ANTALYA ALANYA MOTORWAY

ANTALYA ALANYA MOTORWAY PROJECT

NON-TECHNICAL SUMMARY

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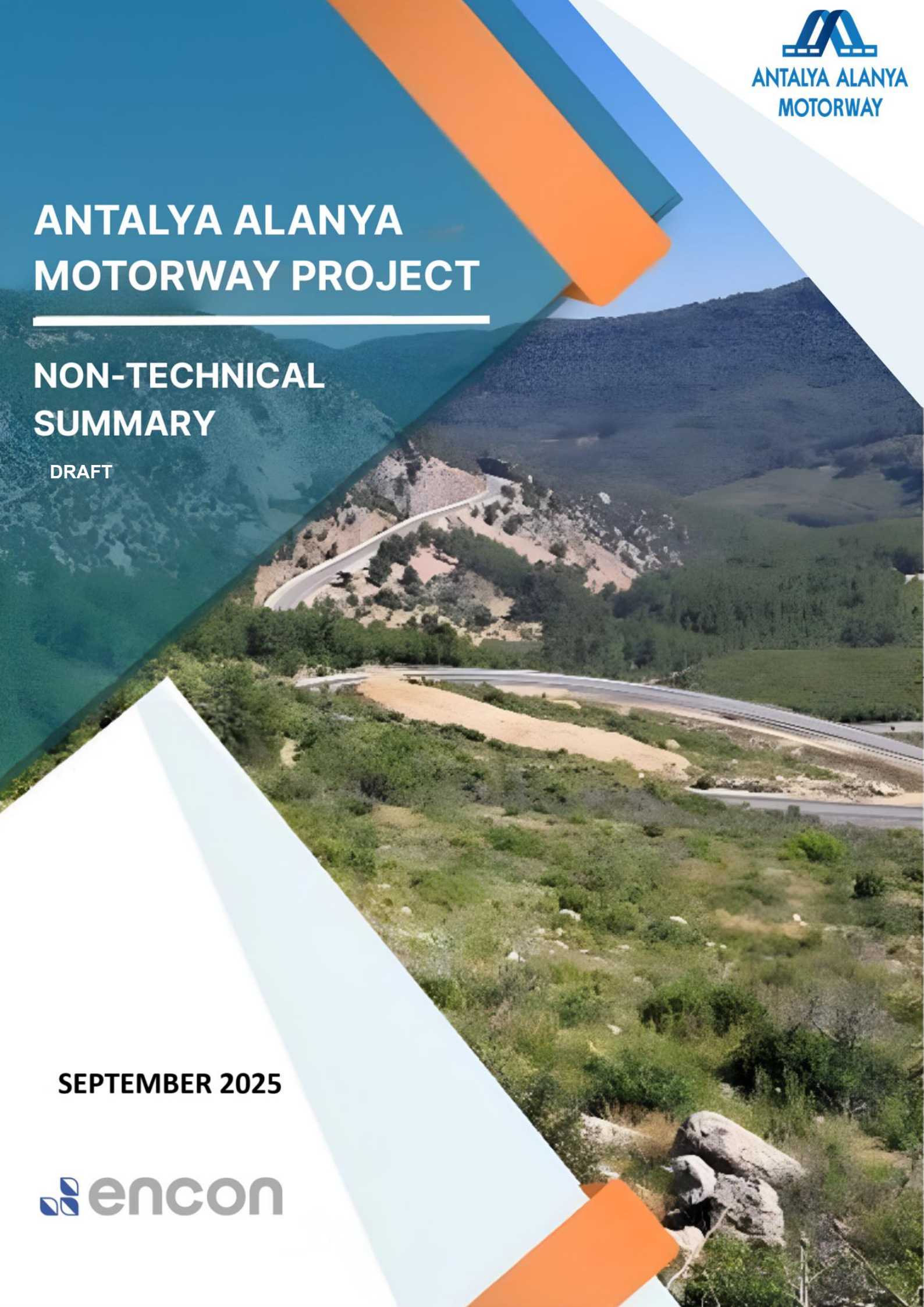

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LIST OF ABBREVIATIONS

AAOİAŞ	Antalya-Alanya Otoyolu İnşaat Yatırım ve İşletme A.Ş.
AQMS	Air Quality Measurement Stations
BAP	Biodiversity Action Plan
BMEP	Biodiversity Monitoring and Evaluation Programme
BMP	Biodiversity Management Plan
BOT	Build-Operate-Transfer
CIA	Cumulative Impact Assessment
CLOs	Community Liaison Officers
E&S	Environmental and Social
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
ENCON	ENCON Environmental Consultancy Co.
EPC	Engineering, Procurement and Construction
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESMPs	Environmental and Social Management Plans
ESMS	Environmental and Social Management System
ETL	Energy Transmission Line
EU	European Union
GBV	Gender-Based Violence
GBVH	Gender-Based Violence and Harassment
GHG	Greenhouse Gas
GIS	Geographic Information System
GM	Grievance Mechanism
HGS	Fast Pass System
ICOMOS	International Council on Monuments and Sites
ICU	Intensive Care Unit
IFC	International Finance Corporation
ILO	International Labor Organization
KBAs	Key Biodiversity Areas
KGM	General Directorate of Highways
LMP	Labor Management Plan
LNG	Liquefied Natural Gas
NGOs	Non-Governmental Organizations
O-ESMP	Operation Phase Environmental and Social Management Plan
PCMs	Public Consultation Meetings
Performance Standard	IFC Performance Standard
PPE	Personal Protective Equipment
RAMSAR	Convention on Wetlands of International Importance
RAP	Resettlement Action Plan
RENC	Environmental Noise Control Regulation
SEA	Sexual Exploitation and Abuse
SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
SPV	Special Purpose Vehicle

TKN	Total Kjeldahl Nitrogen
UTM	Universal Transverse Mercator
VECs	Valued Ecosystem Components
VOCs	Volatile Organic Compounds
WGS	World Geodetic System

I. OVERVIEW

The Ministry of Transport and Infrastructure (formerly the Ministry of Transport, Maritime Affairs and Communications), through its affiliated body, the General Directorate of Highways (referred to as "KGM" or "the Administration"), is the owner of the Antalya–Alanya Motorway Project. The Project was tendered in accordance with the Law on the Implementation of Certain Investments and Services within the Framework of the Build-Operate-Transfer (BOT) Model (Law No. 3996). Upon completion of the tendering process, KGM awarded the BOT contract to Antalya Alanya Otoyolu İnşaat Yatırım ve İşletme A.Ş. (referred to as "AAOİAŞ" or "the Project Sponsor") for the implementation of the Project. Throughout this report, AAOİAŞ is referred to as the Project Sponsor. The main contractor responsible for the execution of construction activities is Limak İnşaat Sanayi ve Ticaret A.Ş. (Limak), hereafter referred to as the Contractor.

This Environmental and Social Impact Assessment (ESIA) Report has been prepared by ENCON Environmental Consultancy Co. (referred to as "ENCON" or the "ESIA Consultant") to present the findings of the ESIA studies conducted for the Antalya–Alanya Motorway Project (the "Project").

II. PROJECT BACKGROUND and DESCRIPTION

Antalya-Alanya Motorway Project (the Project) is one of the two sub-projects that constitute the Afyonkarahisar-Alanya Motorway Project and is designed to connect Serik and Alanya districts through Manavgat district of Antalya province. The Project will enhance the existing transportation network services with surrounding provinces (Burdur, Muğla, Konya, Isparta, Karaman and Mersin). Various environmental, social, and technical studies have been conducted along the initial route of the Project tendered by the KGM. Based on these studies, the route was optimized, incorporating engineering practices and addressing environmental and social considerations, particularly issues of involuntary and economic resettlement, before being finalized.

The demand for freight and passenger transportation in Türkiye has two sources based on internal and external dynamics. The demand created by internal dynamics varies entirely depending on the current income level of Türkiye. As income increases, mobility also increases, triggering the transportation sector. Secondly, the demand created by external dynamics arises from transit transportation through Türkiye. In 2022, domestic freight transport was predominantly by road, accounting for 89.3%, while railways contributed 4.6% and maritime transport 6.1%. Passenger transport rates for 2022 were similarly dominated by road at 91.2%, followed by air at 6.8%, railways at 1.5%, and sea at 0.48%1The road network under the responsibility of KGM is as of January 1, 2025 is given in Table II.1, and motorway network of Türkiye as of 2025 is presented in Figure II.1.

Table II.1. Road Network of Türkiye as of January 2025*

Road Type	Road Length (km)	Length of Dual Carriageway (km)
Motorways**	3,796	3,796
State Roads	30,825	21,858
Provincial Roads	33,996	2,414
Total	68,617	28,068

** Source: KGM, 2025[2]*
*** BOT contracted motorways are included.*

[1] *https://cevreselgostergeler.csb.gov.tr/ulastirma-turlerine-gore-tasinan-yolcu-ve-yuk-miktari-i-85789*

[2] *http://www.kgm.gov.tr/Sayfalar/KGM/SiteTr/Kurumsal/YolAgi.aspx*

The Project is situated within the administrative jurisdiction of the 13th Regional Directorate of the General Directorate of Highways (KGM). Encompassing an area of 44,119 km^2, the jurisdiction spans the entirety of Antalya, Isparta, and Burdur provinces, as well as parts of Afyon and Muğla provinces. Ninety-six percent (96%) of the road network managed by the 13th Regional Directorate consists of asphalt-paved roads, totalling 3,341 km in length. The region under the purview of the 13th Regional Directorate is home to a total population of 3,836,236 individuals, with 2,517,970 registered vehicles utilizing the roadways.

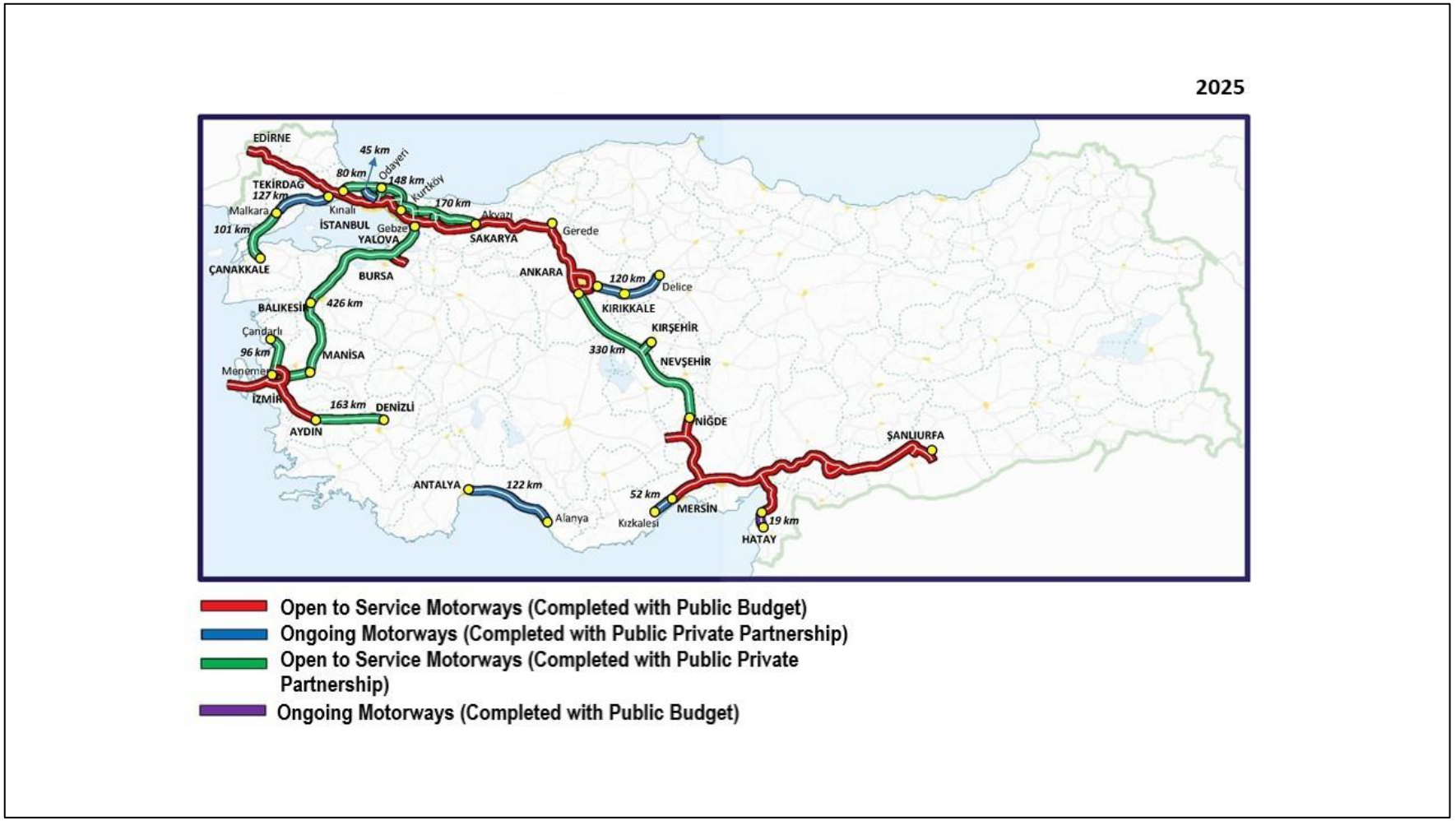

Figure II.1. Current Motorway Network of Türkiye as of 2025[3]

[3] http://www.kgm.gov.tr

Economic and Social Significance of the Project

Effective transportation infrastructure is a key to the development of countries. Today, transportation has become one of the basic needs of the mankind and a prominent driving force for the socio-economic development. In this respect, road transportation provides the most flexible transportation means as far as the topography, amount of the load to be transported and the time is concerned. Road transportation is usually preferred as it enables non-stop and fast transportation and thus most of the time is the most economical alternative when compared to other transportation systems.

