
Trainings	
Training records	Trainings on ESMP and SEP documents. Providing all trainings (including GM, GBV, SEA/SH) to all employees. 100% of scheduled training sessions conducted 80% or higher participant satisfaction rate Zero participants without completion certificates if applicable
Disclosure	
Grievance Records, Disclosure meeting participant records, ESMP, SEP, GM will be disclosed at Project web site in two languages (English and Turkish).	All grievances closed-out within the target timeframe ESMP, Project specific SEP and GM will be prepared and disclosed at the Project web site
Vulnerable groups	
Incidents, Grievances, Toolbox talks and trainings, Information/ disclosure	All grievances closed-out within the target timeframe Sufficient information provided to the VGs
Grievance mechanism	
Grievance Records, GM disclosure	All grievances closed-out within the target timeframe GM disclosure to the PAPs, stakeholders GM disclosure at Subproject web site
Cultural Heritage	
Existence of a Chance Find	Zero Grievance Records
Registered Cultural Heritage Components (historical fountain, Sokullu Mehmet Paşa Mosque and Hamidiye waterways)	Preventing damage to Cultural Heritage Sites

Table 38. Construction Environmental and Social Monitoring Table

Issue	Parameters to be monitored (What parameter is to be monitored?)	Target/Threshold Value* KPI	Monitoring location (Where the parameter is to be monitored?)	Monitoring Method (**How** *is the parameter to be monitored/ type of monitoring equipment?)*	Timing/Frequency of Monitoring (**When** *is the parameter to be monitored- frequency of measurement or continuous?)*	Cost of Monitoring *(What is the cost of equipment or contractor charges to perform monitoring?)*	Responsible Party/Parties
Air quality	Settled dust, PM_{10} and $PM_{2.5}$	Below the Project Standards: PM10 1-Year: 20 µg/m3 24-Hour: 50 µg/m3 (99th percentile (i.e. 3-4 exceedance days per year) PM2.5 1-Year: 10 µg/m3 24-Hour: 25 µg/m3 (99th percentile (i.e.3-4 exceedance days per year) No air quality related grievance received	In case of a complaint, in the relevant area	Sampling/analysis via an authorized environmental laboratory Visually, on the basis of irritation of the respiratory system (via medical examination etc.)	Air quality monitoring will be conducted bi-weekly during high-impact construction activities (e.g., excavation, concrete works) and monthly during periods of low activity, at locations representing the nearest sensitive receptors (e.g., Dosthane Café and adjacent residential areas) as well as one upwind control point. Upon grievance	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
	Maintenance and exhaust decal records of all machinery and equipment	Below the Project Standards: CO: 50 kg/h Dust: 1 kg/h NOx: (as NO_2) 4 kg/h SOx: 6 kg/h TOC: 3 kg/h	Administration office of Contractor for the follow-up of records	Maintenance records	Quarterly during the construction phase	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
Soil contamination	Amount of contaminated soil	No soil contamination resulting from project activities	Project Area	Visual observation	After each incident	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
Storage and use of Pile Waste	Amount of refilled, stored and disposed pile materials	Proper management of pile wastes	Construction site and storage areas	Visual observation Records	Once in a week starting from the initialization of construction phase	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
Noise	Noise levels	Not exceeding the limit values defined in Project Standards: Receptor: Industrial, commercial: Day time (07:00-19:00): $LA_{eq,\ 5\ min.}$ < 65 dB(A) Evening time (19:00-23:00):	In case of a complaint, in the relevant area	At least 24-hr noise measurements via an authorized environmental laboratory	Noise monitoring will be conducted monthly during the construction phase, with increased frequency (bi-weekly) during activities with high noise potential (e.g., pile driving, demolition, or heavy equipment use). Upon grievance	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant

Issue	Parameters to be monitored (What parameter is to be monitored?)	Target/Threshold Value* KPI	Monitoring location (Where the parameter is to be monitored?)	Monitoring Method (How *is the parameter to be monitored/ type of monitoring equipment?)*	Timing/Frequency of Monitoring (When *is the parameter to be monitored- frequency of measurement or continuous?)*	Cost of Monitoring *(What is the cost of equipment or contractor charges to perform monitoring?)*	Responsible Party/Parties
		$LA_{eq,\ 5\ min.}$ < 60 dB(A) Night time (23:00-07:00): $LA_{eq,\ 5\ min.}$ < 55 dB(A)					
	Number of complaints	No noise related grievance received	Administration office of Contractor for the follow-up of records	Grievance Registration	Quarterly during the construction phase	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
Vibration	Vibration Levels	Preventing damage to cultural heritage elements due to vibration	Cultural heritage sites	Grievance Registration	Quarterly during the construction phase	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
		Peak Particle Velocity (PPV) < 5 mm/s at nearest sensitive biodiversity receptors	Construction sites and adjacent sensitive habitats	Portable vibration meters/accelerometers + biodiversity visual surveys	Weekly and continuous during critical vibration-generating activities	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
Waste	Type and amount of waste generated	Adhering to the TurkStat estimation of 1.03 kg/person/day waste generation Minimizing the amount of waste to be sent for disposal and implementing waste management hierarchy	Construction site, storage areas	Visual inspection regarding proper collection and temporary storage of waste and records kept regarding their coordinated recycle / disposal via licensed firms Waste Records Site inspections Disposal truck register	Once in a month starting from the initialization of the construction phase	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
Resources	Types and amounts of materials/resources used	Use of recycled materials whenever possible Reducing energy consumption	Administration office	Material/resource procurement/consumption records	Quarterly during the construction phase	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
Infrastructure Damage	Number and nature of cases and amount of compensation paid	No infrastructure cases	Administration office	Incident records Receipts of compensation payments	Monthly during the construction phase	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant

Issue	Parameters to be monitored (What parameter is to be monitored?)	Target/Threshold Value* KPI	Monitoring location (Where the parameter is to be monitored?)	Monitoring Method (**How** *is the parameter to be monitored/ type of monitoring equipment?)*	Timing/Frequency of Monitoring (**When** *is the parameter to be monitored- frequency of measurement or continuous?)*	Cost of Monitoring *(What is the cost of equipment or contractor charges to perform monitoring?)*	Responsible Party/Parties
Trespassing	Trespassing cases	No trespassing	Administration office	Security reports Visitor logs	Weekly during the construction phase	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
	Condition of CCTV system			System checks	Daily during the construction phase		
Preventing Infrastructure Damage	Number and nature of cases and amount of compensation paid	No infrastructure cases	Administration office	Incident records Receipts of compensation payments	Monthly during the construction phase	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
Community Health and Safety	Health and safety signs and traffic signs placed in appropriate locations	All cases that cause health and safety problems to be prevented	Project Area	Visual observation Site inspection	Daily basis Upon grievance	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
	Trespassing cases	No trespassing	Administration office and Project Area	Security reports Visitor logs	Weekly during the construction phase	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
				System checks	Daily during the construction phase		
Working Conditions	Workers' grievances	100 percent of satisfactorily resolved grievances within stipulated time	Administration office	Grievance records	Weekly during the construction phase	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
Occupational Health and Safety	Number of incidents	No OHS incidents occurred	Construction site	Incident records	Daily basis starting from the initialization of the construction phases	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
	Incident investigation	No OHS incidents occurred	Construction site	Incident investigation records	Daily basis starting from the initialization of the construction phases	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
	Period of disease occurrence	No infectious disease is recorded	Construction site	Disease follow-up register	Daily basis starting from the initialization of the construction phases	Included in construction cost	Contractor, Sub borrower Construction

Issue	Parameters to be monitored (What parameter is to be monitored?)	Target/Threshold Value* KPI	Monitoring location (Where the parameter is to be monitored?)	Monitoring Method (**How** *is the parameter to be monitored/ type of monitoring equipment?)*	Timing/Frequency of Monitoring (**When** *is the parameter to be monitored- frequency of measurement or continuous?)*	Cost of Monitoring *(What is the cost of equipment or contractor charges to perform monitoring?)*	Responsible Party/Parties
							Supervision consultant
	Number of personnel who are infected with an infectious disease	No infectious disease occurred	Construction site	Training records	Monthly during the construction phase	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
	Training requirements	Every training defined in the Annual ESHS is completed	Construction site	Annual Environmental, Social Health, and Safety (ESHS) training plan	Annually during the construction phase	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
	Adequate OHS organizational structure.	There will always be an adequate OHS organizational structure on site.	Construction site	Site implementation Site inspection	Quarterly during the construction phase	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
	Number of working hours	Total hours worked should be less than 11 hours The total of overtime working hours cannot exceed 270 hours in a year.	Construction site	Timesheets, Grievance records	Monthly, yearly	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
	Number of OSH meeting, toolbox		Construction site	Timesheets, Grievance records, Training records	Monthly, yearly	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
Protecting the Workforce	Age of candidate employee	No case of child labor and forced labor	Administration office and Project Area	Age verification with National ID Grievance records	Before each recruitment Upon relevant grievances	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
Workers Engaged by Third Parties and the Supply Chain	Contractor and sub-contractor agreements	No nonconformity is observed with the ESMP according to the LMP	Administration office	Contract reviews by ESHS expert(s)	Before each agreement made	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment	GBV and SEA/SH related incidents GBV and SEA/SH related grievances	No GBV and SEA/SH related issues Minimum 1 annual refresher training for	Administration office and Project	Document review Review of grievance logs	Quarterly Upon relevant grievances	Included in construction cost	Contractor,

Issue	**Parameters to be monitored** **(What parameter is to be monitored?)**	**Target/Threshold Value*** **KPI**	**Monitoring location** **(Where the parameter is to be monitored?)**	**Monitoring Method** **(How** *is the parameter to be monitored/ type of monitoring equipment?)*	**Timing/Frequency of Monitoring** **(When** *is the parameter to be monitored- frequency of measurement or continuous?)*	**Cost of Monitoring** *(What is the cost of equipment or contractor charges to perform monitoring?)*	**Responsible Party/Parties**
(SEA/SH)	GM, GBV, SEA/SH trainings	SEA/SH and GBV	Areas	Review of training records	Yearly		Sub borrower Construction Supervision consultant
Grievance Mechanism	Number of Grievance Number of closed grievances Percent of closed grievances Average days taken to close	100 percent of satisfactorily resolved grievances within stipulated time	Project Area	Data on complaints are collected in a database and reported	Monthly	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant
Stakeholder Engagement	Number of meetings Total number of participants by used method	Include all stakeholder	Project Area	Stakeholder records	Monthly	Included in construction cost	Contractor, Sub borrower Construction Supervision consultant

Table 39 Operation Environmental and Social Monitoring Table

Issue	Parameters to be monitored (What parameter is to be monitored?)	Target/Threshold Value*	Monitoring location (Where the parameter is to be monitored?)	Monitoring Method (How *is the parameter to be monitored/ type of monitoring equipment?)*	Timing/Frequency of Monitoring (When *is the parameter to be monitored- frequency of measurement or continuous?)*	Cost of Monitoring *(What is the cost of equipment or contractor charges to perform monitoring?)*	Responsible Party/Parties
Soil quality	Soil quality, including, PH, heavy metals, phosphorus, nitrogen, Na, Ca, salts, PAHs hydrocarbons Number of leakages/spills of oil and fuels Contractor's compliance	No soil contamination resulting from Project Activities	Storage area Maintenance Facility	Visual observations Evidence of leakage of fuel and oil Grievance registration	Monthly during operation phase Upon events starting from the initialization of the Project Upon grievance	Included in operation cost	Sub borrower
Noise	Noise level	Not exceeding the limit values defined999 in Regulation on Environmental Noise Control and WB standards No noise related grievance received	In case of a complaint, in the relevant area	At least 24-hr noise measur333399999999999999ements via an authorized environmental laboratory	Once in a year Upon grievance	Included in operation cost	Sub borrower
Waste	Type and amount of waste generated	Adhering to the TurkStat estimation of 1.03 kg/person/day waste generation Minimizing the amount of waste to be sent for disposal and implement waste management hierarchy	Project site and storage areas	Visual observation Waste Records Site inspections Disposal truck register	Weekly basis starting from the initialization of the operation phase of the Project	Included in operation cost	Sub borrower
Resources	Types and amounts of materials/resources used	Use of recycled materials whenever possible Reducing energy consumption	Administration office	Material/resource procurement/consumption records	Annually starting from the initialization of operation phase	Included in operation cost	Sub borrower
Infrastructure Damage	Number and nature of cases and amount of compensation paid	No infrastructure cases	Administration office	Incident records Receipts of compensation payments	Monthly during the operation phase	Included in operation cost	Sub borrower
Fish/fauna disturbance (light, noise)	Night-time light spill, underwater noise (if new maintenance activities added)	Light levels minimized at water surface; noise below 160 dB re 1µPa (if pile works occur)	Bridge deck (lights) and in-water areas (if underwater noise relevant)	Light meter (lux) & noise hydrophone (if applicable)	Annually or upon major maintenance works	Included in operation cost	Sub borrower
Social							
Community Health and Safety	Health and safety signs and traffic signs placed in appropriate locations	All cases that cause health and safety problems to be prevented	Project Area	Visual observation Site inspection	Daily basis Upon grievance	Included in operation cost	Sub borrower
	Trespassing cases	No trespassing	Administration office and Project Area	Security reports Visitor logs	Weekly during the operation phase		

Issue	**Parameters to be monitored** **(What parameter is to be monitored?)**	**Target/Threshold Value***	**Monitoring location** **(Where the parameter is to be monitored?)**	**Monitoring Method** **(How** *is the parameter to be monitored/ type of monitoring equipment?)*	**Timing/Frequency of Monitoring** **(When** *is the parameter to be monitored- frequency of measurement or continuous?)*	**Cost of Monitoring** *(What is the cost of equipment or contractor charges to perform monitoring?)*	**Responsible Party/Parties**
Working Conditions	Workers' grievances	Proper management of provisions given in ESMP	Administration office	Grievance records	Weekly during the operation phase	Included in operation cost	Sub borrower
Occupational Health and Safety	Number of incidents Incident investigation Period of disease occurrence	No OHS incidents occurred No infectious disease is recorded	Administration office	Incident records Disease follow-up register	Daily basis starting from the initialization of operation phase	Included in operation cost	Sub borrower
Traffic	Traffic flow, accident records	Accident rate not higher than city average; free flow maintained	Administration office	Visual observation, traffic police data	Weekly during the operation phase	Included in operation cost	Sub borrower
Working Conditions	Workers' grievances	Proper management of provisions given in LMP	Administration office	Grievance records	Weekly during the operation phase	Included in operation cost	Sub borrower
Protecting the Workforce	Age of candidate employee	No case of child labor	Administration office	Age verification with National ID	Before each recruitment	Included in operation cost	Sub borrower
Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH	GBV and SEA/SH related incidents	No GBV and SEA/SH related issues	Administration office	Document review Review of grievance logs Training records	Upon relevant grievances Annually	Included in operation cost	Sub borrower
Cultural Heritage	Community grievances	No grievance	Administration office	Grievance records	Weekly during the operation phase	Included in operation cost	Sub borrower

4.5 List of Associated Plans and Procedures

As a part of the mitigation measures, this site-specific Environmental and Social Management Plan has been developed. The ESMP includes management plans and procedures for both construction and operation phases of the Project, which are given in Table 40 along with guidelines for preparation of the sub-management plans to be prepared by the contractor.

Table 40: Required Management Plans and Procedures for the Project

Management Plans/Procedure	Stage to be Prepared	Responsible Party	Monitoring & Reporting Party	Approving Party
Construction Phase				
Chance Find Procedure	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Water Resources Management Plan	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Cultural Heritage Management Plan	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Pollution Prevention Plan	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Labour Management Plan	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Livelihood Restoration Plan	Prior to - construction	İstanbul Metropolitan Municicpality	İstanbul Metropolitan Municicpality	ILBANK
Biodiversity Management Plan	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Stakeholder Engagement Plan	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Community Health, Safety, and Security Management Plan	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Traffic Management Plan	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Occupational Health and Safety Management Plan	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Contractor Management Plan	Prior to construction	İstanbul Metropolitan Municicpality	Construction Contractor	ILBANK
Code of Conduct (to be included in LMP)	Prior to construction	İstanbul Metropolitan Municicpality	Construction Contractor	ILBANK

Management Plans/Procedure	Stage to be Prepared	Responsible Party	Monitoring & Reporting Party	Approving Party
Waste Management Plan	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Soil Management Plan	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Emergency Preperadness and Response Plan	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Operation Phase				
Stakeholder Engagement Plan	Prior to operation	İstanbul Metropolitan Municicpality	İstanbul Metropolitan Municicpality	ILBANK
Occupational Health and Safety Management Plan	Prior to operation	İstanbul Metropolitan Municicpality	İstanbul Metropolitan Municicpality	ILBANK
Labour Management Plan	Prior to operation	İstanbul Metropolitan Municicpality	İstanbul Metropolitan Municicpality	ILBANK
Code of Conduct	Prior to operation	İstanbul Metropolitan Municicpality	İstanbul Metropolitan Municicpality	ILBANK
Zero Waste Management Plan	Prior to operation	İstanbul Metropolitan Municicpality	İstanbul Metropolitan Municicpality	ILBANK

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

4.6 Management of Change

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

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

- Administrative/ organizational structure changes at the decision-making level
- Changes in assigned environmental, social and/or OHS staff
- Legislative changes impacting Subproject implementation (e.g. new permitting processes).
- Design changes (e.g. any changes in the Subproject description, footprint such as new temporary or permanent sites/facilities – on-site or off-site, changes in number of workforce involved, changes in on-site/off-site worker accommodation arrangements).
- Schedule changes

- Changes related to E&S issues (e.g. new biodiversity features or cultural heritage assets identified, additional resettlement need, etc.)
- Changes in the contractor or construction supervision consultants at any phase of the Subproject that require: (i) clarification of E&S commitments and roles and responsibilities with the new contractor or supervision consulting firm, and (ii) reorganization and redelivery of E&S training to the staff of the new contractor or supervision consulting firm

5 CAPACITY DEVELOPMENT AND TRAINING

5.1 Organizational Capacity

The organizational structure of the PIU to be established by the Sub-borrower, is presented in Figure 36. The PIU will include qualified staff and resources to the satisfaction of ILBANK.

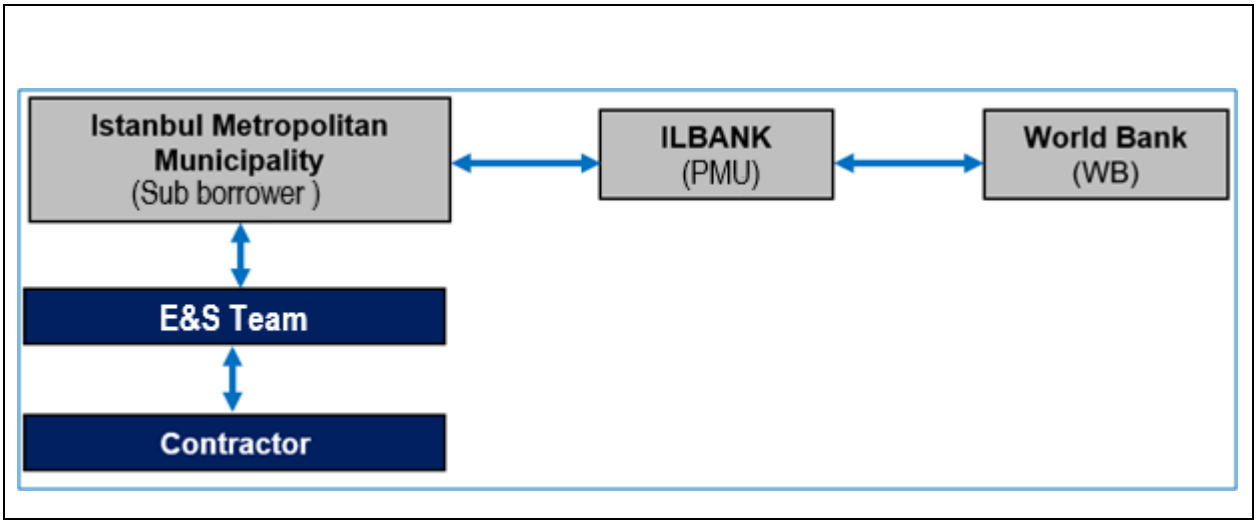

Figure 36. Organization Structure of the Subproject

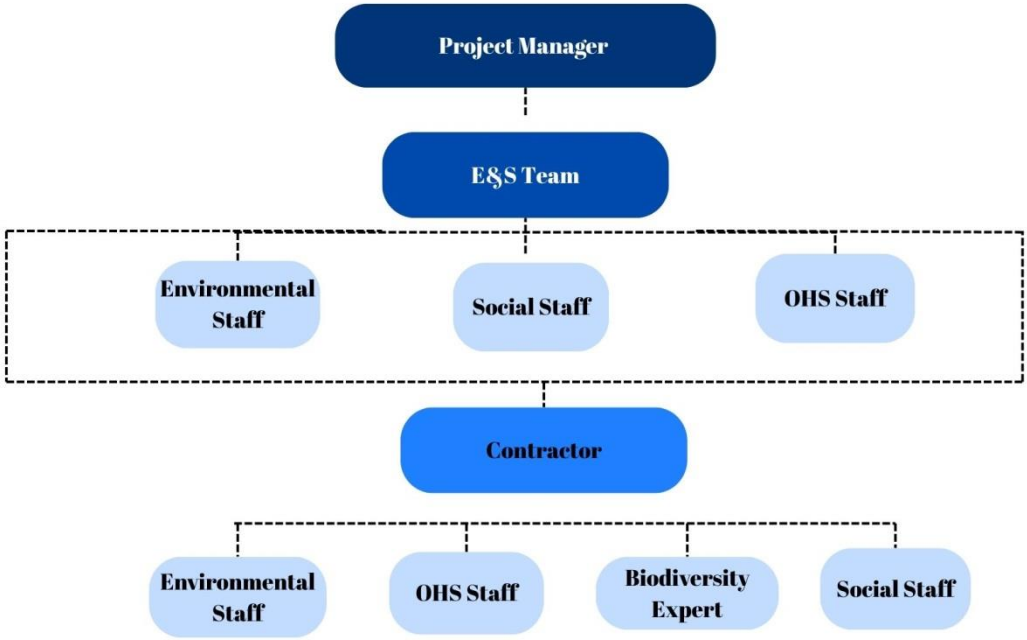

Figure 37 Projet Implementation Unit and Contractor Structure

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

Currently, organizational structure of Sub-borrower, the Directorate of Environmental Protection and Control includes several relevant branch directorates as human resources and capacity. Considering this

structure, the E&S (Environmental & Social) and OHS (Occupational Health & Safety) roles will be integrated as follows:

E&S (Environmental & Social) Role:

- Associated Unit: Climate Change and Zero Waste Branch Directorate and Social Affairs Department

- Responsibilities: Assessment, monitoring, and reporting of environmental and social risks; conducting environmental impact assessments; performing social impact analyses.

OHS (Occupational Health & Safety) Role:

- Associated Units: Health Affairs Department, Human Resources and Training Department

- Responsibilities: Preparation and implementation of OHS Plan, monitoring, training of the personnel; taking necessary measures to prevent workplace accidents, reporting.

