



Non-Technical Summary

Environmental and Social Impact Assessment

Malkara - Çanakkale Motorway Project (including the 1915 Çanakkale Bridge)

March 2018

Prepared for **COK A.S.**

By ERM

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Table of Key Issues and Mitigation Actions

1.1

BACKGROUND

The company Çanakkale Otoyol ve Köprüsü İnşaat Yatırım ve İşletme A.Ş. (ÇOK A.Ş.) was awarded the contract by the General Directorate for Highways (KGM) to design, build and operate the new motorway from Malkara to Canakkale, including the 1915 Canakkale Bridge across the Dardanelles Strait (referred to in this document as the “Project”).

The Project will cost approximately 3 billion Euros, and financing will be provided by a group of Turkish and international banks (the “Lenders”). The policies of the Lenders require that appropriate environmental and social studies are conducted to ensure that the Project is implemented in a safe and proper manner and potential negative impacts are avoided. An Environmental Impact Assessment (EIA) Study was completed in November 2016 according to Turkish regulations, and then in 2017 a more comprehensive environmental and social impact assessment (ESIA) was performed to meet the Lenders’ standards. The ESIA is very lengthy and detailed, and consists of several volumes (called the “ESIA Package”), as shown below.

This document in hand is a **Non-Technical Summary** of the ESIA results, and represents Volume I of the ESIA Package.

Table 1 - Overview of ESIA Package

Part of ESIA Package	Description of contents
Volume I - The NTS - Non-Technical Summary	A stand-alone summary to explain the key points of the ESIA to a wider public.
Volume II - The main ESIA Report	The central document and contains most of the relevant ESIA information and key findings.
Volume III - ESIA Appendices	Contains the comprehensive field data and scientific assessments for the key ESIA topics, and numerous lengthy annexes (this Volume is in English, but certain parts can be translated to Turkish if requested).
Volume IV - Environmental and Social Management and Monitoring Plan (ESMP)	Describes the relevant mitigation measures ÇOK A.Ş. needs to take to prevent negative impacts and a monitoring plan to ensure these steps are taken.
Volume V - LACR Framework	Describes the detailed process and work-plan for ÇOK A.Ş. to coordinate with KGM on the expropriation of land parcels for the Project. [<i>This document is confidential, but a summary is provided to public in the GLAC – see below</i>)]
Guide to Land Acquisition and Compensation (GLAC)	The GLAC presents a summary of key information to the public regarding the process of land expropriation and how landowners will be compensated per the regulations and KGM policies.

Stakeholder Engagement Plan (SEP)	The SEP spells out how ÇOK A.Ş. will provide information to the public and enable the public to provide comments and input to the Project development.
Consultation Report (an Annex to the SEP)	The Consultation Report presents a summary of the disclosure process of the Draft Final ESIA Package, a list of all comments received from public and how the comments are addressed in the ESIA Package (or elsewhere if not applicable for the ESIA)

1.2 ESIA DISCLOSURE

The intention of ÇOK A.Ş. is to make it easy for the public to become informed about the Project, and to invite the public to provide their views and comments (whether positive or negative about the Project).

The relevant documents of the ESIA Package in “Draft Final version” were subject to public disclosure and comment for 30 days between 8th January and 7th February 2018: copies of the ESIA documents were available for review at 31 locations in the Project Area (e.g. at Muhtar offices), and a series of public meetings and presentations was also held during this period attended by about 900 persons.

All of the key documents remain available for review on the internet website of ÇOK A.Ş. (see below). The entire process of disclosure and engagement with the public is described in the SEP document as shown in Table 1 above. The Consultation Report describes how comments received during disclosure are reflected in the ESIA or elsewhere.

1.3 WHERE TO GET MORE INFORMATION?

For any questions, complaints or concerns about the ESIA process or the Project in general, please contact ÇOK A.Ş. at the address below, or via the telephone number, email address or website.

ÇOK A.Ş. contact under:

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<http://1915canakkale.com/> (Website)

2 INTRODUCTION

2.1 WHAT IS THE PROJECT?

The Project comprises the Malkara – Canakkale Motorway, including the 1915 Canakkale Bridge. The Motorway is 88.5km and the Bridge about 3.6 km long (including a center span of 2023m, making it the world’s longest suspension bridge). The Project is part of the larger 324 km long Kinali – Tekirdag – Canakkale – Savastepe Motorway project in western Turkey.

2.2 WHY IS THE PROJECT NEEDED?

The Project is part of the country’s Vision 2023 Master-Plan to improve motorway infrastructure across Turkey. This Motorway will facilitate long-distance road travel and freight transport from western Anatolia (e.g. Izmir and Manisa Regions) into Europe by avoiding the current bottleneck through the congested metropolitan areas of Istanbul. The new bridge will greatly reduce the time needed to cross the Dardanelles Strait, which currently can only be done via ferry boat.

2.3 WHO IS THE PROJECT OWNER?

The overall developer and initiator of the Project is the KGM (Turkish Ministry of Transport, General Directorate for Highways, Türkiye Cumhuriyeti Ulaştırma Bakanlığı Karayolları Genel Müdürlüğü). KGM awarded the contract to design, build and operate the motorway to the private firm ÇOK A.Ş., which is formed by two Turkish firms (Limak and Yapı Merkezi) and two Korean firms (Daelim and SK Engineering). At the end of the 16-year contract period, the Motorway and Bridge will be transferred back to KGM.

2.4 WHY IS THIS ESIA NEEDED?

An Environmental Impact Assessment (EIA) Study was completed in November 2016 for the entire 324 km long motorway in conformance with Turkish EIA regulatory requirements. The EIA, entitled “Kinalı-Tekirdağ-Çanakkale-Savaştepe 1st and 2nd Section Motorway EIA”, was approved by the Ministry of Environment and Urbanization on 23 November 2016 (Decree no. 4388). The EIA specifies numerous actions and rules that ÇOK A.Ş. must follow during construction to protect the environment.

This Turkish EIA, however, is not of sufficient scope and detail to meet the requirements of international Lenders involved in financing the Project. Therefore, a more detailed and comprehensive ESIA in conformance with international standards is required for the Project. Some of the main differences between the Turkish EIA and the ESIA are that the ESIA pays more attention to social topics and requires more extensive involvement of the public. Also, the design of the Project has advanced since the time of the

Turkish EIA, and therefore the ESIA is based on a more updated design of both the Motorway and the Bridge.

The ESIA Package is thus based on the stringent international standards and guidelines, such as those of the WorldBank/IFC, and is in line with comparable standards in the European Union.

The ESIA Report describes the Project and the impacts it is predicted to have on environmental and social conditions in both construction and operation phases, and explains how the Project has been designed and how it will be implemented in order to minimise its adverse impacts and maximise its benefits. The actions required of ÇOK A.Ş. are compiled in the Environmental and Social Management and Monitoring Plan (ESMP – see Table 1), and these include as well the many actions specified in the Turkish EIA.

2.5 *WHAT HAPPENS AFTER ISSUING THE ESIA*

The 30 day Disclosure Period has been completed (as discussed above in *Section 1.2*, and the Final ESIA Report and the related documents have been revised to incorporate the comments and feedback received from the stakeholders.

All of the documents of the ESIA Package have been closely reviewed by the Lenders using independent external consultants to ensure that the Project meets the Lender requirements. The ESIA commitments are included by the Lenders in the financing contract with ÇOK A.Ş.; this underscores the importance for ÇOK A.Ş. to implement the required actions.

During Project implementation in the coming years ÇOK A.Ş. will provide frequent reports to the Lenders to show how progress with the ESIA/ESMP is being made, and Lenders will also conduct their own periodic monitoring of the Project to confirm the conformance of ÇOK A.Ş. to the contract obligations. These follow-up actions and monitoring will take place during construction and extend as well into the operations phase. In addition, the Project construction and operations are of course subject to review and inspection by the various Turkish regulatory authorities.

2.6 *THE AUTHORS*

The ESIA Package was prepared on behalf of ÇOK A.Ş. by a highly qualified team of national and international experts. These consultants have experience and previous involvement in the ESIA's prepared for other major infrastructure projects in Turkey, e.g. the North Marmara Motorway Project, the Gebze-Orhangazi-Izmir Motorway Project (including Izmit Bay Bridge), and the recently completed Eurasia Bosphorus Tunnel in Istanbul.