Playing a key role in economic development and enhancement of welfare, road transportation is not only an important economic activity on its own but it also paves ground for interaction between different sectors. The fact that time gains primary importance in the globalizing world raises the importance of road transportation as it provides the ability to compete and establish flexible relations.

States prioritize motorway investments for several compelling reasons. Firstly, efficient transportation infrastructure serves as the foundation of economic activity. Motorways facilitate the movement of goods and people, connecting businesses to markets, workers to jobs, and tourists to destinations. This interconnectedness fosters economic growth by stimulating trade and investment. Secondly, modern motorways prioritize safety by incorporating features like wider lanes, guardrails, and median barriers. These design elements significantly reduce traffic accidents, fatalities, and injuries, leading to a safer transportation network. Thirdly, investments in expanding motorways or improving traffic flow management systems can alleviate traffic congestion. This not only conserves time for commuters but also reduces fuel consumption and emissions from idling vehicles, contributing to environmental sustainability. Furthermore, well-maintained motorways bridge the gap between rural and urban areas by providing essential services, education, and healthcare access for residents in remote locations. This improved accessibility enhances the overall quality of life for people across the state. Finally, efficient motorways are critical for emergency response vehicles, ensuring faster response times for ambulances and fire trucks in times of crisis.

Akdeniz Region of Türkiye has a particular role in the tourism and agriculture sectors. The Project is planned in the Akdeniz Region, aiming to strengthen the region's capacity to serve this role in the most efficient and effective way possible. The Project is a vital component of a broader motorway network projects that aim to strengthen the existing road infrastructure and improve the accessibility and coverage throughout the region. The geographical positioning, rich cultural heritage, and historical landmarks, coupled with its favorable climate, render the Akdeniz Region a paramount center for both tourism and accommodation, and agriculture within Türkiye. The Project is an important opportunity to increase accessibility to the facilities located between Antalya province and Alanya district, which encompasses the accommodation facilities that cater to 9,093,324 visitors annually, 96.08% of whom are foreigners, according to 2021 data of the Turkish Statistical Institute (TurkStat)[4]. The Motorway route lies on the east-west axis on the southern coast of Türkiye, holding substantial significance in linking these prominent tourism centers.

Simultaneously, the region serves as a focal point for the cultivation of numerous fruits, notably citrus varieties, alongside year-round production of vegetables and flowers by greenhouses. The Project is anticipated to assume a crucial role in enhancing the efficiency of transporting these high-value agricultural commodities rapidly to both domestic and international markets, ensuring their faster delivery and hence increasing product freshness and quality.

Motorway investments play an important role in the infrastructure development strategies of nations. This role is especially important in Türkiye's transportation sector, where 91% of passenger transportation and 89% of freight transportation rely on road networks[5]. Motorways offer efficient, safe, and rapid travel services, essential for overcoming the topographic and geological challenges present in Türkiye's terrain. Despite their strategic importance, motorway investments entail significant expenses in both initial capital outlay and ongoing operational costs. Given Türkiye's geographical position bridging historic and present-day economic and cultural trade routes, ensuring the security,

[4] *Source: https://biruni.tuik.gov.tr/ilgosterge/?locale=tr*
[5] *https://cevreselgostergeler.csb.gov.tr/ulastirma-turlerine-gore-tasinan-yolcu-ve-yuk-miktari-i-85789*

comfort, and efficiency of these corridors is paramount to fostering new opportunities for economic and political collaboration. Consequently, Türkiye is improving its infrastructure by identifying crucial road corridors in order to achieve the targeted socio-economic goals and to realize the projects determined to be feasible through careful cost-benefit analyses.

Furthermore, each year, over 4,000 lives are tragically lost in traffic accidents on Türkiye's roads, resulting in an annual economic loss of approximately 5 billion dollars, with an additional 180,000 individuals suffering permanent disabilities[6] Considering these disquieting statistics, the necessity for new motorway projects featuring dual carriageways and meeting stringent technical safety standards, aimed at improving the safety of passenger and freight transportation has become evident.

The current D400 highway, characterized by its passage through numerous settlements, exhibits traffic patterns akin to urban environments, leading to congestion and reduced travel speeds. This situation is further exacerbated by the heavy traffic flow between Antalya International Airport and popular tourist destinations along the coast. It is therefore evaluated that the new motorway will not only provide a faster and more direct connection between key points but also significantly alleviate congestion on the D400, improving travel times and road safety for both residents and tourists.

The Project's primary aim is to relieve the intense traffic burden on the Akdeniz Region's existing road network while building the capacity needed to accommodate future traffic. This purpose is aimed to be achieved by separating local traffic driven by urbanization and industrialization from intercity and international traffic. The Project will create a transit corridor for freight that bypasses congested city centers.

In addition, The Project will generate travel time savings by reducing traffic congestion, leading to shorter travel times for both households and businesses, which will enhance productivity and contribute to overall economic growth. Consequently, it is expected to boost overall wellbeing of households, also by increasing productivity in business, create operational surplus and compensation of employees, which result contribution to employment.

In addition to improving transportation networks and benefiting users, the Project is expected to generate social and economic advantages, including job creation, local and regional development, better access to employment, markets, education, healthcare, and cultural/tourism facilities, as well as improved emergency response times and contributions to the national budget through tax revenues and strengthened national security. However, to maximize these benefits and ensure the Project's environmental and social acceptance. As a result of these efforts, the quality of transportation services will improve, and the Project will help reduce traffic-induced energy consumption, air emissions, and time losses.

The Project shortens the time to the representative destination and provides opportunity to drive less hours for drivers. In addition to travel time savings, this motorway route also contributes to the avoidance of greenhouse gas emissions through reduced travel time from state road to the motorway. Emission factors for each vehicle type were sourced from DEFRA (Department for Environment, Food & Rural Affairs), ensuring a reliable and standardized approach to estimating CO_2 reductions.

II.1 Project Description

The Project is one of two sub-projects that comprise the broader Afyonkarahisar–Alanya Motorway Project. It is designed to connect the districts of Serik and Alanya via the district of Manavgat in Antalya Province, traversing a landscape characterized primarily by agricultural areas, with additional sections of forest and artificial surfaces.

As of the current design dated April 2025, the total length of the Motorway is approximately 117.8 kilometers. This includes 84 kilometers of main Motorway and 33.8 kilometers of access roads. The planned alignment consists of a dual carriageway, with predominantly three lanes and, in certain sections, two lanes in each direction (3x2 and 2x2 configurations). Table II.2 presents the start and end

[6] *https://dergipark.org.tr/tr/download/article-file/2119555*

points of the Motorway based on the current design, along with the approximate lengths of the main Motorway alignment and access roads. Figure II.2 presents a map illustrating the entire route.

Table II.2. Information of the Motorway

Start Location	End Location	Main Road (Motorway)	Access Roads	Total
Km 52+000	Km 136+000	84+000	33+800	117+800

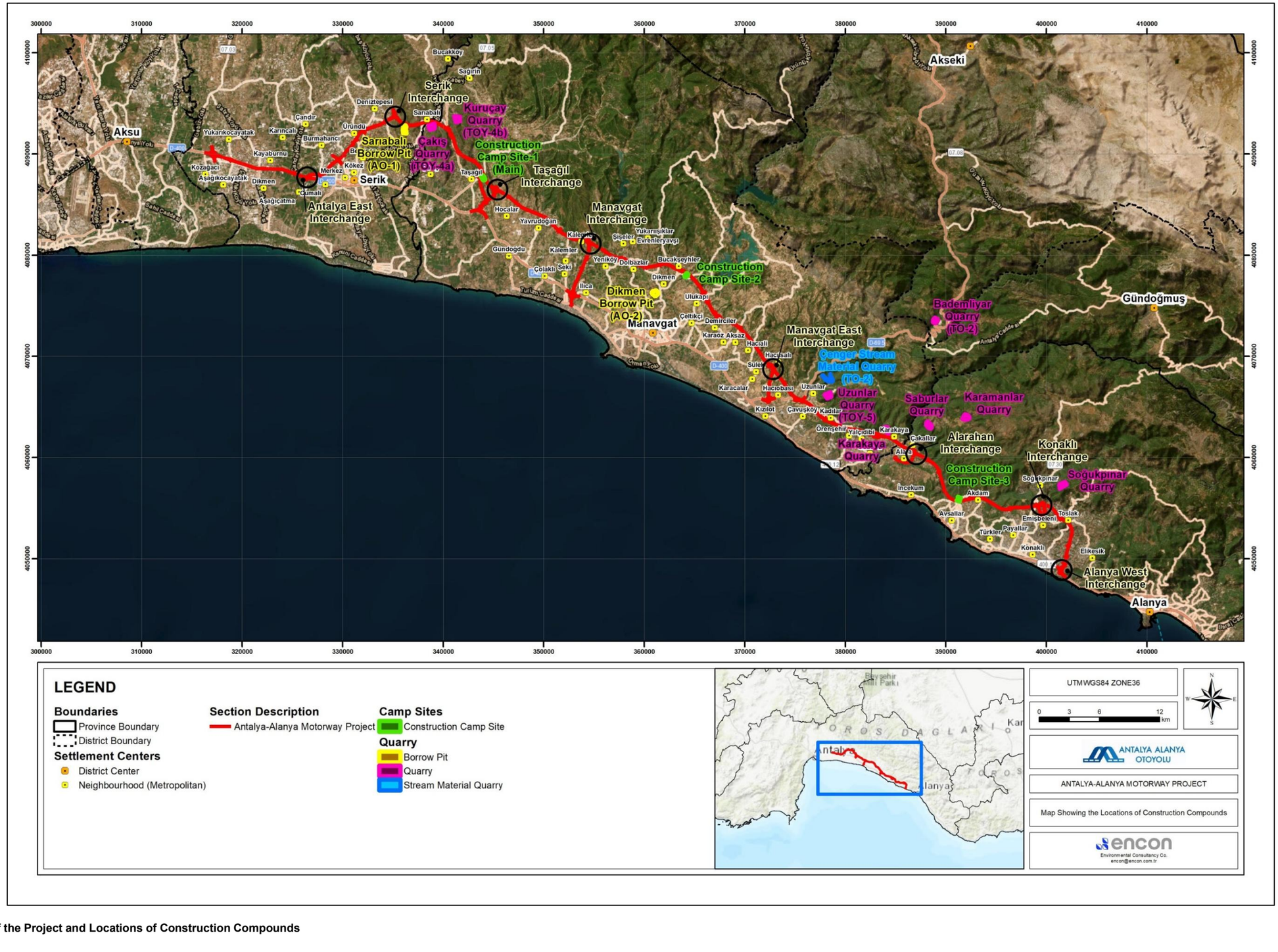

Figure II.2. Route of the Project and Locations of Construction Compounds

II.2 Project Components

Prior to commissioning, the Project will involve land acquisition, land preparation, and construction activities. Lands required for the Motorway and its components will be acquired in accordance with Turkish legislation. KGM is responsible for expropriation procedures under the national Expropriation Law. For forest areas, treasury lands, and other public properties, KGM will obtain the necessary permits, land use approvals, and easement rights from relevant authorities.