The E&S team at the Sub-borrower PIU will include the following personnel, who shall support the management and monitoring of Subproject E&S risks and impacts and ensure full compliance with the ESMP and other relevant E&S instruments:

- **Environmental Specialist(s):** to address environmental risks and impacts identified under the Environmental and Social Assessment (ESA) reports, such as Environmental and Social Management Plan (ESMP), Stakeholder Engagement Plan (SEP), Traffic Management Plan (TMP), and Biodiversity Management Plan (BMP) prepared specifically for this Subproject as described in Table 40)..
- **Social Expert/ GM Focal Point:** responsible for addressing social risks and impacts identified under the ESA reports, including stakeholder engagement, grievance redress, labor issues, and the implementation of the Livelihood Restoration Plan (LRP). No land acquisition is anticipated within the scope of this Subproject, as stated in this ESMP. Relevant plans described in Table 40 will be managed by Social Expert.
- **OHS Specialist(s)** to address OHS risks and impacts identified under the ESA reports. Relevant plans described in Table 40 will be managed by OHS Specialist.

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

Contractors

The Sub-borrower will require the awarded contractors to establish and maintain throughout the contract duration an organizational structure with qualified staff and resources. This will be achieved through assigning the following personnel within the contractor's organization:

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

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

5.2 Roles and Responsibilities

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

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

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

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

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

Table 41. Roles and E&S related Responsibilities of Key Parties associated with ESMP Implementation

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

Party	Role	Key Responsibilities
		• Facilitate monitoring visits and audits by ILBANK and their consultants • Notify the ILBANK DG of any significant E&S incident or accident within maximum **24 hours** of the accident/incident; contractually require the supervision consultants and/or contractors to promptly report such incident and accidents (timeframe to be defined by ILBANK) • Prepare and submit a detailed E&S Incident Investigation Form, supplemented by an RCA to be conducted pursuant to GIIPs, to ILBANK within **15 days** of the accident/incident date for significant accidents or incidents (in line with the template presented in the E&S Supervision, Monitoring and Reporting Procedure). The investigation will be supplemented by a Root Cause Analysis (RCA).
	E&S Team - Environmental staff - Social staff - OHS staff	• Participate in the training to be organized by ILBANK as part of ILBANK ESMS Training Procedure implementation • Ensure that satisfactory ESMP, SEP and as required other E&S assessment documentation required by ILBANK is prepared by qualified independent specialists and submitted to ILBANK for appraisal and credit decision-making for High[30] and Substantial risk Subproject, as well as for Moderate risk Subproject where the sub-borrower has limited E&S capabilities, coordinate commissioning independent third-party specialists (such as external E&S consultancy companies, individual consultants) to carry out the E&S assessment and prepare the E&S documentation required for ILBANK's appraisal and credit decision-making processes. • Provide ILBANK with relevant adequate information to undertake the E&S due diligence in accordance with the ESMS (e.g. duly completed sub-borrower questionnaire and supporting documentation to be requested by ILBANK in accordance with the E&S Screening and Risk Classification and ESDD procedures) • Support the sub-borrower management as required in the review and evaluation of ESAP and other E&S covenants for incorporation into sub-financing agreements to be executed between the ILBANK and the sub-borrower • Ensure compliance of Subproject operations (including contractor activities on site) with national legislation and E&S requirements of the lending IFIs as included in the sub-financing agreements, ESAP and Subproject-specific E&S documentation (such as ESMP, SEP and other E&S management plans and procedures required by ILBANK) • Undertake monitoring of Subproject E&S performance and reporting to ILBANK at IFI standards in line with the sub-financing agreement conditions • Ensure implementation of corrective actions in case of E&S non-compliances in coordination and agreement with ILBANK DG and RD E&S teams over reasonable timeframes • Coordinate the construction supervision consultants, contractors and/or external E&S consultants for collection of the monitoring data and compilation of or providing input to periodic monitoring reports as necessary and appropriate • Allow ILBANK representatives (including individual consultants) to access Subproject facilities and records.
Construction Supervision Consultants	Management and E&S staff	Carry out the following tasks on behalf of the sub-borrowers: • Participate in the training sessions to be organized by sub-borrowers in line with the requirements of ILBANK ESMS Training Procedure • Supervise the construction works of contractors on-site, including implementation of Subproject-specific E&S requirements (requirements stemming from ESMP, SEP and other E&S management plans and procedures required by ILBANK as applicable) by contractors on a daily basis • Ensure sufficient E&S capacity for implementation of E&S requirements as set out in the sub-financing agreements between the sub-borrower and ILBANK • Support the sub-borrowers for the supervision and review of E&S management documentation prepared by construction contractors and submit them to sub-borrowers upon finalization • Review monthly self-monitoring reports prepared by the construction contractors for early identification of E&S issues and/or non-compliances and submit them to

[30] It should be noted that Subprojects rated as "High risk" are excluded from the scope of CDRC support.

Party	Role	Key Responsibilities
		municipalities/municipal utilities upon finalization • Identify E&S non-compliances on site and enforce construction contractors to undertake corrective actions within defined and agreed timeframes • Support the sub-borrowers (as requested) in the preparation of periodic E&S monitoring reports to be submitted to ILBANK in line with the ILBANK E&S Supervision, Monitoring and Reporting Procedure • Notify the sub-borrower of any significant E&S incident or accident that have taken place in Subproject related operations within **24 hours**.
Construction Contractor	Management and E&S staff	• Ensure sufficient E&S capacity for implementation of E&S requirements as set out in the construction contracts • Participate in the training sessions to be organized by sub-borrowers in line with the requirements of ILBANK ESMS Training Procedure • Prepare and implement the Subproject-specific E&S management plans and procedures, including but not limited to the Stakeholder Engagement Plan (SEP), Labor Management Plan (LMP), Traffic Management Plan (TMP), and Cultural Heritage Management Plan (CHMP), as detailed in this ESMP and required by the construction contracts.Comply with the requirements of national legislation and implement the E&S requirements as set out in the sub-financing agreements (executed between ILBANK and the sub-borrowers) and construction contracts • Submit monthly E&S self-monitoring reports to the municipalities/municipal utilities through construction supervision consultants ("*müşavir*") – in line with the format provided by ILBANK. • Fill in monthly OHS forms – reviewed by construction supervision consultants. • Implement corrective actions in case of E&S non-compliances under the supervision of sub-borrower's construction supervision consultant • Promptly notify the sub-borrower of any significant E&S incident or accident that have taken place in Subproject related operations within **24 hours**.

5.3 Capacity Building and Training

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

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

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

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

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

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

Sub-borrower staff (trained by ILBANK) will deliver E&S training to contractors. The training contents are summarized in Table 42. The Sub-borrower will identify specific training programs to be conducted in line with these modules and submit this to ILBANK prior to commencement of works.

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

Table 42. Training Components for Training of Contractor Staff

Module	Training Name	Training Duration	Key Training Content
Module 1	ILBANK E&S Requirements	1 hour	- Overview of ILBANK E&S requirements: o ILBANK E&S Policy (including but not limited to the guiding principles on human rights, labor rights and working conditions, community health, safety and well-being, cultural heritage, gender equality, etc.) o External Communications (including stakeholder engagement, grievance management, etc.) o Monitoring, Review and Reporting o Labor Management, Contractor Management - ILBANK Code of Conduct
Module 2	Subproject-level E&S Requirements for contractors as per sub-financing agreement conditions	3 hours	- Subproject specific requirements: o E&S covenants included in sub-loan agreements o Subproject ESAP requirements o Subproject-level E&S assessment and management documentation (such as ESMP, SEP and other E&S management plans and procedures as applicable); o Emergency Preparedness and Response Plan including a training program for emergency responders including drills at regular intervals; o Specific training (such as driver training in case of involvement of vehicles or fleets of vehicles in Subproject-operations, training of security forces in the use of force (and where applicable, firearms), and appropriate conduct toward workers and affected communities, etc.). - Preparation and implementation of Labor Management Plans.

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

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

6 IMPLEMENTATION SCHEDULE AND COST ESTIMATES

6.1 Implementation Schedule

Duration of the construction and operation phase activities are listed in Table 43.

Table 43 Duration of Activities

			Preparatory Works				Year 1												Year 2		
			M-4	M-3	M-2	M-1	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15
NO	**Work Item**	Period	-4	-3	-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Detailed Design Works																				
	Detailed Design of Approach Bridge																				
	Seismic Design of Floating Bridge																				
	MAINTENANCE WORKS																				
1	**Survey Works**																				
1.1	Detailed Survey Works																				
2	**Bridge Bearings Control, Maintenance & Revisions**																				
2.1	Jack-up Both Side	13 Month																			
2.2	Unkapanı J1 Side Level Adjustment Works																				
2.3	Azapkapı J1* Side Level Adjustment Works																				
2.4	Horizontal Balancing of The Bridge (Pontoon Balancing Works)																				
2.5	Unkapanı JX Joint Fixed Bearing Maintenance Works																				
2.6	Unkapanı J0 Joint Movable Bearing Maintenance Works																				
2.7	Unkapanı J1 Joint Roller System Revision & Maintenance Works																				
2.8	Unkapanı J2 Joint Bearings Visual Control & Maintenance Works																				
2.9	Azapkapı JX* Joint Fixed Bearing Maintenance Works																				
2.10	Azapkapı J0* Joint Movable Bearing Maintenance Works																				
2.11	Azapkapı J1* Joint Roller System Revision & Maintenance Works																				
2.12	Azapkapı J2* Joint Bearings Visual Control & Maintenance Works																				
2.13	Jack-down Both Side																				
3	**Bridge Road Level Expansion & Connection Joints Control, Maintenance & Revisions**																				
3.1	Unkapanı JX Expansion Establishment Works	9 Month																			
3.2	Unkapanı J1 Expansion Plates & Supports Revisions																				
3.3	Unkapanı J2 Expansion Plate with Supports Renewal Works																				
3.4	J3 Curved Connection Joint Plate Renewal																				

			Preparatory Works				Year 1												Year 2		
			M-4	M-3	M-2	M-1	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15
3.5	J3* Finger Connection Joint Plate Renewal																				
3.6	Azapkapı JX Expansion Establishment Works																				
3.7	Azapkapı J1 Expansion Plates & Supports Revisions																				
3.8	Azapkapı J2* Expansion Plate with Supports Renewal Works																				
4	**Reinforced Concrete Element Works**																				
4.1	Beams Unkapanı Side	12 Month																			
4.2	Strengthening elements with concrete and reinforcement damage (Concrete Parts)																				
4.3	Stripping and checking side abutments and reinforced concrete approach bridge covers																				
4.4	Stripping and checking soffit of concrete slabs																				
5	**Mechanical Items Control, Maintenance & Revisions**																				
5.1	Draw Hook Repair & Maintenance Works	11 Month																			
5.2	Chain & Pulley System Maintenance Works																				
5.3	Longitudinal Bar Repair & Maintenance Works																				
5.4	CrossBar Repair & Maintenance Works																				
5.5	Hinge - Pin Connection Repair & Maintenance Works																				
6	**Steel Structure Repair & Maintenance Works**																				
6.1	Repair of Damaged Elements in All Locations	4 Month																			
6.2	Sandblasting of Steel Columns and Beams																				
6.3	Painting of Steel Columns and Beams																				
7	**Pontoon Anchoring Repairing Works**																				
7.1	Removal of the Existing Anchoring Elements	6 Month																			
7.2	New Anchoring System Works																				
8	**Construction Works of Inspection Walkway**																				
8.1	Unkapanı JX - J0 & J1 Expansion Joints Inspection Walkway	3 Month																			
8.2	Unkapanı J2 Expansion Joints Inspection Walkway																				
8.3	J3 Curved Movable Expansion Joints Walkway (Movable & Pontoon Compatible)																				
8.4	J3* Finger Movable Expansion Joints Walkway (Movable & Pontoon Compatible)																				
8.5	Azapkapı J2* Expansion Joints Inspection Walkway																				
8.6	Azapkapı JX* - J0* & J1* Expansion Joints Inspection Walkway																				

			Preparatory Works				Year 1												Year 2		
			M-4	M-3	M-2	M-1	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15
9	**Renewal of the Drainage System**																				
9.1	Road Level Drainage System Works	5 Month																			
9.2	Unkapanı J1 Joints Drainage System Works (Compatible with Expansion)																				
9.3	Unkapanı J2 Joints Drainage System Replacement																				
9.4	J3 Curved Joints Drainage System (Compatible with Movable)																				
9.5	J3* Finger Joints Drainage System (Compatible with Movable)																				
9.6	Azapkapı J2* Joints Drainage System Replacement																				
9.7	Azapkapı J1* Joints Drainage System (Compatible with Expansion)																				
10	**Corrosion Protection by Cathodic Protection Construction Works**																				
10.1	Construction of Cathodic Protection System of the Bridge	3 Month																			
11	**Pontoon Fender System Construction Works**																				
11.1	Removal of Existing Fenders	2 Month																			
11.2	New Fender System Works																				
11.3	Splash Proof System Works Around Navigation																				
12	**Construction of Cable Tray System**																				
12.1	Cable Tray Works at J3–J3* Movable Joint System*Movable Joint System Construction Works	2 Month																			
	NEW APPROACH BRIDGE CONSTRUCTION	10 Month																			

6.2 Cost Estimates

The financing requirements for fixed investments and associated expenses over the first two years are summarized in Table 44.

Table 44 Summary of Financing Needs by Year

Years	1.Year	2. Year	TOTAL
Fınancıng Need	Foreign Currency	Foreign Currency	
Fixed Facility Investment	€23,450,000	€11,550,000	€35,000,000
Financing Expenses	€175,000	€25,000	€200,000
Total Fınance Need	€23,625,000	€11,575,000	€35,200,000
Equity Resources	€175,000	€25,000	€200,000
Foreign Sources	€23,450,000.00	€11,550,000.00	€35,000,000.00

For the purpose of this ESMP, the overall cost of implementing the proposed mitigation, monitoring, training, and stakeholder engagement measures for the implementation of the Environmental and Social Plan (ESMP) including the Livelihood Restoration Plan (LRP) is estimated at approximately 1% of the total Subproject investment cost. This represents a high-level indicative figure intended for planning purposes only. A detailed and itemized cost analysis will be prepared by İMM during the subsequent stages of Subproject development, once construction methodologies, schedules, and site-specific requirements are finalized.

Annex A – CONTRIBUTORS

Name-Surname	Profession
Dr. Okan BİLKAY	Mechanical Engineer, Ph.D.
Dr. İ.Haluk ÇERİBAŞI	Environmental Engineer, Ph.D.
Ülkü ÖZEREN	Environmental Engineer, M.Sc.
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Dr. Hüseyin ÇİÇEK	Sociologist, Ph.D.
Ebru GÜLER	Environmental Engineer
Kübra ÇİBUK	Environmental Engineer
Buket Ece UYGURTAŞ	Environmental Engineer
Prof. Dr. Erdoğan ÇİÇEK	Biologist, Ph.D.
Nazan Duygu YIGITER	Urban Planner, M.Sc
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Annex B LEGAL FRAMEWORK

This section presents the main aspects of the legal and administrative framework followed in the design of this ESMP. In this Subproject, in addition to determining which standards to follow, a gap analysis is conducted between national legislation and ESF. Various national legislation and international conventions and standards explained in the following sections are also to be complied with during different stages of the Subproject, including construction and operation phases.

6.3 National Legislation

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

National Environmental, Health and Safety Legislation

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

Occupational Health and Safety Law No. 6331, which is ratified June 2012 (Official Gazette dated 30.06.2012 and numbered 28339), is other principal legislation related to the Subproject. Occupational Health and Safety Law enforces various by-laws and decrees to regulate and uphold health and safety standards.

The Subproject will comply with the Environmental Law No. 2872 and the Occupational Health and Safety Law No. 6331, along with their associated by-laws and decrees. These regulations establish the fundamental environmental and occupational health and safety requirements applicable to the Subproject. Ensuring full adherence to these national legislations will help mitigate environmental and social risks, promote worker safety, and align the Subproject with best practices. Additionally, compliance with these legal requirements will facilitate the implementation of international standards set by the World Bank, ensuring the Subproject meets both national and global sustainability expectations.

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

The rest of the Turkish Legislation that the Subproject will comply with is presented in Table 45.

Table 45 Turkish EHS Legislation Related to the Subproject

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Subproject Phases
National Environmental, Legal and Political Framework			
Waste Management			
Regulation on the Control of Waste Batteries and Accumulators	August 31, 2004	25569	• This regulation applies on battery and accumulator wastes that may occur as a result of office or vehicle use throughout the lifetime of the Subproject.
Regulation on the Control of End-of-Life Tires	November 25, 2006	26357	• This regulation applies on waste management of End-of-Life Tires generated during all phases of the Subproject.
Regulation on the Control of End-of-Life Vehicles	December 30, 2009	27448	• This regulation applies on waste management of End-of-Life Vehicles generated during all phases of the Subproject.
Regulation on Waste Management	April 2, 2015	29314	• This regulation is the main regulation applies on regarding the non-hazardous and hazardous wastes that will be generated as a result of all activities to be carried out throughout the lifetime of the Subproject.
Regulation on the Control of Waste Vegetable Oil	June 6, 2015	29378	• This regulation applies on waste vegetable oils during especially the operation phase of the Subproject.
Regulation on the Control of Medical Waste	January 25, 2017	29959	• This regulation applies for medical waste to be generated throughout the life of the Subproject.
Regulation on Zero Waste	July 12, 2019	30829	• This regulation applies on the establishment of zero-waste management system that aims to protect the environment and human health and all resources regarding the wastes that will be generated as a result of all activities to be carried out throughout operation phase.
Regulation on the Management of Waste Oil	December 21, 2019	30985	• This regulation applies on waste oils that may occur as a result of vehicle/equipment maintenance throughout the lifetime of the Subproject.
Regulation on the Control of Packaging Waste	June 26, 2021	31523	• This regulation applies on packaging waste that will occur as a result of activities that can be carried out throughout the lifetime of the Subproject.
Regulation on Management of Waste Electrical and Electronic Equipment	December 26, 2022	32055	• This regulation applies on electrical and electronic equipment waste as a result of activities to be carried out throughout the lifetime of the Subproject.
Water Quality Control and Management			
Regulation on Control of Water Pollution	December 31, 2004	25687	• Wastewater generated by the site staff during construction and operation phases.
Regulation on the Water Intended for Human Consumption	February 17, 2005	25730	• This regulation applies on the monitoring of the suitability for human consumption of water within the scope of the Subproject during all phases of the Subproject.
Regulation on the Control of Pollution Caused by Hazardous Substances in and around Water Environment	November 26, 2005	26005	• This regulation applies on the hazardous substance impacts on the water and its surroundings that may occur during the Subproject lifetime.

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Subproject Phases
Air Quality Control and Management			
Regulation on the Air Quality Assessment and Management	June 6, 2008	26898	• This regulation applies on activities that may cause the deterioration of the air quality during the lifetime of the Subproject, especially the construction phase of the Subproject.
Regulation on Industrial Air Pollution Control	July 3, 2009	27277	• This regulation applies on activities that may cause air pollution during the lifetime of the Subproject, especially the construction phase of the Subproject.
Regulation on the Monitoring of Greenhouse Gas Emissions	May 17, 2014	29003	• This regulation applies on greenhouse gas emissions during the lifetime of the Subproject.
Regulation on Exhaust Gas Emission Control	March 11, 2017	30004	• This regulation applies on exhaust gas emissions sourced from Subproject vehicles, machinery and equipment during the lifetime of the Subproject.
Noise Control and Management			
Regulation on the Environmental Noise Emissions Caused by Equipment Used Outdoors	December 30, 2006	26392	• This regulation applies on the noise emissions caused by equipment used outdoors within the Subproject especially throughout the construction phase.
Regulation on Environmental Noise Control	November 30, 2022	32029	• This regulation applies on the management of noise emissions during lifetime of the Subproject.
Soil Quality Control and Management			
Regulation on Soil Pollution Control and Point Source Contaminated Fields	June 8, 2010	27605	• This regulation applies on the protection of soil against pollution during lifetime of the Subproject.
Environmental Management, Permitting and Planning			
Environmental Law No: 2872	August 11, 1983	18132	• This general law regulates the main environmental rules for all activities to be carried out during the lifetime of the Subproject.
Regulation on Environmental Permits and Licensing	September 10, 2014	29115	• This regulation applies on the required environmental permits and licenses at all phases of the Subproject.
Regulation on Environmental Impact Assessment	July 29, 2022	31907	• This regulation applies on administrative and technical procedures and principles to be followed during the Environmental Impact Assessment (EIA) process at the pre-construction phase.
National Social, Legal and Political Framework			
Community Health and Safety			
Highways Traffic Law No: 2918	October 13, 1983	18195	• This law applies on ensuring traffic order on the highways during the all phases of the Subproject.
Regulation on Traffic Signs	June 19, 1985	18789	• This regulation applies on traffic sign for the purpose of ensuring traffic order and safety during all phases of the Subproject.
Regulation on Highway Traffic	July 18, 1997	23053	• This regulation applies on ensuring traffic order on the highways during the all phases of the Subproject.

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Subproject Phases
Preparation, Completion and Cleaning Works Regulation	April 28, 2004	25446	• This regulation applies on the working conditions in the preparation, completion and cleaning works that must be carried out in order for the main work carried out in a workplace to be carried out in an orderly, healthy and safe manner during lifetime of the Subproject.
Labor and Working Conditions			
Labor Law No: 4857	June 10, 2003	25134	• This main law applies on the rights and responsibilities of the workers employed based on the labor contract with the employers, regarding the working conditions and working environment during the lifetime of the Subproject.
Regulation on the Procedures and Principles of Employment of Children and Young Workers	April 06, 2004	25425	• This regulation applies on determine the basis of the way children and young workers work without endangering their health and safety, physical, mental, moral and social development or education, and to prevent their economic exploitation during lifetime of the Subproject.
Social Security and General Health Insurance Law No: 5510	June 16, 2006	26200	• This law applies on health and safety measures to be taken during lifetime of the Subproject.
Occupational Health and Safety Law No. 6331	June 30, 2012	28339	• This law applies on occupational health and safety measures to be taken during lifetime of the Subproject.
Communiqué on Occupational Health and Safety Hazard Classes List	December 26, 2012	28509	• This Communiqué applies on determination of hazard classes during lifetime of the Subproject.
Regulation on Risk Assessment for Occupational Health and Safety	December 29, 2012	28512	• This regulation applies on preparation of occupational health and safety risk assessment and all related principles to be followed during lifetime of the Subproject.
Regulation on Health and Safety Conditions Regarding Use of Work Equipment	April 25, 2013	28628	• This regulation applies on ensuring the health and safety conditions for the use of work equipment to be used during life of the Subproject.
Manual Handling Operations Regulation	July 24, 2013	28717	• This regulation applies on health and safety measures to be taken during manual handling activities at all phases of the Subproject.
Regulation on the Use of Personal Protection Equipment at Workplaces	July 2, 2013	28695	• This regulation applies on personal protection equipment to be used at lifetime of the Subproject.
Regulation on Emergency Situations in Workplaces	June 18, 2013	28681	• This regulation applies on measures to be taken during emergency situations in workplaces during lifetime of the Subproject.
Regulation on Health and Safety Precautions Regarding Working with Chemicals	August 12, 2013	28733	• This regulation applies on chemical handling and necessary precautions in workplaces during lifetime of the Subproject.