3.1 REGIONAL CONTEXT

The Project is part of the wider Kınalı-Tekirdağ-Çanakkale-Savaştepe (Kınalı-Balıkesir) Motorway with a length of 324 km, which is one of the key “Vision 2023” Projects for national development of infrastructure across Turkey.



Figure 3.1-1 Overview of the Kınalı-Savaştepe/Balıkesir Motorway Project

The motorway is being developed by KGM in three sections:

- **Kınalı to Malkara** (107 km) - will connect at the Kınalı-1 Junction to the existing O-3 Istanbul-Edirne Trans European Motorway;
- **Malkara to Canakkale**, including the 1915 Canakkale Bridge (88.5 km - this Project);
- **Canakkale to Savastepe/Balıkesir** (127 km) - will connect to the Gebze-Izmir Motorway near Balıkesir.

The current ESIA Package relates only to the **Malkara to Canakkale section (including the Bridge)**. The other two sections of the motorway are still in the planning process, and KGM has not yet awarded the contracts for design and construction. Therefore, the Malkara-Canakkale section is the first one being developed, and priority is to start with constructing the Bridge.

Users of the Motorway and Bridge will need to pay tolls, similar to the requirements for the Gebze-Izmir Motorway and the Osman Gazi Bridge at Izmit Bay, and several other new motorways being built in Turkey.

The Malkara-Canakkale Project spans Europe and Asia at the Dardanelles:

- European Side: Malkara Junction-Gelibolu South Junction (about 72 km);
- Bridge Area: Gelibolu South Junction – Çanakkale 1 Junction (about 8 km);
- Asian Side: Çanakkale 1 Junction – Çanakkale 2 Junction (about 8 km).



Figure 3.2-1

THE 1915 ÇANAKKALE BRIDGE

The 1915 Çanakkale Bridge will be a suspension bridge across the Dardanelles between Sütlüce and Suluca to connect the European and Asian parts of the Motorway. The only way to cross the Dardanelles at present is by ferryboat (e.g. between Gelibolu and Lapseki). After completion of the Bridge, the ferries will still continue to play an important role for tourists and local traffic.

Key data for the Bridge

Characteristics	Dimensions
Width of the Dardanelle Strait	3900 m
Total Bridge Length (including approach ramps)	4628 m
Centre Span (between the two towers)	2023 m
Height of towers (above mean water level)	318 m
Navigational clearance (width x height above water)	1600 m x 70 m

With the Centre Span of 2023 m, the Bridge will be **the longest suspension bridge in the world**. The Tower Height of 318m also makes it **one of the tallest bridges in the world**. The Bridge is designed solely for motor vehicle traffic; for safety reasons, pedestrian and bicyclists will not be able to use the Bridge (but they can of course continue to use the ferries as currently).

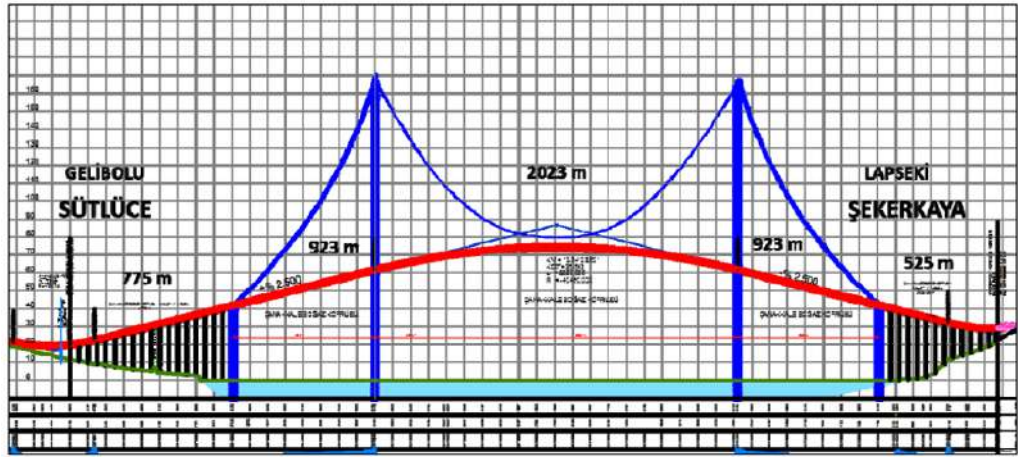


Figure 3.3-1 Representative Display of the Bridge



Figure 3.3-2 Photo-simulation of the Bridge

3.4 DESCRIPTION OF MOTORWAY

The Motorway and the Bridge will handle six lanes of traffic, three in each direction. Access will solely be via six junctions with existing State Roads, where tolls will also be collected.

Motorway Junctions

No.	Junction Name	Distance Between Junctions (km)	Connection to
1	Tekirdağ Batı - Malkara	33.5	State Road D110
2	Malkara - Bolayır/Evreşe	39.6	State Road D550
3	Bolayır/Evreşe - Gelibolu Kuzey	15.3	State Road D550
4	Gelibolu Kuzey - Gelibolu Güney	15.6	State Road D550
5	Gelibolu Güney - Çanakkale 1	8.4	State Road D200
6	Çanakkale 1 - Çanakkale 2	6.8	State Road D200



Figure 3.4-1 Locations of the six junctions

Underpasses and overpasses

The Motorway is planned so that it will either pass over or below the existing roads; similarly, the Motorway will cross all existing rivers, streams and irrigation channels so that they will remain intact (some temporary diversions may be needed during construction). A total of 36 overpasses are planned, plus 33 underpasses (13 for larger roads and 20 for smaller agricultural roads).

Viaducts

Viaducts are raised portions of the Motorway supported on towers to cross valleys and other low-lying or sensitive areas. Four viaducts are planned.

Table 3.4-1 Malkara-Çanakkale Motorway Section Viaducts

Name	Length (m)
Passing over Köprübaşı River Valley	1078
Passing over Koca River	183
Passing over Paşova River	862
Passing over unnamed valley; Asian side	690

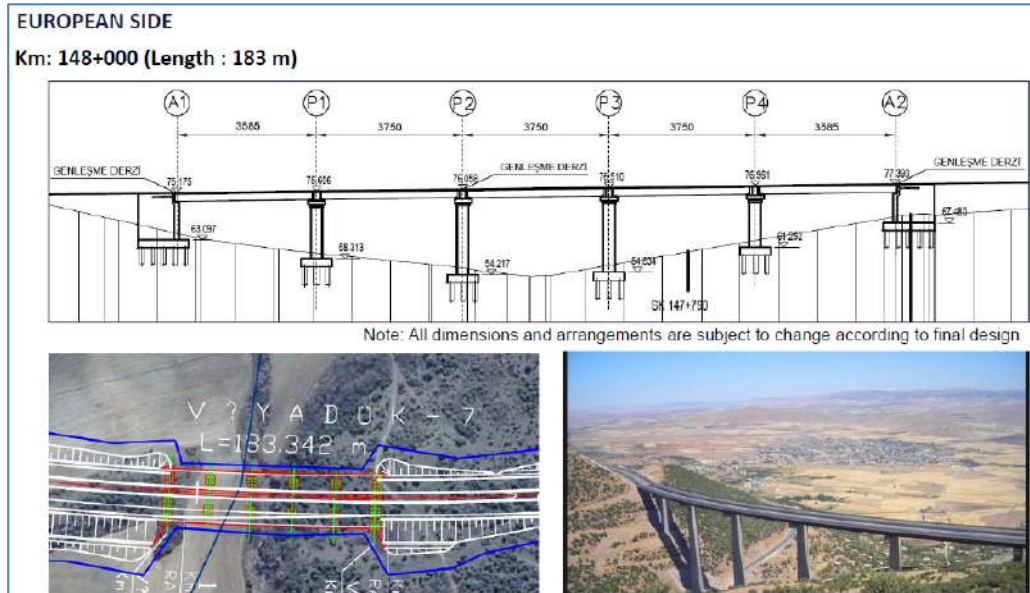


Figure 3.4-2 Example Viaduct over Koca River

Rest areas/service areas

Four rest/service areas are planned as are typical for such motorways (e.g. with Filling Station, Restaurants, and shops). Also there will be two maintenance areas, one each on the European and Asian sides.