During the construction phase of the Project, several temporary facilities will be established, including construction campsites, quarries, plants, and service roads. These facilities will be decommissioned upon the completion of construction activities. Three main construction campsites are planned along the alignment: Camp Site No. 1 near Km 64+500 in the Taşağıl neighborhood of Manavgat; Camp Site No. 2 near Km 87+800 in the Bucakşeyhler neighborhood of Manavgat; and Camp Site No. 3 near Km 124+300 in the Avsallar and İncekum neighborhoods of Alanya. Each site will include essential infrastructure such as cafeterias, infirmaries, sanitary facilities, wastewater treatment units or septic tanks, and water supply systems including wells and tanks.

Construction will proceed in several main phases. The initial phase includes substructure works such as topsoil removal, poor soil excavation, and cut-and-fill operations. This is followed by the construction of engineering structures like bridges, viaducts, culverts, underpasses, and retaining walls. Pavement works will involve layering subbase, base, and asphalt or concrete surfaces. Final works include the installation of signage, guardrails, fences, and completion of service areas, operation centers, and toll systems. These activities follow a standard construction procedure. The Project incorporates a range of engineering structures designed in accordance with KGM standards, emphasizing safety, durability, aesthetics, environmental compatibility, and cost efficiency. These include 16 viaducts, 22 bridges, 305 culverts, 25 interchanges, 56 overpasses, 43 underpasses, and 5 tunnels. Figure II.2 presents a map illustrating construction compounds.

Excavated materials generated during construction will be reused in filling operations wherever technically suitable. Surplus materials will be transported to designated storage areas. Temporary access roads will be constructed to enable the efficient and safe movement of personnel, materials, and equipment between construction areas and supply points, including tunnels, viaducts, and concrete plants. Where the Motorway intersects existing utilities such as electricity, water, sewage, telecommunications, and gas lines, relocation will be carried out to prevent service disruptions. Similarly, any temporary road closures will be managed through detours to ensure continuity of local access.

In terms of operational infrastructure, the Motorway will function as an access-controlled route, with toll collection stations installed at all entry and exit points, equipped with fast pass system (HGS) infrastructure. Service areas, designed according to international standards, will be spaced at intervals of 20 to 50 kilometers to provide rest and refreshment facilities for users. To ensure long-term functionality and safety, maintenance centers will be constructed at intervals of 50–60 kilometers, with primary centers located approximately every 120–150 kilometers. These centers will include administrative offices, workshops, storage areas, garages, fuel stations, accommodations, and parking zones. A maintenance and operation center is planned near Km 64+500, although design and approval processes are ongoing and final specifications may be subject to revision.

During the operation phase, the Project Sponsor will be responsible for road maintenance until the end of the contract. Maintenance will include routine, winter, and periodic works, with major repairs expected every 10 years. All works will comply with technical standards and specifications. Upon contract completion, the Motorway will be transferred to KGM in a fully operational and debt-free condition. Toll collection will be managed through electronic systems. Construction and operational activities will be overseen by KGM-appointed personnel or independent consultants, with special structures subject to inspection and sign-off.

As per IFC definitions, associated facilities refer to infrastructure not financed by IFC but essential to the project's function. This Project does not involve such facilities. The Motorway operates independently, connecting to the D-400 State Road in Serik and terminating at the Alanya Interchange, without relying on external infrastructure.

II.3 Project Alternatives

Route selection for the Project has been made in two stages. The first stage included the selection of the route by the KGM during the feasibility and tender stages. Following the BOT tender and appointment of the relevant company, Project Sponsor has conducted further work to optimize the route and the locations, numbers, and/or lengths of the road structures such as viaducts, interchanges, overpasses, underpasses, culverts, etc. to achieve the most suitable design in terms of technical, environmental and economic considerations. The third and final stage of the alternative route selection commenced during the post-design phase and continued until the beginning of the construction phase. During this stage, revisions to the route were made based on findings from field studies and/or insights provided by assigned expert(s). In particular, detailed site investigations carried out during the pre-construction phase necessitated changes in certain sections of the route. The primary reason for these revisions was the identification of cultural heritage sites during field activities. A comprehensive field study was conducted along the Project route to detect and assess cultural heritage assets. Following this process, additional studies will be carried out during the construction phase under the supervision of a cultural heritage expert to be employed by the Project Sponsor.

A “No Project” scenario was also evaluated. Given Türkiye’s heavy reliance on road-based passenger and freight transport, the Project is deemed critical to addressing regional transportation demands, reducing congestion, and improving safety. The Motorway is expected to enhance the region’s role in tourism and agriculture, reduce traffic-related accidents, and improve access to services in rural areas. Moreover, it supports economic growth, environmental performance, and human well-being through more efficient logistics and reduced emissions. While a no-project scenario offers minimal alternatives, the Project is justified as a necessary infrastructure investment for long-term socio-economic development and sustainability in the region.

II.4 Project Schedule

The Project is scheduled to be implemented over a six-year period, beginning in December 2023 and continuing through October 2028. The project comprises four main phases: contractual processes, administrative affairs, expropriation works, and highway construction works. The contractual phase extends from December 2023 to October 2024, followed by administrative procedures that are planned between October 2024 and October 2025. Expropriation works will be carried out from October 2024 through April 2026, overlapping with the construction phase, which spans from October 2024 to October 2028. A visual summary of the construction schedule is provided in Annex-13 of ESIA Report

III. MANAGEMENT OF POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

This chapter provides a comprehensive overview of the existing environmental and social conditions within the Project's area of influence. Understanding current conditions is essential for identifying potential risks, assessing project-related impacts, and informing the development of appropriate mitigation measures. The baseline data have been compiled through a combination of literature review, field surveys, and consultations with relevant stakeholders.

III.1 Environmental and Social Impact Assessment

The ESIA for the Project has been undertaken to ensure full compliance with both national regulatory frameworks and international environmental and social performance standards. Infrastructure development projects of this scale, particularly motorways, represent substantial public investment needs. Given the high capital costs associated with motorway construction and the constraints on public budgeting, Türkiye has increasingly adopted BOT models to deliver major transportation infrastructure. These models, which leverage private sector expertise and international financial support, have become a preferred mechanism for advancing such projects without imposing additional fiscal burden on the national treasury.

The Antalya–Alanya Motorway Project has been procured under the BOT framework. As the selected bidder, the Project Sponsor is seeking financing from international lenders, which necessitates adherence to internationally recognized environmental and social safeguards. Accordingly, the Project has been reviewed in accordance with the Equator Principles IV, the World Bank's Environmental and Social Framework (ESF), and the International Finance Corporation's (IFC) Sustainability Framework. Based on screening criteria defined in the European Union's Environmental Impact Assessment (EIA) Directive, Türkiye's harmonized EIA Regulation, and the aforementioned international standards, the Project has been designated as a "Category A" activity, signifying the potential for significant adverse environmental and social impacts. This designation mandates the preparation of a full-scope ESIA.

Under national legislation, motorway construction projects fall under Annex I of the Turkish EIA Regulation and are therefore subject to a mandatory EIA. An EIA Positive Decision was granted for the Project on August 17th, 2018. However, to align with lender requirements and secure international financing, a more comprehensive ESIA was initiated in May 2024. The ESIA builds upon and complements the national EIA, ensuring that all potential environmental and social risks are adequately assessed, and that appropriate mitigation and management measures are in place.

The ESIA process encompasses the entire project lifecycle and includes the evaluation of direct, indirect, cumulative, and residual impacts. It involves rigorous baseline studies, stakeholder engagement, impact prediction, mitigation planning, and the establishment of an Environmental and Social Management System (ESMS). This section of the report outlines the institutional and legal obligations guiding the ESIA process and demonstrates the Project's commitment to ensuring regulatory alignment and sustainability in its implementation.

III.2 Land Use and Property

In total, the Project corridor encompasses 6,856 hectares, with agricultural and natural vegetation areas dominating the landscape. Agricultural areas constitute the majority of the land cover, accounting for approximately 76.06% of the total area.

Prior to commencing construction, fertile topsoil will be removed and properly managed (e.g., stored in designated topsoil storage areas) to preserve its productivity. This preserved soil will later be used in landscaping and land rehabilitation activities once construction is complete.

Temporary land use impacts will occur at Camp Sites 2 and 3, which will be decommissioned following the construction phase, whereas Camp Site 1 will serve as the permanent O&M Centre throughout the operation phase. According to the BOT contract, the construction duration is limited to a maximum of three years. Quarries and borrow pits will be used during construction, and while their immediate impacts on land use are temporary, the full reversal of these effects depends on the success of long-term rehabilitation efforts. Once construction is complete, all affected sites will be appropriately rehabilitated in accordance with KGM Technical Specifications. Rehabilitation of temporary facilities, including three campsites, two borrow pits, and quarries is expected to support vegetation recovery and result in positive contributions to land use conditions during the operation phase. KGM specifications will also guide soil management to limit topsoil degradation, minimize erosion risks, and prevent potential soil contamination from unexpected incidents. In this regard, the Project Company will prepare and implement Soil Management and Erosion Control Plan to effectively prevent or mitigate erosion and sediment-related impacts.

The most notable impact is the fragmentation of areas due to the physical division caused by the Motorway. Such fragmentation can hinder access to agricultural areas used along the Motorway's path. To reduce these impacts, underpasses and culverts will be constructed throughout the Project route. These structures are intended to facilitate uninterrupted access across the Motorway and alleviate the effects of fragmentation.

During the operation phase, no additional physical land disturbance is anticipated. However, some impacts will be permanent. These include habitat fragmentation, land acquisition, and associated socio-

economic changes, which may result in long-term shifts in local conditions. These impacts may be either positive or negative, particularly for households affected by changes in land use.

Over time, with effective implementation of mitigation measures, impacts on forestlands, agricultural areas, and other land types are expected to decline to low levels. Nonetheless, certain residual impacts will remain. These include medium-level impacts on forests with ecological value, high to medium-level impacts on cultivable agricultural lands depending on their land capability classification, and medium-level impacts on pasturelands classified as Class I to V. The overall regional land use pattern is also expected to change. This change may be beneficial or adverse depending on the future planning measures adopted by the responsible authorities.

It is also important to recognize that the effectiveness of mitigation actions, such as site rehabilitation and afforestation, may take months or even years to materialize. Moreover, the Project may stimulate future tourism, urban development, or industrial activities along its route. While such developments may offer socio-economic benefits, they could also increase pressure on adjacent forest and agricultural lands. Managing these pressures will require careful planning and oversight by local and regional authorities to ensure that further significant losses of valuable land uses are avoided.

III.3 Topography, Soils, and Geology

The baseline assessment of the Project indicates that 49 percent of the route passes through areas with steep or very steep slopes exceeding 20 percent, while flat areas with slopes less than 10 percent constitute approximately 26%. Erosion sensitivity is a critical concern, with approximately 57% of the corridor affected by severe erosion and moderate erosion represent 25% of the area.

Soil quality measurements carried out in September 2024 and May 2025 at various project-relevant locations; including quarry areas, campsites, and storage areas—generally indicate low levels of environmental risk. Most chemical parameters, heavy metals such as nickel, chromium, lead, cadmium, copper, mercury, and total petroleum hydrocarbons, remain well below national regulatory limits excluding arsenic. These elevated values are likely attributed to a combination of natural geological background and diffuse agricultural sources. Despite this localized concern, overall soil quality across the study area does not present significant contamination risks. Moreover, the risk of asbestos presence is considered negligible based on regional geological characteristics, the absence of known asbestos-related activities, and site inspections.

During the construction phase, the Project will involve large-scale earth-moving activities including topsoil stripping, cut and fill operations, and other civil works, all of which may affect the existing soil conditions if not properly managed. Elevation differences created by these operations, along with material extraction at quarry sites, will lead to permanent alterations in the topography of the area. Potential impacts on soil may include disturbance of soil structure such as loss of fertile topsoil, mixing of layers, compaction, and increased risk of erosion and contamination due to accidental spills or leakages. The Project will also need to address geotechnical risks along the route to ensure the safety and stability of engineering structures. Mitigation measures will focus on minimizing soil loss, controlling erosion, and preventing contamination through proper handling of construction materials and effective site management practices.