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Subproject Phases
Regulation on the Methods and Essentials of Occupational Health and Safety Trainings for Workers	May 15, 2013	28648	• This regulation applies on health and safety training to be performed during lifetime of the Subproject.
Regulation on the Protection of Workers from Noise Related Risks	July 28, 2013	28721	• This regulation applies on health and safety measures to be taken against the noise impacts during lifetime of the Subproject.
Regulation on the Protection of Workers from Vibration Related Risks	August 22, 2013	28743	• This regulation applies on health and safety measures to be taken against the vibration impacts during lifetime of the Subproject.
Regulation on Management of Dust	November 5, 2013	28812	• This regulation applies on management of to be generated dust during pre-construction and construction phases.
Regulation on Health and Safety Signs	September 11, 2013	28762	• This regulation applies on health and safety signs to be placed during lifetime of the Subproject.
Regulation on the Occupational Health and Safety for Temporary or Fixed Term Jobs	August 23, 2013	28744	• This regulation applies on health and safety measures to be taken for temporary workers during lifetime of the Subproject.
Regulation on the Occupational Health and Safety in Construction	October 5, 2013	28786	• This regulation applies on constructional health and safety measures to be taken during construction phase.
First Aid Regulation	July 29, 2015	29429	• This regulation applies on in case of a first aid requirement during construction and operation phases.
Regulation on Personal Protection Equipment	May 1, 2019	30761	• This regulation applies on personal protection equipment to be used during construction and operation phases.
Management of Chemicals and Other Dangerous Substances			
Regulation on the Classification, Labelling and Packaging of Materials and Mixtures	December 11, 2013	28848	• This regulation applies on chemicals and mixtures to be used during lifetime of the Subproject.
Regulation on Material Safety Data Sheets on Hazardous Materials and Mixtures	December 13, 2014	29204	• This regulation applies on preparation and distribution of safety data sheets in order to ensure effective control and surveillance against the negative human health and the environment effects of hazardous substances and mixtures that may be used during lifetime of the Subproject.
Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals	June 23, 2017	30105	• This regulation applies on to ensure a high level of protection of human health and the environment during the construction and operation phases, to evaluate the damages of the substances used, to have information on the registration, evaluation, permission and restriction of those chemicals..
Regulation on the Road Transportation of Hazardous Goods	June 18, 2022	31870	• This regulation applies on hazardous goods to be transported during lifetime of the Subproject.
Land Use			

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Subproject Phases
Soil Conservation and Land Use Law No: 5403	July 19, 2005	25880	• This law applies on management of change in the land use during the planning phase of the Subproject.
Regulation on the Protection, Usage and Planning of Agricultural Lands	December 9, 2017	30265	• This regulation applies on management of change in the land use during the planning phase of the Subproject.
Stakeholder Engagement			
Right to Information Law No: 4982	October 24, 2003	25269	• The institutions shall provide the requested information within 15 working days.
Regulation on Environmental Impact Assessment	July 29, 2022	31907	• Inform the investing public, to get their opinions and suggestions regarding the Subproject, Public Participation Meeting. Participants raise issues related to the Subproject. • As the Subproject has EIA exemption, the Public Participation Meeting has not been held.
Others			
Law on Conservation of Cultural and Natural Assets No. 2863	July 21, 1983	18113	• The purpose of this Law is to determine the definitions related to movable and immovable cultural and natural assets that need to be protected, to organize the transactions and activities to be carried out, to determine the establishment and duties of the organization that will take the necessary principles and implementation decisions in this regard.
Regulation on the Implementation of the Law Concerning Private Security Services	October 7, 2004	25606	• This regulation applies on private security services to be used during construction and operation services.
Regulation on Contractors and Sub-contractors	September 27, 2008	27010	• This regulation applies on management of the conditions for the establishment of the principal employer-subcontractor relationship, the notification and registration of the workplace belonging to the subcontractor, the issues that should be included in the subcontractor agreement.
Regulation Concerning the Increase in the Efficiencies of Energy Consumption and Energy Resources	October 27, 2011	28097	• This regulation applies on the procedures and principles regarding the effective use of energy, prevention of energy waste, and increasing efficiency in the use of energy resources and energy to protect the environment during lifetime of the Subproject.
Protection of Personal Data Law No: 6698	April 7, 2016	29677	• This law applies on protection of fundamental rights and freedoms of individuals, especially the privacy of private life, in the processing of personal data during lifetime of the Subproject.
Regulation Concerning the Ozone Depleting Substances	April 7, 2017	30031	• This regulation applies on ozone depleting substances to be used during construction and operation phases.

*Relevant amendments of the listed legislation will be applicable.

B.2. International Agreements and Standards

International financial institutions follow certain policies and procedures regarding assessment and management of environmental and social impacts/risks of the Subproject s to be financed. As a requirement of international support for the Subproject, environmental and social impact assessment studies shall be undertaken to guarantee that the Subproject's design, construction and operation will be satisfactory for international environmental standards alongside national legislation.

B.2.1. International Environmental Conventions that Türkiye is a Contracting Party

Türkiye's national policy on the protection of cultural heritage, conservation of biological resources, and environmental sustainability is based on international agreements that Türkiye has ratified or acceded to through national laws and regulations. These agreements establish a framework for the protection of natural habitats, biodiversity, wildlife, water resources, and cultural heritage, which are relevant to the implementation of the bridge rehabilitation Subproject.

The following international conventions and agreements, to which Türkiye is a contracting party, are particularly relevant to the Subproject:

- Convention on the Protection of the World Cultural and Natural Heritage (Paris Convention, 1975): Ensures the protection of cultural and natural heritage sites, which may be relevant if the Subproject area includes or is near protected heritage areas.
- Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution (1976) and its protocols: Relevant if the Subproject is located near or impacts coastal or marine environments.
- Bern Convention on the Conservation of European Wildlife and Natural Habitats (1982): Provides protection for biodiversity, including species and habitats that could be affected by the construction activities.
- Ramsar Convention on Wetlands of International Importance (1994): Ensures the protection of wetlands, which is significant if the bridge rehabilitation activities impact rivers, floodplains, or wetlands.
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (1994): Addresses the proper management of hazardous waste that may arise from construction and demolition activities.
- Convention on Biological Diversity (Rio Convention, 1992): Promotes the conservation and sustainable use of biodiversity, which is essential if the Subproject area includes sensitive ecosystems.
- Kyoto Protocol (1997) and UN Framework Convention on Climate Change (UNFCCC, 2004): Encourage measures to reduce greenhouse gas emissions, relevant to construction-related emissions from heavy machinery and transportation.
- ILO Conventions on Occupational Health and Safety: Ensure the protection of workers' rights and safe working conditions during the rehabilitation process.

This bridge rehabilitation Subproject will be implemented in compliance with these international agreements, as well as relevant national laws and regulations, to minimize environmental and social impacts while ensuring sustainable infrastructure development.

B.2.2. World Bank Environmental and Social Framework (ESF)

Since the main finance source of the Subproject is WB, the Subproject must be in compliance with the good international practice, including WB ESF, guidelines, and best practices documents alongside the national legislation.

The Subproject is classified as Moderate Risk according to WB's E&S Policy, which states that for moderate risk Subproject s the potential risks and impacts and issues are likely to have the following characteristics: (i) predictable and expected to be temporary and/or reversible, (ii) low in magnitude, (iii) site-specific, without likelihood of impacts beyond the actual footprint of the Subproject and (iv) low probability of serious adverse effects to human health and/or the environment (e.g., do not involve use or disposal of toxic materials, routine safety precautions are expected to be sufficient to prevent accidents, etc.).

Reasons regarding to the risk characterization of the Subproject is given below:

- Renovating an existing bridge causes less environmental damage than a new construction Subproject. However, there are impacts to consider in terms of water ecosystem, air quality and noise pollution.
- Renovating an existing structure instead of building a new bridge creates less environmental and social impacts because it does not require land use change.
- Construction waste, debris and hazardous waste (e.g. paint and solvents) that may occur during construction must be managed appropriately.
- Due to the potential risk of dust, exhaust emissions and pollution of water resources during construction, control measures must be taken.
- Bridge renovation works may cause temporary disruptions to vehicle and pedestrian traffic.
- The use of construction equipment may affect nearby residential areas.

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

B.2.3. Comparison of Turkish EIA Regulation and WB ESSs

Since the main finance source of the Subproject is WB, the Subproject must be in compliance with the good international industry practice, including WB Safeguard Policies, WB Group's EHS guidelines, ESF standards, including its ESSs and best practices documents alongside the national legislation.

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

The Subproject and the social and environmental elements in the Area of Influence (AoI) of the Subproject include elements or activities that are related to the scope of ESS1, ESS2, ESS3, ESS4, ESS6 and ESS10. The main objectives of these standards within the scope of the Subproject are presented below.

- ESS1: Assessment and Management of Environmental and Social Risks and Impacts,
- ESS2: Labour and Working Conditions,
- ESS3: Resource Efficiency and Pollution Prevention and Management,
- ESS4: Community Health and Safety,
- ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources,
- ESS10: Stakeholder Engagement and Information Disclosure.

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

Table 46 The Relevance of WB ESSs with the Project

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

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
	social performance, in ways which recognize and enhance Borrower capacity.	**Organizational Capacity and Competency** World Bank's ESF Where the project involves specifically identified physical elements, aspects and facilities that are likely to generate impacts, the ESMS will establish and maintain an emergency preparedness and response system so that the client, in collaboration with appropriate and relevant third parties, will be prepared to respond to accidental and emergency situations associated with the project in a manner appropriate to prevent and mitigate any harm to people and/or the environment. Turkish EIA Regulation Organisational arrangements and the competency of construction personnel have not been incorporated into the EIA.	Define project environment and social resources (construction, consortium and operational) in terms of organisation and competency with regard to environment and social issues.
		Emergency Preparedness and Response World Bank's ESF Where the project involves specifically identified physical elements, aspects and facilities that are likely to generate impacts, the ESMS will establish and maintain an emergency preparedness and response system so that the client, in collaboration with appropriate and relevant third parties, will be prepared to respond to accidental and emergency situations associated with the project in a manner appropriate to prevent and mitigate any harm to people and/or the environment. This preparation will include the identification of areas where accidents and emergency situations may occur, communities and individuals that may be impacted, response procedures, provision of equipment and	Prepare and implement an emergency response plan for both construction and operational phases.

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

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
		Although EIA is more limited in scope, it requires some environmental and social management plans. There is also a monitoring plan that indicates whether the environmental impacts of the project (in terms of air, water quality, noise and vibration) will comply with the Turkish Environmental Law and relevant legislation.	
		External Communications and Grievance Mechanisms <u>World Bank's ESF</u> The project owner should implement and maintain a procedure for external communications that includes methods to (i) receive and register external communications from the public; (ii) screen and assess the issues raised and determine how to address them; (iii) provide, track, and document responses, if any; and (iv) adjust the management program, as appropriate. In addition, clients are encouraged to make publicly available periodic reports on their environmental and social sustainability. Where there are Affected Communities, the client will establish a grievance mechanism to receive and facilitate resolution of Affected Communities' concerns and grievances about the client's environmental and social performance. The grievance mechanism should be scaled to the risks and adverse impacts of the project and have Affected Communities as its primary user. It should seek to resolve concerns promptly, using an understandable and transparent consultative process that is culturally appropriate and readily accessible, and at no cost and without retribution to the party that originated the issue or concern. The mechanism should not impede access to judicial or administrative remedies. The client will inform the Affected Communities about the mechanism in the course of the stakeholder engagement process.	A communications plan and procedure (including identification of Affected Communities) should be prepared that describe mechanisms for external communications on environment and social topics. The plan should define how grievances and concerns can be made to the project and how these will be investigated, responded to and rectified, if appropriate.

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
		Turkish EIA Regulation Stakeholder Engagement Plan: It is explained in EIA Regulation as a plan that explains how, what methods and tools will be used to communicate and inform legal/real persons (stakeholders) who may be affected by the project or have an interest in the project, at all stages of the planned project. Regulation does not address the issues of internal, external communication and grievance mechanism.	
		On-going Reporting to Affected Communities World Bank's ESF The project owner should provide periodic reports to the Affected Communities that describe progress with implementation of the project Action Plans on issues that involve on-going risk to or impacts on Affected Communities and on issues that the consultation process or grievance mechanism have identified as a concern to those Communities. If the management program results in material changes in or additions to the mitigation measures or actions described in the Action Plans on issues of concern to the Affected Communities, the updated relevant mitigation measures or actions will be communicated to them. The frequency of these reports will be proportionate to the concerns of Affected Communities but not less than annually. Turkish EIA Regulation The EIA does not define Affected Communities and therefore there is no definition of communication and reporting.	Reporting to Affected Communities should be included within the Communication Plan and Procedure.
ESS2 Labor and	ESS2 recognizes the importance of employment creation and income generation in the pursuit of	World Bank's ESF ESS2 requirements include the documentation and implementation of	Prepare a Human Resources Policy. Prepare a project handbook that covers

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
Working Conditions	poverty reduction and inclusive economic growth. Borrowers can promote sound worker management relationships and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working conditions. The objectives of ESS2 are as follows: • To promote safety and health at work. • To promote the fair treatment, non-discrimination, and equal opportunity of project workers. • To protect project workers, including vulnerable workers such as women, persons with disabilities, children (of working age, in accordance with this ESS) and migrant workers, contracted workers, community workers, and primary supply workers, as appropriate. • To prevent the use of all forms of forced labor and child labor. • To support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law. • To provide project workers with accessible means to raise workplace concerns.	workforce management procedures applicable to the project. These procedures will specify how project workers will be managed in accordance with the requirements of internal law and this ESS and explain the following; (i) working conditions and management of worker relationship including terms and conditions of employment, non-discrimination and equal opportunities, worker's organizations, (such as the preparation and implementation of workforce management procedures applicable to the project); (ii) protection of the workforce, including the establishment of a minimum age for workers and the prohibition of child labor and forced labor; (iii) grievance mechanism (for workers); (iv) occupational health and safety (OHS) ; (v) contracted workers; (vi) community workers and (vii) primary supply workers. The Borrower will develop and implement written labor management procedures applicable to the project. These procedures will set out the way in which project workers will be managed, in accordance with the requirements of national law and this ESS. The project owner should adopt and implement human resources policies and procedures appropriate to its size and workforce that set out its approach to managing workers consistent with the requirements of this Performance Standard and national law The project owner should establish a mechanism to maintain, and improve the worker-management relationship and should also promote compliance with national employment and labour laws. The project owner should establish a mechanism to protect workers, including vulnerable categories of workers such as children, migrant workers, forced labour, workers engaged by third parties, and workers in the client's supply chain while it should also provide a tool to promote safe and healthy working conditions, and the health of workers. In countries where national law recognizes workers' rights to form and to join	working conditions and employment arrangements. Prepare an Equality and Diversity Programme that defines protection of employees, contractors and suppliers. Establish a mechanism to protect workers. Provide a Grievance Mechanism.

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
		workers' organizations of their choosing without interference and to bargain collectively, the client will comply with national law. Where national law substantially restricts workers' organizations, the client will not restrict workers from developing alternative mechanisms to express their grievances and protect their rights regarding working conditions and terms of employment. The client should not seek to influence or control these mechanisms. The client will provide a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns. The client will inform the workers of the grievance mechanism at the time of recruitment and make it easily accessible to them. The mechanism should involve an appropriate level of management and address concerns promptly, using an understandable and transparent process that provides timely feedback to those concerned, without any retribution. The mechanism should also allow for anonymous complaints to be raised and addressed. The mechanism should not impede access to other judicial or administrative remedies that might be available under the law or through existing arbitration procedures, or substitute for grievance mechanisms provided through collective agreements. <u>Turkish EIA Regulation</u> There is no Human Resources (HR) Policy for the project. There are warnings about how the workers should prevent any harmful effects that may arise during construction and operation phases. However, detailed working conditions or terms of employment are not mentioned in the EIA report The EIA does not address worker employment and therefore, there is no documented or formal policy of non-discrimination, equal opportunity and fair treatment in the EIA.	
ESS3	ESS3 recognizes that economic activity and	<u>World Bank's ESF</u>	Prepare an evaluation of potential

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
Resource Efficiency and Pollution Prevention and Management	urbanization often generate pollution to air, water, and land, and consume finite resources that may threaten people, ecosystem services, and the environment at the local, regional, and global levels. The current and projected atmospheric concentration of greenhouse gases (GHG) threatens the welfare of current and future generations. At the same time, more efficient and effective resource use, pollution prevention, and GHG emission avoidance, and mitigation technologies and practices have become more accessible and achievable. This ESS sets out the requirements to address resource efficiency and pollution prevention and management throughout the project life cycle consistent with Good International Industry Practice (GIIP). The objectives of ESS3 are as follows: • To promote the sustainable use of resources, including energy, water, and raw materials. • To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities. • To avoid or minimize project-related emissions of short- and long-lived climate pollutants. • To avoid or minimize generation of hazardous	The project owner should implement technically and financially feasible and cost effective measures for improving efficiency in its consumption of energy, water, as well as other resources and material inputs, with a focus on areas that are considered core business activities. Such measures will integrate the principles of cleaner production into product design and production processes with the objective of conserving raw materials, energy, and water. Where benchmarking data are available, the client will make a comparison to establish the relative level of efficiency. The project owner should avoid the release of pollutants or, when avoidance is not feasible, minimize and/or control the intensity and mass flow of their release. This applies to the release of pollutants to air (including GHG emissions), water, and land due to routine, non-routine, and accidental circumstances with the potential for local, regional, and transboundary impacts. Where historical pollution such as land or ground water contamination exists, the project should seek to determine whether it is responsible for mitigation measures. It is also important to address potential adverse project impacts on existing ambient conditions, the client will consider relevant factors, including, for example (i) existing ambient conditions; (ii) the finite assimilative capacity of the environment; (iii) existing and future land use; (iv) the project's proximity to areas of importance to biodiversity; and (v) the potential for cumulative impacts with uncertain and/or irreversible consequences. In addition to applying resource efficiency and pollution control measures as required in this Performance Standard, when the project has the potential to constitute a significant source of emissions in an already degraded area, the project should consider additional strategies and adopt measures that avoid or reduce negative effects. These strategies include, but are not limited to, evaluation of project location alternatives and emissions offsets. <u>Turkish EIA Regulation</u>	resource efficiency during construction and operation. Define potential impacts and develop approaches for avoidance, minimisation and use of alternative materials in order to reduce the project impact on natural and scarce resources. Baseline information must be captured for topics such as potential contaminated land and environmental impacts associated with the soil movement required by the earthworks. All assessments should address current conditions and potential future impacts of project construction and operation

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
	and nonhazardous waste.	The EIA does not address resource consumption and resource efficiency measures. Baseline information is provided in the EIA on air emissions, wastewater, solid wastes, hazardous wastes and noise. The EIA assessments have focussed on construction phases and have not addressed operational phases for each of these elements. The EIA provides no information regarding the potential contamination of land associated with historical use and does not discuss the environmental and social impacts associated with the volumes of soil movements proposed in the earthworks activities.	
ESS4 Community Health and Safety	ESS4 recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impacts. In addition, communities that are already subjected to impacts from climate change may also experience an acceleration or intensification of impacts due to project activities. ESS4 addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of Borrowers to avoid or minimize such risks and impacts, with particular attention to people who, because of their particular circumstances, may be vulnerable. The objectives of ESS4 are as follows: • To anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project life cycle from	<u>World Bank's ESF</u> WB's ESF: The project should anticipate and avoid adverse impacts on the health and safety of the Affected Community and ensure that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimizes risks to the Affected Communities. ESS4 requirements are as follows: (i) community health and safety, including infrastructure and equipment design and safety, safety of services, traffic and road safety, ecosystem services, community exposure to health issues, management and safety of hazardous materials, and emergency preparedness and response and security; and (ii) security personnel. <u>Turkish EIA Regulation</u> The EIA does not address regarding the environmental and social impacts associated with construction camps and the influx of temporary/migrant labour to support construction activities.	Assess the safety and security risks associated with construction and operation of the bridge on the community and develop a plan to mitigate and manage risks.

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
	both routine and nonroutine circumstances. • To promote quality and safety, and considerations relating to climate change in the design and construction of infrastructure. • To avoid or minimize community exposure to project-related traffic and road safety risks, diseases, and hazardous materials. • To have in place effective measures to address emergency events. • To ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities.		
ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources	ESS6 recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development. Biodiversity is defined as the variability among living organisms from all sources, including inter alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems. The objectives of ESS6 are as follows: • To protect and conserve biodiversity and habitats.	<u>World Bank's ESF</u> The environmental and social assessment as set out in ESS1 will consider direct, indirect, and cumulative project-related impacts on habitats and the biodiversity they support. This assessment will consider threats to biodiversity, for example, habitat loss, degradation and fragmentation, invasive alien species, overexploitation, hydrological changes, nutrient loading, pollution and incidental take, as well as projected climate change impacts. It will determine the significance of biodiversity or habitats based on their vulnerability and irreplaceability at a global, regional, or national level and will also take into account the differing values attached to biodiversity and habitats by project-affected parties and other interested parties. The Borrower will avoid adverse impacts on biodiversity and habitats. When avoidance of adverse impacts is not possible, the Borrower will implement measures to minimize adverse impacts and restore biodiversity in accordance with the mitigation hierarchy provided in ESS1 and with the requirements of this ESS. The Borrower will ensure that	Robust sampling methodologies and plans should be prepared to inform surveys for all identified habitats and species to ensure that robust baseline data is obtained to inform the assessment of potential impacts, mitigation and compensation strategies.

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
	• To apply the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity. • To promote the sustainable management of living natural resources. • To support livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development priorities.	competent biodiversity expertise is utilized to conduct the environmental and social assessment and the verification of the effectiveness and feasibility of mitigation measures. Where significant risks and adverse impacts on biodiversity have been identified, the Borrower will develop and implement a Biodiversity Management Plan. <u>Turkish EIA Regulation</u> The EIA has provided inadequate baseline data regarding project biodiversity and natural habitats and the potential impacts associated with the project during construction and operation. The EIA reports that ecological species and habitat evaluations were undertaken through habitat evaluation and literature review.	
ESS10 Stakeholder Engagement and Information Disclosure	This ESS recognizes the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation. The objectives of ESS10 are as follows: • To establish a systematic approach to stakeholder engagement that will help Borrowers identify stakeholders and build and maintain a constructive relationship with them, in particular project affected parties.	<u>World Bank's ESF</u> Borrowers will engage with stakeholders throughout the project life cycle, commencing such engagement as early as possible in the project development process and in a time frame that enables meaningful consultations with stakeholders on project design. The nature, scope, and frequency of stakeholder engagement will be proportionate to the nature and scale of the project and its potential risks and impactsThe process of stakeholder engagement will involve the following: (i) stakeholder identification and analysis; (ii) planning how the engagement with stakeholders will take place; (iii) disclosure of information; (iv) consultation with stakeholders; (v) addressing and responding to grievances; and (vi) reporting to stakeholders. For all Category A and B subprojects proposed for WB funding, the borrower will consult and consider the views of the project-affected groups and non-governmental organizations regarding the environmental impacts of the subproject during the EA process.	A stakeholder engagement plan should be prepared to address project start up, construction and operation. This should be a two way process of giving and receiving information. It should involve the local, regional and national communities as applicable to the project.

