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Ankara-Nigde Motorway Project

Environmental and Social Impact Assessment (ESIA) Study
Non-Technical Summary (NTS)

ERG Otoyol Yatırım ve Isletme A.S.

April 2018

Quality information

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1. Introduction

The Ankara-Nigde Motorway (hereafter referred to as the ANM or ANM Project) is a key national transportation project planned and developed by the General Directorate of Highways (KGM) of Turkey, a governmental organization operating under the body of the Turkish Ministry of Transport, Maritime Affairs and Communications.

The ANM is one of the complementary sections of the United Nations Economic Commission for Europe (UNECE) Trans-European Motorway (TEM) Project, which is a regional transportation infrastructure project established in 1977 with the initial financial support of the United Nations Development Program (UNDP). TEM Project starts in Poland and reaches Asia via Turkey, also running across some of the Middle Eastern and South-eastern European countries. Turkey is one of the full members of the Project together with other 14 member countries. The ANM, being one of the core sections of the TEM, constitutes the missing section of the TEM network in southern Turkey. The planning studies of the ANM Project dates back to 1990's. Due to financial difficulties, the Project could not be put out to tender and was put on hold during that period.

In 2015 the Project was revitalized with the High Planning Council's decision authorizing the KGM for the implementation of the ANM through the build-operate-transfer (BOT) model. In the period following this decision, the Environmental Impact Assessment (EIA) process required under the national EIA Regulation was conducted and an EIA Positive Decision was issued by the Ministry of Environment and Urbanization for the Project in September 2016 (Decision Date: September 5, 2016; Decision No: 4280).

ERG Otoyol Yatirim ve Isletme A.S. ("ERG" or the "Project Company") was selected in April 2017 as the Appointed Company for the concession to construct and operate the Project as a result of the BOT tender launched by the KGM. The BOT Contract was signed between the KGM and the Project Company in August of 2017.

The concession period of the BOT Contract is 11 years 10 months 17 days, including the 3 year-construction phase, which starts with the financial close of the international financing process. The investment cost for the Project is specified in the BOT Contract as approximately 4 billion Turkish Liras (around 1.1 billion Euros).

The Project Company is considering international and national finance for the implementation of the Project. To meet the environmental and social requirements of the potential Lenders, AECOM Turkey Consultancy and Engineering Limited Company (AECOM) has been retained to carry out an Environmental and Social Impact Assessment (ESIA) study in line with the international standards[1]. As per the environmental and social categorization approaches of the Equator Principles Financial Institutions (EPFI) and the Export Credit Agencies (ECAs), the ANM Project is classified as a "Category A" Project.

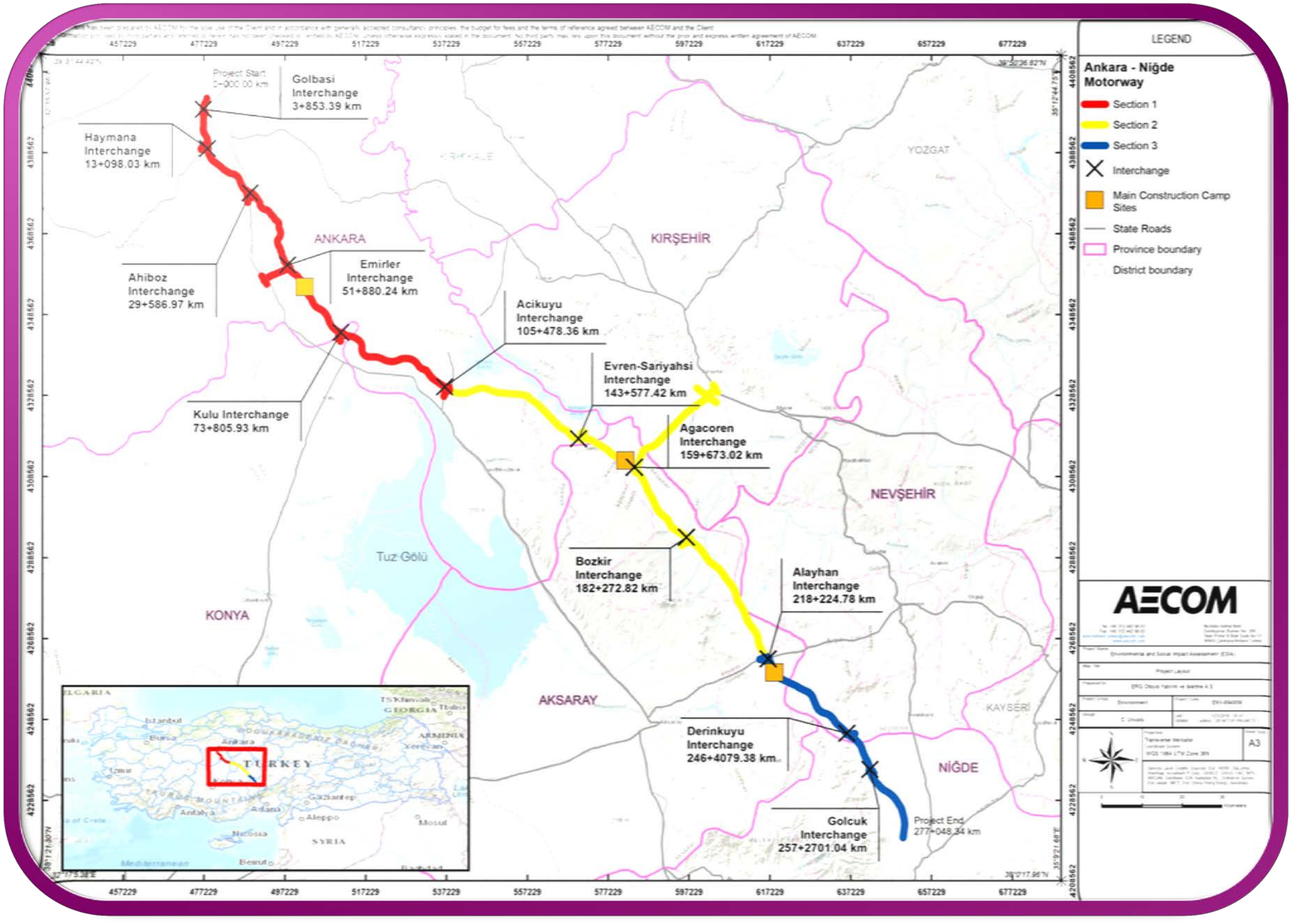
As part of the ESIA studies, AECOM has prepared an ESIA Disclosure Package including the following documents:

- ESIA Report
- Non-technical Summary (NTS)
- Stakeholder Engagement Plan (SEP)
- Environmental and Social Management and Monitoring Framework Plan (ESMMFP)

An Environmental and Social Action Plan (ESAP), Livelihood Restoration Plan (LRP) Framework and Resettlement Action Plan (RAP) Framework have also been prepared for the Project.

[1] Equator Principles III (June 2013), IFC's Sustainability Policies, Performance Standards (January 2012), Recommendation of the Council on Common Approaches for Officially Supported Export Credits and Environmental and Social Due Diligence ("OECD Common Approaches", 2016) and relevant Environmental, Health and Safety Guidelines.

Ankara-Nigde Motorway



1.1 What is the Ankara-Nigde Motorway Project?

ANM is a Project planned to cross the provinces of Ankara, Aksaray, Konya, Kirsehir, Nevsehir and Nigde, which are located in Central Anatolia. The Motorway will have a total length of approximately 330 km including the main route (around 275 km) and the connection roads (around 55 km). It will be a dual carriage way of 2x4 lanes in the first 30 km part of the route, and 2x3 lanes for the remaining part. The main components of the Motorway will consist of the engineering structures including the interchanges, viaducts, underpasses, overpasses, bridges and culverts, as well as the operational facilities including the services areas, park areas and maintenance centers. The Project consists of the following three sections:

i) Section 1: Ankara Golbasi-Acikuyu Intersection,

ii) Section 2: Acikuyu-Alayhan Intersection, and

iii) Section 3: Alayhan-Golcuk Intersection.

1.2 Who is developing the Project

The General Directorate of Highways (KGM) is the developer and owner of the ANM Project. It is the public entity determining the standards concerning construction, repair and maintenance of the road network in Turkey and updates related national technical specifications. KGM's responsibility in the scope of the Project includes control of design and construction works, quarry allocations (on state-owned lands) and execution of legal procedures regarding expropriation.

ERG Otoyol Yatirim ve Isletme A.S. is the Appointed Company under the BOT Contract. It is a special purpose vehicle (SPV) established by the ERG Construction and Seza Construction for the implementation of the Project. Within the SPV, ERG Construction acts as the pilot shareholder holding 95% of the shares. With its headquarters closely located to the start of the ANM in Golbasi, Ankara, ERG Construction is a leading construction company in Turkey, operating since 1972, in design, planning, construction and operation of a wide array of projects including roads, airports, dams and hydroelectric power plants, industrial plants and other infrastructure.

1.3 Where is the Project located and how the land required for the Project will be acquired?

The ANM Project is located in Central Anatolia. The ANM route starts approximately 2 km south of the Ankara Ring Road (E90) near Hacilar neighborhood located in Golbasi district of Ankara province and ends around 15 km north-east of the center of Nigde province, where it will connect to the existing Nigde South Motorway (O-21) and the Kayseri-Nigde State Road (D805). Along its route, the Motorway will cross the provinces of Ankara, Konya, Kirsehir, Aksaray, Nevsehir and Nigde. The route of the Motorway and its connection roads crosses mainly the agricultural lands located on the Anatolian Plateau.

Provinces Crossed by the Motorway	Districts Corresponding to the Motorway Route
Ankara	Golbasi, Bala, Sereflikochisar, Evren
Aksaray	Ortakoy, Sariyahsi, Gulagac, Agacoren, Merkez
Konya	Kulu
Kirsehir	Merkez
Nevsehir	Acigol, Derinkuyu
Nigde	Merkez
Total	

In line with the relevant national legislation, acquisition of the required land is being done/will be done primarily by land consolidation or expropriation where this is not applicable. Land consolidation is conducted by the Ministry of Food, Agriculture and Livestock, General Directorate of Agricultural Reform and KGM is responsible from the execution of expropriation works. According to the related terms of the BOT Contract, the Project Company is liable to provide up to 50 million Turkish Lira for the expropriation costs. The costs exceeding this amount will be provided by the KGM according to the BOT Contract.