Figure 3.4-3 Locations Of Rest Areas (1-4) And Maintenance Areas (A, B)

3.5 OTHER PROJECT RELATED FACILITIES

In addition to the above-mentioned permanent facilities of the Project, there will be some temporary installations during the construction period. These include for example:

- construction camps (some with worker housing)
- lay-down and storage areas
- concrete and asphalt plants
- workshops.

The land needed for such temporary facilities will be leased from the property owners and then restored prior to handover.

Furthermore, the Project will rely on a number of quarries in the region to provide the rocks and stones needed to produce the concrete and other construction materials for the motorway. The exact quarry locations and material quantities from each quarry will be selected later by the Construction Contractor, but ÇOK A.Ş. will prefer that existing, licensed quarries are used (rather than creating new ones). If new quarries are needed, KGM will acquire or lease the land and all necessary permits will be obtained to ensure safe and environmentally suitable operations.

3.6 *EARLY WORKS*

Certain construction works (called “early works”) needed to be initiated before the actual start of the main Project construction stage for the Bridge. These works include mainly:

- Dry dock (built on land near shore on European side of the Strait);
- Wet dock (built in the Strait near European shore);
- Caisson (part of the Bridge foundation, constructed in the dry dock and wet dock, then floated to the foundation locations for the two towers);
- Dredging and Piling (related to the excavation of the sea-bottom for the tower foundations and construction of the docks).

Some of the above Early Works started in late 2017/early 2018. An “Early Works Management Plan” was developed to ensure that environmental and social impacts were avoided during these activities, because the ESIA documents were not yet finalised at that time.

3.7 *HOW LONG WILL THE CONSTRUCTION TAKE?*

The overall construction is estimated to last approximately 5.5 years, starting from late 2017 with the preparatory “early works” mentioned above. Key milestones are:

- Early works: second half of 2017 to early 2018
- start of dredging for the Bridge tower foundations: early 2018
- completion of Bridge: August 2023
- Motorway construction from March 2018 until August 2023
- Official opening of the Project: **September 2023.**

The ESIA Team conducted the works in accordance with best international practices. This included the following key steps:

- **Review of available information on the Project** and the ecological and social conditions in the Project Area, including the 2016 Turkish EIA;
- Conducting a so-called “**Scoping**” study to determine which topics will be most important for the assessment; this involved also visits to the Project area and initial discussions with some local villagers, Muhtars and public officials;
- Teams of experts went into the field to **collect additional baseline data** on the current ecological situation e.g: sampling of water quality in streams, air and noise measurements, evaluation of plants, animals and birds. An important topic was also **cultural heritage/archaeology**: specialists walked over the entire route (except where military or otherwise not possible) and worked closely with the authorities to determine areas of historical importance that need protection.
- Also **social experts** met with Muhtars in the 29 villages along the route, and had over 200 discussions with local villagers to determine the current social-economic situation in the Project area.
- **Thorough assessment was made of potential impacts** of the Project on the ecological and social baseline conditions. Detailed maps and models were made to evaluate the potential impacts at each location. For impacts that might be significant, appropriate mitigation measures/solutions were recommended to avoid or minimise the impacts. These obligations also include conformance with the requirements specified in the 2016 Turkish EIA.

The final result of the impact assessment is the set of commitments that ÇOK A.Ş. has made to mitigate potential impacts so that the remaining effects to humans and the environment are acceptable and in line with Turkish regulations and international standards. These commitments are then compiled in the ESMP, along with a description of how ÇOK A.Ş. will ensure successful implementation.

The ESIA process commenced in April 2017; the scoping was done in May 2017, and field works for ecological and social baseline took place from June to September 2017. The data were then assessed and the reports for the ESIA Package prepared in late 2017 and finalised in early 2018.

The term “stakeholders” refers to local residents, public institutions, private organisations and other persons who may be affected by the Project or are otherwise interested in the Project. Stakeholder engagement is all about how ÇOK A.Ş. , as developer of the Project, provides information to the stakeholders – and asks them about their views of the Project, including any comments, suggestions, questions or complaints. This two-way process of stakeholder engagement is a very important part of the overall Project, beginning prior to start of construction and continuing through the operations.

5.1**STAKEHOLDER CONSULTATION DURING SCOPING**

The stakeholder involvement during the “scoping” stage of the ESIA preparation is important to make sure that those issues/topics of concern to stakeholders are then also considered in the studies. Numerous Stakeholder Engagement activities were conducted as part of the ESIA Scoping work in May and June 2017:

- **Consultations with Government Agencies:** National, provincial and local-level agencies were visited, and in the consultation discussions key issues were raised as well as positive impacts, possible improvements and changes etc.
- **Consultations with non-government, public organisations (NGOs):** During the discussions with these organizations, topics such as the location of the bridge and the effect on the local people’s activities, as well as the access to information were raised.
- **Consultations with Village Muhtars** of three settlements (Yülüce, Koruköy, Sütlüce) took place, discussing with the ESIA team the impact on land and compensation of losses.
- **Consultation with the Public:** The public was present during discussions with Muhtars and expressed opinion regarding impacts of the Project on their daily activities and access to their properties.



During the ESIA studies, additional consultation meetings were carried out to inform the stakeholders on the subsequent ESIA process:

- **Consultations with Mayors**
- **Field Social Survey:** A Field Social Survey was undertaken in July 2017 as part of the social baseline collection. Muhtars and residents of 15 villages along the route were contacted and interviewed.
- **Project Website:** Since June 2017, there has been a website available to the public, in Turkish language, on which Project-related information has been posted: <http://www.1915canakkale.com/>.

The information and views obtained during the above discussions held during scoping and during the ESIA itself were included in the ESIA, and help to determine which topics are most important and how they should be addressed.

As described above in *Section 1.2*, a 30-day disclosure process was undertaken in January/February 2018 of the Final Draft ESIA.

The Stakeholder Engagement Plan (SEP) is a separate document describing the mechanisms by which involved people, communities and other stakeholders are informed about the Project and given opportunities to provide comments and input to Project development. The SEP describes the engagement already undertaken in the past (as mentioned above) as well as meetings and other events planned for the future.

A key part of the SEP is the so-called “Grievance Mechanism”, which provides an easy way for anybody to submit their comments, questions or complaints (together called “grievances”) to the responsible Project managers at ÇOK A.Ş. Under the Grievance Mechanism, all such grievances submitted are tracked and must be responded to within 30 days.

The SEP is a “living document”, meaning that it will be routinely updated and made public as the Project progresses.

The next steps in stakeholder engagement will be the disclosure of the Final documents of the ESIA Package on the Project website. Anybody is free to continue to provide comments/grievances to ÇOK A.Ş. throughout the life of the Project.

General information: the Project routing was originally selected by KGM to avoid residential areas, sensitive ecological areas, historical monuments and other protected areas as far as possible. During the ESIA process and final design by ÇOK A.Ş., further fine-tuning of the routing was made to further minimise the potential impacts of the Project.

A table of the main ESIA findings for the various topics is attached at the end of this Report. The sections below provide some additional information on certain topics.

6.1

WHAT ARE THE KEY ECOLOGICAL IMPACTS?

Protected Areas/Species

There are several protected zones in the immediate Project area, including important wetlands and bird habitat at Saros Bay, plus the Dardanelles Strait is a protected waterway. Numerous species of plants and animals were characterized in the study, some of which are rare or endangered and require special protection.