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
	• To assess the level of stakeholder interest and support for the project and to enable stakeholders' views to be taken into account in project design and environmental and social performance. • To promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life cycle on issues that could potentially affect them. • To ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible, and appropriate manner and format. • To provide project-affected parties with accessible and inclusive means to raise issues and grievances, and allow Borrowers to respond to and manage such grievances.	<u>Turkish EIA Regulation</u> The EIA reports that a single, formal, information disclosure exercise has been carried out regarding the project. This occurred at the start of the EIA process. No further information disclosure activities have been undertaken prior to the EIA report being finalized. The EIA does not describe any stakeholder engagement and therefore it is assumed that none has been undertaken. For the projects included in the list of Annex-I, which therefore require the preparation of an EIA Report, the public information and participation meeting, whose place and date is decided by the Provincial Directorate of Environment, Urbanization and Climate Change, is held not later than 10 days prior to the meeting by disclosing it publicly in local and national newspapers. No public information and participation meeting is held for the projects included in the list of Annex-II. <u>Public Information and Participation Meeting:</u> In the Turkish EIA Regulation, public consultation is required for the purpose of "preliminary scope determination" only for projects requiring EIA, and for this purpose, only the environmental assessment must be announced with its justification. However, ESS 10 does not specify how many times and by what method public consultation and public information will be carried out, instead it is requested to adopt a continuous stakeholder participation approach throughout the project life cycle, which will be decided in proportion to the nature, scale and impact size of the project.	

Annex C -Site Photographs

Photo No: 01		
Date: 06.03.2025		
Location: Unkapanı (Atatürk) Bridge		
Details/Notes: Heavy traffic was observed in one direction of the bridge		
Photo No: 02		
Date: 06.03.2025		
Location: Sokullu Mehmet Paşa Mosque		

Details/Notes: The Mosque next to the bridge	
Photo No: 03	
Date: 06.03.2025	
Location: Haliç Shipyard	
Details/Notes: The shipyard wall near the bridge	

Photo No: 04	
Date: 06.03.2025	
Location: Dosthane Café	
Details/Notes: Dosthane Cafe near the bridge	

Annex D – E&S Incident Notification Form Template

1) Incident Details		
Date of Incident: [*Please indicate*]	**Time of Incident:** [*Please indicate*]	
Location of the Incident:	[*Please indicate*]	
Full Name of Sub-borrower:	[*Please indicate*]	
Date Reported to ILBANK: [*Please indicate*]	**Reported to ILBANK by**: [*Please indicate]*	**Notification Type**: [*Please indicate; e-mail/phone call/media notice/other]*
Date Reported to WB: [*Please indicate*]	**Reported to WB by**: [*Please indicate]*	**Notification Type**: [*Please indicate; e-mail/phone call/media notice/other]*
Full Name of the Contractor of the Subproject:	[*Please indicate]*	
Full Name of the Sub-contractor involved in the incident:	[*Please indicate]*	

2) Type of incident (please check all that apply)[31]	
☐ Fatality	☐ Acts of violence/protest
☐ Lost time injury	☐ Unexpected impacts on heritage resources
☐ Displacement without due process	☐ Unexpected impacts on biodiversity resources
☐ Child labor	☐ Environmental pollution incident
☐ Forced labor	☐ Dam failure
☐ Disease outbreaks	☐ Other

3) Description/Narrative of Incident

For example:

I. *What is the incident?* [*Please briefly describe*]

II. *What were the conditions or circumstances under which the incident occurred (if known)?* [*Please briefly describe*]

III. *Are the basic facts of the incident clear and uncontested, or are there conflicting versions? What are those versions?* [*Please briefly describe*]

IV. *Is the incident still ongoing or is it contained?* [*Please briefly describe*]

V. *Have any relevant authorities been informed?* [*Please briefly describe*]

4) Actions taken to contain the incident

Short Description of Action	Responsible Party	Expected Date	Status

[31] See Appendix 2 for definitions.

For incidents involving a Contractor:

Name of Contractor:
Have the works been suspended? Yes ☐ No ☐
Note: Please attach a copy of the instruction suspending the works

5) What support has been provided to affected people

[*Please briefly describe*]

APPENDICES

Appendix 1: Supporting documents

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

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

Appendix 2: Incident Types

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

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

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

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

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

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

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

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

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

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

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

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

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

Annex E – E&S Incident Investigation Form Template

1) Investigation Findings
For example: I. *where and when the incident took place,* II. *who was involved, and how many people/households were affected,* III. *what happened and what conditions and actions influenced the incident,* IV. *what were the expected working procedures and were they followed,* V. *did the organization or arrangement of the work influence the incident,* VI. *were there adequate training/competent persons for the job, and was necessary and suitable equipment available,* VII. *what were the underlying causes; where there any absent risk control measures or any system failures.*

2) Corrective Actions from the investigation to be implemented (to be fully described in Corrective Action Plan)		
Action	**Responsible Party**	**Expected Date**

3a) Fatality/Lost Time Injury Information	
Fatality ☐	**Lost time injury ☐**
Immediate cause of fatality/injury for worker or member of the public (please check all that apply) [32]**:**	
☐ Caught in or between objects	☐ Medical Issue
☐ Struck by falling objects	☐ Suicide
☐ Stepping on, striking against, or struck by objects	☐ Project Vehicle Work Travel
☐ Drowning	☐ Non-project Vehicle Work Travel
☐ Chemical, biochemical, material exposure	☐ Project Vehicle Commuting
☐ Falls, trips, slips	☐ Non-project Vehicle Commuting
☐ Fire & explosion	☐ Vehicle Traffic Accident (Members of Public Only)
☐ Electrocution	☐ Other
☐ Homicide	

Name	**Age/ Date of Birth**	**Nationality**	**Gender**	**Date of Fatality/ Injury**	**Cause of Fatality/ Injury**	**Affected Party (Employee/ Public)**
			☐ Female ☐ Male			☐ Sub-borrower employee ☐ Contractor employee ☐ Sub-contractor employee ☐ Public

[32] See Appendix 1 for definitions

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

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

Name	Compensation Type	Compensation Amount (TRY)	Responsible Party

4) Supplementary Narrative

Appendix 1: Definition of fatality/injury immediate causes

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

Vehicle Traffic
13. Project Vehicle Work Travel: traffic accidents in which project workers, using project vehicles, are involved during working hours and which occur in the course of paid work.
14. Non-project Vehicle Work Travel: traffic accidents in which project workers, using non-project vehicles, are involved during working hours and which occur in the course of paid work.
15. Project Vehicle Commuting: traffic accidents in which project workers, using project vehicles, are involved while travelling to (i) the worker's principal or secondary residence; (ii) the place where the worker usually takes his or her meals; or (iii) the place where he or she usually receives his or her remuneration.
16. Non-project Vehicle Commuting: traffic accidents in which project workers, using non-project vehicles, are involved while travelling to (i) the worker's principal or secondary residence; (ii) the place where the worker usually takes his or her meals; or (iii) the place where he or she usually receives his or her remuneration.
17. Vehicle Traffic Accident (Members of Public Only): traffic accidents in which non-project workers/members of the public are involved in an accident while travelling for any purpose.

Appendix 2: Supporting documents

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

☐ Copy of the social security registration records of the victims and involved persons

☐ Copy of the instruction suspending the works

☐ Statement of victims

☐ Statement of witnesses

☐ Copies of notifications done to the relevant authorities

☐ Copies of legal investigation reports of relevant authorities

☐ Copies of E&S training records of the affected and involved persons

☐ Copies of OHS training records of the affected and involved persons (such as basic OHS training, induction training, visitors training, job-specific training, refreshment training, etc.)

☐ Photographs related to the incident

☐ Health examination records of the affected and involved employees

☐ Copies of Personal Protective Equipment delivery forms (signed copies)

☐ Root Cause Analysis completed for the incident

☐ Information/documentation related to any judicial process

☐ Others

Appendix 3: Corrective Action Plan template

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

Annex F – Chance Finds Procedure

1. INTRODUCTION

This Chance Finds Procedure is a Subproject-specific procedure which will be followed in the Subproject if previously unknown cultural heritage is encountered during Subproject activities.

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

1.1. SCOPE

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

1.2. DEFINITIONS

Chance Find	According to WB ESS8, a chance find is archaeological material encountered unexpectedly during Project/Subproject construction or operation. Most often, chance finds occur during the construction phase of a Project/Subproject. Such finds include, for example, the discovery of a single artifact, an artifact indicating the presence of a buried archaeological site, human remains, fossilized plant or animal remains or animal tracks, or a natural object or soil feature that appears to indicate the presence of archaeological material.
Museum(s)	Istanbul Archaeological Museum Directorate istanbularkeoloji@ktb.gov.tr
Regional Board(s) for the Conservation of Cultural Heritage	Istanbul No. 2 Cultural Heritage Protection Regional Board Directorate istanbulkurul2@ktb.gov.tr istanbul2kurul@hs01.kep.tr Istanbul No. 4 Cultural Heritage Protection Regional Board Directorate istanbulkurul4@ktb.gov.tr istanbul4kurul@hs01.kep.tr

1.3. REFERENCES

- Law on the Conservation of Cultural and Natural Assets (Law No: 2863, 1983)
- Principal Decision No. 658 on Archaeological Sites, Conservation and Utilization Conditions

2. ROLES AND RESPONSIBILITIES

The roles and responsibilities of the Subproject parties associated with the implementation of this Procedure are described in Table 1.

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

Table 1. Roles and Responsibilities associated with Chance Finds Procedure Implementation

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

3. CHANCE FINDS PROCEDURE

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

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

1) All works in the survey area shall cease.

2) Transitional buffer zones shall be established around the chance find area.

3) Site management and the Museum Archaeologist shall be contacted immediately.

4) The chance find site shall be adequately secured by markings, signposts, and banners, etc.

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

Step 2 – Registration

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

2) Completed Chance Find Notification Form Section A s shall be forwarded by the Contractor's management to the Sub-borrower in **24 hours** of the discovery.

Step 3 – Communication with Local Authorities

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

Step 4 – Museum Assessment and Decision

1) The Museum officials evaluate the significance of the discovery and determines the required actions:

a) Site/Chance Find is of **No Significance**:

- The Museum officials declare the site or find as **insignificant.**
- Records are maintained and chance finds procedure is closed.
- No further action is required. Construction activities may resume.

b) Site/Chance Find is **Significant**:

- The Museum officials declare the site or find as **significant**.
- The Museum officials decide on further action and notify the relevant Subproject representative.
- The Subproject representative communicates with the Sub-borrower and relevant Subproject parties to coordinate actions.

Step 5 – Site Survey

1) The Subproject's site workers are notified by relevant Subproject representative regarding the decision and instructions of the relevant Museum Directorate.

2) The Museum officials determine the significance level of the site/chance find following a site survey.

a) Sites/chance finds of **minor** significance:

- The Museum officials declare the site or find as of minor significance.
- The relevant Subproject representative notifies the Contractor's management.
- The Contractor's management notify the Sub-borrower.
- Records are maintained by the relevant Subproject representative and chance finds procedure is closed.
- No further action is required. Construction activities may resume.

b) Sites/chance finds of **moderate** significance:

- The Museum officials declare the site or find as of moderate significance and determine the actions to be implemented.
- The relevant Subproject representative notifies the Contractor's management.
- The Contractor's management notify the Sub-borrower.
- The actions determined by the Museum Directorate are implemented by the Subproject:
    - Subproject management shall provide an archaeological task force under the leadership of the Museum officials. The task force shall be composed of qualified archaeologists as well as other specialists and workers.

    - The actions required by the Museum Directorate such as the test pit, salvage excavation or remote sensory surveys, shall be completed under the instructions and supervision of the Museum officials.
    - Upon completion of the required actions, the team shall report to the Museum Directorate.
    - Museum Directorate forwards the findings of the survey to the relevant Regional Board.
    - The Regional Board shall officially verify the completion actions and notifies the Subproject management accordingly.
- Records are maintained by the relevant Subproject representative and chance finds procedure is closed.
- No further action is required. Construction activities may resume.

c) Sites/chance finds of **high** significance:

- The Museum officials declare the site or find as of high significance and determine the actions to be implemented.
- The relevant Subproject representative notifies the Contractor's management.
- The Contractor's management notify the Sub-borrower.
- The actions determined by the Museum Directorate are implemented by the Subproject:
    - Subproject management shall provide an archaeological task force under the leadership of the Museum officials. The task force shall be composed of qualified archaeologists as well as other specialists and workers.
    - The actions required by the Museum Directorate such as the test pit, salvage excavation or remote sensory surveys, shall be completed under the instructions and supervision of the Museum officials.
    - Upon completion of the required actions, the team shall report to the Museum Directorate.
    - Museum Directorate forwards the findings of the survey to the relevant Regional Board.
    - The Regional Board shall officially verify the completion actions and notifies the Subproject management accordingly.
    - As required, the site shall be registered and placed under protection as per Turkish legislation in accordance with the Law on the Conservation of Cultural and Natural Assets (Law No: 2863, 1983).

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

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

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

4. MONITORING AND REPORTING

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

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

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

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

5. REPORTING TEMPLATES

5.1. CHANCE FINDS NOTIFICATION FORM

<table>
<tr><td colspan="4">PART A
BÖLÜM A</td></tr>
<tr><td colspan="2">Date:
Tarih</td><td colspan="2">Form No:
Form No</td></tr>
<tr><td colspan="2">Sub-borrower:
Alt borçlu</td><td colspan="2">Subproject:
Alt Proje</td></tr>
<tr><td colspan="2">Construction Supervision Consultant:
Müşavir Firma</td><td colspan="2">Contractor:
Yüklenici</td></tr>
<tr><td>Subproject Location
Alt Proje Sahası</td><td>District:
İlçe</td><td colspan="2">Neighborhood/Village:
Mahalle/Köy</td></tr>
<tr><td colspan="4">Name of person reporting chance find:
Şans bulgusunu rapor eden kişinin ismi</td></tr>
<tr><td colspan="4">IMMEDIATE ACTIONS
ACİL ÖNLEMLER</td></tr>
<tr><td colspan="2">Was work stopped in the immediate vicinity of the chance find? Şans bulgusunun tam çevresinde iş durduruldu mu?</td><td>☐ Yes
Evet</td><td>☐ No
Hayır</td></tr>
<tr><td colspan="2">Was a buffer zone created to protect the chance find?
Şans bulguyu korumak için tampon bölge oluşturuldu mu?</td><td>☐ Yes
Evet</td><td>☐ No
Hayır</td></tr>
<tr><td colspan="2">Contractor's management representatives (e.g. Subproject /Site Manager) contacted?
Yüklenici yönetim temsilcileri (ör. Proje/Saha Müdürü) ile irtibata geçildi mi?</td><td>☐ Yes
Evet</td><td>☐ No
Hayır</td></tr>
<tr><td colspan="2">Supervision Consultant's E&S team contacted?
Müşavir firma Ç&S ekibi ile irtibata geçildi mi?</td><td>☐ Yes
Evet</td><td>☐ No
Hayır</td></tr>
<tr><td colspan="2">Sub-borrower contacted?
Alt borçlu ile irtibata geçildi mi?</td><td>☐ Yes
Evet</td><td>☐ No
Hayır</td></tr>
<tr><td colspan="4">CHANCE FIND DETAILS
ŞANS BULGU AYRINTILARI</td></tr>
<tr><td colspan="2">GPS coordinates
GPS koordinatları</td><td colspan="2">Photo record
Fotoğraf kaydı
☐ Yes ☐ No
Evet Hayır

Other records ☐ Yes ☐ No
Diğer kayıtlar Evet Hayır

Specify (drawings, HD quality videos, etc.):
Belirtin (çizimler, HD kalite videolar, vb.)</td></tr>
<tr><td colspan="4">Description of chance find:
Tesadüfi buluntunun tanımı</td></tr>
<tr><td colspan="4">Description of site/finding and other specifications of site/finding: (e.g. surface sediment type, ground surface visibility, distance to closest watercourse, etc.)
Sahanın / bulgunun ve saha/bulgunun diğer özelliklerinin tanımı: (örn. Yüzey sediman türü, yüzey zemin görünürlüğü, en yakın suyoluna olan mesafe, vb.)</td></tr>
</table>

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

5.2. CHANCE FINDS LOG

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

Annex G – Change Notification Form

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

Annex H Socio-Economic Environment

Demography and Population

Istanbul's population growth trend has increased rapidly since the 1990s, especially with intense migration movements in the 2000s, making the city grow quickly. Industrialization, the development of the service sector, and increasing job opportunities have made Istanbul one of Türkiye's most attractive cities. However, after 2010, the population growth rate slowed down, and by 2020, it became stable. After 2022, a slight decline in the population began. This change, as seen in the Figure 38, is a result of demographic trends, economic factors, and social dynamics in Türkiye.

Rising living costs and increasing housing prices, especially after the pandemic, have led white-collar workers to move out of Istanbul as remote work has become more common. In addition, earthquake concerns in the region and the growing job and living opportunities in other cities in Anatolia have accelerated reverse migration from İstanbul to other provinces. Overall, Istanbul's population growth seems to have reached a saturation point.

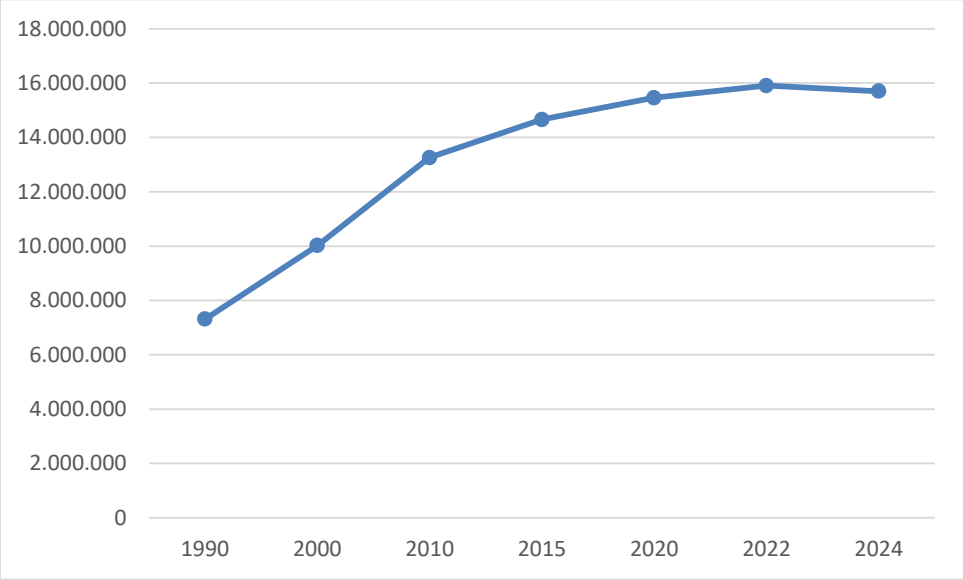

Figure 38 Population of İstanbul Province
Source: *Turkish Statistical Institute (TÜİK). (2025). MEDAS – Address Based Population Registration System (ABPRS) Database. Turkish Statistical Institute.* ***https://biruni.tuik.gov.tr/medas/?kn=95&locale=tr***

Figure 38 shows the population trends of İstanbul's Beyoğlu and Fatih districts. Fatih had a relatively high population in the 1990s but has generally shown a declining trend since the 2000s. Although there was a short-term increase around 2010, the overall trend remains downward. Beyoğlu's population, on the other hand, followed a more stable pattern, showing slight growth until 2010 but experiencing a noticeable decline after 2020. In general, while the population of Beyoğlu and Fatih has been decreasing, İstanbul's overall population continued to grow until 2022 but saw a decline in 2024. Overall, the population decline in these two districts indicates a shift from the central areas of İstanbul to the outer regions.

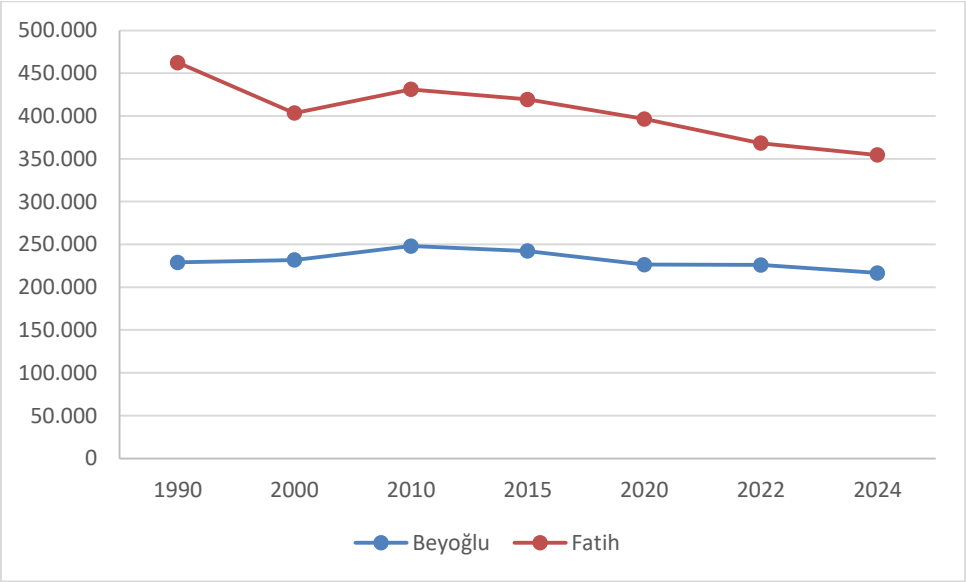

Figure 39 Population of Beyoğlu and Fatih District

Source: ***Turkish Statistical Institute (TÜİK). (2025). MEDAS – Address Based Population Registration System (ABPRS) Database. Turkish Statistical Institute.*** https://biruni.tuik.gov.tr/medas/?kn=95&locale=tr

Figure 39 shows the population distribution by gender for Beyoğlu, Fatih, Istanbul, and Türkiye. In Beyoğlu, the male population share (51.31%) is slightly higher than the female population, whereas in Fatih, the female population (50.3%) is slightly higher than the male population. In Istanbul overall, the male and female population ratios are nearly equal, with females making up 50.19% of the total. At the national level, the gender distribution is almost balanced, with males at 50.02% and females at 49.98%. These figures indicate that the male-female population ratio is generally balanced across Istanbul and Türkiye, although minor variations exist between districts.

