



REPORT

Yerköy-Kayseri High-Speed Railway (HSR) Project
Environmental and Social Impact Assessment - Non-Technical Summary

Submitted to:

Doğuş İnşaat ve Ticaret A.Ş. - Çelikler Taahhüt İnşaat ve Sanayi A.Ş. - Özkar İnşaat Sanayi ve Ticaret A.Ş. (Doğuş-Çelikler-Özkar) Joint Venture

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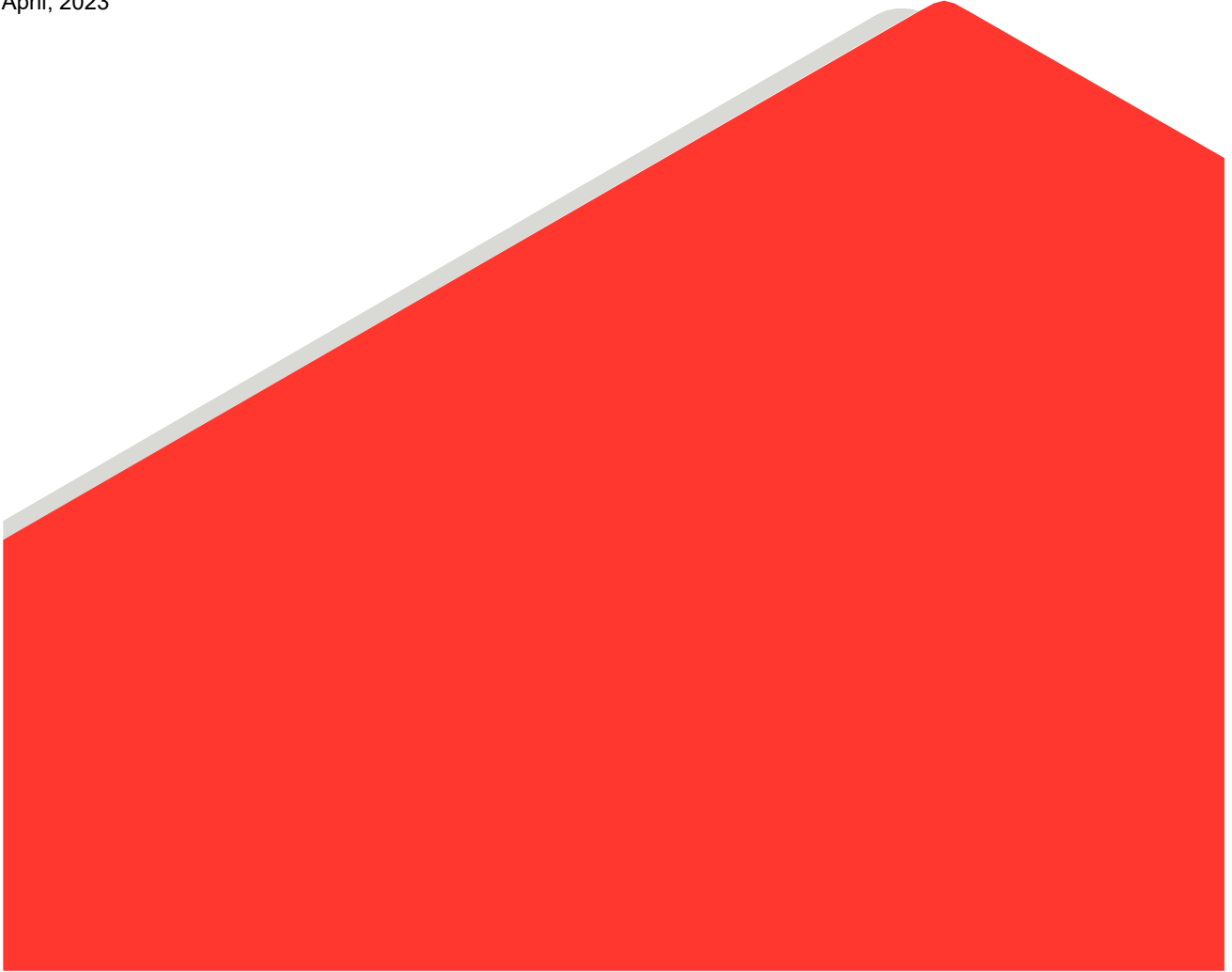
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Acronyms and Abbreviations

Aol	Area of Influence
AST	Aboveground Storage Tank
AYGM	General Directorate of Infrastructure Investments
BAT	Best Available Technique
CH	Critical Habitat
CI	Catch Interviews
CIA	Cumulative Impact Assessment
DSI	State Hydraulic Works
EHS	Environmental, Health, and Safety
EIA	Environmental Impact Assessment
EN	Endangered
EP	The Equator Principles
EPFIs	Equator Principles Financial Institutions
E&S	Environmental and Social
ESAP	Environmental and Social Action Plan
ESIA	Environmental Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System Management
ETL	Energy Transmission Line
EU	European Union
GHG	Greenhouse Gas
GIIP	Good International Industry Practices (GIIP)
GM	Grievance Mechanism
GWP	Global Warming Potential
HRIA	Human Right Impact Assessment
HSR	High-speed Railway
IFC	International Finance Corporation
ILO	International Labour Organization

KPIs	Key Performance Indicators
LMP	Labour Management Plan
LRP	Livelihood Restoration Plan
LSA	Local Study Area
MoTI	Ministry of Transport and Infrastructure
NATM	New Austrian Tunnelling Method
NGO	Non-Governmental Organization
NT	Near Threatened
NTS	Non-technical Summary
O.G.	Official Gazette
PAP	Project Affected People
PPE	Personal Protective Equipment
PPM	Public Participation meetings
PSs	Performance Standards
RAP	Resettlement Action Plan
SEP	Stakeholder Engagement Plan
SIA	Social Impact Assessment
TCDD	Turkish State Railways (Türkiye Cumhuriyeti Devlet Demiryolları)
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
VU	Vulnerable
WHO	World Health Organization
WWTP	Wastewater Treatment Plant

Record of Issue

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1.0 INTRODUCTION

1.1 Project Background

"Yerköy-Kayseri High-speed Railway Project (Yerköy-Kayseri HSR Project), which was included in the Investment Programme of the Turkish Government, was planned by T.R. Ministry of Transport and Infrastructure (MoTI), General Directorate of Turkish Republic State Railways (TCDD). The planned Project aims to connect the Kayseri Northern Passage Railway line with the Ankara-Sivas High-speed Railway Yerköy Station exit, which is under construction. The Project has been planned as 139.545 km length and starts from Akpınar Village and Oymağaç Neighborhood within the administrative borders of Yozgat Province and passes through Yerköy, Şefaati, Yenifakılı and Boğazlıyan Districts of Yozgat Province, Kozaklı District of Nevşehir Province, and Kocasinan District of Kayseri Province. The planned Project will pass through the administrative borders of Yozgat (79 km-length part), Nevşehir (15.6 km-length part) and Kayseri (44.945 km-length part) provinces.