In the operation phase, no additional physical changes to topography, soil, or geology are expected under normal conditions. However, there will be ongoing risks of soil contamination due to maintenance activities and potential accidents involving fuel or chemical spills. These impacts are similar in nature to those encountered during construction and will be addressed with comparable mitigation strategies.

Residual impacts on topography, soils, and geology are expected to be low in the long term if the proposed mitigation measures are effectively implemented. However, certain effects, such as the changes to local topography caused by embankment and excavation works, will be permanent. Other impacts like erosion and contamination can be managed with time-bound measures such as afforestation and erosion control, which may take months or years to become fully effective. Soil-related risks can be effectively mitigated by trained personnel following established procedures.

The project corridor falls within a zone of moderate earthquake risk as per Türkiye's official earthquake hazard map. For seismic and geotechnical risks, compliance with relevant international and national engineering standards is crucial to ensure that these risks remain within acceptable levels and do not compromise the structural safety of the Motorway or the well-being of surrounding communities. Seismic risks will remain a concern throughout the operational life of the Motorway, and their management will require continuous adherence to structural and geotechnical safety standards. These mentioned standards were considered at the design of the Project.

III.4 Use of Resources and Waste Management

During the construction phase, various temporary facilities and sites such as campsites, quarries, borrow pits, plants, and service roads will be established. These will be decommissioned following the completion of construction activities. Waste generation during this period is expected to include a wide range of materials such as cleared vegetation, municipal solid waste, domestic wastewater, treatment sludge, packaging waste, excavation waste, construction and demolition debris, hazardous materials, and special wastes.

Solid waste management infrastructure in Antalya includes four primary landfills: Patara Solid Waste Landfill, Manavgat Solid Waste Energy Recovery and Landfill Facility, Alanya Integrated Solid Waste Recycle and Disposal Facility, and Kızıllı Integrated Solid Waste Recycle and Landfill Facility. District municipalities are responsible for collecting solid waste and transferring it to one of six transfer stations (Elmalı, Kumluca, Serik, Kemer, Korkuteli, and Manavgat) before final disposal at these landfills.

Excavation, construction, and demolition wastes in the province are managed at a single authorized disposal site located on Karaöz Street in the Kızıllı Neighborhood. Additionally, Antalya hosts 25 packaging waste recovery facilities. These facilities handle the collection, separation, and recovery of various packaging materials, including plastics, metals, glass, cardboard, wood, and composite materials. Hazardous and special waste management in Antalya is carried out through licensed recovery, disposal, storage, and export facilities. Medical waste is managed through a dedicated system that includes a licensed sterilization facility and six medical waste transportation vehicles. For other special waste streams, there are ten licensed interim storage facilities for waste vegetable oil, although the province lacks a dedicated recovery plant.

The Project will also involve significant excavation and fill operations. Demolition of existing structures will further contribute to construction and demolition waste.

During operation, municipal solid waste will continue to be generated, primarily from food waste, packaging, and hygiene-related materials. With an average daily generation of 182 kg based on expected staffing levels and site use, this volume is relatively small but will be consistently managed. Waste collection, separation, and transport to licensed facilities will be carried out through authorized providers, ensuring compliance with environmental standards.

In addition, operation and maintenance activities will produce various solid waste streams including resurfacing waste, road litter, illegally dumped items, waste from toll and control stations, and vegetation debris from right-of-way maintenance. These will be managed through separate collection and sent to licensed disposal facilities. Municipal wastewater generation will be managed through connections to the municipal sewer system or the continued use of septic tanks and package treatment units. Agreements will be in place with licensed service providers for emergency and routine wastewater transport and treatment.

Hazardous waste from maintenance operations, including old paint from bridge repainting or chemical handling, will be managed with strict segregation in dedicated impermeable storage areas protected from rain and runoff. Compliance with national regulations and international good practices will ensure that waste handling does not adversely impact soils, water resources, or ecosystems. When good management practices are applied, no significant impacts on soil or environmental health are expected.

With the implementation of appropriate waste management strategies and adherence to national and international environmental standards, residual impacts are anticipated to be minimal. Effective handling, storage, transport, and disposal of both hazardous and non-hazardous waste will prevent contamination and degradation of soil and water resources. Although construction activities will result in permanent topographical changes and high volumes of waste, these will be addressed through proper mitigation measures. Therefore, no significant long-term impact is expected from waste generation or resource use related to the Project, including both construction and operation phases, after mitigation measures are applied.

III.5 Water Resources

The Project passes through the Antalya Basin, one of Türkiye's most significant regions in terms of surface and groundwater availability. The route intersects several key streams, including the Köprüçay, Manavgat, Alara, Karpuz, and Kargı, and traverses sub-basins such as Manavgat, Aksu, and Dim.

Major rivers like the Köprüçay and Manavgat exhibit stable year-round flow regimes that support local ecosystems, agricultural irrigation, and tourism-related activities. However, these rivers are subject to multiple pressure sources, including domestic wastewater discharges, agricultural runoff, and the environmental footprint of tourism infrastructure. Similar pressures have been identified along the Alara and Karpuz streams, particularly due to agricultural use and sediment extraction. In response, the Project design ensures that no construction activities occur within the protection zones designated for this critical water source.

Groundwater is also an essential resource in the Antalya Basin, supporting both agricultural irrigation and domestic water supply needs, including those of construction camps. Groundwater sampling conducted as part of the baseline assessment revealed variable quality levels, with occasional exceedances in conductivity, sulphur, and oil and grease parameters.

Baseline conditions for both surface and groundwater resources were established through comprehensive sampling and laboratory analyses. Surface water sampling sites were selected from major streams intersecting the route, prioritizing areas where construction activities may impact water quality. Groundwater sampling locations were determined based on local hydrogeological characteristics and their proximity to potential impact zones.

In total, 20 sampling stations were selected along and near the motorway corridor. Analyses were conducted in accordance with Türkiye's Surface Water Quality Regulation, aligned with EU standards. Parameters indicative of organic pollution, nutrient enrichment, and chemical contamination were assessed. The results are indicative of diffuse pollution from agriculture and local domestic sources.

During the land preparation and construction phase, potential impacts on water resources are expected to be more pronounced compared to the operation phase. The primary sources of impact are suspended sediments in runoff waters and accidental spillages of hazardous materials. These impacts can degrade surface water quality and pose risks to aquatic life and downstream users if not properly managed.

Excavation, stockpiling, quarrying, wheel washing, and road construction can result in silty runoff with high turbidity. Spills of fuel, oil, lubricants, and cement, as well as the use of bitumen and waterproofing materials, may contaminate surface water when mixed with runoff. Wastewaters from both sanitary and process sources also pose risks if discharged untreated. Groundwater can be affected through deeper excavations that require dewatering, or by blockage of fissure permeability through sediment infiltration. Accidental discharges and site activities may lead to aquifer contamination, especially in areas with shallow overburden.

In the operation phase, impacts on water resources are generally less intense but may still occur under certain conditions. Maintenance activities such as the use of de-icing agents can temporarily affect surface water quality. Spills from road accidents or filling stations, although rare and often isolated, can lead to sudden pollution events. Routine deposits from vehicle use and leakage of road body materials

represent continuous, low-level pollution sources, which could cause long-term impacts on nearby surface waters.

The generated domestic wastewater will be removed from the Project area with septic tank and/or package wastewater treatment plant. The generated domestic wastewater will be removed from the Project area with septic tank and/or package wastewater treatment plant during construction and operation phases.

Structural features such as viaducts, culverts, and drainage channels may alter hydrological regimes, potentially affecting riverbeds and banks through scour or erosion. Increased impermeable surface area from the motorway can elevate surface runoff rates, leading to flooding or erosion during storm events. Culverts and diversion channels, if improperly designed, may restrict flow and cause upstream flooding. Groundwater quality could be affected by runoff infiltration containing dust, hydrocarbons, or other pollutants. Where subsoil is shallow and groundwater wells are located close to fill sections, the risk of contamination increases. Additionally, deep cuttings in certain areas may disrupt the local groundwater table, and sealing of surfaces may reduce groundwater recharge.

With the proper implementation of water management strategies and pollution control measures, residual impacts on both surface and groundwater are expected to be minimal. Best practices in construction and operation will ensure that water resources are protected from contamination and hydrological disturbances. As a result, no significant long-term impacts are anticipated on ecosystems or public health once the mitigation measures are fully in place.

III.6 Ecology and Biodiversity

The ecological assessment for the Project was conducted to establish baseline biodiversity conditions, identify sensitive habitats, and evaluate potential ecological impacts along the proposed motorway corridor. The studies were carried out in accordance with IFC PS 6, which promotes biodiversity conservation and the sustainable management of natural resources. Between July 2024 and March 2025, extensive seasonal surveys, desktop analyses, literature reviews, and species identification efforts were undertaken by expert teams.

Sampling sites were strategically selected to reflect the diversity of ecosystems along the route, encompassing both terrestrial habitats and aquatic environments. The selection process prioritized ecological sensitivity and habitat representativeness. In addition to primary field data, expert judgment, satellite imagery, and published literature were used to determine species' conservation statuses and to guide the assessment of potential impacts. All ecological data collection and analysis complied with relevant national legislation and international conservation frameworks.

While some degree of habitat degradation is anticipated in the natural areas surrounding the Project Area, the overall impact on natural habitats is expected to be low. This is primarily due to the limited presence of vegetation other than cultivated plant species, as the land is predominantly used for agricultural purposes. Thus, it is determined that the change in the habitat quality of the area will cause some habitat loss in terms of shelter and feeding of animal species that constitute wildlife.

Considering the size and location of the Project Area, the overall environmental impact to limit the life of fauna elements during the activities, preventing their feeding, breeding and movement is expected to be low. This is primarily because the habitat along the motorway route closely resembles that of the surrounding areas, minimizing the potential for significant ecological disruption. Habitat similarity creates an alternative and advantage for faunistic species. Most of the fauna elements move to safe habitats as soon as possible due to their mobility. To mitigate habitat fragmentation resulting from the motorway construction, the implementation of wildlife crossings has been proposed. These structures are designed to maintain ecological connectivity by allowing animals to safely traverse the roadway, thereby reducing the risk of wildlife-vehicle collisions and supporting biodiversity conservation.

Since a large portion of the project site consists of agricultural land, where vegetation is either absent or highly modified, minor contraction of natural habitats in the surrounding area is anticipated.

However, certain sections of the motorway pass through partially degraded or intact maquis and forested areas, making some biodiversity impacts inevitable for the habitats and some species. To address this, potential impacts for these ecological components have been identified, and mitigation measures have been developed. By implementing risk assessment matrices and mitigation strategies, it is possible to reduce potential impacts on ecology during both the construction and operational phases of the project.

In addition, considering the risk assessment matrices and recommendations, possible impacts on the ecosystem during the installation and operation phases of the Project will be reduced. Recommended monitoring studies will ensure detection of residual impacts and negative effects that may arise during the process and intervention to eliminate the negativities.

III.7 Air Quality

Air quality monitoring in Antalya Province is carried out regularly through several automatic Air Quality Measurement Stations (AQMS) operated under the National Air Quality Monitoring Network administered by the Ministry of Environment, Urbanization and Climate Change (Molucca). For the purposes of this Project, the most representative station was identified, and 2025 monitoring data from this station indicate that pollutant levels remained within the permissible limits defined under the Regulation on the Assessment and Management of Air Quality and the Regulation on the Control of Industrial Air Pollution.

In addition to national data, project-specific air quality baseline measurements were conducted at 21 locations during September–October 2024 as part of the ESIA studies. The campaign covered PM_{10}, $PM_{2.5}$, settled dust, and heavy metals in settled dust. Settled dust was measured over a 2-month period, while PM_{10} and $PM_{2.5}$ were measured over 24-hour periods. Baseline monitoring for PM_{10}, $PM_{2.5}$, and settled dust was conducted to capture local variability influenced by site-specific conditions such as surface activities, unpaved roads, and nearby construction or traffic. SO_2 and NO_2 were monitored using passive sampling over a one-month period between September 21 and October 21, 2024, at the five selected locations. VOC measurements were conducted on October 17, 2024. Sampling points were selected based on their proximity to sensitive receptors such as residential areas, quarries, and high-traffic roads.