2. Project Background

2.1 Why is the Project needed?

With the implementation of the Project, which is the missing link of the Turkish TEM Project, the travel distance between Ankara and Nigde provinces will be reduced by approximately 40 km. The Project is also expected to ease the traffic flow and reinforce social and commercial relations between the northwest and southeast of Turkey, enhancing economic growth, trade options, as well as logistics capacity through elimination of existing physical barriers. There will also be large-scale construction-phase employment opportunities, for local people and workers from different backgrounds. Acquisition of goods and materials for the construction activities will also add to the regional economy. The ANM Project is also anticipated to increase the accessibility of the important touristic areas in the region, including Salt Lake (located within the boundaries of Ankara, Konya and Aksaray) and the historical Cappadocia (located within the boundaries of Nevsehir, Kayseri, Kirsehir, Aksaray and Nigde). Once it is commissioned, the Project will provide an uninterrupted road connection from Turkey's Bulgarian border in Edirne province to Sanliurfa near the Syrian border and contribute to improvement of the regional transportation network.

2.2 Which standards apply to the Project?

All relevant requirements of the national legislation regarding the management of environmental, social, labor, cultural, land acquisition and transportation will apply to the Project.

Additionally, the ANM Project will be implemented in line with the following international environmental and social standards and guidelines:

- Recommendation of the Council on Common Approaches for Officially Supported Export Credits and Environmental and Social Due Diligence ("OECD Common Approaches") (2016),
- Equator Principles III (2013),
- IFC Performance Standards, and Environmental Health and Safety Guidelines (2012),
- IFC General Environmental, Health and Safety (EHS) Guidelines (2007) and relevant industry sector guidelines,
- International Conventions and Protocols to which Turkey is a party, and
- The Project Company's environmental and social policies, guidelines, and standards.

2.3 What has been done according to the Turkish EIA Regulation?

A full EIA process was conducted for the Project (including the entire Motorway route as well as the quarries and borrow sites) and Project's national EIA Report had been prepared by a competent local consultant (DOKAY Engineering and Consultancy Ltd. Co) in 2016 in line with the national EIA Regulation and other applicable national legislation. Based on the EIA Report prepared, an "EIA Positive Decision" was obtained from the Ministry of Environment and Urbanization for the Project in 2016. As part of the process, public participation meetings were held in July 2015, in all of the six provinces along the Motorway route; Ankara, Konya, Aksaray, Kirsehir, Nevsehir and Nigde. More than 30 governmental institutions were involved in the scoping, review and evaluation of the EIA Report.

2.4 What is the Environmental and Social Impact Assessment (ESIA) Process?

The ESIA is the process of environmental and social assessment that is conducted in line with applicable international standards of Lenders. It takes into consideration the national EIA studies conducted according to the national EIA Regulation as the basis and updates and supplements the existing studies as necessary with additional environmental and social studies.

The ESIA Process for the ANM Project has been undertaken in line with the international standards and Good International Industrial Practices (GIIP), to address key issues related to the implementation of the Project through its design, construction and operation. In preparation of the ESIA Report, a systematic approach has been applied to the entire ESIA Process and methodology. This approach has taken all of the steps required to be taken to implement the Project, and also the legislative framework, environmental baseline studies, analysis of alternatives, assessment of environmental and social impacts, proposed mitigation measures to avoid and/or minimize potential impacts, as well as the environmental and social management systems (ESMS). The main objective is to ensure that the ANM Project activities are conducted so as to minimize potential impacts identified during the ESIA Process, and maximize benefits that affected communities and environmental receptors would get from implementation of the Project.

The overall ESIA study area is composed of sub-study areas, which will be minimum 500 m corridor to cover the direct physical impacts of the Motorway and be expanded as necessary to cover impacts that may go beyond this border. The sub-study areas will be specific to each environmental and social subject considered in the ESIA study.

A number of parties are involved in the ESIA Process, who would take different responsibilities throughout the Project implementation, based on the activities conducted and also associated impacts and mitigation measures. Such parties include but are not limited to the Project Developer and Owner (KGM), Project Company, third party consultants, other government offices, financial institutions, affected communities, local businesses, social service providers, non-governmental organizations (NGOs) and civil society organizations (CSOs), media, and internal stakeholders of the ANM Project.

2.5 Who has undertaken the ESIA Process?

The ESIA Process for the ANM Project has been undertaken by AECOM in line with the applicable national legislation and international standards of the Lenders. AECOM has conducted all relevant studies for the preparation of the;

- Environmental and Social Assessment (ESIA) Report
- Non-Technical Summary (NTS)
- Stakeholder Engagement Plan (SEP)
- Environmental and Social Management and Monitoring Framework Plan (ESMMFP)

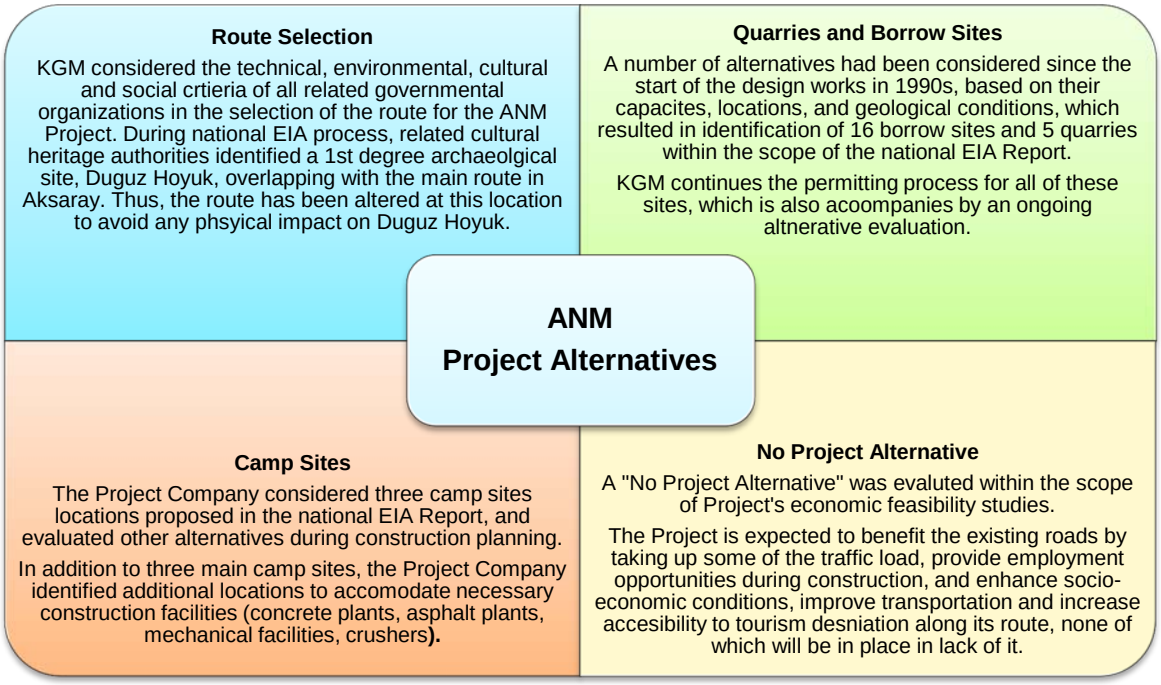
An Environmental and Social Action Plan (ESAP), Livelihood Restoration Plan (LRP) Framework and Resettlement Action Plan (RAP) Framework have also been prepared for the Project. SRM Consulting has been responsible for the baseline social surveys, assessment of potential social impacts and preparation of the Stakeholder Engagement Plan (SEP), RAP Framework and LRP Framework; whilst REGIO Cultural Heritage Management Consultancy conducted the cultural heritage field surveys, assessment of potential impacts on the cultural heritage and preparation of the Cultural Heritage Management Plan.

2.6 What are the key limitations and uncertainties of the ESIA studies?

The route of the ANM was fixed at the time of the ESIA studies; however, optimization of the number, characteristics and locations of engineering structures are likely to be continued in the following phases of the Project in order to implement the Project in the most environmentally, socially, technically and financially feasible way. The ESIA has considered the latest design as of April 2018. Potential future changes that may occur in the next phases of the Project (with the approval of KGM) could naturally not be considered in scope of the ESIA Report.

As the land acquisition works (land consolidation and expropriation) for the Project are conducted by the related governmental agencies (GDAR and KGM), the Project Company does not have direct access to land consolidation data; however, it collaborated with KGM to obtain the data (from the GDAR) required for the assessments during the ESIA process. Since expropriation will be conducted only after land consolidation is completed (gradually along the Motorway), detailed expropriation data was at the stage of preparation and not available during the ESIA studies. Land consolidation and expropriation data will be further taken into consideration in the scope of the LRP and RAP studies to be conducted for the Project in the next phases. A number of quarries and borrow sites are being considered by the KGM and the Project Company for the Project's construction phase. Since the assessment of alternatives is on-going, the ESIA has considered all the potential alternatives to the extent technical information is available.

2.7 What alternatives were considered?



2.8 What permits and licenses are required for the Project implementation?

All necessary permits and licenses required for the implementation of the Project will be acquired by the KGM and Project Company, in line with the Turkish legislation according to the Project schedule.