The EIA Positive Decision for the Project had been obtained on July 8th, 2019.

Doğuş-Çelikler-Özkar Joint Venture which will be the construction contractor retained Golder Associates Türkiye Ltd. ("WSP-Golder Türkiye") to prepare the Environmental and Social Impact Assessment ("ESIA") for the Yerköy-Kayseri HSR Project in compliance with the national and international requirements.

The financing process is currently ongoing. Following the financial closure, the construction will be commenced.

1.2 Project Owner

Yerköy-Kayseri High-speed Railway Project was included in the Investment Programme of the Turkish Government. The owner of the Project is the Republic of Turkish Ministry of Transport and Infrastructure (MoTI). The construction contract was signed between MoTI General Directorate of Infrastructure Investments (AYGM) and the construction contractor which is Doguş-Çelikler-Özkar Joint Venture.

After the completion of the construction works of the Project, the Project will be commissioned with its transfer from AYGM to MoTI General Directorate of Turkish Republic State Railways (TCDD) including all the structures and other elements included in the construction contract. Operation of the Project will be conducted by TCDD.

1.3 Contractor

The tender for the turn-key design, build and finance of Yerköy-Kayseri HSR Project was held on 16th of December 2021 by the Ministry and Doguş-Çelikler-Özkar Joint Venture (Doğuş İnşaat ve Ticaret A.Ş. – Çelikler Taahhüt İnşaat ve Sanayi A.Ş. – Özkar İnşaat Sanayi ve Ticaret A.Ş.) was contracted on 24th of December 2021.

Doguş-Çelikler-Özkar Joint Venture will be the main turn-key construction contractor of the Ministry and will be responsible for construction of infrastructure, railway lines, stations, tunnels, engineering structures and the production of superstructure, electrification, signalisation and telecommunication, testing and commissioning.

1.4 Project Rationale

In parallel with the gradual liberalization of trade in the world, the increase in competition and the prolongation of transportation distances with the gaining of global and regional organizations have highlighted the element of speed. This situation has increased the importance of delivering raw materials and processed products to buyers at low cost and on time, and widespread the use of combined transportation systems supported by logistics services.

Since rail and sea transportation physical infrastructure is not developed enough in line with the transportation demand in Türkiye, this has led to the installation of the road network mainly for freight and passenger transport. This situation has caused the formation of an unbalanced and inefficient transportation system among transport types. In addition to these, traffic safety, especially on highways, has not reached sufficient levels yet.

The solution of these problems will be possible with railway transportation. However, first of all, the railway infrastructure needs to be improved and expanded, and the passenger and logistics services provided on the railway must be improved.

Many goals and targets have been determined for the development of railways in the 2019-2023 Strategic Plan of TCDD which include the development and expand of the national rail network; ensuring that infrastructure operations are maintained in a safe, uninterrupted and comfortable manner; providing safe traffic and station management with effective capacity in the national railway network and ensuring the integration of railway infrastructure with other transportation systems.

In addition, the increase in the population of Kayseri and in the share of the urbanized population in total population as well as its feature as a manufacturing industry center make Kayseri's need for both urban and intercity transportation more prominent. Since the conventional railway line between Yerköy and Kayseri cannot meet today's transportation needs, there is a need for a high standard railway that makes high-speed train operation possible.

In this respect, the Project aims to:

- Increase the ratio of railways in the intercity transportation,
- Develop fast, safe and economical transportation opportunities,
- Increase in integration with other rail system lines.

With the realization of the Project:

- The ratio of railways in intercity transportation will increase,
- Fast, safe and economical transportation will be provided,
- Rail system network will expand across the country,
- Intercity logistics costs will decrease.
- Employment will be provided both during the construction and operation phases.

1.5 The Goal of this Document

An Environmental and Social Impact Assessment study has been conducted by WSP-Golder Türkiye regarding the realization of the Yerköy-Kayseri HSR Project. This document, non-technical summary (NTS) of the ESIA, aims to summarize the ESIA findings, which was conducted according to the national and international regulations and standards of international Lenders, and mitigation measures for the management of the Project's environmental and social issues which was proposed by Doguş-Çelikler-Özkar Joint Venture; and aims to provide clear and valid information for the stakeholders by using a non-technical language.

1.6 Standards to be Applied in the Project

Doguş-Çelikler-Özkar Joint Venture commits to adhere to the provisions of Turkish laws and requirements applicable to the Project during the life-time of the Project. These requirements include (but are not limited to) the Environment Law, Occupational Health and Safety Law, Labour Law and other applicable Turkish legislation.

The Project will also comply with the International Finance Corporation Performance Standards (IFC PSs), Equator Principles and European Union legislation, the Turkish laws and requirements.

1.7 Project Categorisation

The requirements from IFC and Equator Principles 4 regarding the Environmental and Social Assessment process and outcomes differ depending on the category of the project. Projects are categorized as follows:

Table 1: Project Categorisation

Category	Description of the Project
	IFC and EP4
Category A	Projects with potential significant adverse environmental and social risks and/or impacts that are diverse, irreversible or unprecedented
Category B	Projects with potential limited adverse environmental and social risks and/or impacts those are few in number, generally site-specific, largely reversible and readily addressed through mitigation measures.
Category C	Projects with minimal or no adverse environmental and social risks and/or impacts.

Project is proposed as “Category A” in reference to Equator Principles 4 and IFC for project categorization.