The results showed that PM_{10} concentrations generally complied with the thresholds established in Turkish national regulations, EU Directives, and IFC standards. However, some locations, PM_{10} levels approached the daily limit value, indicating the need for closer monitoring. $PM_{2.5}$ concentrations in the same area slightly exceeded the IFC 24-hour guideline value, which is likely attributable to the high volume of vehicular activity in the vicinity.

Heavy metal concentrations in settled dust, including cadmium, lead, and thallium, were below detection limits at all monitored sites. While Turkish and EU regulations and IFC standards set certain limits for settled dust and ambient air quality, no exceedances were observed. In the absence of EU or IFC standards specific to settled dust, results were assessed according to Turkish regulations and found to be compliant.

Additional monitoring of SO_2, NO_2, and VOCs confirmed that values remained within national and EU limits. An exception was observed some locations though they remained below the IFC Interim Targets. This exceedance is likely due to nearby greenhouse operations and residential areas situated adjacent to frequently used roadways.

Overall, the baseline air quality assessment indicates that while pollutant levels are mostly within acceptable thresholds, certain locations, require monitoring to ensure that air quality remains protective of public health and the environment.

Air quality modeling was conducted to assess the short- and long-term impacts of emissions from both the construction and operation phases of the Antalya-Alanya Motorway Project. The dispersion of pollutants (PM_{10}, $PM_{2.5}$, NO_2, CO, VOC) was simulated using the air quality model under sixteen different scenarios.

Although short-term PM_{10} concentrations were high at some locations, the number of daily exceedances remained within the legal threshold, and annual averages were well below the regulatory limit during the construction phase. This indicates that construction-related dust emissions are temporary, localized, and compliant with regulations.

Annual $PM_{2.5}$ concentrations were low, significantly below the legal limit. However, some location, where the background concentration was already high, the Project's contribution raised the cumulative value, exceeding the regulatory limit.

NO_2 hourly and annual concentrations during both phases remained well below the legal thresholds with no exceedances. Emissions during the operation phase were even lower, confirming minimal contribution to NO_2 pollution.

CO concentrations remained very low in both phases, with maximum 8-hour values far below the regulatory limit, indicating negligible health risk.

VOC levels were also minimal and although no specific regulatory threshold applies, these concentrations are not expected to impact air quality or health.

The overall air quality impacts of the project are considered to be within national and international standards. The construction phase may result in short-term and localized air quality degradation, especially in areas where background concentrations are already high. However, these impacts are expected to be significantly reduced with the implementation of mitigation measures. The assessment indicates that for most local communities, potential impacts during land preparation and construction are low, and would further diminish following mitigation.

During the operation phase, at the service areas, a green buffer strip will be formed between the outer lane of the Motorway and the facilities. This strip will be properly planted (e.g. with shrubs that start growing from the base and are resistant to dust and gaseous emissions) to form a barrier against dust to be sourced from the Motorway's vehicle traffic. The application of automatic toll systems along the Motorway will contribute to an optimization of traffic flows and thus lower emissions.

III.8 Climate Change

The project area is subject to a range of climate-related risks shaped by regional meteorological trends and broader climate change dynamics. The Project area is situated in the Mediterranean region of Türkiye, characterized by hot, dry summers and warm, rainy winters. The Taurus Mountains significantly influence local weather by trapping humid air, contributing to sudden heavy rainfall. Climate change has intensified these effects, leading to rising summer temperatures between 28 and 36 degrees Celsius, reduced snowfall, prolonged droughts, and changing precipitation patterns. These conditions threaten water availability, ecosystems, and agriculture. The Antalya Metropolitan Municipality's climate action plan identifies ecosystem degradation and agricultural productivity loss as key risks.

Long-term meteorological data from the Manavgat Meteorology Station highlight the local climate. The annual average temperature is 18.9 degrees Celsius, with extremes ranging from -2.8 to 44.9 degrees. Annual average precipitation is 1,110.9 millimeters, peaking in winter, particularly in December, and falling to a low in July. Average annual relative humidity is 63.5%, with April being the most humid month. Evaporation is highest in July, and cloud cover data show a predominance of clear and partly cloudy days. Wind data indicate that the prevailing wind direction is from the north, followed by northwest, with an annual average wind speed of 2.1 meters per second. The strongest wind recorded was 33.2 meters per second from the south-southeast. The region experiences a moderate number of stormy and strong windy days, particularly in winter.

Antalya faces several climate-related physical risks. Wildfire danger is high, especially during summer, exacerbated by vegetation density and extreme temperatures. The Fire Weather Index classifies parts of Antalya in the very extreme risk category. Flooding is also a major concern, driven by intense rainfall and urban runoff, with central and coastal districts most affected. Drought risk is increasing due to declining precipitation and overuse of groundwater, especially for agriculture. Despite past efforts to manage drought, current usage patterns and limited recharge present long-term threats to water security. Heatwaves are frequent, with summer temperatures regularly exceeding 35 degrees and sometimes 40 degrees, leading to heat stress risks for outdoor workers and vulnerable populations. These conditions also strain agricultural systems and the tourism sector. The urban heat island effect worsens these impacts due to expanding impermeable surfaces and declining vegetation. Finally, storms and tornadoes are becoming more frequent and intense. Historical data and recent events show widespread damage to greenhouses and crops across districts like Alanya, Serik, and Gazipaşa.

During the construction phase of the Project, greenhouse gas (GHG) emissions will result primarily from the operation of construction machinery and equipment, material transportation, quarry operations, and daily activities such as heating and electricity use in worker accommodation areas. These emissions are categorized under Scope 1 and Scope 2, where Scope 1 includes direct fuel combustion and Scope 2 involves electricity consumption. The main emissions include carbon dioxide (CO_2), with smaller contributions from methane (CH_4) and nitrous oxide (N_2O).

Electricity consumption during construction is estimated based on infrastructure requirements and worker needs. This includes power usage in site offices, lighting systems, and worker camps. The total of greenhouse gas Scope 1 and Scope 2 emissions from electricity consumption during construction remains below the official disclosure threshold set by the Equator Principles, eliminating the need for a separate climate change risk assessment. Nonetheless, the project has adopted emission reduction commitments aligned with IFC PS 3 and demonstrates adherence to international best practices for responsible environmental management.

During the operation phase, GHG emissions will be generated by routine activities such as maintenance operations, vehicle usage by personnel, and power consumption by infrastructure elements like lighting systems and EV charging stations. Scope 1 emissions in this phase primarily stem from fuel combustion by company vehicles, maintenance equipment, and LNG usage for cooking and heating. The total Scope 1 emissions over 12 years are well below the public disclosure and risk assessment thresholds set by the Equator Principles.

The 12-year estimates of Scope 2 emissions from electricity consumption during operation use data from a similar completed motorway project and reflect the expected use of the Project's infrastructure. When combined, the annual total of Scope 1 and Scope 2 emissions during operation is in line with both Turkish regulations and international frameworks.

During the construction and operation phases of the Project, the total annual Scope 1 and Scope 2 greenhouse gas emissions resulting from diesel, LNG, and electricity consumption were estimated, both remaining below the thresholds defined under the Equator Principles. In addition to these emissions, tree clearing activities within the project area are expected to lead to a 0.62 percent reduction in regional carbon sequestration and oxygen generation capacity, indicating a minor but measurable impact on local forest ecosystems. Despite these effects, the Project complies with national and international standards for greenhouse gas management and incorporates appropriate mitigation and adaptation strategies to address its long-term residual climate impacts.

III.9 Noise and Vibration

As part of the ESIA studies, baseline noise measurements were conducted in September 2024 along and around the Antalya–Alanya Motorway route to assess existing noise levels during both weekdays and weekends. These measurements were carried out at 21 locations, prioritizing residential areas and sensitive receptors that are most likely to be affected by elevated noise levels.

The measured noise levels were evaluated against the equivalent continuous sound level (Leq) thresholds defined for industrial plants and transportation sources in the Regulation on Environmental Noise Control, as well as the residential, institutional, and educational area limits provided in the IFC Environmental, Health and Safety (EHS) Guidelines.

The results of the assessment show that Leq levels recorded during daytime, evening, and nighttime often exceeded the applicable thresholds at several locations. Some settlements exhibited significantly elevated noise levels, both during the day and night. This is largely attributed to the presence of various noise sources and the close proximity of sensitive receptors.

Measurement points were selected to reflect the acoustic characteristics of the project corridor comprehensively, including rural, semi-urban, and developed areas where people live, work, and engage in daily activities.

Regarding vibration, baseline assessments indicate that no significant sources of vibration currently exist within the project area or its vicinity. Measurements confirmed the absence of environmental or structural vibration concerns. Existing vibration levels remain within the natural background range, and no man-made or mechanical sources were observed that would contribute to elevated vibration levels. These findings suggest that, under current conditions, vibration is not expected to pose a risk to local communities or structures.

The noise emission impacts of the Project were evaluated using noise modelling software in accordance with the Environmental Noise Control Regulation (RENC) and IFC guidelines, using traffic data projected for 2040. Existing noise levels were measured at 21 locations along the motorway and construction areas, with virtual receivers assigned to these points for simulation.

Baseline measurements in the one area showed that noise levels exceeded the national daytime background limits, going beyond the allowed thresholds. The IFC's construction noise limit was also taken into account and compared with the measured values. Once the motorway is operational, noise levels are expected to exceed limits in two areas due to traffic. Noise barriers are recommended for these locations, and noise monitoring will be necessary in the future.

Complementary to noise effects, vibration caused by various construction methods is another factor influencing the surrounding environment. During the land preparation and construction phase of the Project, vibration impacts are expected due to activities such as heavy vehicle movement, piling, excavation, earthworks, vibratory equipment operation, demolition, and blasting. The operation of heavy construction vehicles will temporarily affect specific areas, primarily raising concerns over potential structural damage to nearby buildings and disturbances to nearby residents.

Once operational, the motorway is not expected to generate significant vibration levels. Vibration from vehicular traffic typically remains below which is comparable to vibrations caused by routine activities within buildings such as walking or closing doors. Structural damage generally occurs high vibration level well beyond the expected vibration from road traffic. Therefore, no damage to nearby buildings is anticipated due to motorway operation.

The vibration assessment concludes that impacts during the construction phase may result in temporary and localized disturbances in nearby settlements. These impacts are short-term and reversible, limited to the expected three-year construction period. With the application of recommended mitigation measures such as delayed blasting, protective barriers, and monitoring, residual vibration impacts are anticipated to remain within acceptable thresholds and will range from medium to low depending on the proximity and sensitivity of receptors. During the operational phase, residual vibration impacts are expected to be negligible.

III.10 Protected Areas, Landscape and Visual Environment

Under national legislation, several protected area categories were reviewed, including national parks, nature parks, nature monuments, nature conservation areas, wildlife development and settlement areas,

specially protected environment areas, forest areas, wetlands, and aquaculture zones. While numerous protected sites such as nature parks, monuments, conservation areas, and wildlife habitats exist throughout Antalya Province, none are situated within the Project corridor. The closest nature park is İncekum, located 2 km south of the corridor, and Zeytintaşı Cave is the nearest nature monument, 7.4 km north. Similarly, wetland areas such as Avlan Lake and Eğri Lake are situated at considerable distances and do not intersect with the Project alignment. No areas under protection by international conventions that Türkiye is party to, such as the Bern, Barcelona, or RAMSAR Conventions, are present within the Project area.

In terms of forestry, the Project falls under the jurisdiction of four Forestry Management Directorates. Forest coverage varies depending on the database used but generally ranges between 10% and 29% of the study corridor. Specially Protected Environment Areas such as Belek partially overlap with the southern edge of the Project area, though the majority lies at greater distances. There are no drinking water reservoirs, cultural heritage sites, or aquaculture zones within the direct impact area of the Project. Therefore, the Project is not expected to have any significant adverse impact on nationally or internationally protected areas as defined under applicable legislation.

In addition to the assessment of protected zones, a detailed analysis of the landscape and visual environment was undertaken to characterize the broader physical setting of the Project. A visibility analysis was conducted for 62 settlements within the socio-economic area.