Table 47 Population in Subproject Area

Location	Male		Female		Total	
	Population	Share (%)	Population	Share (%)	Population	Share (%)
Beyoğlu	111.183	51,31	105.505	48,69	216.688	100
(Fatih	176.161	49,70	178.311	50,30	354.472	100
Istanbul	7.820.462	49,81	7.881.140	50,19	15.701.602	100
Türkiye	42.853.110	50,02	42.811.834	49,98	85.664.944	100

Source: Turkish Statistical Institute (TÜİK). (2025). MEDAS – Address Based Population Registration System (ABPRS) Database. Turkish Statistical Institute. https://biruni.tuik.gov.tr/medas/?kn=95&locale=tr

Socio-Economic Development Level

The Socio-Economic Development Index (SEDI) studies help in determining the development level of cities, districts, and regions while allowing for comparative benchmarking. According to the Socio-Economic Development Index of Provinces and Regions Study, İstanbul ranks 1st among 81 provinces in Türkiye, positioning it as the most developed province in the country (Ministry of Industry and Technology, 2017). As the financial, cultural, and commercial hub of Türkiye, İstanbul has a strong economy, diverse job opportunities, and well-established infrastructure. However, despite its overall high development status, there are significant differences in socio-economic conditions among its districts.

According to the Socio-Economic Development Index of Districts Study[33], Fatih and Beyoğlu stand out as some of the most developed districts within İstanbul. Both districts are placed within the 1st-degree development level, indicating high economic activity, strong infrastructure, and advanced social services. Fatih, located in the historical peninsula, is an economic and cultural

[33] Ministry of Industry and Technology. (2022). Socio-Economic Development Index of Districts Study (SEGE).

center, home to major tourism attractions, trade hubs, and historical sites. It benefits from a strong commercial structure, but some neighborhoods within the district experience socio-economic disparities due to migration and urban transformation processes.

Similarly, Beyoğlu is a key district in terms of tourism, entertainment, and cultural activities. With landmarks such as Taksim Square, İstiklal Avenue, and Galata, Beyoğlu has a well-established service sector and a vibrant economic environment. Despite being classified as a highly developed district, certain neighborhoods within Beyoğlu face challenges related to urban renewal, housing quality, and income inequality.

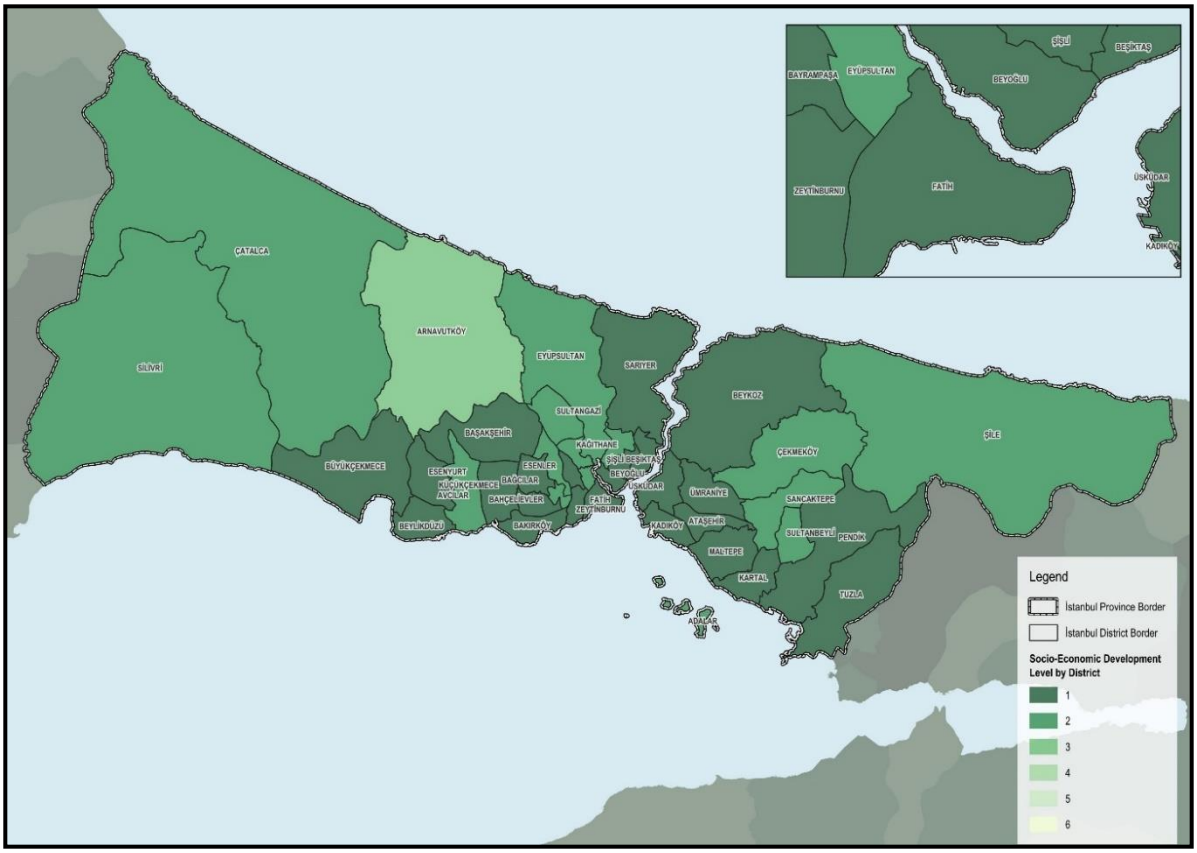

Figure 40 Socio-Economic Development Level of İstanbul Province by District (2022)
Source: *Ministry of Industry and Technology. (2022). Socio-Economic Development Index of Districts Study (SEGE).*

Figure 41 and Figure 42 showing the socio-economic structure of İstanbul reveals the differences in income distribution and living standards in the city. The central districts such as Beşiktaş, Şişli, and Sarıyer on the European Side are marked in pink and stand out as areas with high socio-economic status. On the Anatolian Side, districts such as Kadıköy and Üsküdar stand out as areas with similarly high-income groups. In contrast, districts with less dense construction such as Büyükçekmece, Çatalca, and Silivri in the west of the city, and regions such as Pendik, Tuzla, and Şile in the east are shown as areas with lower socio-economic groups.

Figure 41 show that the majority of İstanbul's population belongs to the lower-middle and upper-middle income groups. While the A+ group, people with the highest income level, constitute only 16% of the total population, Group A has a distribution of 29%, Group B 24%, Group C 23%, and Group D 16%.

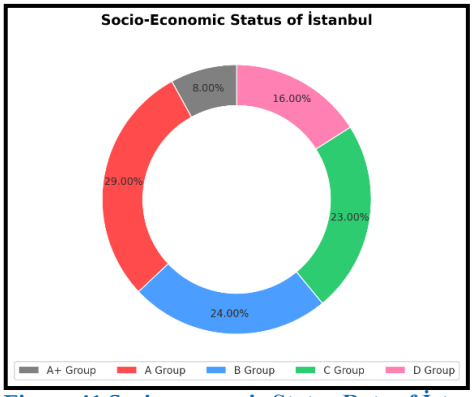

Figure 41 Socio-economic Status Rate of İstanbul

Source: *Endeksa. (2025). İstanbul demografi analizi. https://www.endeksa.com/tr/analiz/turkiye/istanbul/demografi*

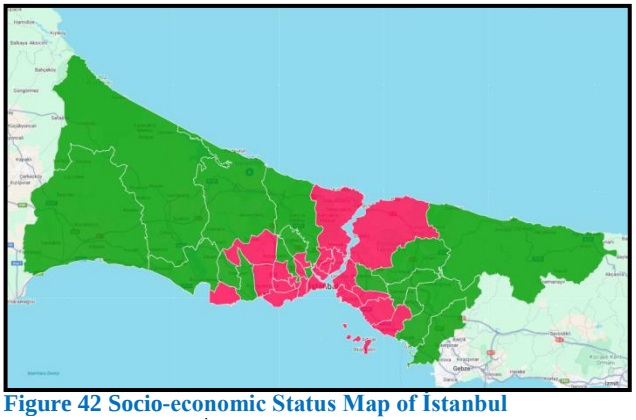

Figure 42 Socio-economic Status Map of İstanbul

Source: *Endeksa. (2025). İstanbul demografi analizi. https://www.endeksa.com/tr/analiz/turkiye/istanbul/demografi*

Land Use, Function of the Area

The Unkapanı (Atatürk) Bridge and its surroundings stand out as a region where mainly trade, service, and transportation functions are concentrated. Figure 42 show that a large part of this area is covered with commercial areas, workplaces, and transportation connections. In this region, where orange and red tones are dominant, residential use is quite limited. In addition, the region is connected to many main arteries and has a high-density traffic flow. This shows that the region is quite active in terms of both pedestrian and vehicle traffic during the day. As workplaces close towards evening hours, human mobility decreases significantly.

Considering the commercial density of the region, bridge reinforcement works may disrupt the activities of businesses in the region during the day. Customer access may be restricted, disruptions may occur in logistics processes and traffic congestion may increase.
On the other hand, since residential use is quite limited, it can be said that the night population in the region is low. This shows that the work to be carried out in the evening and night hours will affect fewer people compared to the daytime. In addition, the creation of alternative routes in terms of transportation will be a critical measure to reduce traffic congestion. Protecting the accessibility of public spaces and social facilities is also important for the social dynamics of the region.

Fatih

Beyoğlu

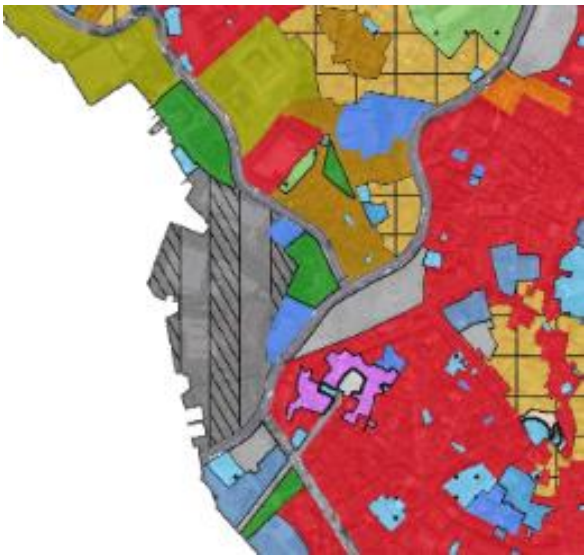

Figure 43 Land Use Map of Fatih and Beyoğlu Districts, 2017

Source: *Istanbul Metropolitan Municipality (IMM). (2017). Districts – Department of Urban Planning. Istanbul Metropolitan Municipality. https://sehirplanlama.ibb.istanbul/ilceler/*

Around the Unkapanı (Atatürk) Bridge, especially on the shores of the Golden Horn, there are fishing shelters and small-scale shipyards. These facilities are an essential part of the maritime activities in the region. Fishing shelters meet the shelter, maintenance, and logistics needs of local fishing boats, while also ensuring the continuity of the fishing culture in the region. Shipyards provide services such as construction, maintenance, and repair of small and medium-sized ships[34]. These shipyards are generally small-scale and are not suitable for large ship departures. Shipyards in the region are mostly concerned with the construction and maintenance of sea vessels such as fishing boats, passenger boats, and small cargo ships.

Transportation and Traffic

The urban fabric surrounding the Unkapanı (Atatürk) Bridge, covering Fatih and Beyoğlu, features a dense, organically developed street network with narrow and winding roads. This unplanned and

[34] İstanbul Şehir Hatları. (2025). Tersane Hizmetleri [Shipyard Services]. İstanbul Şehir Hatları. https://sehirhatlari.istanbul/tr/kurumsal/tersane-hizmetleri-617

historically evolved layout creates a dense and intricate urban structure, primarily designed for pedestrian movement rather than modern vehicular traffic. The presence of numerous historical landmarks, religious buildings, and commercial hubs adds to the area's vibrancy but also restricts vehicle flow. Additionally, key intersections connected to the bridge, such as Şişhane and Unkapanı, serve as major bottlenecks, contributing to persistent traffic congestion and frequent pedestrian-vehicle conflicts.

Due to these factors, the area experiences significant traffic congestion and pedestrian-vehicle conflicts, particularly in commercial and touristic zones. The irregular street structure hampers efficient public transport integration and limits accessibility. Despite high pedestrian activity, vehicular traffic remains essential, straining the limited infrastructure. During partial closures for bridge reinforcement, traffic will inevitably shift to surrounding backstreets, increasing pressure on already inadequate roads. Addressing these issues requires improved traffic management, pedestrianization, and enhanced public transport connectivity.

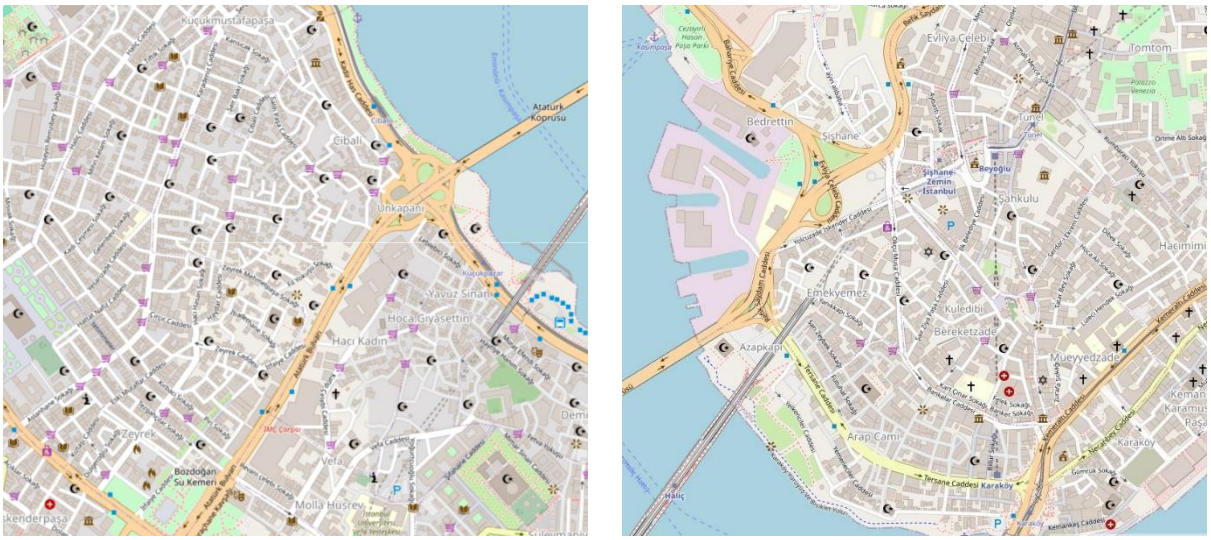

Figure 44 Urban Texture Around Unkapanı (Atatürk) Bridge Fatih and Beyoğlu
Source: *OpenStreetMap contributors. (2025). OpenStreetMap [Map]. OpenStreetMap. https://www.openstreetmap.org/#map=15/41.02126/28.96262.*

The analysis of traffic conditions around Unkapanı (Atatürk) Bridge at 17:30 on a typical Monday evening indicates congestion due to peak-hour traffic. The bridge itself and its entry and exit points experience traffic, as evidenced by the red markings in Figure 44, signifying slow-moving vehicles and bottlenecks. This congestion is likely caused by the high volume of vehicles commuting towards Unkapanı, Şişhane, and Eminönü.

Similarly, major roads such as Adnan Menderes Boulevard, Fevzi Paşa Street, Turgut Özal Millet Street, and the Laleli area exhibit substantial traffic density, likely influenced by the commercial activity in Aksaray, Laleli, and Beyazıt. The Halic Bridge and E-5 connections also display heavy congestion, as these roads serve as critical arteries linking key business districts such as Mecidiyeköy and Zincirlikuyu.

Furthermore, traffic density is evident around Eminönü, Karaköy, and the Galata Bridge, where the combination of bus stations, tram lines, and commercial movement contributes to slow traffic flow. Overall, this traffic map illustrates the severe congestion in Istanbul’s key transport corridors during evening rush hours, particularly at bridge crossings. Given these conditions, alternative transportation methods, such as maritime transit and rail systems, may provide more efficient commuting options.

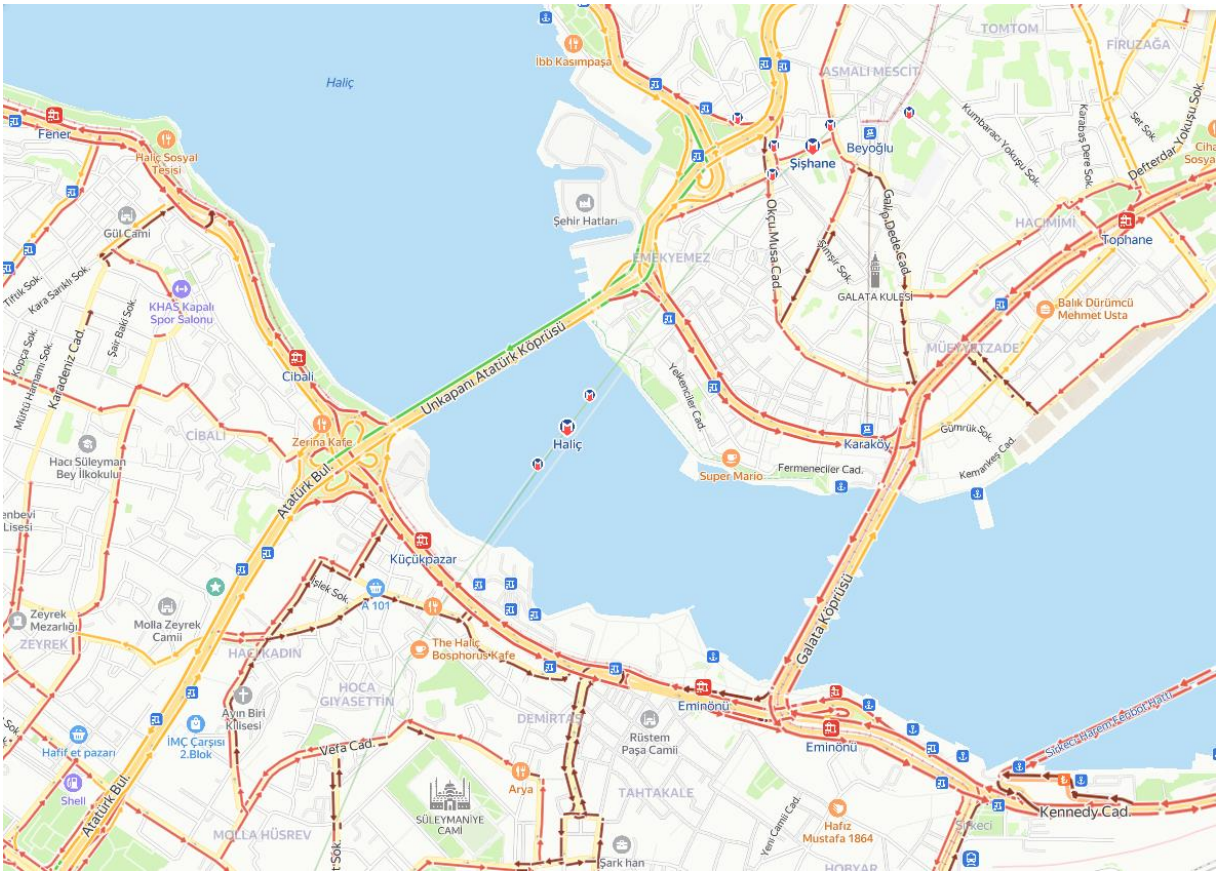

Figure 45 Traffic Map for the Most Congestion Observed Time Period (Monday 17:30)

Source: Yandex. (2025). Istanbul traffic map (Monday, 17:30) [Map]. Yandex Map. https://yandex.com.tr/harita/11508/istanbul/trafik/?ll=28.966508%2C41.022706&trfm=arc&trfst=date%3A1744611424000~time%3A17%2C30&z=15.2

According to Figure 45, the traffic on the Unkapanı (Atatürk) Bridge and its surroundings appears to be more impeded than before. The roads on the bridge are generally green, indicating that the flow of vehicles is comfortable. There is no serious congestion at the Eminönü and Unkapanı exits, so it can be said that this crossing point can be used without any problems for now.

The connections to the coastal road in the direction of Eminönü are generally fluid, but some sections of the roads around the Galata Bridge and Karaköy are yellow. This indicates that the speed may slow down a little at some points where vehicle traffic in the region increases. The roads to the Şişhane and Kasımpaşa directions are also largely green, meaning that there is no problem for drivers moving from the Unkapanı (Atatürk) Bridge in these directions.

In terms of alternative routes, the Haliç Bridge and its surroundings also appear to be quite fluid. Although there are some yellow areas on the E-5 connections for drivers who want to go north, it can be said that there is no congestion in general. The Cibali and Kasımpaşa coastal roads are also green, so it is possible to provide a more comfortable traffic flow by using the coastal roads. In general, the Ataturk Bridge and its surroundings do not currently have any major congestion, and this route can be preferred without any problems.

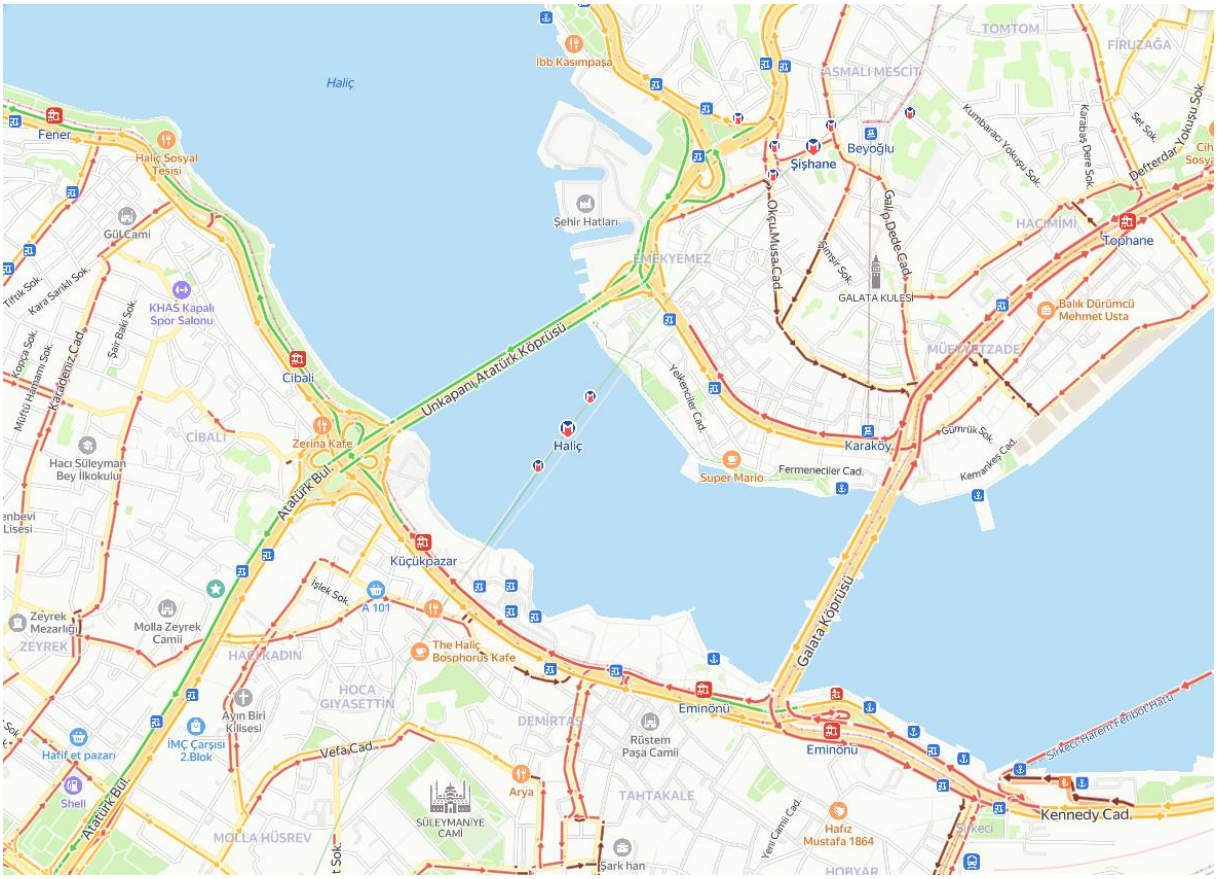

Figure 46 Typical Traffic Map for Wednesday 11:00
Source: *Yandex. (2025). Istanbul traffic map (Wednesday, 11:00) [Map]. Yandex Map. https://yandex.com.tr/harita/11508/istanbul/trafik/?ll=28.966508%2C41.022706&trfm=arc&trfst=date%3A1744870624000~time%3A11%2C0&z=15.2*

The comparison between the typical traffic map and the live traffic map for Wednesday at 11:00 AM reveals notable differences in congestion patterns. While the typical map suggests moderate and predictable traffic, the live map indicates varying intensity across different routes, with some roads experiencing heavier congestion and others being unexpectedly clear.