2.0 PROJECT DESCRIPTION

2.1 Project Overview and the Location

Yerköy-Kayseri HSR Project has been planned as 139.545 km length and starts from Akpınar Village and Oymaağaç Neighborhood within the administrative borders of Yozgat Province and passes through Yerköy, Şefaattli, Yenifakılı and Boğazlıyan Districts of Yozgat Province, Kozaklı District of Nevşehir Province, and Kocasinan District of Kayseri Province. The planned Project will pass through the administrative borders of Yozgat (79 km-length part), Nevşehir (15.6 km-length part) and Kayseri (44.945 km-length part) provinces. The location map of the Project is presented in Figure 1.

The provinces and districts that Project will pass through between 0+000 km and 139+545 km are given in detail below and illustrated in Figure 2.

- Yozgat Province, Yerköy District (0+000 km – 20+200 km)
- Yozgat Province, Şefaattli District (20+200 km + 52+700 km)
- Nevşehir Province, Kozaklı District (52+700 km – 68+300 km)
- Yozgat Province, Yenifakılı District (68+300 km – 91+400 km)
- Yozgat Province, Boğazlıyan District (91+400 km – 94+600 km)
- Kayseri Province, Kocasinan District (94+600 km – 139+545 km)

With the commissioning of the Project, Ankara-Sivas Railway line, which is under construction, will be connected to Kayseri via a connection from Yerköy. In addition, connection to the existing Kayseri Northern Railway will be achieved with the realization of the Project.

The Project will have two stations. Station-1 is planned to be located at approximately 5.6 km southwest of the district of Şefaattli whereas Station-2 is planned to be located at approximately 1.5 km northwest of the district of Yenifakılı (see figures below). Transportation will be provided with two separate lines as arrival and departure. There will be one siding with a length of 1,504.13 m on the planned route and at a distance of approximately 3.5 km east of Himmetdede Town of Kocasinan District of Kayseri Province. Within the scope of the Project, construction of the structures such as bridges, overpasses, underpasses, culverts and tunnels are also planned.

All Project components including the temporary facilities that will be established and operated/used throughout the construction phase of the Project were considered in identification of the nearest settlements to the Project footprint (see figures below).