The visual baseline of the study area was analyzed using Google Earth to assess the landscape characteristics along the Motorway route. The route begins in flat agricultural lands near Deniztepesi and Sarıabalı Neighborhoods, where greenhouses, rural settlements, and residences are common, and extends through a variety of landscapes including sloping forest lands in areas such as Çakış, Sağırin, and Taşağıl. Further along, the route passes through flat agricultural regions in Hocalar, Gündoğdu, Çolaklı, Ilıca, Manavgat, and Kızılağaç, with notable forested slopes and greenhouse areas. The alignment continues through forested and agricultural zones in Kızılot, Çenger, Hacıisalı, Hacıobası, and the eastern parts of Manavgat, then transitions into flat agricultural and residential areas in Çavuşköy, Kadılar, Örenşehir, and neighboring settlements. In its final stretches, the route traverses predominantly sloping forest lands and greenhouse-dense areas in İncekum, Avsallar, Akdam, Türkler, Soğukpınar, and Toslak.

The project aims to avoid significant impacts on protected areas or areas of environmental, social, and cultural importance. Field surveys and detail analyses were used to identify direct potential impacts on protected zones. Where necessary, mitigation measures such as route adjustments or design modifications have been incorporated. Protecting these areas has been a key criterion during the route selection process.

Construction-related visual and landscape impacts are expected to be reduced to acceptable levels through the rehabilitation of disturbed areas. As a result, residual impacts from the construction phase are considered low in most areas. However, in rural zones where the landscape character is distinct, changes during construction may be more pronounced, leading to medium residual impacts in those specific sections.

Once operational, the motorway and its associated infrastructure will become permanent features in the landscape. These include the motorway alignment, interchanges, bridges, viaducts, culverts, service areas, parking lots, toll plazas, and lighting structures. The visual impact will be most noticeable during the early operational years before the implementation of landscaping and visual mitigation measures such as tree planting.

Long-term visual changes will remain due to the presence of the motorway and associated infrastructure. These will be most visible in areas where natural landscapes are replaced by engineered structures. Influence will be limited to a narrow corridor, typically extending up to 200 meters on each side of the motorway axis.

III.11 Land Acquisition and Involuntary Resettlement

In parallel with the ESIA studies, the SPV appointed GEM Sustainability Services and Consultancy Inc. in April 2025 to prepare a Resettlement Action Plan (RAP) for the Project in line with IFC Performance Standard 5 and other applicable international standards followed by potential Project lenders. As part of the RAP, the socio-economic baseline conditions of people affected by Project-related land acquisition ("affected people") were identified based on a detailed review of expropriation data[7] and the results of field surveys carried out by the RAP Consultant Team in May 2025.

The RAP fieldwork included:

- Key informant interviews with mukhtars from 34 affected neighborhoods,
- Household-level surveys with 196 affected houses,
- Household-level livelihood surveys with over 380 households using affected lands for income generation,
- Interviews with employers of 32 businesses (that will be relocated or partially affected but expected to remain operational).

As known, the Project area spans Serik, Manavgat, and Alanya districts in Antalya province, each combining coastal zones, mountainous terrain, and fertile agricultural plains. The Motorway route primarily crosses productive lowlands where open-field farming, orchards and greenhouse cultivation dominates. Serik is known for its greenhouse-grown vegetables such as tomatoes, strawberries, and peppers. Manavgat benefits from the irrigated Manavgat River plain, while Alanya's favorable climate supports robust and expanding greenhouse agriculture, including a variety of tropical fruits. Across all three districts, open-field and greenhouse farming is central to local livelihoods.

According to RAP survey findings, agriculture is the most important economic activity in all affected neighborhoods, with households relying on a diverse mix of vegetables, fruits, and field crops. Greenhouse farming is widespread and increasingly focused on high-value tropical crops like bananas and avocados, with samples of other topical fruits such as mango and dragon fruit among others. However, a shift toward monoculture, especially in banana cultivation, is becoming evident.

The population in affected settlements is predominantly made up of "*Yörüks*," a cultural group with roots in pastoral nomadism. While most now lead settled lives, traditional ties to animal husbandry remain, though the practice is in decline in the affected areas. Tourism also plays a vital role in local economies. It is widely viewed as a core and preferred source of employment – particularly among youth and those without higher education.

Overview of Land Acquisition Status

A Public Benefit Decision (No: 2023/371) was declared for the Project by the MoTI on 28 November 2023. A Presidential Decree (No. 9708) concerning the Accelerated Expropriation of certain immovable properties under the scope of the Project (located within the settlements covered by the Decree) by the KGM in line with Article 27 of the Expropriation Law of Türkiye (Law No. 2942, 1983) was published[8] in the Official Gazette (No. 32857) on 30 March 2025 (referred to as Accelerated Expropriation Decision). Expropriation Decisions have been taken for several segments of the Project alignment by KGM since 5 December 2024.

The valuation studies for the parcels affected by the Project's current route in accordance with the technical specifications of KGM have been carried out by the valuation contractor. As part of this process, valuation reports are prepared for each affected parcel. The KGM and SPV target completing the valuation for the full alignment in Q3 2025.

[7] Compiled by the engineering firm (valuation contractor) with KGM's approval under the Expropriation Law and KGM's 2019 Technical Specifications.

[8] https://www.resmigazete.gov.tr/eskiler/2025/03/20250330-5.pdf

Based on the Accelerated Expropriation Decision, KGM has the authority to initiate accelerate expropriation court proceedings (Article 27) in line with the construction schedule and subject to the availability of the expropriation budget for compensating right holders. However, in this Project, KGM has prioritized negotiated settlements through the Article 8 process (purchasing method) under the Expropriation Law. Accordingly, KGM has started inviting and will invite all owners and shareholders, including heirs, to participate in Article 8 negotiations. Article 27 will be used by KGM as a last resort, only after Article 8 negotiations and consultations with the rightful owners and shareholders have been held and failed, or if they do not attend the reconciliation negotiations despite the consultation efforts made.

For parcels that had priority under the construction programme agreed between KGM and the SPV, and for which the valuation had been approved by KGM, the expropriation process was initiated by KGM in February 2025 through the issuance of Article 8 invitations and the conduct of negotiation meetings with participating owners and shareholders. It will progress lot by lot, in line with the availability of the expropriation budget.

According to KGM's current expropriation program, the full expropriation process – including expropriation payments under Article 8 and the deposit of land seizure fees under Article 27, as applicable – is targeted to be completed within the three-year construction period, in alignment with the SPV's project schedule and subject to the availability of the project's expropriation budget.

During the route selection process, KGM aimed to avoid and minimize land acquisition and expropriation to the extent feasible, in order to reduce the socio-economic impacts of the Project and lower expropriation costs. Following the signing of the BOT Contract, the SPV undertook route modifications to optimize design and reduce the Project's environmental and social risks, including those related to land acquisition. Additional avoidance or minimization of displacement impacts may be achieved during implementation, through mechanisms outlined in the RAP.

As per the current design, the Project affects a mix of land ownership categories within the Motorway's expropriation corridor, including privately-owned, state-owned (e.g., treasury, treasury – forestry, treasury – pasture, non-registered, etc.), and legal entity parcels (e.g., municipalities, government institutions, public corporations). In addition, temporary construction facilities such as construction camps, storage areas, and plant sites (e.g., concrete, asphalt, mechanical) will impact land use.

Land acquisition will result in physical and/or economic displacement of users of affected lands – both formal and informal including vulnerable individuals – and businesses. Based on an analysis of expropriation plans dated April and May 2025, the impacts are summarized below:

- 55 settlements (neighborhoods) across three districts: Serik, Manavgat, and Alanya
- Total affected parcels: 3,599
- Affected Structures:
    - Houses: 297 residential buildings on 231 parcels, affecting 341 households
    - Greenhouses: 599 units on 347 parcels
    - Businesses: 37 commercial structures on 30 parcels to be relocated
    - Other non-residential, non-commercial structures also affected

In line with the Expropriation Law, KGM is responsible for carrying out expropriation activities and providing mandatory cash compensation. To address displacement impacts in compliance with international standards, the SPV has commissioned a Resettlement Action Plan (RAP) in accordance with IFC PS5 and other applicable standards. The RAP sets out measures to ensure fair compensation and support for affected individuals and businesses (including vulnerable groups), livelihood restoration and improvement activities, and support mechanisms for land users and business owners/employees.

The SPV has begun implementing key RAP principles in Q2 2025. Full implementation will continue for three years, starting from the signing date of the finance agreement between the SPV and the Lenders. During this period, the SPV will provide livelihood restoration and support to eligible landowners, formal and informal land users, and affected businesses, and continuous engagement with affected people, in line with RAP provisions. A dedicated RAP Fund has been allocated and will be managed by the SPV.

This fund is separate from KGM's compensation and will address international requirements exceeding national law provisions.

The RAP will remain a living document and will be updated as needed to address unforeseen or emerging impacts throughout the Project lifecycle, ensuring all affected persons are covered

A Guide to Land Acquisition and Compensation (GLAC) is prepared and will be distributed to affected people to support transparent and effective RAP implementation.

III.12 Community, Health and Safety

The potential risks on the affected communities are traffic, water resources, dust and air quality, noise and vibration and security personnel, potential community severance, and exposure to airborne or communicable diseases. Details of these can be found in the individual plans. Additionally, blasting activities near settlements or agricultural land may lead to air shock, fly rock, or vibration impacts if not properly managed.

The presence of a predominantly male, temporary construction workforce could increase the risk of gender-based violence and harassment (GBVH), especially for women and girls in nearby settlements and for seasonal female agricultural workers.

Temporary labor camps may also create additional pressure on local water, sanitation, and healthcare infrastructure. To address these risks, mitigation measures such as community fire drills, safe traffic planning, gender-sensitive training for workers, secure accommodation practices, and clearly defined emergency response procedures will be implemented.

During the operation phase, community health and safety risks will mainly arise from high-speed vehicular traffic, traffic accidents, emissions, and operational noise. The project corridor will experience increasing traffic volumes each year, which may elevate accident risks if not addressed through proper design, maintenance, and enforcement. However, the Motorway's high construction and design standards are expected to result in a general reduction in traffic-related fatalities, as supported by comparative international data.

Pedestrian safety remains a critical issue during the operational phase, particularly for children, bicyclists, and local residents who may encounter increased risks near access points, underpasses, or in areas with agricultural activity. Gender-based violence risks may continue if insufficient safeguards are maintained. Air quality degradation and continuous noise pollution may also have long-term health impacts for roadside communities, particularly for chronically ill or elderly individuals. To mitigate these concerns, the Project will implement animal crossings, fencing, air quality monitoring, emergency preparedness plans, and gender-responsive occupational safety policies in compliance with international guidelines.

Even with the application of best management practices and comprehensive mitigation strategies, certain residual impacts may remain. These include long-term health risks from emissions and noise for residents near the Motorway, potential social impacts from permanent community severance, and residual safety concerns related to driver behavior. Vulnerable groups such as the elderly, children, women, and persons with disabilities may continue to experience disproportionate exposure to these residual impacts if safeguards are not monitored and adjusted.

To minimize such outcomes, the Project will maintain its Emergency Preparedness and Response Plan, enforce safety and gender-sensitive measures, and continue engagement with local stakeholders. While risks from vehicular traffic and structural failure are expected to be limited due to strict engineering and safety standards, public behavior and environmental variables will still influence outcomes. Continuous monitoring and adaptive management will therefore be essential to ensure that community health and safety are maintained throughout the Motorway's operational lifespan.

III.13 Human Rights, Labor, and Working Conditions

Türkiye is a signatory to 59 International Labor Organization (ILO) Conventions, including those concerning occupational health and safety, child labor, and gender equality in employment. While significant legal progress has been made, issues such as child labor and low female labor force participation persist. Child labor remains particularly prevalent in agriculture, with additional presence in industry and informal services. The presence of Syrian refugees and informal economic pressures continue to exacerbate the issue. National programs and ILO-supported projects have been implemented to mitigate the worst forms of child labor, though challenges remain, especially in mobile seasonal work and street-based activities.

The Project poses several potential human rights and labor-related risks, primarily concerning displacement, access to resources, and working and living conditions.