Construction

- Permit for the use of agricultural lands
- Permit for the use of pasturelands
- Land use agreements with state authorities for state owned lands
- Crossing permits and approvals for roads, railroads, water bodies, canals, power supply lines, pipelines etc.
- Official view/approval from military authorities
- Workplace notification for camp sites
- Permit for fuel storage
- Raw material production licenses for the quarries and borrow sites
- EIA Decisionx for the material borrow sites and quarries
- Environmental permit for the operation of package wastewater treatment plants and material borrow sites where necessary
- Blasting permit
- Approval for waste management plans

Operation

- Environmental permit for the operation of package wastewater treatment plants at the service areas or connection quality control certificate and/or wastewater channel connection document

3. Project Description

3.1 What are the main components of the ANM Project?

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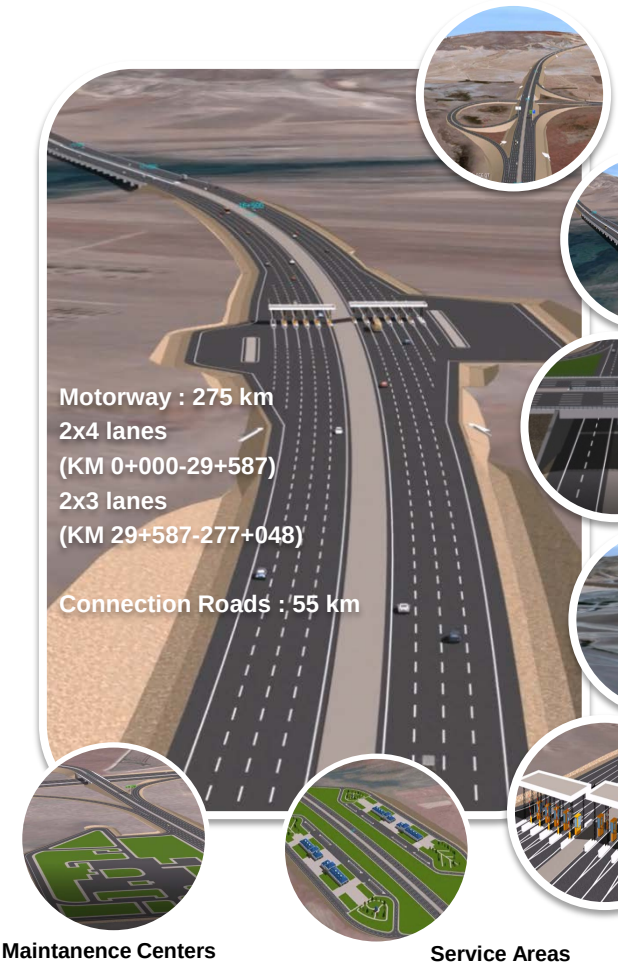


Interchanges

A total of 12 interchanges are planned, which will be located at every 20-30 km along the Motorway.

Viaducts

Planned in Golovasi, Derekisla, Sofular and Bozkir, with a total length of 2.5 km.

Overpasses/Underpasses

Existing infrastructure (e.g. state roads, village roads) along the Motorway route will be crossed using around 170 overpasses and underpasses that are planned to be built.

Culverts

Built to allow passage of humans, streams and animals, there will be nearly 400 culverts along the Motorway.

Toll Collection Areas

Each toll collection area of the access controlled ANM will have collection booths, toll passage lanes, operation buildings, substations and parking areas.

Maintanence Centers

Main maintenance centers to be established at every 120-150 km, while local ones at every 40-60 km.

Service Areas

A total of 6 service areas are planned at every 50 km with parking areas, restaurants, restrooms, fuel, washing, and repairs.

Logistics Center

A logistics center has been established on existing Ankara-Konya Road (E90) near Ogulbey neighborhood of Golbasi district in Ankara province. The Ogulbey Logistics Center is located around 7 km east of Motorway KM 9+000.

3.2 What are the temporary construction facilities?

Temporary construction facilities are the three main construction camp sites, one in each section; construction facilities, including concrete plants, asphalt plants, mechanical facilities; and crushers, quarries and material borrow sites.

Main Construction Camp Sites

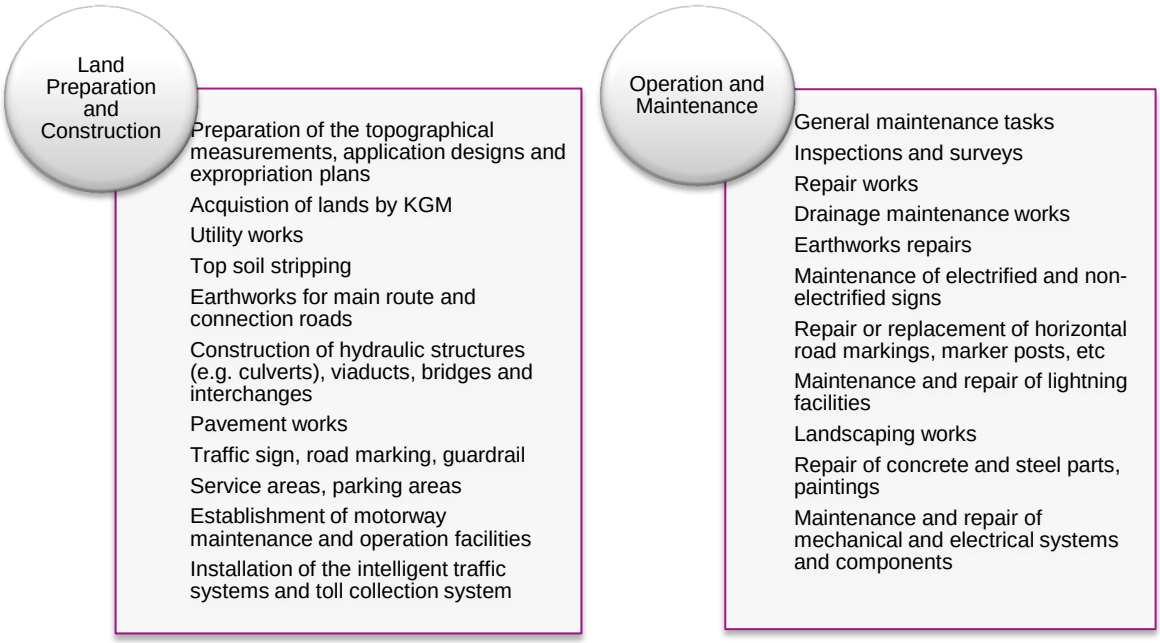
The main construction camp sites in Derekisla (Section 1), Kutuklu (Section 2) and Osmanli (Section 3), will include on-site accommodation facilities and a cafeteria, medical room, showers and toilets, wastewater management units, water supply facilities, and all related amenities. In addition, there will be additional construction related units such as a fuel station, workshops, laboratories, concrete plant, etc. Each main construction camp site is planned with its own infirmary equipped with medical facilities and sufficient number of healthcare staff in line with the national legislation, to serve immediate healthcare needs of the Project personnel.

Quarries and Material Borrow Sites

Sand, gravel, stone and rock material to be required for the construction works will be supplied from the nearby licensed material borrow sites and quarries. Currently, the Company is at the stage of selection of the quarries and material borrows sites to be used in the scope of the Project. All the permits/licenses required for the operation of these facilities will be obtained by the KGM or the operator. The facilities are planned to be used in the scope of the construction works for a maximum of 3 years. Operation activities at the material borrow sites and quarries will be conducted for 8 hours a day. Whenever required, blasting operations will be conducted at the quarries.

3.3 What are main Project activities?

The main activities in different phases of the Project will include the land preparation, construction and operation. Prior to start of land preparation and construction activities, all of the land within the acquisition (land consolidation/expropriation) corridor of the Motorway will be acquired and allocated to the Project by the KGM.



3.4 What is the construction workforce needed for Project implementation?

In the peak construction phase, a total of 7,500 personnel (including direct and contracted workers) are anticipated to be employed in the Project works. Maximum working hours, number of shifts and shift durations for different works (e.g. earthworks, quarry operations, pavement works etc.) will be arranged according to the nature of work and seasonal conditions and in compliance with the national Labor Law.

Workforce	Administrative Personnel	Site Personnel			Total
		Section 1	Section 2	Section 3	
Skilled	115	750	767	268	1,900
Semi-skilled	115	240	245	86	686
Unskilled	130	2,009	2,057	717	4,913
Total	**360**	**2,999**	**3,069**	**1,071**	**7,499**

3.5 What is the Project implementation program?

The BOT contract for the Project covers 11 years, 10 months and 17 days, including the construction period which is 3 years from the financial close. Land acquisition works of the Project, including land consolidation and expropriation, are being conducted by the related governmental agencies (KGM and GDAR). The land consolidation works of GDAR started around 6 years ago and have been completed at a ratio of approx. 90% in the section that covers districts of Bala, Golbasi, Sereflikochisar and Evren (corresponds to the first 150 kilometers of the Motorway) in Ankara province. Works are on-going in the remaining sections. Expropriation works of KGM will start after the finalization of land consolidation works. Currently, planning works for expropriation process is being conducted. The mobilization and land preparation works has started in sections where land consolidation works have been completed.

4. Stakeholder Engagement

4.1 Who takes an interest in the ANM Project?

The stakeholders of ANM Project include national authorities, local authorities (including headmen/mukhtars of the villages/neighborhoods), directly affected communities and settlements, local businesses, social service providers, non-governmental organizations (NGOs), civil society organizations (CSOs), and media. Employees of the Project Company and contractors are the internal stakeholders of the ANM Project.

4.2 Which engagement activities have been undertaken?

Public participation meetings for the ANM Project within the scope of the national EIA process were conducted in July 2015 in six provinces located along the Motorway route; Ankara, Konya, Aksaray, Kirsehir, Nevsehir and Nigde. The national EIA process also included engagement with more than 30 governmental organizations through meetings and official correspondence.

Within the scope of the ESIA studies, a social field study comprising interviews with project affected communities, households and local governmental institutional stakeholders (provincial and district governorates, municipalities and mukhtars/headmen) was conducted in February 2018. This included engagement with 22 governmental institution representatives, 34 mukhtars/headmen, 4 focus groups surveys and 375 household interviews and overall allowed to consult with 446 individuals who are among the stakeholder of the ANM Project.

4.3 What are the planned stakeholder engagement activities?

A Stakeholder Engagement Plan (SEP) has been developed for the Project as part of the ESIA Disclosure Package. The Project Company will implement the SEP throughout its contract duration to inform Project's stakeholders and engage them in the Project in an organized, systematic and transparent way.

Various methods of stakeholder engagement have been and will be used to involve the below listed stakeholders such as conducting public meetings, one-to-one and small group meetings, informing stakeholders by phone, email and project website. In line with international standards and its own corporate policies, the Project Company is committed to communicate openly about all of the Project-related activities with its employees, communities, as well as governmental and non-governmental organizations.