One of the most significant differences is observed on Unkapanı (Atatürk) Bridge. While the typical map suggests moderate traffic flow at this hour, the live map shows higher congestion levels, particularly in the bridge's Fatih to Beyoğlu direction. This could be due to temporary factors such as increased vehicle density, an accident, or roadwork near the bridge. Additionally, Golden Horn Bridge and the D-100 (E-5) highway exhibit heavier congestion than expected, likely due to mid-morning traffic fluctuations. Similarly, Vatan Street and the Unkapanı-Şişhane connection experience slower movement, possibly due to business-related activity in the area.

Conversely, some areas show lighter traffic than usual. Galata Bridge and Dolmabahçe appear to have better flow compared to the typical trend, suggesting fewer vehicles on these routes. Despite this, Fatih and Eminönü districts still maintain moderate congestion, particularly around commercial hubs and public transport access points.

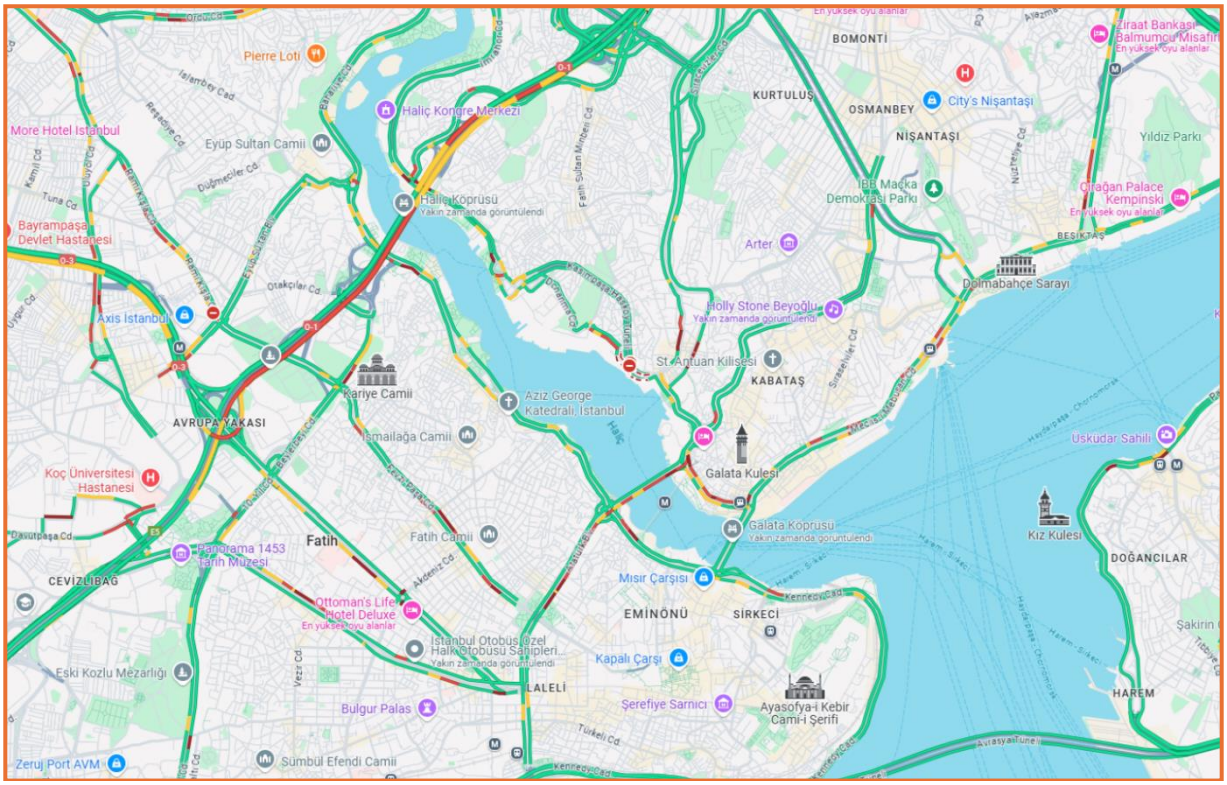

Figure 47 Live Traffic Map for Wednesday 11:00

Source: *Google. (2025). Map view of 41.0213946°N, 28.970204°E [Map]. Google Maps. https://www.google.com.tr/maps/@41.0213946,28.970204,15z/data=!5m2!1e1!1e4?hl=tr&entry=ttu&g_ep=EgoyMDI1MDMxOC4wIKXMDSoASAFQAw%3D%3D*

According to İstanbul Metropolitan Municipality, the directional traffic data of the Atatürk Bridge for the years 2024 and 2025 were examined, and the data for both years were evaluated to include day, hour, and direction information. The 2024 data was collected completely and regularly covering the entire month; it is based on a wide period including daily, hourly, and weekly averages. In contrast, the 2025 data only covered a limited period between the 11th and 21st of March and presented a narrower sample due to data deficiencies. As a result of the comparative analyses, it was evaluated that the data for 2024 was more comprehensive, reliable, and representative, and this data set was taken as the basis for the analyses. It is predicted that even if the traffic density increases in 1 year, the traffic density direction will not change.

Table 48 Unkapanı (Atatürk) Bridge Traffic Data for 2024

2024	Unkapanı - Şişhane	Şişhane - Unkapanı
Daily average vehicle	35,049	34,929
Weekday average vehicle	34,727	35,038
Weekend average vehicle	35,837	34,664
Hourly average vehicle	1,524	1,519
17.00 average vehicle	1,942	2,038
09.00 average vehicle	1,742	1,717
Monday 17.00 average vehicle	1,915	2,105
Wednesday 11.00 average vehicle	1,810	1,952

Source: *Istanbul Metropolitan Municipality. (2025). Traffic Density Data [Data set].*

According to the data measured during August 2024, the daily average vehicle numbers are quite close to each other. While an average of 35,049 vehicles passes from Unkapanı to Şişhane daily, 34,929 vehicles pass from Şişhane to Unkapanı. This shows that the bridge is used in a balanced manner in both directions. The average number of hourly vehicles is around 1,520 in both

directions, and there is no significant difference between the directions. This suggests that traffic density remains constant at a certain level throughout the day.

The increase in density at certain hours of the day is striking. Especially at 17:00 in the evening, the Şişhane-Unkapanı direction is busier with 2,037 vehicles, while the Unkapanı-Şişhane direction is 1,942 vehicles. This situation shows that there are more returns from Şişhane to Unkapanı during the rush hour. At 09:00 in the morning, the transition from Unkapanı to Şişhane is slightly higher with 1,742 vehicles, suggesting that the morning commute is Şişhane.

When detailed hourly data is examined according to the days of the week, the transition from Şişhane to Unkapanı is quite busy with 2,105 vehicles at 17:00 on Monday. This shows that the rush hour traffic is at its highest level on the first working day of the week. On Wednesday at 11:00, the number of vehicles passing from Şişhane to Unkapanı (1,952) is again higher than the number passing from Unkapanı to Şişhane (1,810). This shows that there is a traffic flow from Şişhane to Unkapanı even in the middle of the day.

Disadvantaged or Vulnerable Individuals or Groups

According to WB ESF, social risks and impacts, including risks that Subproject impacts fall disproportionately on individuals or groups who, because of their circumstances, may be disadvantaged or vulnerable should be taken into account.

Disadvantaged or vulnerable refers to those who may be more likely to be adversely affected by the Subproject impacts and/or more limited than others in their ability to take advantage of a Subproject's benefits. Such an individual/group is also more likely to be excluded from/unable to participate fully in the mainstream consultation process and as such may require specific measures and/or assistance to do so. This will take into account considerations relating to age, including the elderly and minors, and including in circumstances where they may be separated from their family, the community or other individuals upon whom they depend (WB ESF)

Within the Subproject, vulnerable or disadvantaged groups may include but are not limited to the following:

- Individuals over 65 years of age living alone;
- Physically or mentally handicapped;
- People who have a chronic illness or are bedridden;
- Women heads of households;
- Poor people who live on state or association aid;
- Persons who are economically dependent on unique natural resources;
- Peasants who do not own land and work daily on other people's land;
- Refugees.

According to the Ministry of Family and Social Services, in Istanbul, the province with the lowest disability rate, the total population is approximately 15 million, and the number of people with disabilities is 370,430. The proportion of the disabled population to the total population is 2.47%.

Additionally, there are a total of 1,210,866 elderly individuals in Istanbul. Among this population, 519,338 are men, and 691,528 are women. The proportion of the elderly population within the total population is determined to be 7.6%. When analyzed by gender, the proportion of elderly men in the total population is 6.5%, while the proportion of elderly women is 8.7%.

According to data obtained from the Istanbul Metropolitan Municipality's open data portal,[35] among the designated direct impact areas, the neighbourhoods of Arap Cami, Bedrettin, Cibali, Emekyemez, and Yavuz Sinan stand out as socioeconomically disadvantaged areas based on the aid data. These neighbourhoods generally fall within D and E levels of Socioeconomic Status (SES), and despite having relatively small populations, they were prioritized in both the 2022 food parcel distributions and the 2024 distribution of shopping cards. For instance, Arap Cami Neighbourhood, with a population of only 122, received 20 food parcels in 2022 and was supported with 17 shopping cards in 2024. Bedrettin Neighbourhood, with a population of 684, received 38 food parcels in 2022 and 35 shopping cards in 2024, drawing attention to the consistency of aid allocation. Cibali Neighbourhood, with a population of 8,097 and a low SES score, received 85 food parcels in 2022 and 81 shopping cards in 2024, making it one of the most supported neighbourhoods.

Emekyemez Neighbourhood, despite having only 171 residents, received 20 food parcels in 2022 and was provided with 16 shopping cards in 2024, reflecting its inclusion in aid programs due to social vulnerability. Similarly, Yavuz Sinan Neighbourhood, with a population of 242, received 32 food parcels in 2021 and was allocated 32 shopping cards in 2024. On the other hand, Sarıdemir Neighbourhood, although defined as a direct impact area, had no recorded population as of 2022 and, therefore, did not receive any aid, as reflected in the distribution records.

In 2022, Beyoğlu Municipality distributed a total of 2,419 food parcels, while Fatih Municipality distributed 3071 food parcels across their respective neighbourhoods. In total, Beyoğlu Municipality distributed 2,294 shopping cards across its neighborhoods in 2024, while Fatih Municipality provided 2,756 shopping cards within the same period.

Table 49 Social Aid Provided by Mukhtars

District	Neighborhood	SES Value	SES Score	2021	2022	2024
Beyoğlu	Arap Cami	D	25	14	20	17
Beyoğlu	Bedrettin	D	25	28	38	35
Beyoğlu	Emekyemez	C	37.5	12	20	16
Beyoğlu	Total			1,758	2,419	2,294
Fatih	Cibali	D	25	63	85	81
Fatih	Sarıdemir	C	37.5	0	0	0
Fatih	Yavuz Sinan	E	12.5	24	32	30
Fatih	Total			2,267	3,071	2,756

Source: *Istanbul Metropolitan Municipality. (2023). Distribution numbers of aid packages by neighborhood headships [Data set]. Open Data Portal. https://data.ibb.gov.tr/dataset/muhtarliklar-yardim-kolisi-dagitim-sayilari*

According to the data obtained from the IMM open data portal[36], IMM provided active and social support Istanbulkart support, i.e. regular cash support, within the scope of the social and economic support program. The support provided was given on a district and neighbourhood basis as the number of households. In 2021, 381 households in the Cibali neighbourhood were provided with assistance, and in 2022 and 2023, 348 and 347 households were provided with assistance. The neighbourhood that received

[35] Istanbul Metropolitan Municipality. (2023). Distribution numbers of aid packages by neighborhood headships [Data set]. Open Data Portal. https://data.ibb.gov.tr/dataset/muhtarliklar-yardim-kolisi-dagitim-sayilari

[36] Istanbul Metropolitan Municipality. (2025). Number of households receiving social aid by neighborhood dataset. https://data.ibb.gov.tr/dataset/mahallelere-gore-sosyal-yardim-alan-hane-sayisi

the most assistance within the impact area is the Cibali neighbourhood. Later, Bedrettin and Yavuz Sinan neighbourhoods were provided with assistance for around 20 households. Although the assistance provided to the Yavuz Sinan neighbourhood is around 20 every year, the assistance provided to the Bedrettin neighbourhood has decreased to 10 households over the years. In 2021, support was provided to 4 and 1 households in Emekyemez and Arap Cami neighbourhoods. The assistance provided to the Emekyemez neighbourhood has decreased to 2 over the years. Arap Cami has not been provided with assistance since 2021. In addition, since no people are living in the Sarıdemir neighbourhood, no assistance was provided.

In 2021, the total number of aids provided in the Beyoğlu district was 5,976 households, and in the Fatih district was 8,395 households. In 2022, the total number of aids provided in Beyoğlu district decreased to 5,626 households. The total aid provided in the Fatih district decreased to 7,301 households. In 2023, the total number of aids provided in Beyoğlu district increased again to 5,775 households. The total aid provided in the Fatih district was 7,546 households.

Table 50 Number of Households Receiving Social Assistance by Neighbourhood

District	Neighborhood	2021	2022	2023
Beyoğlu	Bedrettin	18	10	10
Beyoğlu	Emekyemez	4	2	2
Beyoğlu	Arap Cami	1	0	0
Beyoğlu	Total	5,976	5,626	5,775
Fatih	Cibali	381	348	347
Fatih	Sarıdemir	0	0	0
Fatih	Yavuz Sinan	19	20	19
Fatih	Total	8,395	7,301	7,546

Source: *Istanbul Metropolitan Municipality. (2025). Number of households receiving social aid by neighbourhood dataset. https://data.ibb.gov.tr/dataset/mahallelere-gore-sosyal-yardim-alan-hane-sayisi*

Annex I – The Official Letters

Fatih Belediyesi
Emlak ve İstimlak Müdürlüğü
Sayı: E-31762245-622.03-1445/29226
Tarih: 29.10.2025
Dosya Numarası: 2025-146904

T.C.
FATİH BELEDİYE BAŞKANLIĞI
Emlak ve İstimlak Müdürlüğü

Sayı : E-31762245-622.03-1445/29226 29.10.2025
Konu : Unkapani (Atatürk) Köprüsü |
Unkapanı (Atatürk) Köprüsü

İSTANBUL BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞINA
(Altyapı Projeler Şube Müdürlüğü)

İlgi : 30.09.2025 tarihli E-72583974-604.99-2025.2051029 sayılı yazınız.

İlgi yazınızda Unkapanı (Atatürk) Köprüsü ile ilgili "Unkapanı (Atatürk) Köprüsü Kenar Ayakları Yapısal Analiz Hesaplamaları ile Onarım ve Güçlendirme Uygulama Projelerinin Hazırlanması İşi (2025/01)" proje çalışmalarına başlanılmış olup proje çalışmaları Başkanlığınızca sürdürüldüğü bildirilmiş, söz konusu proje alanında yapılan çalışmalar neticesinde, proje alanının bir kısmının Başkanlığımız mülkiyetindeki 2263 ada 1 parselde kaldığı tespit edilmiş, mülkiyet kullanım izniyle ilgili uygunluk görüşümüzün bildirilmesi istenilmektedir.
İlgi yazınıza istinaden tarafımızca yapılan incelemede mülkiyeti Başkanlığımız adına kayıtlı 2263 ada 1 parsel sayılı taşınmazın proje kapsamında kullanılmasına ilişkin sakınca bulunmamakta olup, bilgilerinize arz ederim.

Mahmut EKŞİ
Belediye Başkanı a.
Belediye Başkan Yardımcısı

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Doğrulama Kodu: 488678EE Doğrulama Adresi: https://www.turkiye.gov.tr/fatih-belediyesi-ebys

Adres: Akşemsettin Mah. Adnan Menderes Vatan Bul. No:54
Posta Kodu: 34096 Fatih / İSTANBUL
Telefon No: (0212) 453 14 53 Fax No:
Kep Adresi: fatihbelediyesi@hs01.kep.tr
Web: https://www.fatih.bel.tr

Bilgi için: Murat HASDEMİR
Mimar Mühendis (Harita Mühendisi)

1/1

Ek-1

T.C.
KÜLTÜR VE TURİZM BAKANLIĞI
İstanbul II Numaralı Kültür Varlıklarını
Koruma Bölge Kurulu

Toplantı Tarihi ve No : 31.07.2025- 751
Karar Tarihi ve No : 31.07.2025- 15944

Toplantı Yeri
İSTANBUL

KARAR

İstanbul ili, Beyoğlu ilçesi, Arapcami ve Camiikebir Mahalleleri, İstanbul 1 Numaralı Kültür ve Tabiat Varlıklarını Koruma Kurulunun 22.03.1995 tarih ve 6482 sayılı kararı ile korunması gerekli tarihi sit olarak tescilline karar verilen, İstanbul 2 Numaralı Kültür ve Tabiat Varlıklarını Koruma Bölge Kurulunun 23.06.2010 tarih ve 3601 sayılı kararı ile Tarihi Sit Alanı sınırının 1/5000 ölçekli Koruma Amaçlı Nazım İmar Planı paftasında işaretlendiği biçimde genişletilerek revize edilmesine karar verilen ve İstanbul II Numaralı Kültür Varlıklarını Koruma Bölge Kurulunun 09.08.2024 tarih ve 14079 sayılı sınırları sayısallaştırılarak güncellenen Tarihi Sit Alanında kalan SK 1, SK 2 ve SK 3 olarak isimlendirilen sondaj noktalarının ve İstanbul I Numaralı Kültür ve Tabiat Varlıklarını Koruma Kurulunun 05.02.1992 tarih ve 3418 sayılı kararında "…ön çalışması Kurulumuzda mevcut Beyoğlu, Galata Tersane Caddesi güneyindeki Karaköy ve Unkapanı köprüleri arasında sınırlar içinde kalan alanın Kültür ve Tabiat Varlıklarını Koruma Kanunu'nun 17.maddesi gereğince sit alanı ilan edilmesine…", İstanbul I Numaralı Kültür ve Tabiat Varlıklarını Koruma Kurulunun 07.07.1993 tarih ve 4720 sayılı kararında ise "…Tersane Caddesinden Karaköy sahiline, kıyıyı izleyerek ve Dolmabahçe Camisini içine alarak …uzanan sınırlar içinde kalan alanın kentsel sit olarak ilan edilmesine..." denilen Beyoğlu Kentsel Sit Alanı ve Bakanlar Kurulunun 20.02.2017 tarih ve 2017/9942 sayılı kararı ile belirlenen Perşembe Pazarı Yenileme Alanı sınırları içerisinde kalan SK 4 ve SK 5 olarak isimlendirilen sondaj noktalarına ilişkin kamu mülkiyetine ait Unkapanı (Atatürk) Köprüsünün kenar ayaklarının deprem bakımından irdelenmesinde bahse konu noktalarda ilgili müze ve KUDEB denetiminde zemin etüdü amaçlı sondaj yapılmasında 2863 sayılı Yasa bakımından sakınca olmadığına ilişkin alınan İstanbul II Numaralı Kültür Varlıklarını Koruma Kurulunun 20.12.2024 tarih ve 14732 sayılı kararı, İstanbul Büyükşehir Belediye Başkanlığının 11.11.2024 tarihli ve 2058578 sayılı yazısı eki paftalarda SK1, SK2, SK3 ve SK4 olarak belirtilen noktalarda yapılan zemin etüdü amaçlı sondaj çalışmaları sırasında "2863 Sayılı Kültür ve Tabiat Varlıklarını Koruma Kanunu" kapsamında herhangi bir kültür varlığına rastlanmadığına dair İstanbul Türk ve İslam Eserleri Müzesi Müdürlüğünün 30.04.2025 tarih ve 6671601 sayılı yazısı, sondaj çalışmalarının tamamlandığını ve Atatürk (Gazi) Köprüsü kenar ayakları ile ilgili hazırlanan projelerin yazı ekinde iletildiğini belirterek söz konusu projelerin 2863 sayılı yasanın 57.maddesine göre değerlendirilmesi hususundaki İstanbul Büyükşehir Belediye Başkanlığı Etüd ve Projeler Dairesi Başkanlığı Altyapı Projeler Şube Müdürlüğünün 07.05.2025 tarih ve 894734 sayılı yazısı, sondaj çalışmaları sırasında herhangi bir tescilli eski esere rastlanılmadığı hususundaki yapı tespit tutanağının iletildiği İstanbul Büyükşehir Belediye Başkanlığı Koruma Uygulama ve Denetim Şube Müdürlüğünün 18.06.2025 tarih ve 1191520 sayılı yazısı, Unkapanı (Atatürk) Köprüsü'ne ilişkin hazırlanan projenin kısmen 07.09.2024 tarih ve 32655 sayılı Resmî Gazete'de yayımlanarak yürürlüğe giren 06.09.2024 tarihli ve 8948 sayılı Cumhurbaşkanı Kararı ile ilan edilen "Marmara Denizi ve Adalar Özel Çevre Koruma Bölgesi" sınırları içerisinde kaldığı görüldüğünden Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğünün görüşleri ile birlikte iletilmesi halinde konunun değerlendirilebileceği hususundaki 09.07.2025 tarih ve 6986197 sayılı yazımız, Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğünün konu hakkındaki görüşlerinin yazı ekinde iletildiği İstanbul Büyükşehir Belediye Başkanlığı Etüd ve Projeler Dairesi Başkanlığı Altyapı Projeler Şube Müdürlüğünün 14.07.2025 tarih ve 1401571 sayılı yazısı ve ekleri, 30.07.2025 tarih ve 3606613 evrak kayıt numaralı uzman raporu okundu, 34.13.7135 numaralı işlem dosyası incelendi, yapılan görüşmeler sonucunda;

ASLI GİBİDİR
Ahmet LATİFOĞLU
Müdür

1/2

31.07.2025/ PD

Ek-1

T.C.
KÜLTÜR VE TURİZM BAKANLIĞI
İstanbul II Numaralı Kültür Varlıklarını
Koruma Bölge Kurulu

Toplantı Tarihi ve No : 31.07.2025- 751
Karar Tarihi ve No : 31.07.2025- 15944

Toplantı Yeri
İSTANBUL

KARAR

İstanbul ili, Beyoğlu ilçesi, Unkapanı (Atatürk) Köprüsü güçlendirme çalışmaları kapsamında Kentsel ve Tarihi Sit Alanı sınırları içerisinde kalan ve İstanbul Büyükşehir Belediye Başkanlığının 11.11.2024 tarihli ve 2058578 sayılı yazısı eki paftalarda SK1, SK2, SK3 ve SK4 olarak belirtilen noktalarda yapılan zemin etüdü amaçlı sondaj çalışmaları sırasında "2863 Sayılı Kültür ve Tabiat Varlıklarını Koruma Kanunu" kapsamında herhangi bir kültür varlığına rastlanılmadığı İstanbul Türk ve İslam Eserleri Müzesi Müdürlüğünün 30.04.2025 tarih ve 6671601 sayılı yazısında ifade edildiğinden Kurulumuzca yapılacak herhangi bir işlem olmadığına, Unkapanı (Atatürk) Köprüsü güçlendirme uygulama projesinin ilgili müze ve KUDEB denetiminde uygulanmasında 2863 sayılı Yasa bakımından sakınca olmadığına, konunun ilgili diğer mevzuatlar açısından ilgili idarelerince değerlendirilmesine; uygulamanın ilgili idaresi denetim ve sorumluluğunda gerçekleştirilerek uygulama sonucuna ilişkin hazırlanacak bilgi ve belgelerin Kurul Müdürlüğüne iletilmesine karar verildi.