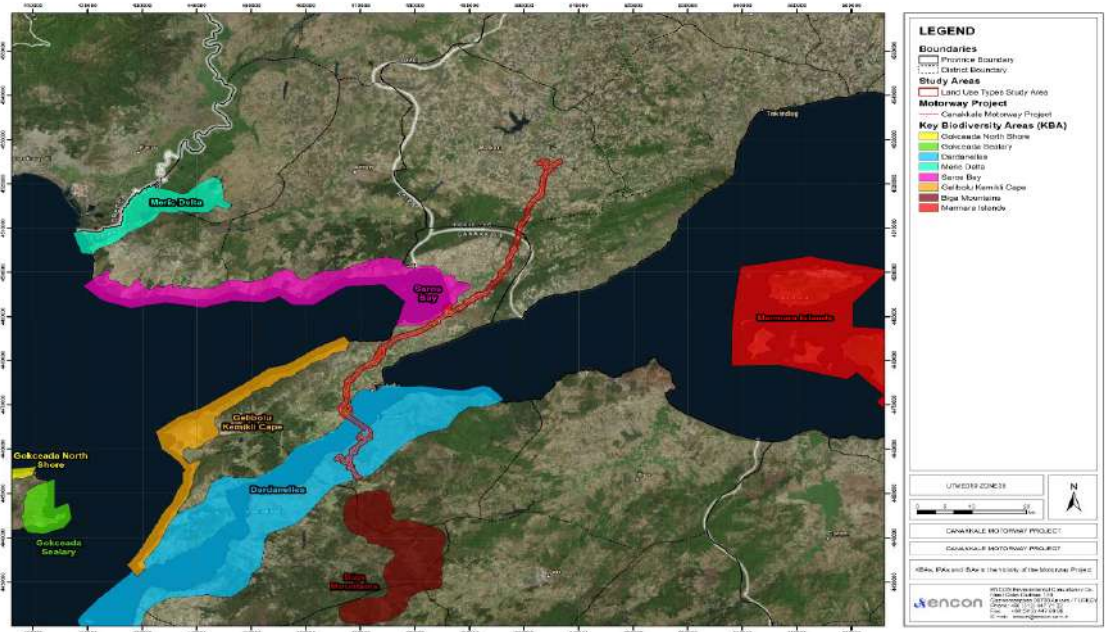


Figure 6.1-1 Map of the ecological protected areas in the Project region

Detailed studies were done for the sensitive species and habitats, and the findings were that most species will not be significantly affected by the Project. Some further review was performed to ensure that certain bird species that tend to fly close to the water surface were not adversely affected by the new Bridge structures.

With regard to plants, some special studies and re-planting of certain species will be needed in a few locations, but this is typical for such Motorway projects.

In the Dardanelles Strait, no particularly sensitive fish species were identified. However, special attention is being paid to minimize impacts during construction to dolphins that migrate through the Strait in Spring and Autumn. Protective measures include use of special equipment and procedures to minimize underwater noise and prevent pollution of the water with sand and silt (also to protect the sensitive seagrass near the shores). Experts will be hired during critical construction periods of the Bridge to keep watch for dolphins, and construction noise will be minimized when dolphins are close by.

Surface water and groundwater

The Motorway will cross a total of eight larger streams and channels via bridges and viaducts, and numerous smaller water courses and irrigation channels via culverts. Field studies found that most fish species present were of low sensitivity, only a few medium and one high. Protection measures during construction will prevent pollution to these waters. The Motorway does not cross any stringent protection zones for groundwater. Any existing groundwater wells that might be damaged during construction will be replaced.

Soils and Waste

The Motorway construction will require the movement of about 8 million tons of soil and fill material to establish the Motorway elevation: some higher areas need to be cut, while lower areas need to be filled. Whilst the designers attempt to optimize the cut-and-fill volumes as far as possible, for this Project there will be about 3 million tons of soil left over.



Figure 6.1-2 *Landscape in the Project area*

The responsible government Authorities (e.g. Forestry Ministry) will determine which locations can be used by ÇOK A.Ş. to deposit these materials. ÇOK A.Ş. will assess the locations and apply the necessary measures to ensure that environmental and social impacts are minimized; all required approvals will be obtained.

Air and Noise

The Project layout was designed in the first place to minimize impacts to local residents. Most of the route passes through rural areas. No sensitive buildings were identified near the route (within 200m) such as schools, hospitals or care homes for elderly. Air quality and noise measurements were made during the ESIA, and then models were used to calculate the potential effects on the nearby villages.

- Air Quality: current measured values are good and no significant impacts are anticipated from the Project;
- Noise: current measured values are typical for rural areas/villages. Consideration will be given during construction to minimize noise from large equipment. During operations, a few locations where houses are close to the Motorway (or junctions/connecting roads) may be impacted by elevated noise emissions. Further measurements will be undertaken and then noise protection measures can be implemented if needed to achieve the required standards.

Construction Vehicle Safety

The construction activities will require that many truck-loads of material must be transported throughout the Project area. If such routes pass through small villages, this can pose a nuisance and safety risk to local residents. For this reason, the Project planners will try to avoid such routing; if unavoidable, truck drivers will be obliged to follow strict rules on maintaining safe speeds, minimizing noise, dust and other nuisance. Special care will be taken in view of children, schools, elderly persons etc.

The Baseline Studies found that in the Project Area about 85% of the land is used for agriculture (mainly non-irrigated farming), about 6% is military and the remainder is forests, artificial surfaces, semi-natural areas and water bodies. Most village residents are engaged in agriculture as their basis of livelihood.

The Motorway will require certain permanent land-take, and these areas will no longer be available for farming or other uses. (Landowners will of course be compensated for their lands - the expropriation process is described in following chapter). Areas leased temporarily during construction will be reinstated as far as possible to their previous conditions, and owners will be compensated for damages.

Most farmers will be able to continue their farming activities as before. The Motorway is planned with numerous over- and underpasses so that existing roads/paths are maintained and farmers will still be able to reach their fields.

Similarly, existing streams and irrigation channels, as well as water supply pipelines and wells, will be maintained.

ÇOK A.Ş. will implement a voluntary programme of support to the villages in the Project region, to be called the Community-Level Assistance Programme (CLAP). The CLAP will include a variety of support measures, such as training programmes to improve agricultural yields, that will be open to all interested residents of the villages – not just those who are directly affected by expropriation.

The exact details of the CLAP measures will be agreed together with the Muhtars of the villages and existing government and social organisations so that the needs of the villages can be met most effectively.

Further information about the CLAP will be included in the above-described SEP.

7.1

EXPROPRIATION AND COMPENSATION BY KGM

The Project will require that certain landplots are acquired permanently and some public land will be allocated temporarily during construction. The land acquisition process is the responsibility of KGM. As mentioned previously, the original Motorway alignment has been made by KGM so that only very few buildings will need to be removed, including a small number of houses and businesses.

The permanent land expropriation will be undertaken by KGM in accordance with Turkish legislation under the Expropriation Law. Temporary land take will be required for the various construction sites along the Motorway, which will be organised by ÇOK A.Ş. through agreed lease contracts with the private land owners if required.

The Project will affect about 2,500 plots of land and related property owners / co-owners and additional persons who rent or use affected land or are otherwise temporarily or permanently affected by the Project:

- Private land owners and co-owners with legal rights (title deeds) on land
- Owners of houses, commercial premises or other built structures
- Owners of assets on land (e.g. irrigation systems, buildings, trees)
- Customary owners/users of treasury/ unregistered lands who have been using these lands for more than 20 years (“zilyet”)

The entire process is fully in accordance with the provisions of the Turkish Expropriation Law and KGM procedures for similar roadway infrastructure projects.

For further details on the process, please refer to the separate GLAC document, mentioned in Table 1.

As part of the ESIA Package, ÇOK A.Ş. has prepared the Environmental and Social Management and Monitoring Plan (ESMP – listed as Volume IV in Table 1). This Plan lays out all the actions that need to be implemented during the construction and operations of the Project, when and by whom. Some of the actions are for ÇOK A.Ş. directly, and others by the construction contractors – in any case ÇOK A.Ş. has the overall responsibility to ensure that the ESIA obligations are implemented as intended.

ÇOK A.Ş. will therefore undertake a monitoring program to ensure that the actions of all Project-related organisations and staff are aligned with the requirements in the ESMP. During the construction period this monitoring will be more intensive than during the subsequent operations period. This monitoring will require specialists to be in the field and checking the contractor works with respect to environmental and social protection, as well as health and safety of workers and the public.

It is a goal of ÇOK A.Ş. to conduct this Project in a safe manner for all parties.

As mentioned earlier, ÇOK A.Ş. will be obliged by the Lenders to provide periodic reports on the monitoring and status of ESMP implementation, and in addition the Lenders will conduct their own monitoring periodically to confirm the status.