Method	Targeted Stakeholder	Project Phase
Public meetings	• Directly affected communities and settlements • Communities that will be affected from the resettlement • Local Authorities / Businesses • General Public	• ESIA Disclosure • Construction
One-to-one and small group meetings	• National Authorities • Local Authorities • Mukhtars • Local Business Representatives	• ESIA Consultation • ESIA Disclosure • Construction & Operation
Period of comment	• Directly affected communities and settlements • Communities that will be affected form the resettlement • National Authorities • Local Authorities / Businesses • Mukhtars	• ESIA Disclosure
Post/phone/ email	• All stakeholders	• Construction & Operation
Project website	• All stakeholders	• Construction & Operation

4.4 How to participate in the Stakeholder Engagement Process?

The Project Company has an active web site (http://www.ergotoyol.com.tr/) for the Project since January 2018. Grievance boxes and comment forms will be put in affected settlements. Project's stakeholders can use Project's web-site or grievance boxes/forms to be placed at construction camp sites and settlements to convey their opinions, questions, comments or complaints about the Project directly to the Project Company by using these tools. A Community Liaison Officer (CLO) has also been appointed under the Project Company's organization structure in April 2018. The CLO and his team will be in direct relation with Project's stakeholders so that they can convey their messages to the Project Company in person.

The ESIA Disclosure Package will be disclosed and remain in the public domain during the course of the Project, as will the SEP, which will be updated periodically. Interested stakeholders can review and comment on the ESIA Report and other documents developed as part of the ESIA Disclosure Package directly through the web-site if they have access to internet or through the grievance/comment forms that will be available at mukhtars' offices, camp sites, etc. and during the meetings that would be conducted in the selected locations.

Method of Communication

Web page	http://www.ergotoyol.com.tr/ http://www.ergotoyol.com.tr/sikayet-ve-oneri/
Phone	0 312 499 50 80
Address	Gaziosmanpaşa Mahallesi 79/1 Sokak No: 6 M Gölbaşı / Ankara
Email	info@ergotoyol.com.tr
Grievance Boxes	In all affected settlements Construction Camp Sites
Grievance Forms	Will be filled directly by the stakeholders or by the Project Company's experts where necessary

5. Potential Environmental and Social Impacts & Mitigation

5.1 What methodology is applied to the impact assessment?

The ESIA followed internationally recognized assessment methodologies and guidelines that allowed determination of impact significance as a factor of sensitivity/value of the receptors/resources and magnitude of impact, which represent the degree of change. The overall magnitude of impacts has been estimated in consideration of relevant factors such as extent, magnitude, reversibility, duration and frequency. As a result, an environmental and social assessment that is compatible with IFC standards has been completed. Residual impacts after the implementation of mitigation measures have also been assessed.

5.2 How will the Project impact land use and soils along the Motorway Route and how this will be managed?

Within the land acquisition corridor of the Motorway, approximately 4,200 ha land will be subject to changes in land use. A major part (nearly 90%) of this area corresponds to the agricultural lands, while the remainder is mainly pastures and natural grasslands.

Arable lands that will be impacted by the construction of the Motorway and its components are being/will be consolidated by the GDAR. As a result of land consolidation, arable lands affected by the Project within its land acquisition corridor will be replaced by Treasury land that will be allocated to the owners/legal right holders of the affected lands. Fertile top soil will be stripped prior to the start of construction activities and top soil management measures will be implemented (e.g. storage at suitable top soil storage areas) to ensure that the fertility of the soils are not lost. These soils will be reused in landscaping and rehabilitation studies following the completion of construction works.

One of the most significant impacts on pastures is the loss of pasture lands as a result of land consolidation and fragmentation of pasture lands due to passage of Motorway. Fragmentation would restrict access to these areas used mostly for animal grazing throughout the Motorway route. In order to mitigate fragmentation impacts, agricultural/pasture underpasses and culverts are either available or will be constructed throughout the entire Project route to enable access from one side of the Motorway to the other and mitigate impacts of fragmentation.

Impact on land use and that will be caused by the quarries, borrow sites and construction facilities that will be located outside the corridor will result from temporary land take. All of the disturbed sites will be rehabilitated as appropriate following the completion of construction works in line with the KGM Technical Specifications, which will also be followed in soil management to minimize impacts on top soil, risk of soil disturbance and erosion, as well as soil contamination due to unexpected accidents. In this respect, the Project Company will develop and implement an Erosion Control and Management Plan in order to prevent or reduce erosion and minimize sediment related impacts.

5.3 Which geological-geotechnical studies have been conducted for the Project and how geotechnical risks and structural safety will be managed in the Project?

Preliminary geotechnical surveys have already been conducted for the Project. These surveys will be followed by implementation of a Geological Survey Program to conduct detailed geological and geotechnical surveys along the Motorway route. Accordingly, the Final Geological, Hydrogeological and Engineering Geology Survey Reports will be prepared to inform stability and integrity assessments of designed engineering structures, as well as potential settlement problems along the Motorway route. The results will provide a sound basis for management of geotechnical risks, including design related mitigation and prevention, which is the major measure type in terms of geotechnical problems.

The ANM Project will be designed, constructed, operated and maintained in full compliance with the national legislation, KGM's technical specifications and, applicable national and international standards including AASHTO SSHB (Standard Specifications for Highway Bridges, 2002) and TS 500 (Turkish Standard of Reinforced Concrete Structures, 2000). In addition, the Project Company plans to assign independent reputable technical consultant(s) to have the design of the road and engineering structures reviewed and verified. Implementation of the design requirements and standards will ensure the engineering structures are constructed to the highest standards.

Regular maintenance of the motorway infrastructure during both operation and construction phases of the Project, as well as additional maintenance following certain events such as earthquakes, will be conducted to ensure continued structural safety.

5.4 What will be the noise impact of the Project and how this will be managed?

The ANM Project will results in generation of noise during the construction phase due to construction, material extraction and operation of construction machinery and plants (e.g. mechanical, concrete, asphalt), and during the operation phase due to Motorway traffic. As part of the ESIA, baseline noise measurements were conducted at 20 settlements that would be potentially affected by Project activities in line with internationally accepted methods (48 hours measurement). By taking the baseline noise levels into consideration, noise impact of the Project was assessed by means of noise modeling studies done in line with the internationally recognized methods and standards.

The Project standards for noise and vibration have been set in accordance with limit values set by the Turkish Regulation on the Assessment and Management of Environmental Noise (RAMEN) and IFC General EHS Guidelines.

Construction phase noise impacts will be effective for a limited period and can be mitigated with the implementation of selected measures. The residual impact for construction phase is estimated to be negligible. For the operation phase, results of the baseline noise measurements indicates that background noise levels are very low at nearly every peripheral location to the motorway axis, thus, the Project is likely to result in increase in background noise levels at settlements located in close vicinity (500 m) of the Motorway. In order avoid unacceptable increases in baseline (background) noise levels, the Project Company will conduct a noise monitoring program and implement a Noise and Vibration Management Plan that will include necessary measures to be taken to keep the noise levels under the Project standards. Project's grievance mechanism will also be in place and any complaint related with noise will be investigated to take corrective actions as necessary.

5.5 What is the vibration impact of the Project and how this will be managed?

The construction phase of the ANM Project will result in vibration mainly due to blasting (at the quarries and certain road sections depending on their geological formation) and operation of construction machinery/equipment. Modeling studies conducted as part of the ESIA by using an internationally accepted computer software (IMMI acoustical software) to identify potential vibration impact of the Project have indicated that the closest safe distance for blasting activities is 178 meters for the quarries given the Project specific blasting design. Any blasting activity farther than this distance will not cause any significant impact (e.g. vibration) on the receptors. For main motorway construction, safe blasting distance has been calculated as 35 meters. Vibration levels will be monitored and modern blasting techniques will be applied during the construction phase to ensure that vibration levels are kept below the Project standards. In addition, Project's grievance mechanism will be in place and any complaint will be investigated to take corrective actions as necessary. No significant vibration impact is anticipated during Project's operation phase as vibration caused by Motorway traffic is not proved to be a common problem for road projects.

5.6 Will the Project have impact on air quality and how this will be managed?

The Project will result in dust emissions due to earthworks (cut-fill operations); material extraction activities to be conducted at quarries and material borrow sites and production to be conducted at concrete, asphalt and mechanical plants. In addition, operation of a large number of construction machinery/equipment during the construction phase will result in emission of exhaust gases. During the operation phase, Motorway traffic will result in air emissions in the form of exhaust gases that would gradually increase in time due to the potential increase in the volume of traffic on the Motorway.

In order to identify significance of Project impacts due to air emissions, a baseline air quality measurement program was run to determine the existing levels of dust and settled dust (at more than 23 settlements located along the Motorway route and in the vicinity of the quarries/plants) as well as NOx, SOx and benzene (at 13 settlements located along the Motorway route and in the vicinity of the quarries/plants). In parallel, air quality modeling studies were conducted as part of the ESIA by using internationally accepted computer software (i.e. AERMOD Gaussian Plume Air Dispersion Model, Version 9.5.0). Results of the modeling study were assessed for construction and operation phases in line with relevant Turkish legislation as well as the IFC EHS Guidelines.

With the implementation of dust management measures (e.g. dust suppression, air quality monitoring) and the Air Quality and Greenhouse Gases (GHG) Management Plan, it is anticipated that the significance of dust impact will be kept at minor or negligible levels at the nearby settlements during the construction phase. Impact of gaseous emissions (NOx, SOx) throughout the operation phase will be periodically monitored and necessary measures will be implemented to reduce the significance of operation phase air emission impacts to acceptable levels at the nearby settlements. Project's grievance mechanism will be in place and any complaint related to air emissions will be investigated to take corrective actions as necessary.

5.7 How much the Project will contribute to greenhouse gas (GHG) emissions?

Greenhouse gas (GHG) emissions anticipated to be emitted during the construction and operation phases of the Project were estimated in the scope of the ESIA studies in line with internationally accepted approaches and calculation methods (e.g. 2006 IPCC Guidelines for National Greenhouse Gas Inventories). Regarding the construction phase, the assessment focuses on direct GHG emissions (Scope 1 emissions due to clearing of vegetation, blasting and combustion of diesel oil) and Scope 2 (electricity indirect GHG emissions due to purchased electricity) emissions while, Scope 3 (other indirect emissions) emissions are taken into consideration for the operation of the Motorway.