BAŞKAN Fatih ELCİL İMZA	ASLI GİBİDİR Ahmet LATİFOĞLU Müdür	**BAŞKAN YARDIMCISI** Deniz DURDU İMZA
ÜYE Burak BÜLBÜL (BULUNMADI)	**ÜYE** Hüseyin KOÇ İMZA	**ÜYE** İlknur Burcu YEŞİLOĞLU İMZA
ÜYE Serdar ŞENOL İMZA	**ÜYE** Şima TOPALOĞLU GÜLER İst. Büyükşehir Bld. Tems. İMZA	**ÜYE** Ahmet AYGÜN Beyoğlu Bld. Tems. İMZA
ÜYE İhsan ERİŞ İst. Vakıflar I. Böl. Md. Tems. İMZA	**ÜYE** Rahmi ASAL İst. Ark. Mz. Md. (BULUNMADI)	**ÜYE** İst. Çev. Şeh. ve İkl. Dğş. İl Md. (BULUNMADI)

31.07.2025/ PD

T.C.
KÜLTÜR VE TUR ZM BAKANLI I
Kültür Varlıkları ve Müzeler Genel Müdürlü ü
stanbul 4 Numaralı Kültür Varlıklarını Koruma Bölge Kurulu Müdürlü ü

2025 AİLE YILI

Sayı : E-57834978-165.02.03-7240773 12.09.2025

Konu : İstanbul İli, Fatih İlçesi, Sarıdemir-Cibali, Kadastral Boşluk ve 2263 ada, 1 parsel hk. (Unkapanı (Atatürk) Köprüsü Kenar Ayakları Tasarım Projeleri) (34.20.4977)

DAĞITIM YERLERİNE

Yukarıda belirtilen konu hakkında alınan İstanbul 4 Numaralı Kültür Varlıklarını Koruma Bölge Kurulu'nun 02.09.2025 tarih ve 15775 sayılı kararı yazımız ekinde iletilmektedir.

Bilgilerinize arz/rica ederim.

Dr. Safa AVCIOĞLU
Koruma Bölge Kurulu Müdür V.

Ek:
1 - Karar (1 Sayfa)
2 - Unkapanı (Atatürk) Köprüsü Kenar Ayak Tasarım Projeleri (3 Pafta)

Dağıtım:

Gereği:
İstanbul Valiliğine
(İl Kültür ve Turizm Müdürlüğü) (Ek-2 konulmadı)
İstanbul Büyükşehir Belediye Başkanlığına
Fatih Belediye Başkanlığına
İstanbul Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğüne

Bilgi:
KÜLTÜR VARLIKLARI VE MÜZELER GENEL MÜDÜRLÜĞÜNE (Kurullar Dairesi Başkanlığı) (Ek-2 konulmadı)
Kültür Varlıkları ve Müzeler Genel Müdürlüğüne
(Kazılar ve Araştırmalar Daire Başkanlığı) (Ek-2 konulmadı)
İSTANBUL TARİHİ ALANLARI ALAN BAŞKANLIĞINA (Ek-2 konulmadı)

2863 ve 2577 Sayılı Kanunlar uyarınca alınan Kurul kararına kar ı ilan veya tebli inden itibaren 60 (Altmı) gün içinde Koruma Yüksek Kuruluna ve/veya Danı tay ve dari Yargıya ba vurulabilir.
Hobyar Mh. Hamidiye Cd. No:5 Kat:6 34112 Fatih/ stanbul
istanbulkurul4@kultur.gov.tr
KEP:istanbul4kurul@hs01.kep.tr
Telefon: (212) 512 09 19 Faks: (212) 528 10 07

Bilgi için:Mutlu Ziya ÇET NBAYİR
Müze Ara tırmacısı
Telefon No:(212) 512 09 19

Ek-1

T.C.
KÜLTÜR VE TURİZM BAKANLIĞI
İstanbul IV Numaralı Kültür Varlıklarını
Koruma Bölge Kurulu

Toplantı Tarihi ve No : 02.09.2025 – 770 Toplantı Yeri
Karar Tarih ve No : 02.09.2025 – 15775 İSTANBUL

KARAR

İstanbul ili, Fatih ilçesi, Cibali ve Sarıdemir Mahallesi, Kamu mülkiyetine ait, Kentsel ve Tarihi Sit Alanı ve Yenileme Alanı sınırları içerisinde yer alan, 1/1000 ölçekli mer-i Koruma Amaçlı Uygulama İmar Planında 3. Derece Koruma Bölgesinde, bir kısmı 1. Derece Taşıt Yolunda, bir kısmı Park Alanında kalan tescilli 2263 ada, 1 parsel sayılı taşınmaz ile kadastral boşlukta kalan alanda, İstanbul IV Numaralı Kültür Varlıklarını Koruma Bölge Kurulu'nun 27.11.2024 tarih ve 14397 sayılı kararı ile izin verilen zemin etüdü amaçlı sondaj çalışmasına dair raporun ve Unkapanı (Atatürk) Köprüsü kenar ayak tasarım projelerinin değerlendirilmesi talep edilen İstanbul Büyükşehir Belediye Başkanlığı'nın 07.05.2025 tarih ve 2025.894734 sayılı yazısı, sondaj çalışmasına ilişkin hazırlanan raporun Müdürlüğümüze ulaşmadığı ve söz konusu raporun iletilmesi hususları ifade edilen İstanbul IV Numaralı Kültür Varlıklarını Koruma Bölge Kurulu Müdürlüğü'nün 28.07.2025 tarih ve 7063239 sayılı yazısı, konuya ilişkin hazırlanan sondaj raporunun iletildiği İstanbul Büyükşehir Belediye Başkanlığı'nın 18.08.2025 tarih ve 2025.1676228 sayılı yazısı, KUDEB raporunun ve fotoğrafların iletildiği İstanbul Büyükşehir Belediye Başkanlığı'nın 29.08.2025 tarih ve 2025.1778486 sayılı yazısı, 26.08.2025 tarih ve 3662418 kayıt sayılı uzman raporu okundu, İstanbul IV Numaralı Kültür Varlıklarını Koruma Bölge Kurulu'nun 27.08.2025 tarih ve 15764 sayılı kararı gereği yerinde ve 34.20.4977 numaralı işlem dosyası eşliğinde incelendi, yapılan görüşmeler sonucunda;

İstanbul ili, Fatih ilçesi, Cibali ve Sarıdemir Mahallesi, 2263 ada, 1 parsel ile kadastral boşlukta kalan alana ilişkin Unkapanı (Atatürk) Köprüsü kenar ayak tasarım projelerinin uygulanmasında 2863 sayılı Yasa kapsamında sakınca olmadığına, uygulamanın ilgili İdareler ve Müze denetiminde yapılmasına karar verildi.

ASLI GİBİDİR
Abdullah SAAF
Müdür V.

BAŞKAN Şevket DÖNMEZ İMZA		**BAŞKAN YARDIMCISI** Talha Bilal SARI İMZA
ÜYE M. Cemalettin SATOĞLU İMZA	**ÜYE** Mustafa KAYA İMZA	**ÜYE** Burak Muhammet GÖKLER İMZA
ÜYE Kevser ÇELTİK ŞAHLAN BULUNMADI	**ÜYE** M. Mustafa TURAL İMZA	**ÜYE** Enes Serdar YALTIR İST.B.Ş.BEL.BŞK.TEM. İMZA
ÜYE Uğur İNAN FATİH BEL.BŞK.TEM. İMZA	**ÜYE** Rahmi ASAL İst. Ark. Müz. Müd. İMZA	**ÜYE** Emel Birgül İNCE İst. Çevre, Şehircilik ve İklim Değişikliği İl Müd. Tems. İMZA

02.09.2025 MZÇ

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

Sayı : E-71280893-220.03-10967943 19.11.2024
Konu : ÇED / Görüş.(İstanbul Büyükşehir Belediye Başkanlığı- Atatürk Köprüsü)

İSTANBUL BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞINA
(Etüd ve Projeler Dairesi Başkanlığı – Altyapı Projeler Şube Müdürlüğü)

İlgi : a) 24.10.2024 tarih ve 10895163 sayı kayıtlı KEP başvuru ile 31.10.2024 tarih ve 10937225 sayı kayıtlı başvuru.
b) 12.11.2024 tarih ve E-20241770 sayılı (Referans No:206479) e-ÇED başvuru.

İstanbul İli, Beyoğlu ile Fatih İlçelerini birbirine bağlayan Haliç geçişi bölgesinde İSTANBUL BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞI tarafından yapılması planlanan "Fatih-Beyoğlu İlçeleri Atatürk Köprüsü Bakım Onarım ve Kenar Ayak Yenileme Projesi" faaliyetinin, faaliyet konusu itibariyle, Çevresel Etki Değerlendirmesi (ÇED) Yönetmeliği kapsamında olup olmadığı konusunun Valiliğimiz İl Çevre, Şehircilik ve İklim Değişikliği Müdürlüğü tarafından değerlendirilmesi istenmektedir.

Müdürlüğümüz teknik elemanlarının dosyasında yaptıkları inceleme sonucunda; söz konusu adreste, İstanbul Büyükşehir Belediye Başkanlığı, Etüd ve Projeler Dairesi Başkanlığı, Altyapı Projeler Şube Müdürlüğü tarafından Fatih-Beyoğlu İlçeleri Atatürk Köprüsü bakım onarım ve kenar ayak yenileme projesinin yapılmasının planlandığı, söz konusu projenin Atatürk Bulvarı güzergahı üzerinde Fatih ve Beyoğlu ilçelerini birbirine bağlayan Haliç geçişi bölgesinde olduğu, Sokullu Mehmet Paşa Cami yapıya 6.8 metre, tarihi çeşmeye ise 10.9 metre uzaklıkta olduğu, bakım, onarım ve kenar ayak yenileme projesi kapsamında; sırasıyla kenar ayak yapılarının üstyapıları ile birlikte yenilenmesi, duba çalışmaları, derz hasar onarımları ve çelik yapı koruması, köprü mekanik açılıp kapanma sistem revizyonları, betonarme tabliye onarımları çalışmalarının yapılacağı, 12.11.2024 tarihinde İl Müdürlüğümüze sunulan taahhütnamede de belirtildiği üzere; İstanbul İli, Beyoğlu ve Fatih İlçeleri, 11.325 m² yüzölçümlü alanda hizmet veren Unkapanı (Atatürk) Köprüsü ile ilgili Başkanlığınızca planlanan proje çalışmalarında; mevcut dubalı köprü sisteminin korunacağını, deniz dolgusunun yapılmayacağını, mevcut kıyı yapısının bozulmayacağını ve deniz içerisinde sondaj yapılmayacağını, köprü üzerinde yer alan yapı elemanlarında onarım yapılacağını, mevcut köprü kenar ayaklarında yürürlükte bulunan Türkiye Köprü Deprem Yönetmeliği'ne göre güçlendirme proje çalışmalarının yapılacağı hususları beyan ve taahhüt edilmiştir.

Bu bağlamda; Fatih-Beyoğlu İlçeleri Atatürk Köprüsü bakım onarım ve kenar ayak yenileme projesi faaliyeti, 29.07.2022 tarih ve 31907 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren ÇED Yönetmeliği'nin Ek-1 ve Ek-2 listelerinde bulunmadığından dolayı, anılan Yönetmelik kapsamı dışında değerlendirilmiştir.

Ancak, bahse konu faaliyet ile ilgili olarak, 2872 sayılı Çevre Kanunu ile 5491 sayılı Çevre Kanununda Değişiklik Yapılmasına Dair Kanuna istinaden çıkarılan Yönetmeliklerin ilgili hükümlerine uyulması ve diğer mer'i mevzuat çerçevesinde öngörülen gerekli izinlerin alınması,

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Web: https://istanbul.csb.gov.tr/ e-posta: istanbul@csb.gov.tr
KEP: istanbulcevreveseh ircilik@hs01.kep.tr
Bilgi için:Birsen ÇAKMAK
Çevre Yüksek Mühendisi

ekolojik dengenin bozulmamasına, çevrenin korunmasına ve geliştirilmesine yönelik tedbirlere riayet edilmesi gerekmektedir. Aksi takdirde 2872 sayılı Çevre Kanunu ve Çevresel Etki Değerlendirmesi (ÇED) Yönetmeliği kapsamında gerekli idari yaptırımların uygulanacağı hususunda;

Bilgilerinizi ve gereğini rica ederim.

Mehmet Sabri KAPLAN
İl Müdürü a.
İl Müdür Yardımcısı

ÇED Şube Müdürlüğü Barbaros Mh. Begonya Sk. No:9A 34746 Ataşehir/İSTANBUL
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KEP: istanbulcevreyesehircilik@hs01.kep.tr
Bilgi için:Birsen ÇAKMAK
Çevre Yüksek Mühendisi

Fatih Belediyesi
Plan ve Proje Müdürlüğü
Sayı: E-60705025-622.03-1999/24732
Tarih: 20.11.2024
Dosya Numarası: 2024-123666

T.C.
FATİH BELEDİYE BAŞKANLIĞI
Plan ve Proje Müdürlüğü

Sayı : E-60705025-622.03-1999/24732 20.11.2024
Konu : Proje Alanı İle İlgili Bilgi

ALTYAPI PROJELER ŞUBE MÜDÜRLÜĞÜNE

İlgi : E-72583974-604.99-2024.1990682 sayı ile 04.11.2024 tarihli yazınız

İlgi yazınızda, Fatih İlçesi, F21C25A3D, F21C25D2A ile F21C25D1B sınırları içerisinde "Unkapanı (Atatürk) Köprüsü Kenar Ayaklarının Gözle Muayenesinin Yapılarak Hasar Tespit Raporu Düzenlenmesi" işi ile ilgili Müdürlüğünüzce proje çalışmaları başlanacağı ve proje çalışmalarınıza altlık oluşturmak amacıyla, 1/1000 ölçekli onaylı barkodlu uygulama imar planının(.ncz formatında) tasdik tarihini belirtir plan notu ve lejantıyla ve varsa söz konusu projeyle ilgili görüşümüzle birlikte tarafınıza iletilmesi istenilmektedir. Konuya ilişkin verileri ekteki linkten indirebilirsiniz.
Gereğini arz ederim.

https://www.filemail.com/d/mssczdlpxopszig

Mehmet ÖZÇELİK
Belediye Başkan Yardımcısı

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Doğrulama Kodu: 965B9911 Doğrulama Adresi: https://www.turkiye.gov.tr/fatih-belediyesi-ebys

Adres: Akşemsettin Mah. Adnan Menderes Vatan Bul. No:54
Posta Kodu: 34096 Fatih / İSTANBUL
Telefon No: (0212) 453 14 53 **Fax No:**
Kep Adresi: fatihbelediyesi@hs01.kep.tr
Web: https://www.fatih.bel.tr

Bilgi için: LEYLA ACAR
Şehir Plancısı

1/1

T.C.
KÜLTÜR VE TURİZM BAKANLIĞI
Kültür Varlıkları ve Müzeler Genel Müdürlüğü
İstanbul 4 Numaralı Kültür Varlıklarını Koruma Bölge Kurulu Müdürlüğü

Sayı :E-57834978-165.02.02-5983807

Konu :İstanbul İli, Fatih İlçesi, Tarihi Unkapanı (Atatürk) Köprüsü Hk.(34.20.4977)

İSTANBUL BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞINA

İlgi : İstanbul Büyükşehir Belediye Başkanlığının 04.11.2024 tarihli ve E-72583974-604.99-2024.1990682 sayılı yazısı.

Beyoğlu İlçesi ve Fatih İlçeleri, F21C25A3D, F21C25D2A, F21C25D1B paftaları sınırları içerisinde kalan, "Unkapanı (Atatürk) Köprüsü Kenar Ayakalarının Gözle Muayenesinin Yapılarak Hasar Tespit Raporu Düzenlenmesi" işi kapsamında, yazınız ekinde iletilen hava fotoğrafında köprü kenar ayaklarına denk gelen alana ilişkin korunması gerekli kültür varlığı kaydının olup olmadığının iletilmesinin talep edildiği ilgi yazınız incelenmiştir.

Unkapanı (Atatürk) Köprüsü kenar ayaklarınının İstanbul ili, Fatih ilçe sınırlarında denk geldiği alana ilişkin Müdürlüğümüz arşivinde yapılan incelemede herhangi bir korunması gerekli kültür varlı kaydına raslanmadığı hususunda gereğini bilgilerinize rica ederim.

Dr. Safa AVCIOĞLU
Koruma Bölge Kurulu Müdür V.

T.C.
KÜLTÜR VE TURİZM BAKANLIĞI
Kültür Varlıkları ve Müzeler Genel Müdürlüğü
İstanbul 2 Numaralı Kültür Varlıklarını Koruma Bölge Kurulu Müdürlüğü

Sayı : E-11367120-165.02.02-5949290
Konu : İstanbul İli, Beyoğlu İlçesi, Unkapanı Atatürk Köprüsü(34.13.7135)

İstanbul Büyükşehir Belediye Başkanlığına
Etüd ve Projeler Dairesi Başkanlığı
Altyapı Projeler Şube Müdürlüğü

İlgi : 04.11.2024 tarihli ve E-72583974-604.99-2024.1990682 sayılı yazınız.

İstanbul İli, Beyoğlu İlçesi, F21C25A3D, F21C25D2A ile F21C25D1B pafta sınırları içerisinde, ekte hava fotoğrafı üzerinde işaretlenen alanda "Unkapanı (Atatürk) Köprüsü Kenar Ayaklarının Gözle Muayenesinin Yapılarak Hasar Tespit Raporu Düzenlenmesi" işi ile ilgili çalışmalara başlanılacağı hususu ilgi yazınız ile belirtilmiş olup alanda korunması gerekli kültür varlığı olup olmadığı ve konuya ilişkin kurum görüşümüz istenilmiştir.

Söz konusu alan İstanbul I Numaralı Kültür ve Tabiat Varlıklarını Koruma Bölge Kurulunun 07.07.1993 tarih ve 4720 sayılı kararıyla belirlenen Beyoğlu Kentsel Sit Alanında kalmakta olup komşuluğunda yer alan 1518 ada, 2 parselde bulunan Sokullu Mehmet Paşa Camii Gayrimenkul Eski Eserler ve Anıtlar Yüksek Kurulunun 17.04.1996 tarih ve 3144 sayılı kararıyla korunması gerekli kültür varlığı olarak tescil edilmiş, 916 ada, 1 parselde bulunan Kapı-Haliç Tersanesi Gayrimenkul Eski Eserler ve Anıtlar Yüksek Kurulunun 25.06.1983 tarih ve 15185 sayılı kararıyla tescil edilmiş, ayrıca 1 parsel içerisinde yer alan Tersane-i Amire Çevre Duvarı, Haliç Tersanesi Kapıüstü Mescidi, Haliç Tersanesi alanında ki Kazıklar, Tersane-i Amire 1-2-3 Nolu Havuzların Duvarları ise 7.04.2017 tarih ve 5332 sayılı, 08.05.2009 tarih ve 2609 sayılı, 21.04.2008 tarih ve 1737 sayılı, 31.07.2009 tarih ve 2803 sayılı Kurul kararları ile korunması gerekli kültür varlığı olarak tescil edilmiştir.

Söz konusu alan, Kentsel Sit Alanında ve tescilli 1518 ada, 2 parselde yer alan Sokullu Mehmet Paşa Camii ile 916 ada, 1 parselde yer alan Kapı-Haliç Tersanesi'nin komşuluğunda bulunduğundan, taşınmazda yapılacak her türlü inşai ve fiziki uygulama öncesinde Koruma Bölge Kurulundan izin alınması gerektiği hususunda gereğini bilgilerinize rica ederim.

Ahmet LATİFOĞLU
Koruma Bölge Kurulu Müdürü

-
Hobyar Mah. Hamidiye Cad. Elkon İşhanı No:5 Kat:5 Sirkeci-Fatih/İSTANBUL
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KEP Adresi : istanbul2kurul@hs01.kep.tr
Bilgi için:Hacer Nur SUBAŞI
Harita Mühendisi

T.C.
İSTANBUL BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞI
Emlak Yönetimi Dairesi Başkanlığı
Emlak Şube Müdürlüğü

Sayı : E-83502474-604.99-2024.2052723 07.11.2024
Konu : Proje Alanı İle İlgili Bilgi

ALTYAPI PROJELER ŞUBE MÜDÜRLÜĞÜNE

İlgi: 04.11.2024 tarih ve 1990682 sayılı yazınız.

İlgi yazınız ile, Beyoğlu ve Fatih İlçelerinde, F21C25A3D, F21C25A2A ve F21C25D1B pafta sınırları içinde kalan ve yazınız ekinde sınırları belirtilen alanda 'Unkapanı (Atatürk) Köprüsü Kenar Ayaklarının Gözle Muayenesinin Yapılarak Hasar Tespit Raporunun Düzenlenmesi' işi ile ilgili çalışmalara başlanacağı belirtilmekte olup, söz konusu alana ait tahsis, kira ve ecrimisil bilgilerinin tarafınıza iletilmesi talep edilmektedir.

Müdürlüğümüz arşivinde yapılan inceleme neticesinde, söz konusu alanda herhangi bir tahsis, kira ve ecrimisil dosyası bulunmamaktadır.

Bilgilerinize arz ederim.