During Project implementation, ÇOK A.Ş. will also designate Community Liaison Officers (CLOs) to engage closely with local residents and to ensure that any public concerns or complaints about the Project works are handled swiftly and satisfactorily.

TABLE OF KEY ISSUES AND MITIGATION ACTIONS

The table below provides a summary of the key Project impacts identified in the ESIA report, along with corresponding actions (the mitigation measures) that ÇOK A.Ş. will need to undertake to avoid or minimise the impacts. The impacts are ranked by severity, starting with *Negligible*, *Minor Moderate* and *Major* - and positive impacts are simply called *Positive*; each ranking level has its own colour-code in the table. The impacts are shown for each ESIA topic (e.g. Resources and Waste Impact) and separately for the Construction Phase and the Operation Phase of the Project.

The table first describes each relevant impact, and then shows the ranking of the potential severity of the impact – before any mitigation measures are considered. Then the recommended mitigation measures are described, followed by a second ranking assuming that these mitigation measures have been implemented. As shown in the table, the severity of nearly all impacts can be reduced substantially by applying the mitigation measures; only a few impacts remain Major.

Note: There are many impacts identified in the ESIA report that were found to be *Negligible* or *Minor* without further mitigation, and these are not shown in this table; **this table shows only those items initially ranked *Moderate*, *Major*, or *Positive*.**

ID#	Impact Description	Impact Assessment (<u>prior</u> to mitigation)	Key Mitigations Measures	Residual Impact (<u>after</u> Mitigation)
RW	Resources and Waste Impacts			
	<i>Construction Phase</i>			
RW-1	Risk of destruction of habitats and vegetation during earthworks and resource extraction	Major	Investigation of geological, land use and habitat conditions to reduce risks and impacts. Some habitat destruction cannot be avoided, for example, to clear the area needed to build the roadway itself. Therefore, after mitigation the situation will be improved, but still ranked as an unavoidable “Major” impact on the habitat and vegetation.	Major
RW-2	Disposal of excavated waste soil	Major	Optimization of waste and soil management procedures in accordance with international and local standards.	Moderate
RW-3	Hazardous waste generation during construction activities	Major	Waste Management Procedure including procedures for handling, storage and safe disposal of hazardous materials (e.g. fuels, oils).	Moderate
	<i>Operation Phase</i>			
RW-4	Hazardous waste generation	Major	Compliance with Hazardous Waste Regulations and onsite trainings.	Moderate
GS	Geology and Soil and Contaminated Land Impacts			

ID#	Impact Description	Impact Assessment (prior to mitigation)	Key Mitigations Measures	Residual Impact (after Mitigation)
<i>Construction and Operation Phases</i>				
GS-1	Soil instability and erosion risk	Major	Soil stability identification during design phase, soil management procedure during construction and preventive drainage, vegetation and slope stability measures.	Negligible
GS-2	Seismic risk	Major	Design, construction and operation in accordance with international standards and technical specifications for protection against seismic activity and flooding.	Negligible to Minor
GS-3	Contaminated Land	Negligible to Major	A Soil Management Procedure will be followed. Contaminated materials that are unexpectedly encountered during construction will be identified and addressed according to the laws.	Negligible
GS-4	Contaminated spills and runoff	From Minor to Major	Appropriate treatment-spill control systems, underground/aboveground storage tanks, containment measures for gas/petrol stations, leak detection systems and alarms etc. will be implemented to mitigate the impacts.	Negligible to Minor
TW	Terrestrial Water Environment Impacts			
<i>Construction Phase</i>				
TW-1	Impacts on Surface Water quality	Major	No fuels, equipment or hazardous materials will be stored or handled in excavated areas or water resources (fencing will be applied). The wastewater will be discharged into the local/municipal sewage network.	Negligible
TW-2	Impacts on Groundwater	Moderate to Major	See above	Negligible
<i>Operation Phase</i>				
TW-3	Impacts on Surface Water Quality (temporary)	Major	A Waste Management Procedure and a spillage risk assessment, which will include management of spills and leakages of hazardous materials during construction and operation will be undertaken.	Negligible
TW-4	Impacts on Surface Water Quality (permanent)	Major	Inspection and maintenance of permanent erosion and runoff control features. Petrol stations will operate in accordance with international standards and oil separators operation will aim to desired water treatment results.	Negligible
TW-5	Impacts on Land Drainage and Flooding	Major	Appropriate siting and use of sustainable road drainage and storm water management practices in accordance with international guidelines.	Negligible
TW-6	Potential impacts on Groundwater resources	Moderate to Major	See above	
MW	Marine Water Environment Impacts			

ID#	Impact Description	Impact Assessment (prior to mitigation)	Key Mitigations Measures	Residual Impact (after Mitigation)
<i>Construction Phase</i>				
MW-1	Impacts from Dredging Activities (excavation of the bottom of the Strait to place the foundations of the two Bridge towers). Sediments from dredging removal and disposal can pollute the water and affect sea plants and fish.	Significance of the impacts cannot be determined without further assessment	The dredging firm hired by ÇOK A.Ş. will use modern equipment to remove the materials via suction method (which causes less pollution than using buckets, and is faster). The materials will then be disposed of elsewhere in the sea bottom at special locations that are selected by the Harbour Authorities.	Residual impacts will be assessed following sediment assessment.
MW-2	Non-routine events There is potential for the accidental or unplanned release of untreated construction site wastewaters. Standard operating procedures and good construction site management will prevent most incidents but it may not be possible to prevent all accidents in this way. Extreme weather events, poor maintenance, and operational errors are the most likely causes of accidental discharges from the construction site to the marine environment.	Moderate	ÇOK A.Ş will prepare an international Emergency Prevention and Response Plan (EPR Plan) applicable to spill containment and clean-up incidents on land and in the marine environment. Any major spills into the Straits waters (e.g. due to collisions of large commercial vessels or severe accident on the bridge) will primarily be handled by the General Directorate of Coastal Safety and Salvage Administration. In addition, there is a private organization (MARE-Marine Clean-Up Services) in Dardanelles Straits, which was established by the 20 coastal facilities. The Environmental Management Plan and the Marine Safety for Tower Foundation Procedure will include procedures on marine environmental design. As a minimum, the Environmental Management Plan to be required from the contractors prior to construction will need provisions on management, collection, storage, handling, disposal of waste from the vessels etc.	These mitigation measures are considered sufficient in preventing impacts to the marine environment in the majority of cases. The significance of collision-based risks will be assessed following the results of the NRA.
MW-3	Impacts from Shipping-Related Accidents and Accidental Spillages	Significance of impacts related to accidents cannot be assessed at this point	A special study is being conducted by ÇOK A.Ş. with shipping navigation experts and the Harbour Authorities to prepare procedures to avoid accidents in the Strait during Bridge construction . These instructions will then need to be followed by the construction firms and their ship pilots.	Residual impacts will be assessed following the navigational risk assessment results.
<i>Operation Phase</i>				
MW-4	Reduced need for ferries from increased road-based accessibility The bridge will reduce the need for ferry services that currently operate across the DS and thus indirectly decrease any associated physical, chemical and noise pollution to the marine environment, specifically water quality.	Positive	None proposed.	Positive