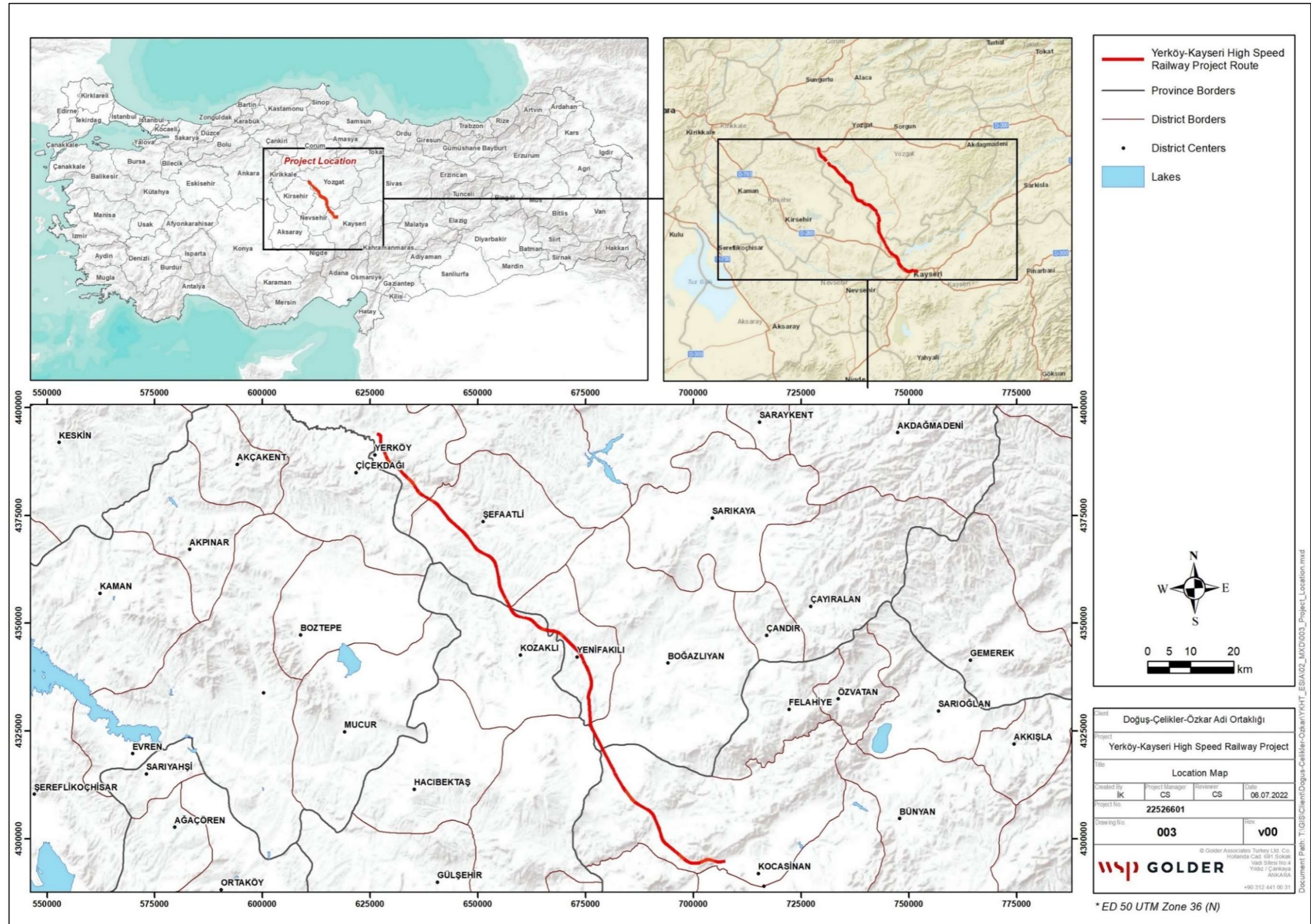


Figure 1: Project Location Map

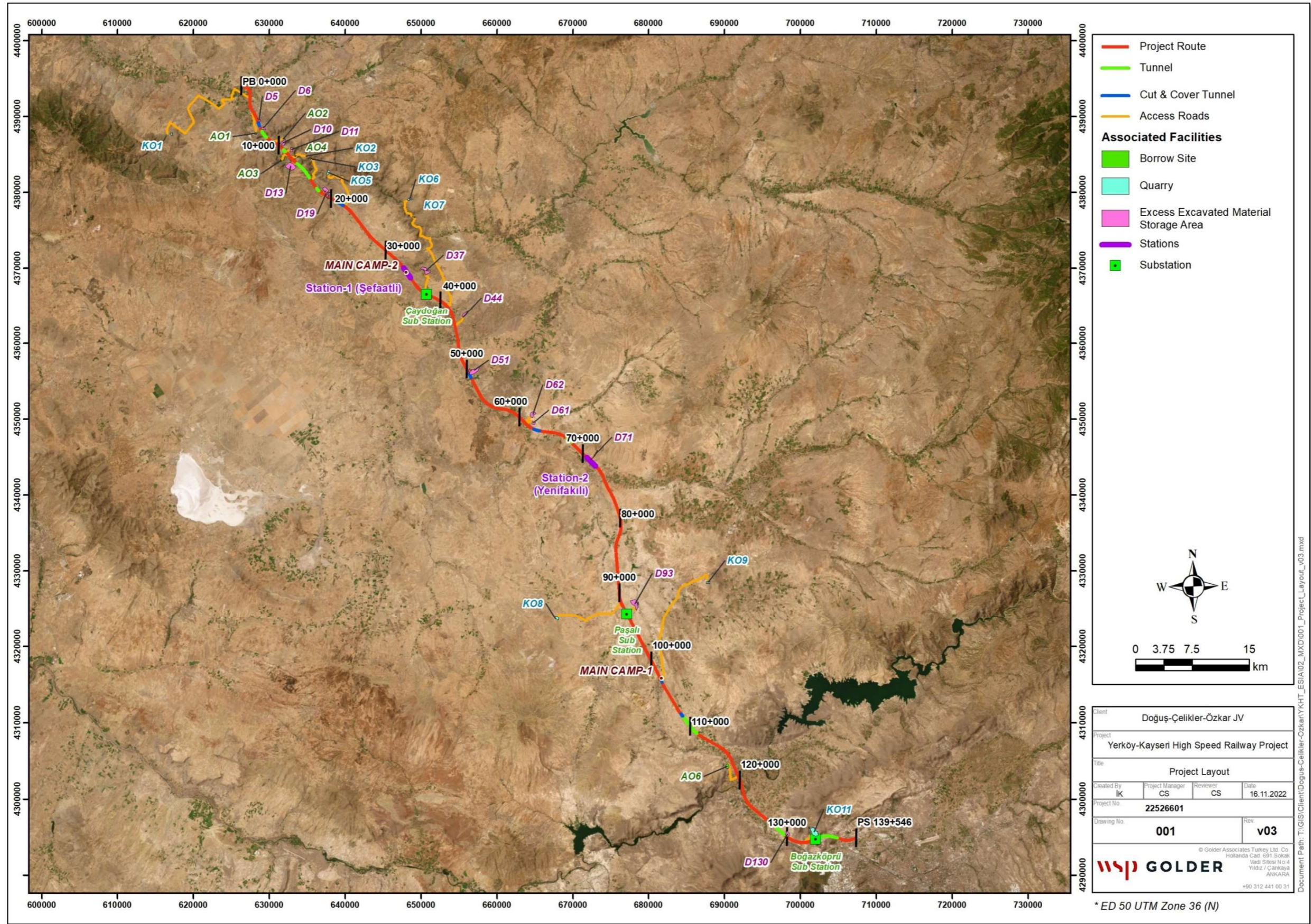


Figure 2: General Project Layout

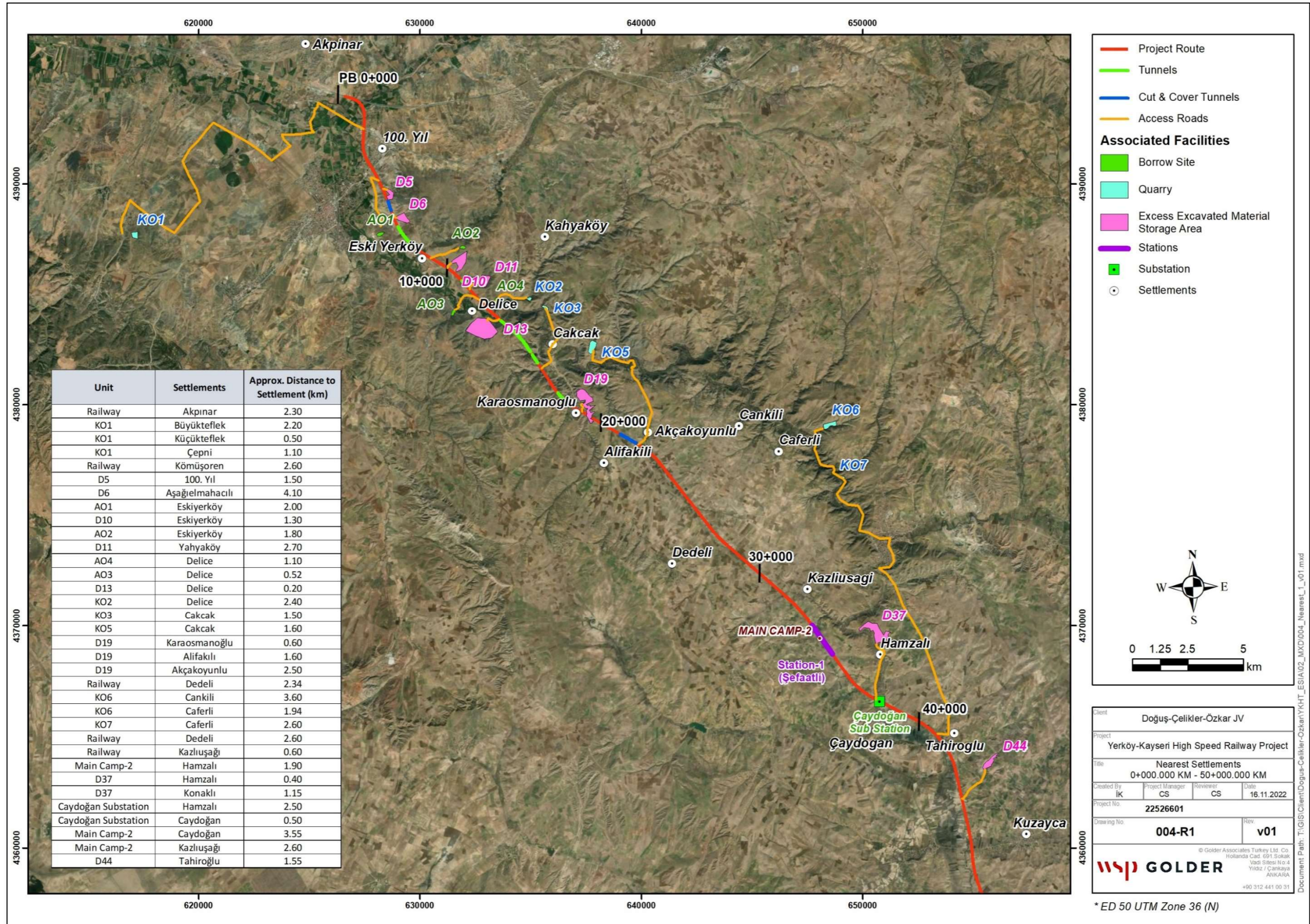


Figure 3: Nearest Settlements-1

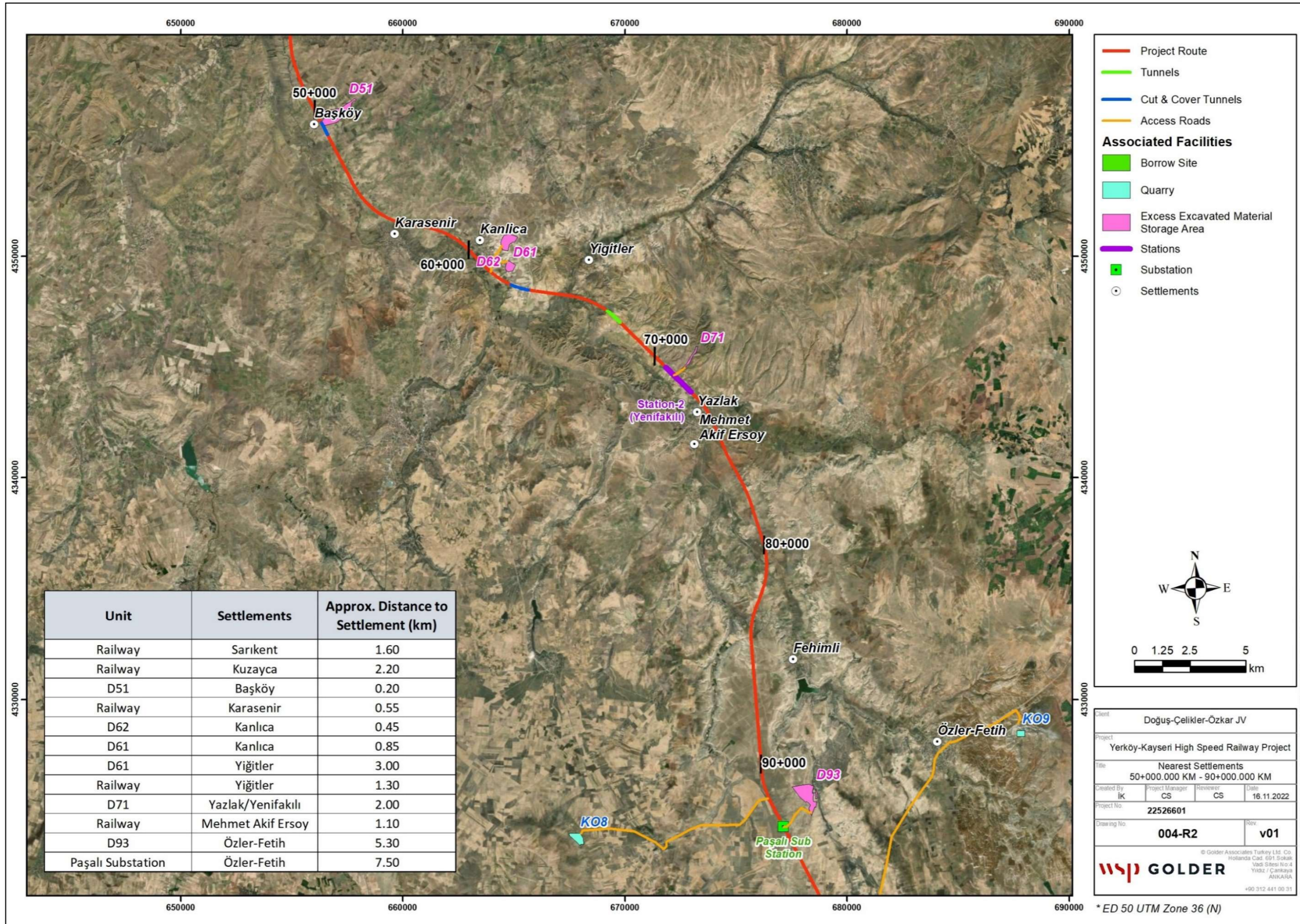


Figure 4: Nearest Settlements-2

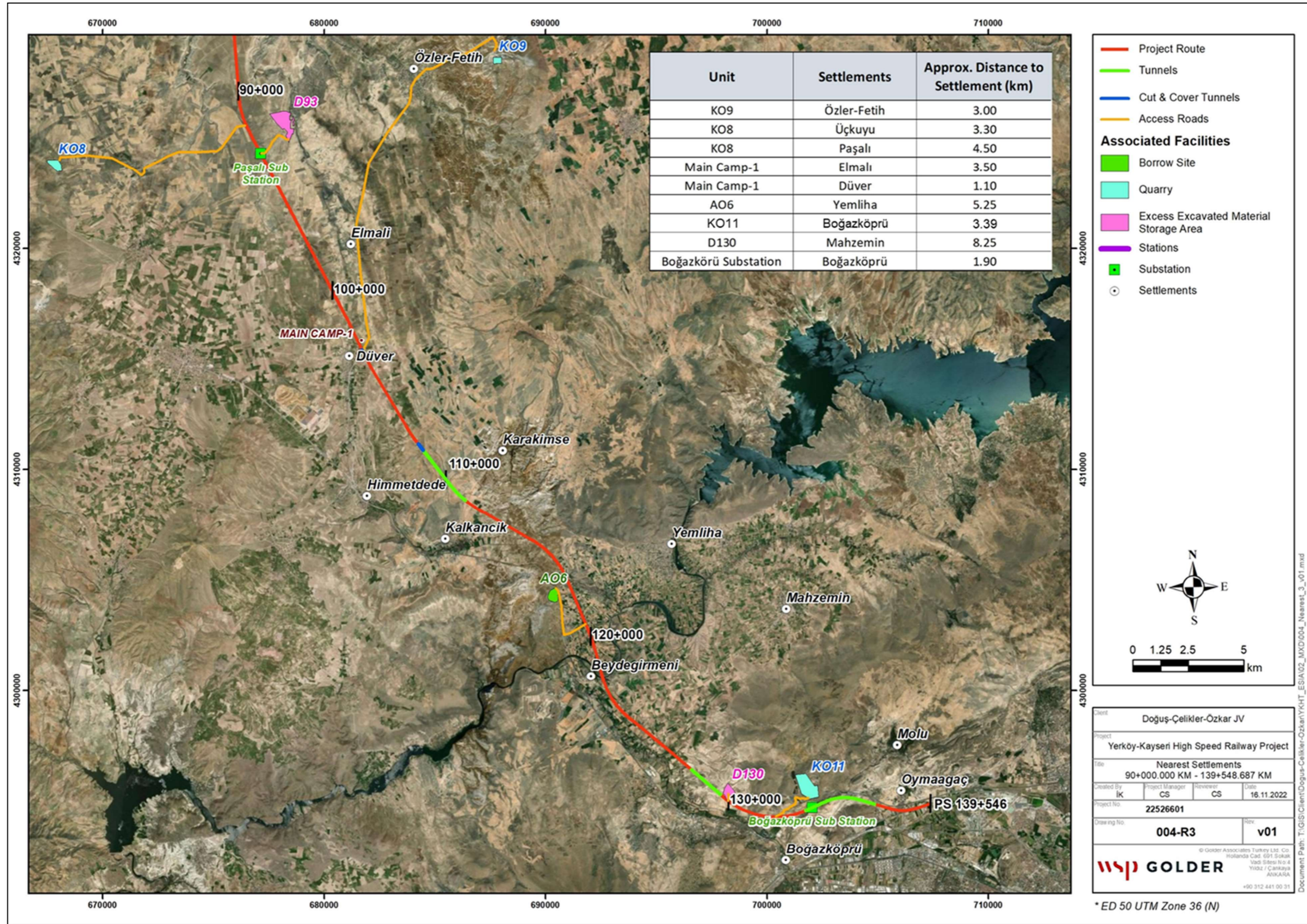


Figure 5: Nearest Settlements-3

2.2 Project Components

2.2.1 Railway Design

The railway line platform will consist of the layers of ballast, sub-ballast and prepared sub-grade (if required) from top to the bottom of the base floor.

The body of the railway line platform will be constructed with filling material of different thickness according to the characteristics of the ground. Schematic view of the railway line is illustrated