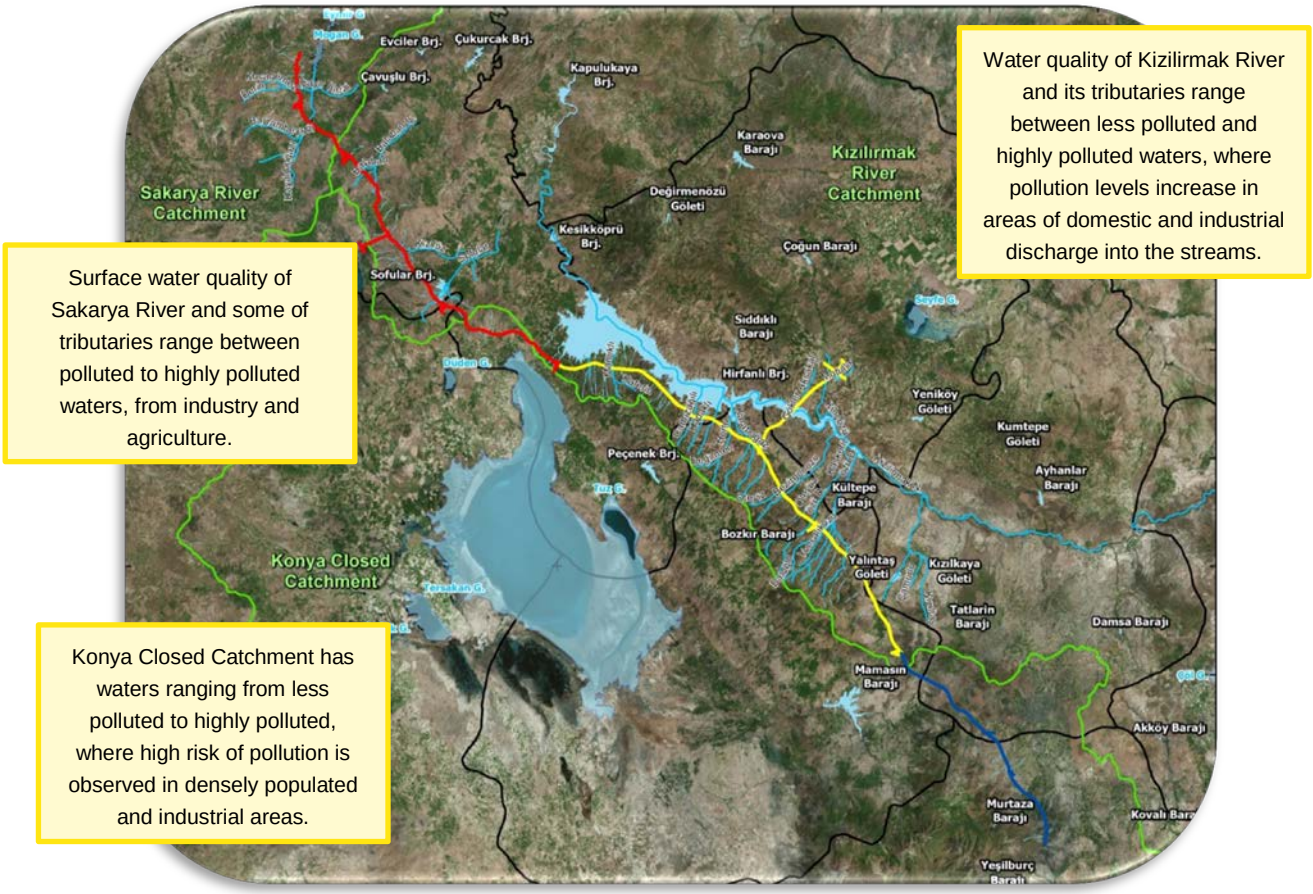
For the construction phase, direct GHG emissions (Scope 1) and GHG emissions from purchased electricity (Scope 2) were quantified as around 2 million tons CO_2 eq for the whole construction period which will be maximum 3 years. The majority (about 80%) of these emissions are from the land use change as a result of clearance of vegetation.

For the operation phase, estimations were carried out for the entire operation period. GHG emissions in the commissioning year correspond to approximately 2.6 million tons CO_{2eq} and emissions are anticipated to reach 3.6 million tons CO_{2eq} with the increase in the number of vehicles. It should be noted that, heavy vehicles constitute a high portion of the total number of vehicles in the traffic projections and 65-70% of the GHG emissions are from the contributions of heavy vehicle load.

The amount of operational GHG emissions during operation of the Motorway will mainly depend on the number of vehicles, fuel consumption, and kilometers travelled. Fuel consumption and type of fuel is mainly dependent on the technology of vehicles which will be managed through governmental strategies. Thus, mitigation of GHG emissions for the operation phase should be considered in context of comprehensive and extensive plans and programs in collaboration with the government.

5.8 What will be Project's potential impact on water resources and how this will be managed?

The Motorway route passes through three main river catchments; Sakarya and Kizilirmak river catchments, and Konya closed catchment. Eymir Lake, Mogan Lake, Tuz Lake, Hirfanli Dam's Reservoir and Kizilirmak River and its tributaries are the major surface water resources located in the vicinity of the Motorway route. The Motorway crosses several rivers and creeks along its route.



Water quality of Kizilirmak River and its tributaries range between less polluted and highly polluted waters, where pollution levels increase in areas of domestic and industrial discharge into the streams.

Surface water quality of Sakarya River and some of tributaries range between polluted to highly polluted waters, from industry and agriculture.

Konya Closed Catchment has waters ranging from less polluted to highly polluted, where high risk of pollution is observed in densely populated and industrial areas.

Project's interaction with the water resources is anticipated to occur mainly during the land preparation and construction phase as the physical works (earthworks, river crossings, material extraction at quarries and borrow site, etc.), water use for construction (i.e. concrete production, dust suppression) and domestic wastewater generation due to the involvement of large scale workforce will be a subject in this phase of the Project. If not properly mitigated, main potential impacts on water resources would include iimpact on surface water flow (modification at intersection points such as river crossings) and degradation of surface water quality (due to earthworks, construction activities and material extraction at the quarries and borrow sites that cause erosion and transportation of sediments, or uncontrolled leakage/spill of chemicals, etc.). As the extraction activities to be conducted at the excavations at the quarry and borrow sites are not likely to reach the groundwater table, impact of the Project on the groundwater resources is anticipated to be limited. During the operation phase, management of storm water along the Motorway surface, which may also be contaminated with the chemicals to be used in road maintenance works and liquid exhaust emissions, as well as the domestic wastewater to be generated at the service areas will be the main aspects for management.

Project's potential impacts on water resources will be minimized by means of design and operational measures to be taken in the scope of a Water and Wastewater Management Plan. In order to avoid impacts of the Project on the surface water flow/hydrology of the surface water resources, around 400 culverts have been included in the design of the Motorway based on the results of hydraulic and hydrological studies conducted. Physical methods will be applied in line with KGM's technical specifications and international good practice to prevent degradation of surface water quality and a water quality monitoring program will be conducted to ensure that the measures taken are effective in avoiding impacts.

Water required for utility and construction purposes is planned to be supplied from the nearby settlements by using tankers, or alternatively from groundwater wells. Drinking water for the Project personnel will also be acquired from either groundwater wells or bottled water meeting drinking water standards.

Domestic wastewater generated at the construction camp sites during the land preparation and construction phase due to use of drinking and utility water will be treated by means of package domestic wastewater treatment plants that will be installed at the camp sites with sufficient capacity for the workforce. All necessary permits for discharge will be obtained from the related authorities. Wastewater generated as a result of construction activities will be taken to sedimentation ponds, settled and recycled into/reused in the concrete production processes. Therefore, there will be no wastewater discharge from the concrete plants into the nearby receiving water bodies.

For the management of storm water during the operation phase, Motorway's drainage system has been designed and will be constructed in accordance with KGM's specifications. This system will include necessary pipes, drainage channels, ditches etc. along the entire Motorway to ensure management of surface run-off and sub-surface drainage. For the operation activities, water will be required mainly at the service areas for the visitors and workers. Personnel working at the toll collection areas, maintenance centers, etc. will also be using water for drinking and utility purposes. Asphalt works will also require limited amounts of water intermittently. Package domestic wastewater treatment plants at the service areas will have modular units to be extended depending on the amount of wastewater to be generated based on the number of visitors and personnel to be employed during the operation phase of the Project.

5.9 How will hazardous and non-hazardous waste be managed?

Wastes anticipated to be generated during the land preparation and construction phase include; municipal solid waste, excavation waste that will not be reused on site for cut and fill works, construction waste, wood and timber scraps, and hazardous wastes such as waste oils, waste vegetable oils, end-of-life tires, waste batteries and accumulators, waste electric and electronic equipment, and medical waste.

More than 88% of the excavated materials will be reused in embankment operations, while the remaining portion will be disposed of at the designated excavated materials storage sites located within Project's land acquisition corridor. This will avoid additional impact on the existing local infrastructure for excavation wastes. Construction waste and recyclable wastes like cement bags, metal scraps, etc. will be segregated and stored temporarily on-site for further recycling at licensed facilities. Non-hazardous and non-recyclable construction wastes will be disposed by the Municipality in charge at each camp site and construction facility. Amount of municipal waste estimated to be generated during the peak phase of the land preparation and construction phase would be less than 1% of the daily waste generation of Project route provinces. Yet, in order to minimize the amount of waste generated, waste management trainings will be provided and separate collection of packaging waste will be encouraged at the logistics center and camp sites. Hazardous and special wastes will also be temporarily stored at locations designated for the type of waste, and will be transferred to licensed facilities for disposal.

During the operation phase of the Project, with the reduction in the number of Project personnel, the amount of waste to be generated will also significantly decrease. The operation phase will mainly involve litter generation by road users, thereby waste management will focus on management of recyclables and municipal wastes, while hazardous wastes from maintenance activities will also be managed in line with the national legislation, and international standards and good practices. In order to ensure effective management of all waste generated as a result of Project activities, general and waste-specific mitigation measures will be implemented, such as; ensuring waste disposal agreements with the Municipality and recycling/disposal facilities are in place, providing adequate on-site storage, segregating wastes at source, providing waste management trainings to the personnel and implementing the Project-specific Waste Management Plan.