ID#	Impact Description	Impact Assessment (prior to mitigation)	Key Mitigations Measures	Residual Impact (after Mitigation)
MW-5	Impacts to water quality from surface run-off drainage and litter	Minor to Moderate	Drainage system, proper design and regular maintenance will to prevent any accidental release from overflow; Tracking of waste recovered from the oil water separator; Signposts to prevent litter; Litter and debris on the Bridge road surface and walkways will be cleaned regularly; Regular collection of road-side litter and debris	Negligible
MW-6	<p>Bridge Design and Non- Routine events or external events: Damage to bridge structure from external event</p> <p>Canakkale Bridge is located in the vicinity of the North Anatolian Fault - NAF which forms part of the border between the Eurasian and African-Arabian plates. The area is susceptible to earthquakes as it is located in the 1st degree earthquake zone.</p> <p>There is a medium probability of a large seismic event occurring in the region during the operational life-time of the bridge of 100 years.</p>	Major	<p>Measures to protect the bridge from structural damage and control traffic during seismic events has been considered through the detailed design phase. The geotechnical, geological and earthquake engineering study conducted by ÇOK A.S. has formed the basis for initiation of design and this data will be enhanced by the remaining interpretive work, laboratory testing and earthquake engineering analyses.</p> <p>ÇOK is committed to undertaking pre-construction scour surveys along the bridge piers and depending on the level of risk of program of mitigation measures will be implemented. Potential mitigation measures may include mattresses, rip-rap around the foundation of the footings. Potential bathymetric changes in other parts of the DS will not be assessed.</p>	Negligible
MW-7	Impacts from obstruction and Interference from the Presence of the Bridge Piers/ Towers and Supporting Structures	To be confirmed once the risk assessment study has been completed	A special study is being conducted by ÇOK A.Ş. with shipping navigation experts and the Harbour Authorities to prepare procedures to avoid accidents in the Strait during Bridge operations . The Bridge designers will need to follow the requirements of the study to ensure that ships can pass safely between the towers.	Residual impacts will be assessed following the navigational risk assessment results.
MW-8	Changes to Morphodynamic Regime (the currents and flow of the water in the Strait)	To be determined once the scouring assessment has been completed.	The mitigation measures and residual impacts can be identified following the assessment of scouring and changes in the bathymetry assessment. These topics are also being reviewed in the special study on shipping navigation.	Residual impacts will be assessed following the navigational risk assessment results.
BC	Biodiversity and Conservation Impacts			
	<i>Construction Phase</i>			
BC-1	Terrestrial Environment: Loss of flora (<i>Rorippa thracica</i> endangered species, which has limited distribution range in Turkey)	Major	Delimitation of areas and definition of access roads will take place before the beginning of the construction activities; Vegetation clearance to enable fauna to move to other areas; Reduction of dust and noise emissions.	Minor

ID#	Impact Description	Impact Assessment (prior to mitigation)	Key Mitigations Measures	Residual Impact (after Mitigation)
BC-2	Terrestrial Environment: Loss of flora (<i>Campanula lyrata</i> subsp. <i>lyrata</i> , <i>Acanthus hirsutus</i> and <i>Ballota nigra</i> subsp. <i>Anatolica</i> , which are endemic and on species <i>Ferulago confusa</i> and <i>Thymus atticus</i> , which are classified as Vulnerable and have a limited distribution range in Turkey)	Moderate	Seeds of limited range distribution flora (<i>Ferulago confusa</i> and <i>Thymus atticus</i>) will be collected from the roadside to be used in the post-construction landscaping phase and delivered to the Ankara Seed GenBank, for conservation purposes.	
BC-3	Terrestrial Environment: Damage to high sensitivity freshwater ecosystems (potential presence of <i>Anguilla Anguilla</i>)	Major	Wastes, hazardous chemical substances and excavated materials will not be dumped into or stored close to freshwater features. Vegetation clearance works will avoid affecting the riparian vegetation and aquatic organisms.	Minor
BC-4	Terrestrial Environment: Damage to medium sensitivity freshwater ecosystems (presence of Riparian gallery forest, <i>Squalis cii</i> and potential presence of <i>Solea solea</i>)	Moderate	See above	Minor
BC-5	Marine Environment: Underwater noise (species of fishes and for the harbour porpoise, which has a medium sensitivity)	Moderate	Noise reduction devices or use of Marine Mammals Observer for piling operations in the central towers will be used. When harbour porpoises or dolphins are detected within 500 m of the piling operations, the operations will stop.	Minor
BC-6	Change of habitat (<i>Pinna nobilis</i> seagrass areas from substrate removal)	Moderate	Individuals will be identified and trans-located to suitable areas. If natural re-instatement of the damaged habitat does not take place, these habitats will be re-instated to restore or re-create original habitat.	Negligible
BC-7	Marine Environment :Colonisation of new hard substrata	Positive	None proposed	Positive
BC-8	Marine Environment: Shipping-related accidents and accidental spillages	The magnitude of this risk cannot be provided in the impact assessment.	ÇOK A.Ş. needs to undertake a navigational risk assessment study following which the effectiveness of the existing system can be incorporated into the impact significance. This shipping navigation study is ongoing.	Residual impacts will be assessed following the navigational risk assessment results.
BC-9	Change of Water Quality from Accidental and Uncontrolled Discharges	Moderate	ÇOK A.Ş. will prepare during design an Emergency Prevention and Response Plan (e.g. sign of sediment traps and oil-water separators) applicable to spill containment and clean-up incidents on land and in the marine environment.	Minor
BC-10	Terrestrial Environment: Disturbance to avifauna (birds) during migration through Straits and nesting in region (eg Saros Bay) posed by road construction and presence of bridge structures (eg collision).	Potentially Major	Many of the above-mentioned mitigation measures to protect flora (plants/vegetation) during construction (and operations) are also relevant to protect habitats for birds. Similarly, measures to prevent noise and vibrations will minimise disturbance to birds. Additional baseline studies will be done in spring of 2018 for several sensitive birds that nest and breed at Saros Bay and for one species (called Yelkouan Shearwater) that migrates along the waters of the	Minor

ID#	Impact Description	Impact Assessment (prior to mitigation)	Key Mitigations Measures	Residual Impact (after Mitigation)
			Strait. Additional mitigation measures may then be applied to the Project if needed, based on the results of these further studies. For example, better protection of the nesting habitats in Saros Bay may be needed, and special lighting of bridge towers near the water surface to prevent collision-injury by the Shearwater (this would apply during construction and operation phases).	
<i>Operation Phase</i>				
BC-11	Terrestrial Environment: Accidental loss of fauna (medium sensitivity species)	Moderate	Warning signs along the motorway, to advice drivers about the risk of run over wild fauna.	Minor
BC-12	Terrestrial Environment: Barrier effect in fauna (medium sensitivity species)	Moderate	Fauna crossing points will be installed along the motorway to increase the permeability of the motorway and reduce the barrier effect.	Minor
BC-13	Marine Environment: Shipping related accidents and accidental spillages	No available data on the frequency and extent of accidental spills.	Management of navigation risk in the Project Area falls primarily under the responsibility of the Undersecretaries of Maritime Affairs. This topic is part of the ongoing shipping navigation study.	Residual impact assessment will be conducted following risk assessment by ÇOKIYL.
AC	Air and Climate Impacts			
<i>Construction Phase</i>				
AC-1	Construction dust (demolition earthworks, construction and trackout on ecological receptors)	Major	Surface binding agents will be used at unpaved roads and earthworks, speed limits will be set for the vehicles, the trucks will be clean and covered, the ground and earthworks are covered and make sure that the soil is properly stockpiled and located.	Minor
AC-2	Construction dust (demolition activities on human health and on dust soiling)	Moderate	See above	Minor
<i>Operation Phase</i>				
AC-3	Off-site impacts during operation (local air quality)	Positive	None proposed	Positive
NV	Noise and Vibrations Impacts			
<i>Construction Phase</i>				
NV-1	Noise generated at Motorway Construction Sites (including main or satellite construction sites and structures)	Major	Regular inspection and maintenance of all machinery and vehicles, installation of silencers or acoustic enclosure on machinery, reducing Project traffic and set speed limits, restrict noise levels from construction activities.	Minor

ID#	Impact Description	Impact Assessment (prior to mitigation)	Key Mitigations Measures	Residual Impact (after Mitigation)
<i>Operation Phase</i>				
NV-2	Noise from Traffic on the Motorway	Moderate to Major	The routing of the Motorway was done to avoid getting close to residential areas as much as possible, but in certain locations this cannot be avoided. Several options are available in case of noise nuisance during motorway operations, such as: building in "low-noise" road surfacing, use of natural topography for noise shielding, noise barriers adjacent to the Motorway, and improvement of house isolation in the adjacent areas.	At this stage it can be estimated that the noise level can be reduced.
LV	Landscape and Visual Impacts			
<i>Construction Phase</i>				
LV-1	Change of landscape due to changes in land use	Major	Working areas will be kept small and visual barriers and temporary fencing will be implemented to obstruct intense construction activity areas.	Depends on the individual observer.
LV-2	Visibility of new structures	Major	See above. The most visible of the construction activities will be the new Bridge construction; while some parts of the Motorway are in remote areas that are only seen by relatively few local residents. Some people may find looking at the construction works to be "negative", while others find it interesting and positive. The experience with the Orhan Gazi Bridge at Izmit Bay suggests that many people will follow the construction progress on the internet, and some will travel to Gelibolu and Lapseki especially to watch the construction of this huge bridge.	Depends on the individual observer.
<i>Operation Phase</i>				
LV-3	Change of landscape due to changes in land use	Moderate to Major	At the Motorway: Planting to restore or compensate for lost habitats, establishment of new and enhancement of native habitats, reinstatement of local landscape, visual screening of road structures and earthworks, landscape design will be coherent with regional landscape. At the Bridge: the Bridge will be highly visible in the surrounding area. As above for construction phase, some people may find the view of the bridge to be negative, but most people are likely to have a positive impression	Depends on the individual observer
LV-4	Visibility of new structures	Moderate to Major	See above.	Depends on the individual observer
SE	Socioeconomic Impacts			
<i>Construction Phase</i>				