in Figure 6. Specification of the Project components and the number of engineering structures along the Yerköy-Kayseri HSR route are presented in below tables.

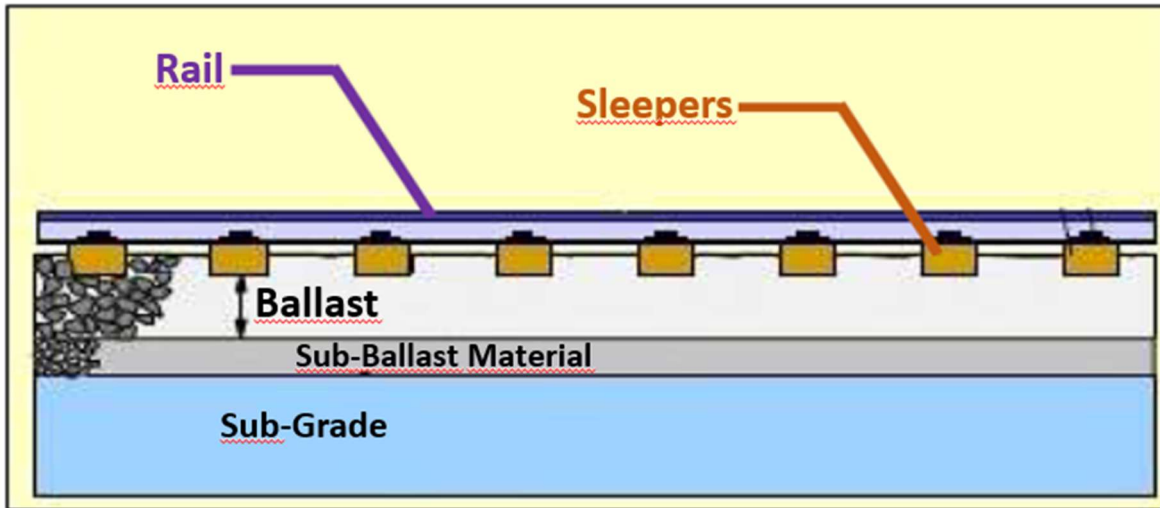


Figure 6: Schematic Illustration of Railway Section (vertical)



Figure 7: A View of High-Speed Railway Line

- **Sleepers:** *Railway sleepers which are also known as railroad ties are important railway components which lay at regular intervals perpendicular to the rails to keep the correct space of gauge and transmit the forces acting on the rail to the ballast layer by meeting and spreading on a wider surface. Concrete sleepers will be established in the scope of the Project.*
- **Ballast:** *Ballast are aggregate stones, gravels, or cinders with 30-60 mm that are placed directly below the sleepers and transmit all the effects transmitted by the sleepers to the platform by spreading them with friction between the grains and forming a track bed to provide stability and proper drainage. The ballast to be used in the Project will consist of broken, natural, artificial or recycled aggregates.*
- **Sub-ballast:** *This is the layer of coarse-grained material that are placed between the ballast and the subgrade to withstand the loads from the ballast and transfer the loads to the subgrade. The sub-ballast in the Project will have sufficient thickness to prevent freezing and thawing. The sub-ballast will enable to transfer most of the water coming from the line to the side trenches therefore will prevent the subfloor become saturated and weaken.*