5.10 Are there any protected areas along the Motorway Route?

Golbasi Special Environmental Protection Area (SEPA) and Tuz Lake SEPA are the two legally protected areas located along the Motorway route (Golbasi SEPA is being crossed by the Motorway and Tuz Golu SEPA's boundary is located 200 m south of the Motorway). Management of these protected areas is under the responsibility of the Ministry of Environment and Urbanization, General Directorate of Protection for Natural Assets. As a commitment to fulfil the provisions of Barcelona Convention and its Protocol on Specially Protected Areas, SEPAs in Turkey are ecologically significant areas at the national and international scale. Both of these SEPAs have been assessed as "Category VI" (Protected area with sustainable use of natural resources) according to the IUCN Protected Area Management Categories.

There are also five internationally recognized areas that the Motorway passes through, namely; Mogan Lake Key Biodiversity Area (KBA) (also Important Bird Area – IBA and Important Plant Area – IPA), Hirfanli Reservoir KBA (also IBA), Tuz Lake KBA (also IBA), Hasan Mountain KBA, and Col Lake and Calikduzu KBA (also IBA). Official statements have been acquired from authorities regarding the statuses of these areas within the scope of the National EIA, which led to commitments for the Project specifically for the conservation of the integrity of these areas. No additional issues have been raised by the authorities, given impacts on biodiversity values present at these areas are managed effectively and related parties are consulted during the process in line with the requirements of national legislation.

Prime Ministry Circular for the ANM Project emphasizes and legalizes Project's priority on all consents and bureaucratic procedures as the Project is part of Turkey's Vision 2023. With respect to the protected areas, official statements have already been obtained from the related authorities within the scope of the national EIA process, with no identified set-back, yet recognizing significance of biodiversity features and the need for effective mitigation measures to address Project-related impacts. In order to further assess impacts of the Project on the SEPAs, on-site surveys will be conducted by competent external experts in May 2018, outcomes of which will be further analyzed within the scope of the ANM Biodiversity Action Plan (BAP). The BAP will also include habitat and species-specific action plans targeting no-net-loss, as well as long-term biodiversity management and monitoring strategies to be developed in line with the official SEPA management plans. With the implementation of the BAP during the construction and operation phases, the Project Company will aim to mitigate Project's potential impact on valued biodiversity components.

5.11 What are the potential impacts on terrestrial and aquatic biodiversity features?

Biodiversity data that provide the basis for terrestrial and aquatic studies conducted within the scope of the Project ESIA Report, had been acquired through desktop studies, including secondary data from the national EIA Report, Golbasi and Tuz Lake SEPA management plans, the KBA inventory, and other related research outcomes that are publicly available. Additional terrestrial and aquatic surveys will be conducted in May 2018, to produce an updated list of habitats and species along the Motorway route and reflect the outcomes in the ANM BAP, which will be prepared to include a more thorough assessment, and species and habitat-specific actions to be implemented to ensure no-net-loss of habitats and species in line with the provisions of the IFC PS 6.

Land preparation and construction phase impacts of the ANM Project on biodiversity are mostly associated with loss of species' habitats and habitat fragmentation, which are expected to leave the most significant impacts on flora and fauna species, for flora resulting in loss of populations, and fauna species are affected through losing areas that are fundamental to their ecological functions in an area. Project activities at this phase will be limited to the Project route and the land acquisition/expropriation corridor, where minimum clearing of natural vegetation will be ensured. Direct impacts on biodiversity will be mitigated through implementation of necessary measures to limit the amount of vegetation removed. Any habitat destruction outside the construction sites will be prohibited and natural habitats of flora and fauna species outside the Project route and the land acquisition/expropriation corridor will be conserved, especially where there are protected area crossings. Statuses of habitats and species will be further evaluated and monitored based on the outcomes of the ANM BAP.

Most of the impacts of road projects on biodiversity starting in land preparation and construction phase also continue during the operation phase although there might be changes in the duration, frequency, overall magnitude. With the habitat already fragmented and causing a barrier effect, it would take some time for species to adapt to a newly constructed road, which poses potential risks for many fauna features. Restoration of natural habitats, maintaining pre-existing land uses and following good international practices in terms of proper waste disposal, hunting bans, movement and operation of machinery, as well as limiting public access, will be effective in terms of avoiding or minimizing operational impacts on all biodiversity features in the area, which may start re-utilizing the site when short-term disturbances of the construction phase is over.

5.12 How is the landscape character defined along the Motorway Route and what are the landscape and visual impacts of the ANM Project?

The landscape character of the ANM Project Route has been defined in terms of the main habitats identified along the route, legally protected and internationally recognized areas, as well as the cultural and archaeological sites, all of which have been identified through desktop and field surveys conducted within the scope of the ANM Project ESIA Studies. The ANM Motorway, for the most part, passes through natural steppes and agricultural land of Central Anatolia. The overall landscape is homogenous with similar vegetation characteristics, except for the protected areas which have distinctive features. Yet, all of these sites have been under the influence of anthropogenic impacts, which have degraded their natural characteristics. Therefore, they are not assessed as having the highest landscape quality but rather are still very attractive natural landscapes offering distinctive visual amenities.

The visual impact assessment for the Project was undertaken to compare the quality of the view before and after the ANM is constructed and to determine the degree of change. As part of the visual impact assessment, the significance of the views has also been assessed in terms of the distance zones, which define the position of the viewer in relation to the landscape. The Project's visual character is defined by the main Motorway, and engineering structures to be built, which will cross the natural topography and allow proper access over the carriageway. Potential viewer groups within the scope of the Project have been identified as local residents, workers, recreational users and travelers, whose relationship with the ANM is the subject of the visual impact assessment.

The Motorway is composed of rather modest structures, with no significant structure that may be visually distinctive. According to the viewpoint analysis, which yielded 14 viewpoints (VPs) that would have some view of the Motorway, views of the main route, intersections, viaducts, toll collection areas and service areas available to potential viewer groups around the Motorway will be limited.

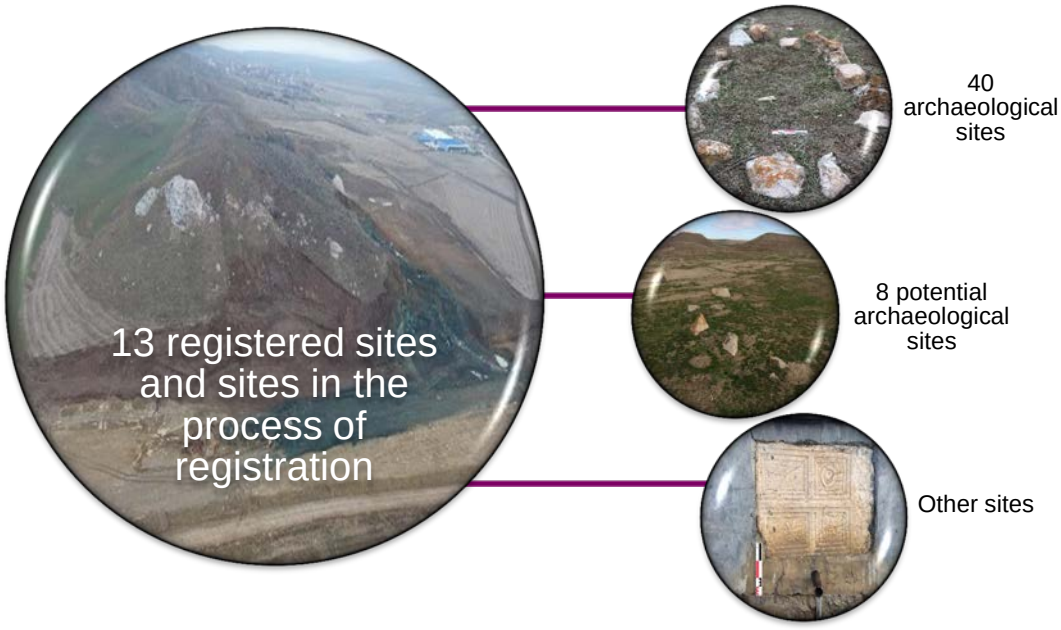
The main impact of the Motorway on the landscape is associated with the degree of change it will cause in the landscape character. Visual impacts that the viewer groups will be subjected to due to changes in their views will also be mitigated through effective measures that with all of the vegetation to be established along the Motorway ridges, the outcome may even be a more pleasant scene with the added diversity in the landscape form. With adequate mitigation measures in place, the ANM Project is expected to set into the topography, which is mostly composed of a homogenous terrain and a network of local roads. In line with the KGM Highway Technical Specifications, the Project Company will be responsible for providing landscape services that will be conducted by landscape architects, which will also include preparation of Landscape Projects to address all potential impacts on landscape characteristics and detailed mitigation measures. All of the mitigation measures to be taken throughout the land preparation and construction phase of the ANM Project will ensure that no further impacts will be incurred during the operation phase, while additional measures with respect to functional and ornamental lighting will be taken to ensure safety and minimize further potential visual impacts.

5.13 What are Project's potential impacts on cultural heritage and how will these be managed?

As part of Project's national EIA process, official registry of archeological sites and other immovable cultural heritage assets in the Project area and its vicinity were obtained from the relevant regional boards for conservation of cultural assets. This process identified a 1st Degree Archaeological Site (registered during the course of the national EIA process) on the Motorway's main route (Duguz Hoyuk in Aksaray) and resulted in route modification to avoid any physical impact on this site due to the Project.

Taking the national EIA process' findings into consideration, the ESIA conducted a comprehensive assessment of Project's impacts on cultural heritage (tangible and intangible) in line with the national legislation and IFC PS8. In this respect, further desk-based research and field (walkover and intensive) surveys were conducted by qualified experts. These studies have aimed to identify the existing status of the cultural amenities that could potentially be impacted by the proposed construction phase of the Project along the Motorway land acquisition (expropriation/consolidation) corridor, where physical activities will be conducted and quarries and borrow pits are located. In line with IFC PS 8, the study focused on designated and non-designated historical and archaeological sites along the Motorway route.