Labor-related risks, such as unsafe conditions, unfair wages, and inadequate grievance mechanisms, are addressed through the Human Resources and Labor Management Plan which includes monitoring and a formal grievance system. Health-related impacts, both physical and psychosocial, are also expected due to construction activities. These will be managed through comprehensive Community and Occupational Health and Safety Management Plans, including noise, dust, and traffic mitigation. In all cases, the residual impacts are expected to be low if mitigation measures are fully implemented.

The risk of GBVH within the workforce and surrounding local communities is a significant concern that must be managed proactively. GBVH constitutes a serious violation of human rights, threatening the safety, dignity, and equality of individuals. Implementing robust preventive mechanisms is not only a legal obligation, but also essential for ensuring an inclusive, respectful, and safe environment for both workers and community members. Preventive actions enhance overall well-being, safeguard the project's social license to operate, and support the proactive mitigation of reputational and social risks. Therefore, the project will enforce a zero-tolerance policy on GBVH, implement targeted awareness-raising efforts, and ensure transparent and accessible grievance mechanisms are in place and effectively functioning.

III.14 Archaeological and Immovable Cultural Heritage

The study of archaeological and immovable cultural heritage within the Project has been conducted under the coordination of HERMES Archeology & Environmental and Social Consultancy Company between 26th of August and 8th of September 2024 and 14th and 17th of March 2025. The assessment includes a four-phase methodology: pre-fieldwork and desktop studies, field surveys, impact assessment, and reporting.

These studies aimed to identify registered and unregistered cultural assets, such as cemeteries, settlement remains, tumulus, aqueducts, and other architectural features. Each finding was evaluated in terms of its historical significance and the potential impact from the Project.

The construction phase of the Antalya–Alanya Motorway Project poses potential risks to archaeological and immovable cultural heritage due to land preparation, excavation, and related activities. The impact assessment was conducted in accordance with the international standards with a strong emphasis on in-situ preservation. To avoid or minimize impacts, the project design was revised where archaeological sites were identified. These route adjustments reflect the commitment to avoid irreversible damage to non-replicable cultural resources.

Construction activities, including excavation and material transport, are the primary drivers of potential disturbance. In addition to avoidance, mitigation measures such as archaeological monitoring and the implementation of a Chance Finds Procedure are planned during construction. This includes collaboration with regional conservation boards and engagement of qualified archaeological personnel. Salvage and test excavations will be conducted where required. Many identified sites, including tumuli, aqueduct remains, rural settlements, and cemeteries, are expected to experience low or minor impacts when these measures are applied.

Once the motorway is operational, there will be no earthworks or land use changes that could physically affect heritage sites. During the operation phase, direct risks to archaeological and immovable cultural heritage are expected to be minimal. Moreover, since the cultural assets along the route were either avoided during design or protected through mitigation actions, long-term impacts during the operation period are not anticipated to pose a significant threat to their integrity.

III.15 Cumulative Impact Assessment

Cumulative impacts are defined as the “impacts that result from the successive, incremental, and/or combined effects of an action, project, or activity (collectively referred to in this document as ‘developments’) when added to other existing, planned, and/or reasonably anticipated future ones.” Several stand-alone developments with individually minor impacts may result in significant cumulative effects.

To assess potential cumulative impacts, a review of other existing, planned, or reasonably foreseeable developments within this corridor was conducted to identify interactions with the Antalya–Alanya Motorway Project. The key developments identified include the Antalya–Kayseri Railway Project, currently in the design phase; the Manavgat–Antalya–Anamur Natural Gas Pipeline, also under design; and two operational energy transmission lines: the Kasimlar Hydroelectric Power Plant ETL and the Varsak–Serik–Belek ETL. The cumulative impact assessment considers both spatial and temporal overlaps with the Motorway Project. Given that the railway and pipeline projects are anticipated to begin construction within a similar timeframe (2025–2028), their combined footprint may result in increased pressure on shared VECs, such as land use patterns, air quality, and local biodiversity. While the energy transmission lines are already operational, their alignment near the motorway corridor presents potential for long-term residual effects, including landscape fragmentation and incremental stress on sensitive habitats.

To manage the identified cumulative impacts, mitigation measures have been proposed within the scope of the ESIA. Since cumulative effects result from the overlapping influence of more than one project, responsibility for mitigation lies not only with the Antalya–Alanya Motorway Project but with all stakeholders involved in the other projects contributing to the impacts.

It is important to note that the proposed mitigation measures are indicative and conditional, intended solely for addressing potential cumulative impacts that may arise if other identified projects become active in overlapping timeframes and within shared areas of influence. These measures are not binding commitments by the Motorway Project or any other third party. Rather, they represent a precautionary planning approach based on publicly available data. The actual implementation of these measures will depend on the confirmation of the other projects' execution plans, timelines, and geographical footprints.

Where possible and appropriate, the Motorway Project may pursue good-faith engagement with relevant third-party entities to explore coordinated mitigation solutions. However, the feasibility and success of such collaboration will depend on the willingness and capacity of all parties involved and cannot be guaranteed by this Project alone. Therefore, while the Motorway Project aims to support the management of cumulative effects through proactive planning, the outcomes of such efforts will remain partly beyond its direct control.

IV. ENVIRONMENTAL AND SOCIAL MANAGEMENT SYSTEM

An Environmental and Social Management System (ESMS) has been developed to manage environmental and social issues in accordance with project standards throughout all phases of the project. Project Sponsor has the adequate ability and capacity to manage the implementation of the project and in particular the E&S Standards. Environmental and Social Management System (ESMS) of Project Sponsor covering all phases of the Project and consisting of management plans on different subjects have available staff and capacity to ensure ESIA implementation. A set of ESMPs and procedures have been developed for each component to address the environmental and social impacts

identified in the ESIA and associated mitigation measures. All ESMPs prepared and to be implemented for the project are explained below.

IV.1 Environmental and Social Management Plans (ESMPs)

Within the scope of the ESMP, several topic-specific procedures have been developed that set out the main management approaches and mitigation measures, together with a monitoring plan to assess the effectiveness of the mitigation measures to be implemented.

In addition to the topic-specific procedures incorporated under the ESMP, the following project-specific sub-management plans have been developed to ensure the effective implementation of the ESMS during the construction phase. These plans provide detailed guidance tailored to the specific activities, risks, and impacts anticipated during construction and are fully aligned with the overarching ESMP framework. Each sub-plan is designed to address environmental and social risks that may arise throughout the construction period. These Plans are:

- Air Pollution and Emissions Management Plan
- Hazardous Material Management Plan
- Solid Waste Management Plan
- Environmental Accident and Spill Response Management Plan
- Water Quality, Wastewater and Storm Water Management Plan
- Noise and Vibration Management Plan
- Change Management Plan
- Community Health and Safety Management Plan
- Construction Camp Site Management Plan
- Emergency Preparedness and Response Management Plan
- Human Resources and Labor Management Plan
- Security Management Plan
- Supply Chain and Subcontractor Management Plan
- Traffic Management Plan
- Training and Communication Management Plan
- Occupational Health and Safety Management Plan
- Resource Efficiency Management Plan
- Excavated Material Management Plan
- Soil Management and Erosion Control Plan
- Cultural Heritage Management Plan
- Blasting Management Plan
- Quarry Management Plan
- Demolition Management Plan
- Environmental and Social Management and Monitoring Plan

In addition, Cultural Heritage Management Plan including Chance Find Procedure and Grave Relocation Procedure and Stakeholder Engagement Plan (including the Grievance Mechanism) were prepared as part of the ESIA Report and is submitted as annexes to this ESIA Report.

An Operation Phase Environmental and Social Management Plan (O-ESMP) will be developed prior to the commencement of the operation phase, as required. This overarching plan will guide the implementation of environmental and social mitigation and monitoring measures during operation. In addition, a set of operation phase sub-management plans will be prepared to address project-specific environmental and social risks. These plans will be aligned with the O-ESMP and the overall ESMS to ensure effective risk management and regulatory compliance during operation.

IV.2 Summary of Monitoring Activities

The effective implementation of the ESMS and ESMP will be monitored through internal and external mechanisms, including site inspections, environmental monitoring, and documentation checks. An Environmental and Social Monitoring Plan has been prepared to support these activities, with associated costs covered by the Project Sponsor. The ESMS is considered a living system that may evolve throughout the Project; updates will be made by the Project Sponsor's Environmental and Social Department and submitted to Lenders as needed.

Internally, the Environmental and Social Manager will conduct monthly labor audits during construction and operation, compiling results into report to assess compliance with ESIA commitments and to determine corrective actions. The EPC Contractor will carry out regular monitoring, including joint site inspections with the E&S Manager and daily oversight across work areas, to ensure adherence to the ESMP. Daily oversight, led by the E&S Manager and occasionally joined by the SPV General Manager, helps track compliance and inform decisions through documented findings and follow-ups.

Externally, independent third-party experts will perform audit (the frequency to be determined) during construction, assessing compliance with national legislation and international standards such as the Equator Principles and IFC PSs.

V. PUBLIC CONSULTATION

Public consultation is an integral component of the ESIA for the Project, aimed at ensuring environmental and social sustainability and stakeholder engagement. Consultations have been carried out and continued to inform affected communities, gather feedback, and incorporate local perspectives into project planning and mitigation strategies. The Stakeholder Engagement Plan (SEP), developed and maintained as a living document, guides these activities throughout the project lifecycle. Objectives of the consultation process include informing stakeholders about the project, understanding local priorities, shaping the ESMP and SEP, and establishing communication channels for ongoing engagement. The Project aligns with both Turkish regulations and international standards, including the Equator Principles and IFC PSs.

V.1 Stakeholder Engagement Activities

Stakeholder engagement for the Antalya–Alanya Motorway Project began during the national EIA process in 2016. Initial outreach included coordination with provincial and district authorities, municipalities, and village mukhtars. Formal public consultation meetings were held in Döşemealtı, Alanya, and Manavgat districts, where project details were presented; community feedback was documented. These meetings were publicly announced and included presentations on construction and operation phases. In June 2024, ENCON conducted a four-day field study involving interviews with academics, mukhtars, NGOs, and various local groups including women, elderly individuals, and agricultural workers in both Serik and Manavgat districts. These discussions provided context-specific insights into social dynamics and community concerns.

Stakeholders were categorized into Project-Affected People, Vulnerable Groups, Interested Parties, and Governmental and Regulatory Stakeholders.

Table V.1. Stakeholder Categorization

Category	Description / Details
Project-Affected People (PAPs)	Individuals and households directly impacted by land acquisition or construction activities; business owners
Vulnerable Groups	Those with limited capacity to participate in decision-making or to absorb adverse impacts

Category	Description / Details
Interested Parties	Institutions, NGOs, unions, academic groups, business owners, or the general public with a stake in the project outcomes. This includes civil society actors and service organizations supporting local communities, including those involved in health, social welfare, gender-based violence response, shelter, or community development.
Governmental and Regulatory Stakeholders	Local, provincial, and national-level authorities responsible for project permitting and oversight. This also includes emergency response units (e.g., disaster management authorities, fire brigades), public health services, municipal utilities, and security or protection bodies involved in addressing GBV and community safety.

Table V.2. Information of PCMs in EIA Process

Districts	Date	Location
Döşemealtı	07 April 2016	Ekşili Village Coffeehouse
Alanya		Alanya Municipality Çıplaklı Wedding Hall
Manavgat		Manavgat Chamber of Commerce and Industry Assembly Meeting Hall

Table V.3.Summary of the Social Field Studies Conducted as part of the ESIA

Tasks	Date	Scope of Field Study
Key Informant Interviews	3-6 June 2024	Four (4) key informant interviews in Serik/Merkez, Manavgat/Ulukapı, Manavgat/Karakaya, and Alanya/Toslak neighborhoods
Focus Group Interviews,		Eight (8) Focus group interviews in Serik Merkez, Taşağıl, Kalemler, Ulukapı, Hacıisalı, Karakaya-Çakallar-Alara, Akdam, and Toslak-Konaklı-Alara
Other Stakeholder Meetings		Interviews with Academics, local officials, and local communities

Further engagement activities were conducted between April and May 2025 to inform the preparation of the ESIA and RAP. These included preliminary and comprehensive field surveys to identify land users and assess potential resettlement needs. Interviews were held with mukhtars, households facing physical or economic displacement, and business owners, while government consultations included meetings with KGM and district agricultural directorates. Additional outreach was conducted with NGOs and agricultural associations such as Sera-Bir. Through these efforts, affected communities were informed about project progress, their level of impact, and opportunities to participate in the resettlement planning process. These engagements helped identify asset types, confirm land tenure, and document vulnerable groups across the project area.