ID#	Impact Description	Impact Assessment (prior to mitigation)	Key Mitigations Measures	Residual Impact (after Mitigation)
SE-1	In-migration and rejuvenation of the local population due to economic growth	Positive	Long-term opportunities for employment of local workforce and vulnerable persons or residents of project-affected communities and local procurement of goods and services.	Positive
SE-1a	Increase in property prices due to above-described anticipation of economic growth	Positive to Minor	Many local persons are likely to consider the economic upswing and related increase in property values as a positive aspect in their lives. Their may be some negative effects to local residents looking to purchase property. No relevant mitigation measures are feasible within the context of this Project.	Positive to Minor
SE-2	Community tensions and loss of cohesion due to implementation of the Project (eg potential temporary interruption of electricity or water supply)	Moderate	The construction contractors are obliged to undertake careful planning to ensure that there is only minimal impact to local residents. In case of any issues, residents can contact ÇOKIYI directly to seek a solution (a special „Grievance Procedure” exists for this, and there will be representatives of ÇOK A.Ş. visiting the local villages frequently.. Also, affected persons can of course contact the local Muhtars and other authorities to assist them.	Minor
SE-3	Employment opportunities and procurement of services	Positive	ÇOK A.Ş. aims to enhance local employment and procurement opportunities for local businesses (eg to supply food and support services to the workers. For this, ÇOK A.Ş. and the construction contractors are developing a special Plan for Local Content and Employment.	Positive
SE-4	Capacity Enhancement of Workforce	Positive	See above	Positive
SE-5	Damage and disruption to road transport and infrastructure	Moderate	The Project will maintain the existing road network by keeping it open to the public during construction through the use of diversions or other local solutions when closure of a given road is required.	Minor
SE-6	Pressure and cuts on existing utility supply	Moderate	The Project will conduct an assessment of public utilities (electricity grid, sewer system, water supply at local and regional levels) and hydrological investigations and will assess the situation of settlements and industry close to the Project.	Minor
SE-7	Temporary loss of water flow due to disruption to flooding an irrigation systems during construction	Major	Inclusion of landowners and implementation of grievance procedure prior to construction. Compensation measures for loss of businesses, households and livelihoods (refer to Appendix 3.2 of ESIA Volume III)	Minor to Moderate
<i>Operation Phase</i>				
SE-8	In-migration due to economic growth	Positive	Long-term opportunities for employment of local workforce and vulnerable persons or residents of project-affected communities and local procurement of goods and services during operation.	Positive
SE-9	Increased urbanization The improved access and increase in touristic and economic activities may lead	Moderate impact on the population in the region along the Project	No mitigation can be defined for this impact at project level.	Moderate

ID#	Impact Description	Impact Assessment (prior to mitigation)	Key Mitigations Measures	Residual Impact (after Mitigation)
	to an accelerated urbanization of settlements which may have a negative impact on the existing social structures, cultural practices and traditions. Also the loss of arable land and risks to local population's livelihoods may be a result. Tourism is also an economic benefit that increases the demand for goods and services, especially in the summer time. Summer house vacationists provide a significant source of income in both Lapseki and Gelibolu.			
SE-10	Employment opportunities	Positive	Identification of local employment and procurement potential, maximisation of benefits from the Motorway to local communities, employment of local personnel residing in project-affected communities, breaking of tender in smaller lots, implementation of a Local Content and Employment Strategy and Plan.	Positive
SE-11	Economic growth through improved connectivity and accessibility (local-national economy and employment)	Positive	See above	Positive
SE-12	Decreased ferry business	Moderate	The new Project will mean that some of the long-distance traffic (especially the trucks) will be willing to pay the Bridge toll to pass through the area more quickly compared to waiting and using the (less costly) ferry to cross the Strait. However, it is expected that much of the local traffic and tourists in the region will continue to use the ferry services.	Minor
SE-13	Taxes revenue (local-national economy and employment)	Positive	See employment opportunities enhancement measures.	Positive
SE-14	Physical presence of the road and bridge and thus improved mobility and access to services (community access to education, employment, services and road safety)	Positive	See employment opportunities enhancement measures.	Positive
SE-15	Reduced access to agricultural fields	Moderate	The Motorway design foresees numerous overpasses and underpasses to keep as many of the existing roads and pathways in place as possible. Further input can be made by the public during the Disclosure Period. A Project specific Grievance Mechanism will be used to record and resolve any future issues in case of reduced access.	Minor
LP	Land, Use, Property and People Impacts			

ID#	Impact Description	Impact Assessment (prior to mitigation)	Key Mitigations Measures	Residual Impact (after Mitigation)
<i>Construction and Operation Phases</i>				
LP-1	Physical Displacement /Effects on livelihood from agricultural activities	Moderate	Expropriation and compensation for affected properties will be conducted by KGM in line with the Turkish regulations (primarily the Expropriation Law) as described in the GLAC (publicly available) and the LACRF. No work will be started until bilateral agreements are settled and official consent letters are received from the legal owners. Complaints related with unauthorized use of privately-owned lands, damages on adjacent lands, etc. can be filed via the Grievance Mechanism and will be considered.	Minor
LP-2	Effects on livelihood from livestock activities	Moderate to Major	Ensure access of local people to agricultural and pasture lands. Requests of local people will be considered by the design team and feasible solutions will be developed and implemented.	Minor to Moderate
LP-3	Loss of economic forestland function within the Motorway's expropriation corridor and at related facilities	Moderate	Minimisation of loss of forest lands (i.e. construction of viaducts), implementation of Afforestation Plan, measures to avoid forest fires and immediately respond to any fire event.	Minor
LP-4	Loss of forest socio economic value (including ecosystem services)	Moderate		Minor
LP-5	Loss of agricultural lands suitable for soil cultivation	Major	Compensation will be paid for loss of assets in accordance with the Turkish Expropriation Law and standard KGM procedures. Some of the land-losses for the Project construction will be unavoidable.	Major
LP-6	Loss of pasturelands available for public use	Major		Moderate
LP-7	Future urban development potential A delayed consequence of the Project can be assumed to be the urban development which may be triggered by the Motorway construction. Such development may result in both positive and negative impacts to current baseline and land users. No details are available (nor will be available in the foreseen future) to perform the impact assessment of this effect.	Major impact on Regional Land Use Character	None proposed.	Major
LW	Labour and Working Conditions Impacts			
<i>Construction Phase</i>				
LW-1	Health and Safety Risks due to General Occupational Health and Safety Hazards	Moderate	Cooperation with the local medical services, documentation of occupational accidents and dangerous occurrences/incidents, visitor	Negligible