The ESIA studies identified 63 archaeological sites along the Motorway route, of which 13 are the sites registered under national legislation. The non-registered sites have been further classified as archaeological (40), potential archaeological (8) and other sites (2)[2]. Only the sites that are located within Project's land acquisition corridor are likely to be affected by Project activities and 36 (1 registered site: Golludag 3rd Degree Archaeological Site; 26 archaeological sites; 8 potential archaeological sites; and 1 other site) of these 63 sites are located within Project's land acquisition corridor. In Nigde, 0.0015% (1,693 m^2) of the entire protection area of the Golludag 3rd Degree Archeological Site falls within the boundaries of Project's land acquisition corridor according to the current planning. The Project Company, in consultation with the KGM and related cultural heritage authorities, will consider the boundaries of this site while preparing the detailed implementation plans for this section to avoid any physical impact on this site.



[2] Archaeological sites are the sites with high intensity of surface materials (between 10-100 pieces or archaeological remains such as a tumulus, wall, cistern; potential archaeological sites are the sites with low intensity of surface materials (between 1-10 pieces) and other sites are the ones that include remains of a historic bridge, a grave/graveyard, fountain, etc.

In compliance with Turkish Law, the Project Company will deliver the information collected through the field surveys about the archaeological sites and immovable cultural heritage assets within the Project's land acquisition corridor and other impact areas such as quarries, borrow pits etc., to the relevant authorities in order to initiate official decision processes for these sites. In this scope, the Project Company has started the process of delivering the field data and informing the related authorities about the non-registered archaeological sites identified during the ESIA walkover survey. The Project Company will take the actions required by the authorities as part of this process in accordance with the national Law and strictly follow the relevant conservation decisions. In order to protect the cultural heritage sites located within the land acquisition corridor and beyond, decisions taken by preservation boards within the framework of Law 2863 will be strictly implemented by the Project Company. A Chance Find Procedure and a Cultural Heritage Management Plan have been developed for the Project. The Project Company will comply with the requirements of national legislation implement these procedures and plans throughout the course of the Project in order to avoid any impact on the cultural heritage.

5.14 What impacts will there be on socio-economic features?

The Project Area encompasses 330 km, across 6 provinces, 15 districts and 77 settlements (villages/neighborhoods) with an overall population of over 50,000. Majority of the land in Project Area is rural, and land is used for dry farming (rain-fed), with no forestry area. Main sources of income are agriculture production based on family farming and livestock activities.

Assessment of social impacts as part of the ESIA was based on a combination of secondary research and field data. As part of the field work, comprehensive social surveys were conducted in a total of 22 settlements in 10 districts and 6 provinces. This included headmen/mukhtar surveys (24 surveys), household surveys (375 surveys) and focus group meetings (4 meetings). A total of 45 institutions (including governors, provincial and district directorates, municipalities and headmen/mukhtars) and 446 PAPs were engaged throughout the field studies

Approximately 4,200 ha of land will be acquired by the Project, impacting 11,316 PAPs (landowners, users, shareholders). Land acquisition will be conducted by land consolidation and expropriation in line with national legal requirements. While majority of land will be acquired by land consolidation; expropriation will be applied in settlements that have immovable assets such as houses, trees and/or insufficient common land that could be used for replacement land.

Land consolidation for private parcels will require land acquisition from common land such as Treasury land. During land consolidation, private parcel owners will be allocated with new land which was under ownership of Treasury, pastures, village legal entity or other common land. Hence, while land owners will be provided with replacement land; land used for the Project's facilities will create an impact on common land and loss of access to that common land permanently. In order to mitigate potential adverse impacts of land acquisition, a Livelihood Restoration Plan (LRP) Framework has been developed as part of the ESIA in line with IFC PS5. Based on this framework, a LRP will further be developed and implemented by the Project Company in collaboration with the KGM.

Moreover, Project's land acquisition will lead to limited physical displacement in relation to the Project activities. Physical displacement is considered a potential social impact issue since it will trigger involuntary resettlement. Within the scope of Project land acquisition activities; the number of houses that will be physically displaced is projected to be 29, approximately half of which are located in Kumbet. A Resettlement Action Plan (RAP) Framework has been prepared in line with IFC PS5 and will be developed into a RAP in order to minimize impacts related to involuntary resettlements.

In addition to land acquisition, Motorway may divide the land parcels or abrupt access to remaining land. Land owners and land users underlined the importance of the accessibility to their pasture, agriculture and animal grazing lands during field consultations. Hence the Project will take necessary measures such as construction of engineering structures (interchanges, viaducts, overpasses, bridges, underpasses and culverts) in order to sustain the accessibility of the land owners and users to these areas so as to minimize any adverse impact on the livelihood resources.

Vulnerable groups are people who by virtue of gender, locality, age, physical or mental disability, economic disadvantage, or social status may be more adversely affected by the Project than others and who may be limited in their ability to claim or take advantage of support measures and development benefits. Vulnerable groups will be considered in a targeted way with mitigation and support measures and through continuous consultation. The specific vulnerable households/individuals affected by land acquisition will be identified by means of further studies at a later stage especially during the development of Project related LRP and RAP. Vulnerable groups will be given priority for Project's employment benefits. Grievance mechanism will have measures to assure grievances from vulnerable groups are responded and resolved in a timely manner.

The Motorway is expected to have positive impact on infrastructure and economy. Interchanges that provide access to existing businesses along the former route; and Salt Lake will also be in place. The procurement of goods and services from the local business is likely to have a positive impact on economic growth and result in employment opportunities during the 3-year construction period by creating new businesses and jobs. It is assumed that an increase in demand of goods and services will lead to increase in supply. This is likely to create the pull factors which are needed to restore the attractiveness of the local communities and keep young people in the villages/neighborhoods and even encourage those who have left already to move back to the settlements.

5.15 What are the labor management strategies?

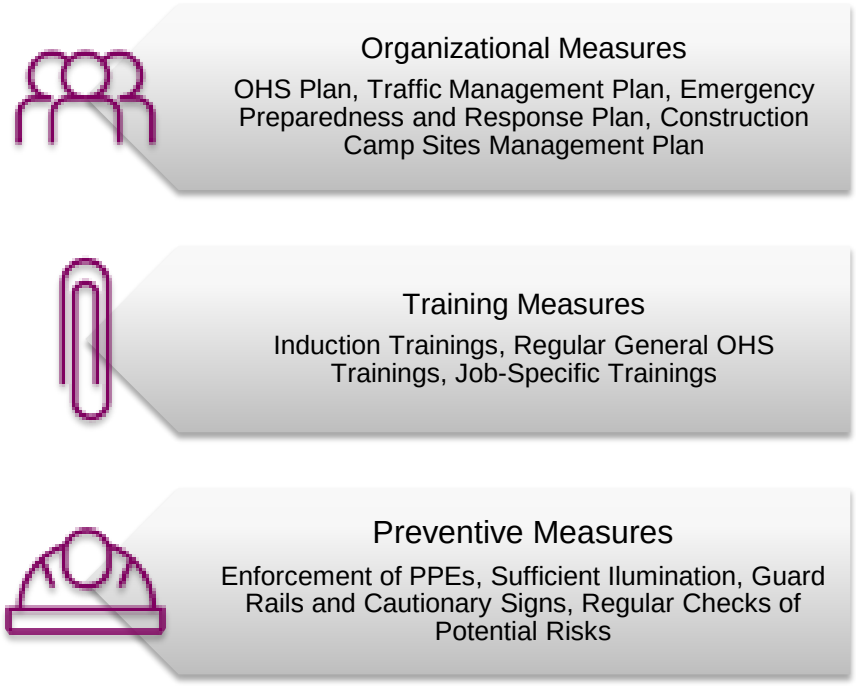
It is foreseen that almost 7,500 personnel will be employed during the peak construction phase. For management of its extensive workforce in line with national and international standards during both construction and operation phases, the Project Company will develop and implement a Human Resources Policy as part of its environmental and social management system. In line with this policy, the Project Company will ensure equal opportunity, equal rights to wages and benefits and right to join workers' associations, whereas child labor, forced labor and discrimination will not be allowed. In addition, all worker relations will be managed through a multitude of management plans such as the Labor Management Plan and the Stakeholder Engagement Plan, which includes a worker grievance mechanism that allows for all workers to relay their concerns and grievances to the Project Company.

One specific important labor management issue will be the provision of adequate accommodation during the construction phase, since almost all of the personnel to be employed during this phase will be employed on site. The Project will comply with IFC and EBRD's Guidance Note on Workers' Accommodation: Processes and Standards (2009), which ensures all personnel to receive at least the minimum acceptable international accommodation standards, as well as related legislation such as the Regulation on Water Intended for Human Consumption. In addition, a Construction Camp Sites Management Plan will be in place to ensure highest possible standards in accommodation and camp sites safety.

5.16 What are the Project-related occupational health and safety risks?

In lack of proper preventive and mitigative measures, activities to be conducted during different phases of the Project may pose potential occupational health and safety (OHS) impacts and risks on the site personnel, resulting from physical hazards such as collisions with moving objects and machinery, slips and falls, working at height and ergonomic injuries, as well as other specific hazards such as traffic risks, blasting operations risks, air quality, noise and potential risks during emergency situations. All of these potential impacts have been identified and addressed through the ESIA process, for each phase of the Project.

Management of OHS impacts and risks, as well as labor management, will be conducted in line with the Turkish Labor Law, and other related national legislation, ILO conventions to which Turkey is a party of and international standards. The Project Company has already obtained OHSAS 18001 certificate for OHS management and will have in place a Health and Safety Policy, a large suite of related management plans, and the mitigation measures identified by the Project ESIA. Therefore, the Project OHS management will ensure full compliance with both national legislation and international standards.