Oktay ERDÖNMEZ
Şube Müdürü

Osmaniye Mahallesi Çobançeşme Koşuyolu Bulvarı No: 5 Bakırköy İstanbul
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T.C.
İSTANBUL BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞI
Etüd ve Projeler Dairesi Başkanlığı
Kentsel Tasarım Şube Müdürlüğü

Sayı : E-48282894-604.99-2024.2053818 07.11.2024
Konu : Proje Alanı İle İlgili Bilgi

ALTYAPI PROJELER ŞUBE MÜDÜRLÜĞÜNE

İlgi : 04.11.2024 tarihli ve E-72583974-604.99-2024.1990682 sayılı yazınız.

İlgi yazıda, Beyoğlu ve Fatih ilçesi, F21C25A3D, F21C25D2A ile F21C25D1B pafta sınırları içerisinde kalan, ekte hava fotoğrafı üzerinde işaretlenen alanda "Unkapanı (Atatürk) Köprüsü Kenar Ayaklarının Gözle Muayenesinin Yapılarak Hasar Tespit Raporu Düzenlenmesi" işi ile ilgili çalışmalara başlanacağı belirtilerek, çalışmalara altlık oluşturmak amacıyla, söz konusu alan ve yakın çevresinde mevcut ve planlanan projeler ile konuya ilişkin kurum görüşümüz istenmektedir.

Söz konusu alanda Müdürlüğümüzce yapılan bir çalışma bulunmamaktadır.

Bilgilerinize arz ederim.

Bayram TAŞKIN
Şube Müdürü

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T.C.
İSTANBUL BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞI
Park ve Bahçeler Dairesi Başkanlığı
Avrupa Yakası Park ve Bahçeler Şube Müdürlüğü

Sayı : E-29609873-604.99-2024.2068880 22.11.2024
Konu : Kurum Görüşü

ALTYAPI PROJELER ŞUBE MÜDÜRLÜĞÜNE

İlgi : 30.09.2024 tarihli ve E-72583974-604.99-2024.1754697 sayılı yazınız.

İlgi yazıda; Beyoğlu ve Fatih İlçeleri, F21C25A3D, F21C25D2A ile F21C25D1B pafta sınırları içerisinde kalan, ekte hava fotoğrafı üzerinde işaretlenen alanda "Unkapanı (Atatürk) Köprüsü Kenar Ayaklarının Gözle Muayenesinin Yapılarak Hasar Tespit Raporu Düzenlenmesi" işi ile ilgili çalışmalara başlanılacaktır. Söz konusu projeyle ilgili görüşümüzü tarafınıza iletilmesi talep edilmektedir.

Söz konusu alanda, ek hava fotoğrafında işaretli yeşil alanın bakım ve onarımı Müdürlüğümüz tarafından yapılmaktadır. Bahse konu alanda planlanan çalışmaların müdürlüğümüzle koordineli olarak yürütülmesi, İSG önlemlerinin tarafınızca alınması, çalışmanın İSG kurallarına uygun şekilde sürdürülmesi ve iş bitiminde alanın yenilenerek eski haline getirilmesi kaydıyla talebiniz uygun görülmüş olup, alanda mevcut veya planlanan herhangi bir projemiz bulunmamaktadır. Söz konusu alanda tarafınızca yapılacak olan çalışmalar esnasında teknik personel ile irtibata geçerek koordineli çalışılması hususunda;

Bilgilerini ve gereğini arz ederim.

İrtibat : İbrahim ÇETİN
0541 430 04 39

Ziya DUMAN
Şube Müdürü

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Belge Doğrulama Kodu : 3cc1556d-1d7c-468b-8b90-8294ea0a6aa5 Belge Doğrulama Adresi : https://www.turkiye.gov.tr/ibb-ebys

Hacı Ahmet Mahallesi Muhsin Yazıcıoğlu Cad. No:1 Kasımpaşa/ İst.
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Kep Adresi: ibb@hs01.kep.tr
Bilgi için:Salih ŞİŞMAN
Şef
Telefon No:

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İSTANBUL BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞI
Yol Bakım ve Altyapı Koordinasyon Dairesi Başkanlığı
Avrupa Yakası Yol Bakım ve Onarım Şube Müdürlüğü

Sayı : E-40268941-160.99-2024.2089542 14.11.2024
Konu : Proje Alanı Çalışma Bilgisi

ALTYAPI PROJELER ŞUBE MÜDÜRLÜĞÜNE

İlgi : 04.11.2024 tarih ve 2024.1990682 sayılı yazınız.

İlgi yazıda, Beyoğlu ve Fatih İlçeleri F21C25A3D, F21C25D2A ile F21C25D1B pafta sınırları içerisinde kalan yazı eki hava fotoğrafı üzerinde işaretlenen alanda "Unkapanı (Atatürk) Köprüsü Kenar Ayaklarının Gözle Muayenesinin Yapılarak Hasar Tespit Raporu Düzenlenmesi" proje çalışmalarına başlanacağı belirtilerek, anılan alan ve yakın çevresinde mevcut veya planlanan herhangi bir çalışmamızın olup olmadığı hususunda bilgi verilmesi talep edilmektedir.

Söz konusu yerde ve yakın çevresinde tarafımızca yapılan mevcut veya planlanan herhangi bir çalışmamız bulunmamaktadır.

Bilgilerinize arz ederim.

Murat ER
Şube Müdürü

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Mühendis
Telefon No: 2124537335

T.C.
İSTANBUL BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞI
Ulaşım Dairesi Başkanlığı
Trafik Şube Müdürlüğü

Sayı : E-49660458-604.99-2024.2198393 28.11.2024
Konu : Mevcut ve Planlanan Sistemler

ALTYAPI PROJELER ŞUBE MÜDÜRLÜĞÜNE

İlgi : 04.11.2024 tarihli ve E-72583974-604.99-2024.1990682 sayılı yazınız.

İlgi yazıda, Beyoğlu ve Fatih İlçeleri, F21C25A3D, F21C25D2A ile F21C25D1B pafta sınırları içerisinde kalan, ekte hava fotoğrafı üzerinde işaretlenen alanda "Unkapanı (Atatürk) Köprüsü Kenar Ayaklarının Gözle Muayenesinin Yapılarak Hasar Tespit Raporu Düzenlenmesi" işi ile ilgili çalışmalara başlanılacağı belirtilmekte olup, proje çalışmalarınıza altlık oluşturmak amacıyla, söz konusu alan ve yakın çevresinde bulunan trafik yönetim altyapısı (sinyalizasyon, trafik kameraları altyapısı vb.) sayısal ortamda tarafınıza iletilmesi talep edilmektedir.

Proje kapsamında, 8 adet Standart Trafik Levhası, 1 noktada 192 numaralı Dedektör, 1 noktada 50016 - (5014) Unkapanı OHT Çıkış EDS, 1 noktada 400 numaralı Kamera Sistemi, 2 noktada 1126, 2347 numaralı Sinyalizasyon Sistemi bulunmaktadır.

Söz konusu proje kapsamına dâhil edilmesi, mevcut sistem ve levhalar için yer ayrılması, uygulama öncesinde ve esnasında aşağıda belirtilen Müdürlüğümüz personelinin bilgilendirilmesi hususunu arz ederim.

Nezaretçi Personel Bilgileri:

Osman DANIŞMAN	Elektronik Denetleme Sistemleri	0530 2015343	0212 4499269	osman.danisman@ibb.gov.tr dl.edskontrolmerkezi@ibb.gov.tr
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Onur EROL	Avrupa Yakası Sinyalizasyon	0533 5114544	0212 4494977	onur.erol@ibb.gov.tr avrupasinyalizasyon@ibb.gov.tr
Mikdat ÇAKMAK	Avrupa Yakası Levha Birimi	0536 2956340	0212 4499080	mikdat.cakmak@ibb.gov.tr avrupaduseytrafik@ibb.gov.tr

Serap ÇETİNKAYA
Şube Müdürü

Ek: Mevcut ve Planlanan Sistem Altyapı Projeleri (1 Adet)

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Kep Adresi: ibb@hs01.kep.tr
Bilgi için:Mustafa Sait KAVRAZLI
Raportör
Telefon No: 2124499377

BOTAŞ

T.C.
ENERJİ VE TABİİ KAYNAKLAR BAKANLIĞI
Boru Hatları ile Petrol Taşıma A.Ş.
Doğal Gaz İletim II. Bölge Müdürlüğü

Sayı : 68977056-405.03.03-E.3017456/42672 21/11/2024
Konu : Alt Yapı / Üst Yapı Geçişleri (Yol, Su, Elektrik,vb.)

İSTANBUL BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞI
(Etüd ve Projeler Daire Başkanlığı-Alt Yapı Şube Müdürlüğü)
HACIAHMET MAH. MUHSİN YAZICIOĞLU CAD. NO:1 KASIMPAŞA- BEYOĞLU / İSTANBUL

İlgi : 04/11/2024 Tarih ve E-72583974-604.99-2024.1990682 Sayılı Yazı

İlgi yazıda; Beyoğlu ve Fatih İlçeleri, F21C25A3D, F21C25D2A ile F21C25D1B pafta sınırları içerisinde kalan, ekte hava fotoğrafı üzerinde işaretlenen alanda "Unkapanı (Atatürk) Köprüsü Kenar Ayaklarının Gözle Muayenesinin Yapılarak Hasar Tespit Raporu Düzenlenmesi" işi ile ilgili çalışmalara başlanılacağı belirtilmektedir.

Söz konusu çalışma alanında Kuruluşumuza ait boru hatları bulunmamaktadır.

Gereğini bilgilerinize arz ederiz.

[E-İmzalı]
Özkan SAMUK
Doğal Gaz İletim II. Bölge Müdür Yardımcısı

[E-İmzalı]
Selami BULUT
Doğal Gaz İletim II. Bölge Müdürü

Adres	: Ramazanoğlu Mah. Kaynarca Cad. No:74 Şeyhli Köyü, Pendik/İSTANBUL	Bilgi için	: Cemil DEVECİ Başmühendis
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T.C.
İSTANBUL BÜYÜKŞEHİR BELEDİYESİ BAŞKANLIĞI
İSKİ GENEL MÜDÜRLÜĞÜ
Çevre Koruma ve Kontrol Dairesi Başkanlığı

Sayı : E-11255029-000-1398174 16 Aralık 2024
Konu : Beyoğlu ve Fatih İlçeleri, Unkapanı (Atatürk) Köprüsü Kenar Ayakları Hk.

İSTANBUL BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞINA
(Etüt ve Projeler Dairesi Başkanlığı)

İlgi : 04.11.2024 tarih ve E-72583974-604.99-2024.1990682 sayılı yazınız (06.11.2024 tarih ve 1281194 sayı ile İSKİ Yazı İşleri ve Arşiv Şube Müdürlüğünde kayıtlı yazı)

İlgi yazınız ile Beyoğlu ve Fatih İlçeleri, F21C25A3D, F21C25D2A ile F21C25D1B pafta sınırları içerisinde kalan, ekte hava fotoğrafı üzerinde işaretlenen alanda "Unkapanı (Atatürk) Köprüsü Kenar Ayaklarının Gözle Muayenesinin Yapılarak Hasar Tespit Raporu Düzenlenmesi" işi ile ilgili çalışmalara başlanacağından bahisle söz konusu alan ve yakın çevresinde yer alan İdaremize ait mevcut ve planlanan proje ve altyapı tesisleri hakkında İdaremiz görüşü istenmektedir.

Proje alanı ve çevresinde bulunan İdaremize ait mevcut altyapı tesisleri yazımız ekinde gönderilmekte olup aşağıdaki hususlara dikkat edilmelidir.

1. Yapılacak uygulama ve inşaat çalışmalarında, İdaremize ait yazımız ekinde gönderilen her türlü mevcut tesislerimiz ile işsonu projesi tarafımıza ulaşmamış, İSKİ'de kaydı bulunmayan, belediyesince veya halk tarafından yapılmış altyapı tesislerine zarar verilmemelidir, hatlarımızın geçtiği güzergâhlar imar yolu olarak korunmalıdır.
2. **Ana isale hatlarımız ve kolektörlerimiz dışında, yeri değişmesi talep edilen, altyapı tesislerimiz bulunması halinde, bu tesislerin deplase bedellerinin karşılanması, ne şekilde deplase edileceğine dair proje hazırlanmadan önce İdaremiz ile mutabakat sağlanması ve tarafınızca hazırlanacak uygulama projelerinin İdaremize tasdik ettirilmesi gerekmektedir.**
3. Yazımız ekinde de görüldüğü gibi söz konusu proje alanı çevresinde çeşitli çaplarda mevcut içmesuyu, yağmursuyu ve atıksu şebeke hatlarımız bulunmaktadır. Yapılacak imalatlarda tesislerimize zarar verilmemeli, hatlarımızın güzergâhı imar yolu veya yeşil alan olarak korunmalıdır.
4. İçmesuyu hatlarımızın geçtiği yol güzergahlarının Ø100 mm. - Ø600 mm. arası çaplar için en az 5 m., Ø600 mm. - Ø1000 mm. arası çaplar için en az 10 m., Ø1200 mm. - Ø1600 mm. arası çaplar için en az 15 m., Ø1800 mm. ve üstü çaplar için en az 20 m. olacak şekilde korunması gerekmektedir.
5. İsale ve şebeke hatlarımızın bakım ve onarımının yapılabilmesi için boru üst kotu, zemin arası derinlik en çok 1.5 m., en az 1 m.'yi geçmeyecek şekilde proje çalışmasının yapılması gerekmektedir. Ayrıca içmesuyu hatları boyunca hatların bakım ve onarımını engelleyici yapı (betonarme plak vb.) yapılmamalıdır.
6. Yazımız ekinde görüldüğü üzere **Beyoğlu İlçesinde yer alan proje alanında tarihi Hamidiye Suyolları font boru isale hattı ve Hamidiye Suyollarına bağlı tarihi çeşme bulunmaktadır.** Fatih ilçesinde yer alan proje alanında herhangi bir tarihi suyolu ve su yapısı bulunmamaktadır. **16.06.2010 tarih ve 3556 sayılı İstanbul 2 Numaralı Kültür ve Tabiat Varlıklarını Koruma Bölge Kurulu kararı ile Hamidiye Suyolları**

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korunması gerekli kültür varlığı olarak tescil edilmiştir. Bahse konu alanda yapılacak her türlü çalışma öncesinde İstanbul 2 Numaralı Kültür ve Tabiat Varlıklarını Koruma Bölge Kurulu Müdürlüğünden uygun görüş alınmalı, **tarihi hatlara ve tarihi çeşmeye zarar verilmemeli** ve korunması gerekmektedir.

7. Mevcut atıksu ve yağmursuyu hatlarımızın geçtiği yol güzergahlarının Ø300 mm. - Ø600 mm. arası çaplar için en az 5 m., Ø700 mm. - Ø1200 mm. çaplar için en az 10 m. ve üstü çaplar için en az 15 m. olacak şekilde düzenlenmesi gerekmektedir. Mevcut imar yol genişlikleri yol kırmızı kotunun altında da muhafaza edilmeli, zemin altında inşa edilecek kazıklar, hatlarımız için belirtilen yol genişlikleri dikkate alınarak planlanmalıdır.

8. Mevcut atıksu ve yağmursuyu tesislerimizin baca üzerleri, yapılacak çalışmalar sırasında kesinlikle kapatılmamalı, baca kapakları can ve mal güvenliği açısından kesinlikle yerinden oynatılmamalıdır. Baca kapak üst kotları bordür-tretuar veya asfalt çalışmalarından sonra oluşacak yol kırmızı kotuna getirilmelidir. Ayrıca atıksu kolektörlerinin her menholünde iş makinesi veya kombine araçla her mevsimde ulaşabilecek kalitede ve ölçüde yollar inşa edilmelidir.

9. Söz konusu proje alanı içindeki uygulamalar İdaremize ait mevcut baca derinlikleri dikkate alınarak belirlenmelidir. İdaremiz Kanalizasyon Projeleri Teknik Şartnamesi'nde imar yollarındaki muayene bacalarına ait toprak örtü kalınlıkları atıksu tesisleri için 2.70 m., yağmursuyu tesisleri için de 1.20 m.'dir.

10. Kavşak, yol, alt geçit gibi sanat yapılarına ait uygulama projeleri hazırlanırken İdaremiz görüşü (mevcut ve planlanan altyapı tesislerimiz dikkate alınmalı) muhakkak alınmalıdır.

11. Her baca için yüzeysel suları alabilecek en uygun noktalara, yolun her iki tarafına birer adet olmak üzere bir baca için toplam iki adet yağmursuyu ızgarası konularak ızgaraların bacalara bağlantıları yapılacaktır.

12. İdaremiz onayı alınmadan yerinde yapılacak imalatların İdaremizce kabulü yapılamayacağından bahse konu proje güzergâhları içinde yeniden planlaması yapılacak altyapı tesisleri için İdaremiz onayı mutlaka alınmalıdır.

13. Uygulama esnasında İdaremiz Abone İşleri 1. Bölge Dairesi Başkanlığı ilgili Şube Müdürlüğünden gözlemci personel talep edilmelidir.

14. Söz konusu proje ve uygulama işlemlerinin tamamlanmasından sonra İdaremiz ile ilgili imalat yapılır ise işsonu (GİS) projeleri hazırlanarak İdaremize gönderilmelidir.

15. Yukarıda sıralanan görüşler mevcut, planlanan altyapı tesislerimize ait İdaremiz altyapı görüşü olup plan görüşü olarak değerlendirilemez.

Netice olarak; Beyoğlu ve Fatih İlçeleri, F21C25A3D, F21C25D2A ile F21C25D1B pafta sınırları içerisinde kalan ve yazınız ekinde hava fotoğrafı üzerinde işaretlenen alanda **"Unkapanı (Atatürk) Köprüsü Kenar Ayaklarının proje çalışmalarında, mevcut altyapı tesislerimize ve tarihi hatlar ile tarihi çeşmeye zarar verilmemesi** ve yukarıdaki hususlara riayet edilmesi gerekmektedir.

Bilgilerinizi ve gereğini arz ederim.

Adem ŞANLISOY
Genel Müdür a.
Çevre Koruma Ve Kontrol Dairesi Başkanı

Ek: Proje Alanı Sayısal Verileri

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İSTANBUL BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞI
İmar ve Şehircilik Dairesi Başkanlığı
Planlama Şube Müdürlüğü

Sayı : E-25955148-115.01.02-2024.2231448 02.12.2024
Konu : Beyoğlu-Fatih İlçesi, F21c 25d 2b, F21c 25c 1a rumuzlu pafta sınırı içerisinde kalan Galata Köprüsü.

ALTYAPI PROJELER ŞUBE MÜDÜRLÜĞÜNE

İlgi: 13.11.2024 tarih, 2024.2094655 sayılı yazınız ve eki.

İlgi yazıda, Fatih ve Beyoğlu İlçeleri, F21c 25a ile F21c 25d rumuzlu pafta sınırları içerisinde kalan ve yazı eki hava fotoğrafında işaretli alanda "Unkapanı (Atatürk) Köprüsü Kenar Ayaklarının Gözle Muayenesinin Yapılarak Hasar Tepit Raporu Düüzenlenmesi" işi ile ilgili çalışmalarına başlanacağı belirtilerek söz konusu alana ait meri 1/5000 ölçekli Nazım İmar Planı bilgilerinin tarafınıza iletilmesi talep edilmektedir.

İlgi yazı eki hava fotoğrafında işaretli alanın Beyoğlu İlçesi sınırları içerisinde kalan bir kısmının, 05.02.1992 tarih, 3418 sayılı İstanbul 1 No'lu Kültür Varlıklarını Koruma Kurulu kararı ile belirlenen Kentsel Sit Alanında ve 20.02.2017 tarih, 2017/9942 sayılı Bakanlar Kurulu kararı ile 22.03.2017 tarih, 30015 sayılı Resmi Gazete ilamı ile Yenileme Alanı ilan edilen "*Beyoğlu İlçesi, Arap Cami Mahallesi, Perşembe Pazarı Yenileme Alanı*" sınırları içerisinde ve **14.01.2011** tasdik tarihli 1/5000 ölçekli Beyoğlu Perşembe Pazarı Kentsel Sit Alanı Koruma Amaçlı Nazım İmar Planı onama sınırları içerisinde kaldığı, 15.01.1986 tasdik tarihli 1/1000 ölçekli Haliç Düzenleme Beyoğlu Azapkapı Sütlüce Uygulama İmar Planında, "Haliç Düzenleme Alanı"nda kalmakta iken söz konusu alanın İstanbul I Numaralı Kültür ve Tabiat Varlıklarını Koruma Kurulunun 05.02.1992 tarih, 3418 sayılı kararı ile sit alanı ilan edildiği ve bölgede geçiş dönemi yapılaşma koşullarının belirlendiği, bahse konu alanda meri 1/5000 ölçekli Nazım İmar Planı doğrultusunda yapılan 1/1000 ölçekli Uygulama İmar Planı bulunmadığı,

Bahse konu alanın az bir kısmının ise 07.07.1993 tarih ve 4720 sayılı İstanbul 1 No'lu Kültür Varlıklarını Koruma Bölge Kurulu kararı ile ilan edilen "*Beyoğlu Kentsel Sit Alanı*"nda, 21.05.2009 tasdik tarihli 1/5000 ölçekli Beyoğlu Kentsel Sit Alanı Koruma Amaçlı Nazım İmar Planı ile 21.12.2010 tasdik tarihli 1/1000 ölçekli Beyoğlu Kentsel Sit Alanı Koruma Amaçlı Uygulama İmar Planı onama sınırları içerisinde kaldığı,

Fatih İlçesi sınırları içerisinde kalan kısmının ise **30.12.2011** tasdik tarihli 1/5000 ölçekli Tarihi Yarımada I. Derece Tarihi Sit Alanları Koruma Amaçlı Nazım İmar Planı ile **04.10.2012** tasdik tarihli 1/1000 ölçekli Fatih İlçesi (Tarihi Yarımada) Kentsel-Tarihi, Kentsel-Arkeolojik 1.Derece Arkeolojik Sit Alanları Koruma Amaçlı Uygulama İmar Planı sınırları içinde kaldığı görülmektedir.

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İlave olarak, ilgi yazı eki hava fotoğrafında işaretli alanın Kıyı Kenar Çizgisinin deniz tarafında kalan kısmında 04.11.2021 tarih ve 4758 sayılı Cumhurbaşkanı Kararı ile ilan edilen ve 05.11.2021 tarih ve 31650 sayılı Resmi Gazete'de yayımlanan Marmara Denizi ve Adalar Özel Çevre Koruma Bölgesi sınırları içerisinde kaldığı görüldüğünden parselin Kıyı Kenar Çizgisinin deniz tarafında kalan kısmında yetkinin Çevre, Şehircilik ve İklim Değişikliği Bakanlığında olduğu tespit edilmiştir.

Bilgi alınması ve gereğini arz ederim.

Özcan DAĞ
Şube Müdürü

Ek: CD.

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Annex J Complaints and Requests

Figure 48 Location of the Underpass Relative to the Subproject Area
Source: *Google Earth. (2025). Sattelite Image [Image].*
https://earth.google.com/web/@41.02236496,28.96080381,2.50605065a,884.48463385d,30y,0h,0t,0r/data=CgRCAggBOgMKATBCAggASgoI_5visAYQAA