Table 2: Project Specification

Parameter	Project Specification
The length of the route	139.545 km
Operation type	Passenger + Freight
Railway route	Electric double line
Speed	250 km/h
Distance between line axes	4.5 m (8.10-6.60 m on side lines)
Rail Type	UIC 60
Sleeper Type	B70 concrete sleepers
Sleeper spacing	62 cm
Ballast	Graded minimum 30 cm
Minimum Curve Radius	3,500 m
Vertical Curve Radius	20,000 m – 30,000 m (min)
Maximum Slope	0.16%
Station Length	1,500 m (min.)
Station Side Line Length	750 m (min.)
Platform Length	250 m (min.)

One siding with a length of 1,504.13 m is planned to be constructed on the planned route at a distance of approximately 3.5 km east of Himmetdede Town of Kocasinan District of Kayseri Province within the scope of the Project.

The operation type of the Project consists of both passenger and freight type railway transportation. Generally, the train type preferred in High-speed railway projects has the following features:

- In freight transportation, taking into account trains with 10 wagons with a capacity of 50 net tons, it has been predicted that a train can carry a total of 500 net tons.
- In the High Standard Railway train sets, the capacity of the passenger train is 332 tons and have the capacity of 411 passenger.

2.2.2 Engineering Structures

In the scope of the Project following engineering structures will be constructed:

- Bridges (*will be constructed where the Project crosses over large rivers*)
- Overpasses (*will be constructed where the proposed railway intersects with the existing roads*),
- Underpasses (*will be constructed where the proposed railway intersects with the existing roads*),
- Culverts (*will be built under the railway embankment body at the small waterways' crossings*)
- Tunnels (*will be built for crossing of hills as "drilled tunnel (NATM)" and "cut&cover tunnels" where drilling cannot be done at near surface*) and
- Escape tunnels (*will be built to ensure that the passengers can leave the tunnels in case of an emergency event where tunnel is longer than 1,000 m*)

The numbers of engineering structures along the Yerköy-Kayseri HSR route are presented in table below.

Table 3: Number of Project Engineering Structures on the Railway Route

Type of Structure	Yozgat Province	Nevşehir Province	Kayseri Province	Total
Bridge	13	1	4	18
Overpass	11	1	6	18
Underpass	62	14	42	118
Culvert	110	30	44	184
Tunnel	8 (5 NATM and 3 Cut&Cover)	2 (1 NATM and 1 Cut&Cover)	5 (3 NATM and 2 Cut&Cover)	15 (9 NATM and 6 Cut&Cover)
Escape Tunnel	1	-	5	6 NATM

2.2.3 Other Components

Electrification is defined as the energy distribution system that provides energy to the electrically operated vehicles on the railway. The electrification system will consist of the transformer centres, energy transmission lines (catenary), remote control and control centres.

The energy type of the planned railway is electrical energy, and the required voltage is 27.5 kV. In order to distribute this energy to the Project route, concrete electricity poles will be installed at intervals of 30-70 meters. The electrical energy required on the railway line will be supplied from the substations located around the line route, and a network system will be established. Within the scope of the Project, no new substations will be constructed in addition to three existing substations planned to be used.

There will be two stations in the railway route. Station-1 is planned to be located at approximately 5.6 km southwest of the district of Şefaati where Station-2 is planned to be located at approximately 1.5 km northwest of the district of Yenifakılı.

During construction phase of the Project, the following facilities will be established:

- Construction Camp Site: *will be established for accommodation of workers Doğuş-Çelikler-Özkar Joint Venture and subcontractors of and material storages during construction phase.*
- Storage Area (for excess excavated material and top-soil): *will be built for storage of vegetative soil stripped along the route and temporary facilities and excess excavations that are not suitable for use in filling.*

- Concrete Batching Plant: *will be established to provide concrete material required during the construction of railway route, stations and other project components.*
- Crushing and Screening Plant: *will be established to provide aggregate material required during the construction of railway route platform and other project components.*

The numbers of Project components are presented in table below.

Table 4: Number of Project Components

Facility	Yozgat Province	Nevşehir Province	Kayseri Province	Total
Station	2 (Şefaati and Yenifakılı)	-	-	2
Construction Camp Site	5	-	4	9
Storage Area (for excess excavated material and top-soil)	11	2	1	14
Concrete Batching Plant	3	-	3	6
Precast Plant	1	-	-	1
Crushing and Screening Plant	2	1	1	4

2.3 Associated Facilities

Three Energy Transmission Lines (“ETLs”) with a power of 27.5 kV will be constructed from the existing substations are the associated facilities of the proposed Project. Information about the existing substations is given in table below.

Table 5: Substations Information

Substations	Province	District	Km	App. Distance to the Route
Çaydoğan Substation	Yozgat	Şefaati	38+000	730 m
Paşali Substation	Kayseri	Kocasinan	93+000	100 m
Boğazköprü Substation	Kayseri	Kocasinan	134+000	1600 m

The map showing the substations and approximate route of energy transmission lines is presented in Figure 8 below.