ID#	Impact Description	Impact Assessment (prior to mitigation)	Key Mitigations Measures	Residual Impact (after Mitigation)
			orientation and control program to ensure visitors do not enter hazard areas unescorted.	
LW-2	Health and Safety Risks due to Physical and Chemical Hazards	Moderate	Work areas will be barricaded to prevent unauthorized access and measures will be taken on elevated structures, hoisting and lifting equipment, protection devices/equipment will be provided, machinery emissions will be minimised, dust masks will be used etc..	Negligible
LW-3	Health and Safety Risks due to Emergencies	Moderate	Emergency Prevention and Response Plan for Spill Containment and Clean-up, engineering contingencies, marine collisions and other emergencies (e.g. natural hazards) will be prepared.	Negligible
LW-4	Health and Safety Risks due to Construction Traffic	Moderate	A safe work zone will be established , relevant measures (closure of roads, diversion of traffic, use of protective barriers, cones, warning lights, etc.) will be taken and weather forecasts will be monitored to provide advance warning of extreme weather to drivers and schedule the work accordingly.	Negligible
LW-5	Health and Safety Risks due to Poor Accommodation Conditions	Moderate	Accommodation, medical, leisure, social and telecommunication facilities etc. will ensure a good standard of conditions, prevent contamination and spread of diseases and accidents and provide workers a comfortable and healthy environment.	Negligible
LW-6	Labour Risks and Impacts Related to Local Recruitment and Capacity Enhancement	Positive	Local recruitment and influx management controls will be established in the Contractors HR&Worker Planagemnt Plan / recruitments procedures, which will be developed with consideration of the COK's Employment Policy and Turkish, EU and IFC laws and standards. COK's contractors will provide information on the recruitment process, with particular emphasis on informing local communities of employment opportunities through different channels such as headmen and local associations. COK will provide, as per Turkish Labor Law, workers the right of collective bargaining and forming a union/related organization.	The impact will remain Positive
LW-7	Labour Risks and Impacts Related to Women Employment and Non-Discrimination and Equal Opportunity	Positive	COK A.Ş. will follow Turkish law, while applying equal opportunities to women in all other branches where law does not prohibit women workers. Further measures will be put in place to encourage female participation in non-employee workforce, such as providing specific training where required, enabling flexibility and job-sharing opportunities for women with children to participate.	The impact will remain Positive
LW-8	Labour Risks and Impacts Related to Subcontractor and Supply Chain Management (Including Child and Forced Labour Risks)	Moderate	COK A.Ş. and its contractors will not employ nor permit any subcontractor to use child labour, and in accordance with Turkish legislation, any person under the age of 18 may not be assigned to any hazardous work within the Project. Similarly, COK A.Ş. will prohibit	Negligible

ID#	Impact Description	Impact Assessment (prior to mitigation)	Key Mitigations Measures	Residual Impact (after Mitigation)
			the use of forced labour. These measures will be reflected in the Project's Employment Policy Document.	
<i>Operation Phase</i>				
LW-9	Health and Safety Risks due to General Occupational Health and Safety Hazards	Moderate	ÇOK A.Ş. will ensure that the operation and maintenance personnel are properly trained in their specialty and successfully completed the necessary security investigations.	Negligible
LW-10	Health and Safety Risks due to Physical and Chemical Hazards	Moderate	measures will be taken to ensure safety during the road maintenance or landscaping works:	Negligible
LW-11	Health and Safety Risks due to Emergencies	Moderate	An Emergency Preparedness and Response Plan, covering the emergency situations (involving vehicles and pedestrians) during the Motorway's operation, will be prepared and implemented to avoid significant risks.	Negligible
CHS	Community Health and Safety Impacts			
<i>Construction Phase</i>				
CHS-1	Traffic accidents (receptors using the community roads)	Major	Measures (awareness raising, fencing, trainings, guarding, minimisation of pedestrian interactions, local traffic signage) will be in place to prevent unauthorised entry to Project-related sites/installations, thus prevent or lower the risks of accidents.	Minor
CHS-2	Disturbance and nuisance generated by dust and air emissions Injury from unsafe equipment use	Moderate	ÇOK A.Ş. will commit to implement key measures to prevent disturbance during construction (noise, dust, other emissions risks with material and hazardous substances and accidents) and operation (traffic noise and air quality).	Minor
CHS-3	Injury from unsafe equipment use (where the construction activities are close to settlements)	Major	Reduced access to work areas using fencing and sign posting and construction site location selection. The proposed mitigation plans are provided in the ESMP (Volume IV).	Minor
CHS-4	Exposure to hazardous materials (where the construction activities are close to settlements)	Major	Strict control of selection, storage, use and disposal of hazardous materials, physical separation, immediate containment, clean up and disposal of spills of hazardous materials, development and implementation of effective emergency prevention and response plans.	Minor
CHS-5	Community exposure to disease and anti-social behaviour (where the construction activities are close to settlements)	Major	Training with appropriate discipline measures in place, health awareness trainings, training of health workers in disease treatment, health services and immunisation programmes to minimise the risks of the spread of communicable diseases.	Minor
CHS-6	Conflicts with security personnel (for communities located close to construction camps)	Major	ÇOK A.Ş. will establish a Community Relations Management Plan to set out the security measures, particularly for the Construction Stage of the Project	Minor

ID#	Impact Description	Impact Assessment (prior to mitigation)	Key Mitigations Measures	Residual Impact (after Mitigation)
<i>Operation Phase</i>				
CHS-7	Traffic safety	Positive	None proposed	Positive
CHS-8	Easier and faster response to emergencies	Positive	None proposed	Positive
CHS-9	Disturbance and nuisance generated by noise	Moderate to Major	See item NV-2 above	See Item NV-2
CHS-10	Injury from unsafe equipment use	Major	Risks are to be minimised by reducing access to work areas, better access control such as fencing and sign posting.	Minor
ABH	Archaeology and Built Heritage Impacts			
<i>Construction Phase</i>				
ABH-1	Complete or partial removal of cultural heritage assets	Major	There are a number of historical/archaeological sites along the Motorway route, especially north of Gelibolu. ÇOK A.Ş. and the archaeology experts are working closely with the Culture Ministry, who instructs on what actions ÇOK A.Ş. must take to protect such sites. Further expert studies are currently being performed, and ÇOK A.Ş. will then prepare a Cultural Heritage Management Plan to protect these sites in conjunction with the Ministry and other relevant authorities.	Major
ABH-2	Removal of a significant part of the asset and significant change of the setting	Moderate		Moderate
<i>Operation Phase</i>				
ABH-3	Promotion of cultural heritage assets as "Points of interest"	Positive	A catalogue of archaeological assets discovered during the project and delivered to the museums will be prepared, promoted and published as part of a corporate social responsibility activity.	Positive
Ecosystem Services				
<i>Construction Phase</i>				
ES-1	Food provisioning: wild plants, nuts, mushrooms, fruit, honey	Moderate	The implementation of the mitigation measures described under Displacement of Existing Land, Use, Property and People are applicable and would reduce the impacts on forested areas, thereby, largely preserving areas where wild plants and mushrooms are gathered. Windbreaks and noise embankments shall be placed around locations where bees may be affected from construction and operation activities. Given that the beekeepers place bee hives in different locations, it is not feasible to describe the areas where this mitigation will be required. Further detail pertaining to this mitigation measure will be developed in the Construction and Operation EMPs. It is anticipated that the impact of the project on food provisioning services will have a significant impact on the incomes or livelihood	Minor

ID#	Impact Description	Impact Assessment (prior to mitigation)	Key Mitigations Measures	Residual Impact (after Mitigation)
			strategies of the local communities provided the suggested mitigation measures are implemented.	
ES-2	Freshwater	Moderate	In addition to the mitigation measures in the Terrestrial Water, the following should be developed: <ul style="list-style-type: none"> Construction water management plan (particularly for worker camps) must be developed with an estimate of water requirements, identification of sources and measures for water saving/ sustainable water use (especially in summer). The SEP should be updated to include local water providers as stakeholders, and ensure that the topic of water is discussed at future engagement meetings. 	Minor
ES-3	Terrestrial Biodiversity Importance	Minor/Moderate depending on successful implementation of the habitat restoration/compensation measures	The mitigation measures related to terrestrial biodiversity are applicable here and are described in detail in the Terrestrial Biodiversity Section. Dependent on successful implementation of the habitat restoration/compensation measures, no additional mitigation is required.	Minor/Moderate if No Net Loss requirements can be achieved as required by the Performance Standard 6.
<i>Operation Phase</i>				
ES-4	Food provisioning: wild plants, nuts, mushrooms, fruit, honey	Moderate	Same as above, ID#ES-1	Minor
ES-5	Terrestrial Biodiversity Importance	Minor/Moderate depending on successful implementation of the habitat restoration/compensation measures	Same as above, ID#ES-5	Minor/Moderate if No Net Loss requirements can be achieved as required by the Performance Standard 6.