5.17 What are Project-related community health and safety risks?

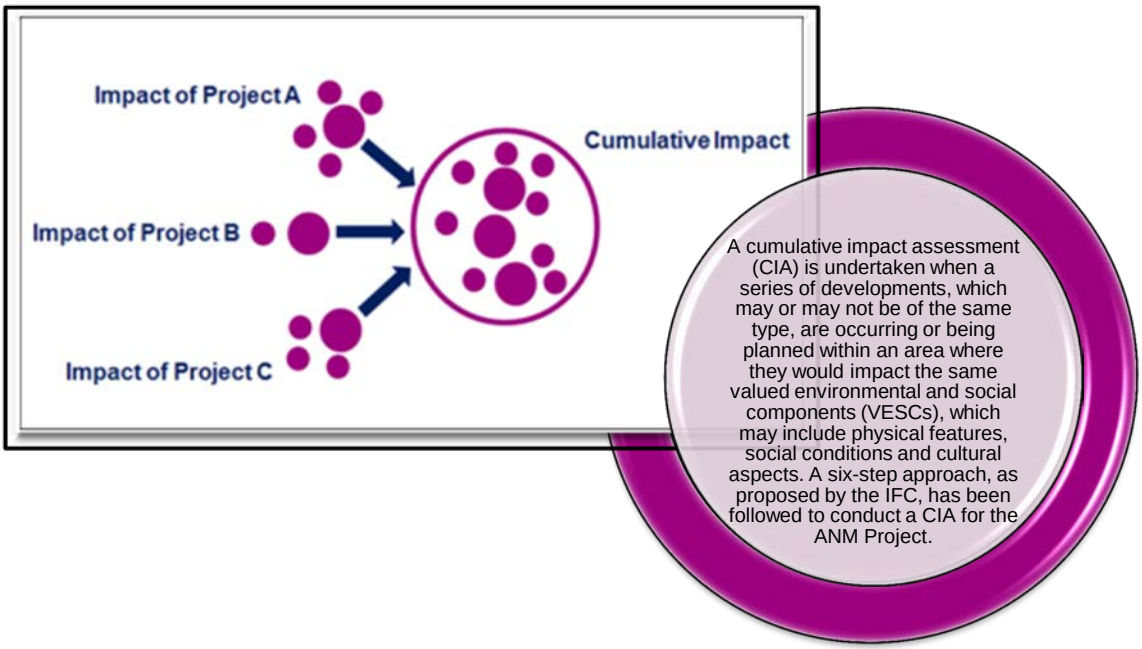
According to IFC, traffic safety, pedestrian safety and emergency preparedness and response are the most significant community health and safety (CHS) issues for Motorway projects. The ANM Project will be designed, constructed, operated and maintained in full compliance with the national legislation, KGM's technical specifications and applicable national and international standards such as the AASHTO SSHB (Standard Specifications for Highway Bridges, 2002) and Turkish Standard of Reinforced Concrete Structures (2000). In addition, the Project Company plans to assign independent reputable technical consultant(s) to have the design of the road and engineering structures reviewed and verified.

Accordingly, traffic safety, pedestrian safety and geotechnical safety will already be insured during the design and construction phases of the Project. In addition, a multitude of measures such as implementation of a Traffic Management Plan, access restrictions at the construction sites and along the Motorway's land acquisition corridor, speed limitations, installations of signage, use of real time warning systems that warn drivers of their current speed and other issues such as weather and road conditions, conducting regular maintenance, etc. will ensure traffic safety for both local communities and the road users.

The Project Company has obtained OHSAS 18001 (2007) certification for occupational health and safety (OHS) management. Implementation of the OHSAS 18001 management system by the Project personnel will also contribute to the minimization of health and safety risks and impacts on the local communities. Additionally, the Project Company developed/will develop and implement environmental and social management plans to minimize/mitigate both on-site and off-site risks and impacts. The following plans will particularly contribute to community health and safety:

- Community Health and Safety Plan
- Stakeholder Engagement Plan (including external grievance mechanism)
- Emergency Preparedness and Response Plan
- Traffic Management Plan
- Air Quality and GHG Management Plan
- Noise and Vibration Management Plan
- Waste Management Plan
- Water and Wastewater Management Plan

5.18 What are potential cumulative impacts?



In line with the good CIA practices, the ANM CIA study focused on the impacts on selected valued environmental and social components (VESCs) that would be affected by the Project activities. Accordingly, first spatial and temporal boundaries for the CIA were determined, which was followed by identification of other past, existing and foreseeable activities/developments and environmental drivers within these boundaries that would affect the condition of the selected VESCs. Reasonable efforts have been made to determine and include both the existing (currently operational) and future projects in the CIA in line with international best practices.

Assessment of potential cumulative impacts of the ANM Project together with other projects/activities/developments identified in the CIA Study Area on the selected VESCs has been based on a qualitative approach, considering projects affecting the VESCs together with the ANM Project. This led to classification of potential cumulative impacts on each VESC, and assessment of their significance within the scope of the ESIA studies.

The significance of cumulative impacts ranges from minor to moderate for the settlements along the Motorway, which would mostly be observed during the construction phases of the projects. Only one of the settlements was identified to be potentially under the stress of multiple transportation projects.

It should be noted that cumulative impacts result from actions of multiple stakeholders call for collaborative effort for management of these potential impacts. Potentially being the most significant contributor of the cumulative impacts, Project-specific mitigation measures will be taken and a collaborative engagement approach with other potential contributors will be adopted by the Project Company, in line with the IFC's Good Practice Handbook on Cumulative Impact Assessment and Management, throughout the different phases of the ANM Project.

6. Environmental and Social Management System (ESMS)

6.1 How is the ESMS structured?

The main objective of the ANM Project Environmental and Social Management System (ESMS) is to provide a framework for the processes to be implemented for environmental and social (E&S) management throughout all phases of the Project in order to ensure compliance with the provisions of the applicable national legislation and international standards. In order to ensure continuous improvement of the overall environmental and social performance of the ANM Project, the ESMS is structured around the following main subjects, which are due for update throughout the Project's life-cycle, whenever necessary modifications are required based on periodical reviews.

6.2 What are the management plans to be implemented?

The ANM Project ESMS approach is;

-to ensure consistency between all E&S procedures throughout the different phases of the Project.

-allow for flexibility that an effective management system can adapt to a potential E&S issue related to the Project

through the implementation of these management plans, procedures and programs.

Environmental and Social Management and Monitoring Framework Plan (ESMMFP)
Air Quality and GHG Management Plan
Biodiversity Action Plan (BAP)
Chance Finds Procedure
Construction and Management Plan
Construction Camp Sites Management Plan
Community Health and Safety Plan
Contractor Management Plan
Emergency Preparedness and Response Plan
Environmental Monitoring and Training Program
Erosion Control and Management Plan
Resettlement Action Plan Framework (RAPF)
Livelihood Restoration Plan Framework (LRPF)
Stakeholder Engagement Plan (SEP)
Grievance Mechanism
Labor Management Plan
Noise and Vibration Management Plan
Occupational Health and Safety Plan
Procurement Procedure
Traffic Management Plan
Waste Management Plan
Water and Wastewater Management Plan

6.3 How will Project Company meet its commitments through the Project ESIA and ESMS?

The ESMS for the ANM Project has been developed as a part of the Project's ESIA process, which describes a policy framework. Potential environmental, health and safety risks associated with the Project have been assessed and related prevention/mitigation measures, and monitoring strategies have been proposed as part of the ESIA studies. The corporate level policies; Human Resources Policy, Health and Safety Policy, Environmental and Social Sustainability Policy and Quality Policy of the Project Company are already in place. The Project Company will also develop Project-specific Environmental and Social Policy, Health and Safety Policy, and Human Resources Policy. The Project Company has already attained ISO 9001, ISO 14001 and OHSAS 18001 certifications in January 2018. Each management strategy within the scope of the Project will be applied through implementation of these policies, management plans, as well as sub-level procedures, which are prepared in accordance with the overall objectives of the Project ESIA and ESMS. For the effective implementation of the ESMS, the Project Company has started to establish a competent organizational structure including relevant environmental and social experts (an Environmental Manager and a CLO have been hired under the SPV; two environmental engineers and one archaeologist have been hired under the construction contractors) and the structure has already been expanded

The Project Company, all contractors and sub-contractors will be responsible for the implementation of the ESMS. This includes the adoption of Project's Environmental and Social Policy, implementation of Management Plans (MPs), procedures, programs, etc. To ensure the highest continuous performance, the ESMS will be reviewed annually and additionally if required in the event of important changes to Project HSE and social conditions and applicable legislation and standards. For monitoring of ESMS performance and to identify if the goals and outcomes set by the ESMS are achieved, the Project Company will conduct internal inspections and audits, as well as audits of contractors. Implementation effectiveness of the environmental and social mitigation measures and compliance with Project standards will also be identified by using the monitoring parameters and Key Performance Indicators (KPIs) defined in the ESMMFP.

An ESAP, identifying the key actions to be taken by the Project Company to ensure a sound environmental and social performance throughout its activities, has also been developed subsequent to ESIA. Implementation of the ESAP, in addition to the ESIA commitments, MPs and ESMMFP, will be monitored by Project's Lenders.

6.4 What will the Project Company do in case of an emergency?

An Emergency Preparedness and Response Plan will be developed by the Project Company, which will provide preventive measures and response strategies to be implemented in case of accidents that may happen during the construction and operation phases of a Motorway Project of this scale. The Plan will also include existing emergency repsonse structure and capacities within the six provinces that the Motorway passes through and means of establishing colloboration with these. Emergency preparedness and response measures will also be in place to protect public health and safety in cases of a natural hazard or sabotage. Roles and responsibilities of different parties, and actions to be taken before, during and after an emergency, as well as a list of contacts will be detailed within the scope of the Plan to be implemented throughout the different phases of the Project.

6.5 How can stakeholders be involved and relay comments or complaints about the Project?

A Grievance Mechanism has been established for the Project as part of the SEP. Through this mechanism, the Project Company will response to complaints and comments about the Project in all phases of the Project. The appointed CLO will ensure implementation of the Project Grievance Mechanism and effective communication with stakeholders. Stakeholder engagement activities and means of communicating with the key stakeholders will be regularly reviewed, updated and reflected accordingly in the next revisions of the SEP.

Project activities, the national EIA, ESIA, NTS, the SEP and all relevant documentation will be disclosed on the website of the Project (www.ergotoyol.com.tr). Information will also be made available for affected communities through contextually appropriate methods (e.g. through the CLO(s), meetings, newspapers, leaflets/ brochures, notifications at neighborhood headmen's offices and teahouses, etc) throughout the lifetime of the Project. Further information on the Project can always be obtained by contacting the Project Company.