As part of the ESIA process, four Public Consultation Meetings (PCMs) were planned along the Antalya–Alanya Motorway route in the third quarter of 2025. These meetings took place in Orta (Serik, Antalya), Yukarıpazarcı (Manavgat, Antalya), Avsallar (Alanya, Antalya), and Konaklı (Alanya, Antalya). Locations were selected based on earlier fieldwork including key informant interviews and focus groups to ensure accessibility and representation of various stakeholder groups. Each location was chosen to cover approximately 30 km segments of the motorway to make participation easier for surrounding settlements. The meetings aimed to share project updates, gather feedback, and promote participation, especially from women and vulnerable groups.

The meetings were held in accessible community venues and announced in local newspapers and through direct outreach to neighborhood mukhtars. Project representatives, the ESIA consultant, and officials from the General Directorate of Highways have participated. The sessions included project presentations and open discussion. Prior to the PCMs, brochures, posters, and large-format maps were distributed to inform communities. Separate meetings with mukhtars are conducted to ensure continuous communication, including the possible use of WhatsApp groups. The PCMs were recorded in writing, and photographs were included in the ESIA and SEP. Vulnerable groups such as women-

headed households, disabled individuals, seasonal agricultural workers, and ethnic minorities have been specifically considered throughout the engagement process to ensure inclusivity and effective participation.

Antalya-Alanya Otoyolu İnşaat Yatırım ve İşletme A.Ş. would use appropriate methods to disclose information about the planned Project, consult with stakeholders on potential benefits and risks of the planned project and potential adverse impact mitigation measures. For all disclosure attempts IFC PS1 and EPFI Principle 5 will be followed and by doing so, the Project will be kept in international standards.

Different engagement methods are proposed and cover different stakeholder needs as stated below:

- Formal/informal face-to-face meetings,
- Focus group meetings,
- One-on-one interviews,
- Digital communication tools (including web pages, correspondence by phone/email, WhatsApp, short message service),
- Written materials,
- Grievance mechanism,
- Social Media promotions

The project has and will continue to use the following methods for interacting with stakeholders:

Table V.4. Stakeholders / Purpose of Communication / Communication Methods

Stakeholders	Purpose for Communication	Type and Method of Communication
Local communities/settlements in the area Farmers and owners of the agricultural fields around the motorway route Related local businesses near the motorway route Local Universities Vulnerable groups specified under the stakeholder identification section of this document which include as follows: • Children • Children with special needs • Out-of-school children (school-age children who cannot attend school) • Elderly people (75+) • Elderly people requiring care and social assistance (65+) • Illiterate adults • Persons with chronic illness (e.g., heart, diabetes, kidney) • Persons with other serious health conditions (e.g., cancer, Alzheimer) • Disabled persons (physical / mental) • Unemployed people (even though they are actively seeking work) • Seasonal agricultural workers • Households dependent on natural resources (agriculture, livestock, forest products) • Green Card holders • State aid beneficiaries • Informally employed workers (without social security) • Physically and Economically displaced households • Female-headed households • Landless households • Low-income households (below minimum wage) • Migrant and refugee households (e.g., Syrian, Afghan) • Ethnic or linguistic minority groups • Semi-nomadic Yörük communities • Households previously affected by expropriation	Providing information on the nature of the proposed Project, duration of the Project, potential environmental, social and economic impacts (positive and negative) Opportunities for the community to be actively involved in the project activities Mechanism / opportunities for suggestions and proposals Discussions on the potential adverse impacts	Information through the notice boards in public places,community liaison officers, project information desks, official website etc. Information about the prepared documents related to the project (ESIA report and SEP). Construction signs and warnings during the construction phase Group or individual meetings to identify impacts, agree and implement mitigation measures, project announcement (leaflets, etc.) as necessary

Stakeholders	Purpose for Communication	Type and Method of Communication
Representatives of local communities	Providing information on the nature of the Project, duration of the Project, potential environmental, social and economic impacts (positive and negative) To generate opportunities for the community to be actively involved in the project activities To create mechanisms and/or opportunities for suggestions and proposals To give rise to discussions on the potential adverse impacts	Official correspondence and meetings to provide information on project progress and issues that concern local communities and providing direct information Information through the notice boards in public places,community liaison officers, project information desks, official website etc. Information about the Project (ESIA, SEP, Management Plans) Formal/Informal Meetings with related parties
Interested national and local NGOs Other interested organizations will be added, as identified throughout the life of the Project	Providing information on the nature of the Project, duration of the Project, potential environmental, social and economic impacts (positive and negative) These organizations can potentially help to identify key issues pertaining to the local community (vulnerable groups) and the local environment	Information through the notice boards in public places,community liaison officers, project information desks, official website etc. Information about the Project (ESIA, SEP, Management Plans) Formal/Informal Meetings with related parties
AFAD Local emergency services, fire brigades, utility owners and operators, local police, coast guard, health services	Inform relevant local authorities about Project and undertake official correspondence when needed	Official correspondence and meetings to prepare for and coordinate activities during operation.
Local and Central Governmental Institutions/Agencies	Informing regarding Project progress and undertake official correspondence Getting necessary approvals/opinions during project execution	Official correspondence and meetings, information disclosure and consultation reporting, monitoring, permit requests
General Directorate of Highways (KGM)	Providing information about the operation process of the Project, providing necessary information and reporting on relevant stakeholder engagement activities	Official correspondence and regular meetings to provide information on project progress and address issues that concern local communities and stakeholders Official correspondence and meetings, information disclosure and consultation reporting, monitoring, permit requests

V.2 Grievance Mechanism

The grievance mechanism (GM) is designed to resolve complaints and concerns efficiently and fairly, aiming to ensure timely and satisfactory outcomes for all parties. It supports the identification and resolution of project-related issues, strengthens stakeholder accountability, and provides accessible channels for feedback. External and internal stakeholders can submit grievances by using the following methods:

- Grievance/comment boxes and forms have been placed in public places including places commonly/ comfortably visited by women),
- Verbally during face-to-face meetings/visits to be held by the Project personnel (e.g. chiefs/ managers, Community Liaison Officers (CLOs)),
- CLO's contact numbers have been shared with the mukhtars and also information leaflets have been hanged in each neighborhood sharing the contact information of the CLO's,
- E-mail (the e-mail address for the submittal of grievances/comments have been shared with the local communities, and
- Website (with the anonymous option).

CLOs during construction will collect submissions weekly. Boxes and information boards have already been installed at mukhtar offices across affected neighborhoods, with further boxes planned for all camp

areas. The Serik office also serve as contact points. Procedural steps of the grievance mechanism are outlined in Table V.8. Stakeholders can directly engage with the Project through several channels:

Table V.5. Contact Details of AAOİAS

Webpage:	www.antalyaalanyaotoyolu.com.tr
Call Centre (hotline):	0850 202 07 07
Grievance Boxes & Forms	Placed in local community centers (e.g., Mukhtar's offices) and camp sites. Anonymous submissions are allowed.
Information Office	Orta, Belek Caddesi, No: 7, Iç Kapi No: 9 Serik/Antalya

Figure V.1 The Grievance and Suggestion Box at Mukhtar's Office

In additionally, two official national-level mechanism which are The Presidency's Communication Centre (CIMER) and The Foreigners Communication Centre (YIMER) provide a centralized complaint system for both Turkish citizens and foreigners.

Table V.6 Contact Details of CIMER

Webpage:	www.cimer.gov.tr www.turkiye.gov.tr
Call Centre (hotline):	150
Phone number:	+90 312 590 20 00
Fax number:	+90 312 473 64 94
Official Letter/Petition:	Republic of Türkiye, Directorate of Communications T.C. Cumhurbaşkanlığı Külliyesi 06560 Beştepe/ Ankara
Individual Application:	Community relations desks at governorates, ministries and district governorates.

Table V.7 Contact Details of YIMER

Webpage:	www.yimer.gov.tr
Email:	yimer@goc.gov.tr
Call Centre (hotline):	157
Phone number:	+90 312 515 11 22
Fax number:	+90 312 920 06 09

Official Letter/Petition:	Republic of Türkiye General Directorate of Migration Management, Çamlıca Mahallesi 122. Sokak No: 4 Yenimahalle/ Ankara
Individual Application:	Republic of Türkiye General Directorate of Migration Management

Grievances related to GBV, Sexual Exploitation and Abuse (SEA), and Sexual Harassment (SH) will be addressed through a dedicated and sensitive approach within the Grievance Mechanism (GM), which will be operational before contractor mobilization. Recognizing the risks of stigmatization, rejection, and reprisals, the GM will enable survivors to report SEA/SH cases safely and confidentially through multiple channels. To protect survivors and encourage reporting, no identifiable information will be recorded in the GM. Only limited details may be documented: the nature of the complaint in the survivor's own words, whether the perpetrator was linked to the project, and, if possible, the age, sex, and service referral status of the survivor. All GM operators, including CLOs, will be trained to handle SEA/SH complaints with confidentiality, empathy, and without judgment. The GM will not ask for or record more information than necessary, and confidentiality will be strictly maintained, particularly concerning the complainant's identity.

Table V.8. Procedural Steps of Grievance Mechanism

Step	Description of Process	Time Frame	Responsibility
GM implementation structure	There exist two Grievance Mechanism at the National Level: • Presidency's Communication Centre and • Foreigners Communication Centre	-	Presidency's Communication Centre, and Foreigners Communication Centre and related authorities, CLO
Grievance uptake	Grievances can be submitted via the following channels: • Telephone • Verbally • E-mail • Website • Grievance/comment boxes • Letter to Grievance focal points at local facilities Complaint form to be logged via any of the above channels • Walk-ins may register a complaint in a grievance logbook at a facility or suggestion box Anonymous Grievances can be submitted via the following channels: • Telephone • Letter to Grievance focal points at local facilities • Grievance box in headman's office and the camp sites • Website	CLO must open grievance boxes every week during the construction phase and every 30 working days during the operational phase	CLO
Sorting, processing	Any complaint received is forwarded to Environment and Social Manager and SPV General Manager, Logged in the Grievance Log, and categorized according to the complaint types[9]:	Within 3 business days of receipt	CLO

[9] *Level 1 Complaint: A complaint that is isolated or 'one-off' (within a given reporting period - one year) and essentially local in nature.*

Note: Some one-off complaints may be significant enough to be assessed as a Level 3 complaint e.g., when a national or international law is broken (see Level 3).

Level 2 Complaint: A complaint that is widespread and repeated (e.g., noise from the facilities, dust, etc.).

Level 3 Complaint: A one-off complaint, or one which is widespread and/or repeated that, in addition, has resulted in a serious breach of the Project's policies or National law and/or has led to negative national/international media attention, or is judged to have the potential to generate negative comment from the media or other key stakeholders (e.g., inadequate waste management).

Step	Description of Process	Time Frame	Responsibility
	If the complaint is assessed to be out of the scope of the Grievance Mechanism, a grievant will be notified through the desired communication method and an alternative mode of solution will be suggested.		
Acknowledgement and follow-up	Receipt of the grievance is acknowledged to the complainant by CLO through a personal meeting, phone call or letter as appropriate, within a target of 3 business days after submission. If the grievance is not well understood or if additional information is required, clarification will be sought from the complainant.	Within 3 business days of receipt	CLO
Verification, investigation, action	Investigation of the complaint is led by Environment and Social Manager and SPV General Manager. The SPV General Manager is notified of Level 1, 2 or 3 grievances. The Social Chief, as appropriate, support the Environment and Social Manager in deciding who should deal with the grievance and determines whether additional support for the response is necessary. A proposed resolution is formulated by Social Chief, as appropriate, supports the Environment and Social Manager and is communicated to the complainant by CLO through the grievance/comment close-out form.	Responses within 30 business days of receipt	SPV General Manager, E&S Manager, Social Chief, Community Liaison Officers
Monitoring and evaluation	Data on complaints are collected in a database and reported to SPV General Manager, Environment and Social Manager and AAOİAŞ HQ every three months	Quarterly	CLO
Provision of feedback	Feedback from complainants regarding their satisfaction with complaint resolution is collected by CLO through phone calls or face-to-face interviews.	15 business days after the implementation of the resolution	CLO