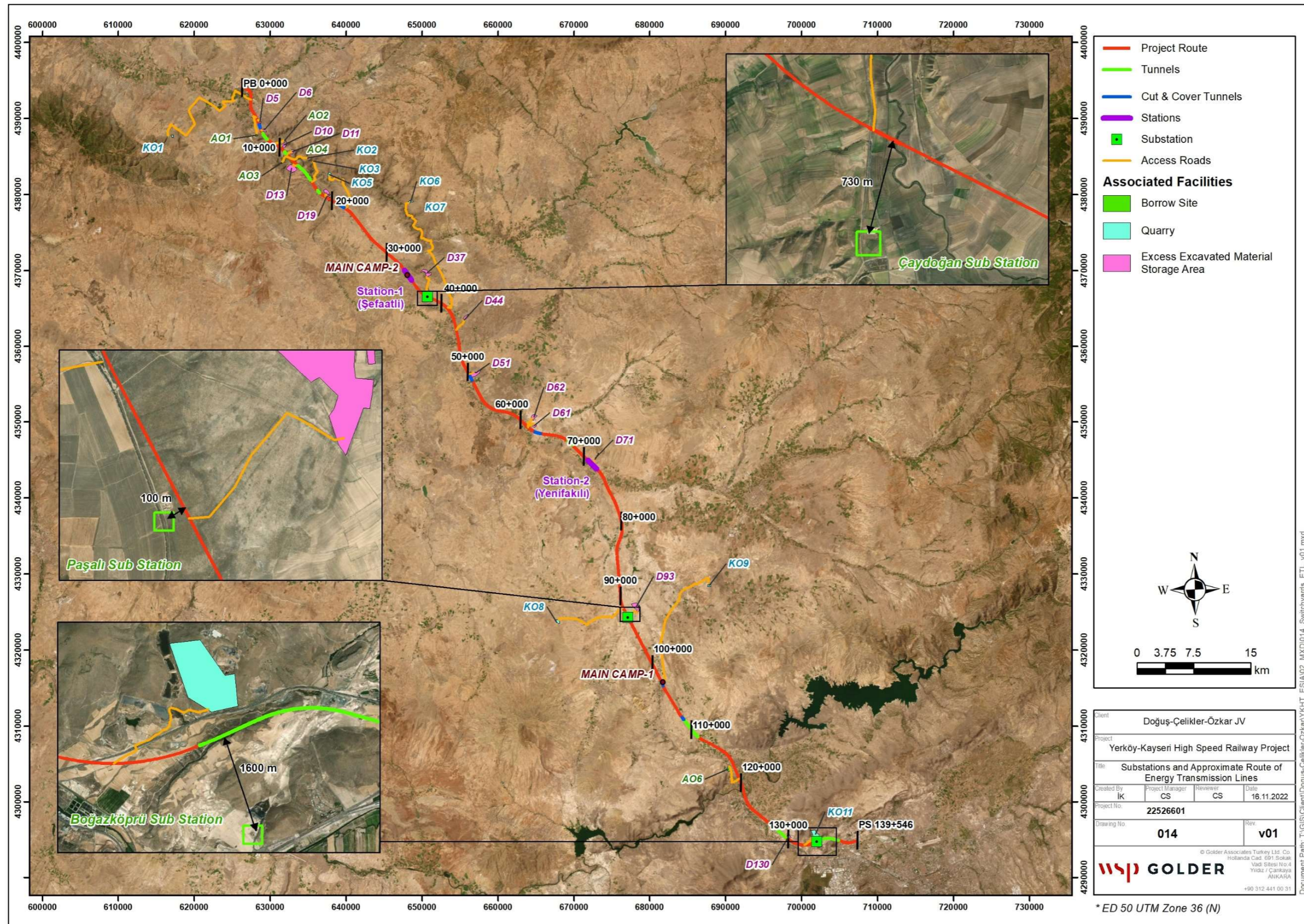


Figure 8: Substations and Approximate Route of Energy Transmission Lines

Temporary facilities which are considered as the associated facilities and planned to be constructed and operated by Doğuş-Çelikler-Özkar Joint Venture are borrow sites and quarries. They will be used in order to provide the necessary filling materials along the Yerköy-Kayseri HSR route construction. The number of temporary facilities to be used and/or constructed within the scope of the Project according to locations are summarized in table below. All temporary facilities established by the Doğuş-Çelikler-Özkar Joint Venture within the scope of the Project will be rehabilitated after the construction phase.

Table 6: Number of Temporary Facilities

Facility	Yozgat Province	Nevşehir Province	Kayseri Province	Total
Borrow Site	4	-	1	6
Quarry	7	1	1	10

2.4 Alternative Analysis

Following alternative analysis have been performed in the scope of the Project design:

- Location Selection
 - Route Selection (three alternative routes)
 - Location of the Facilities
- Technology Selection
- Construction and Engineering Techniques Selection
- No-Project Option

2.4.1 Location Selection

In the Yerköy-Kayseri HSR route selection, after the corridor determined by the General Directorate of TCDD was processed on 1 / 25,000 scaled maps (topographical, geological, etc.), 3 alternatives are evaluated with the survey studies carried out. The alternate routes assessment includes but not limited to the following:

- Meeting the project criteria
- Cost
- Roads
- Pipelines
- Irrigation areas and channels
- Energy transmission lines
- Geological structures (landslide, earthquake, etc.)
- Land use and existing settlements which would be impacted by the Project
- Expropriation
- Facilities along the route which would be impacted by the Project
- Proximity to the legally protected areas

In order to avoid or reduce potential negative impacts of the facilities on the existing environmental and social conditions of the Project's study area and to decrease the Project's footprint, the total number of quarries, borrow sites and excess material storage areas planned to be operated during the construction phase of the Project has reduced from 62 to 28. The areas where cultural heritage is encountered have also been eliminated from the determined list of the quarries/borrow sites/excess excavated material storage areas to be used in the scope of the Project.

Within the scope of this decrease, Project tried to avoid natural habitats whilst positioning the temporary facilities. Utilization of the existing modified habitat for placement of temporary facilities was prioritized as much as possible as part of the ESIA study. In this respect, the location and number of the planned storage sites was revised from 39 to 16 during the ESIA Scoping phase and finally to 14 during the ESIA phase. The locations were moved in order to avoid the use of natural habitat in the remaining locations.

2.4.2 Technology Selection

In the scope of technology selection of the railway, based on the advantages listed below, Yerköy-Kayseri HSR Project was determined to be operated as electrical railway. The Project will not only be cost effective in the short- and long-term period, but the environmental impacts will also be minimized compared to a diesel hauled railway.

- Diesel-powered trains transfer about 30-35 percent of the energy generated by combustion to the wheels, whereas about 95 percent of the energy is directly transferred from an overhead powerline to the wheels.
- In terms of cost benefits, electric locomotive engines' cost is about 20 percent less than diesel locomotive engines, similarly maintenance costs are 25-35 percent less than for diesel engines.
- According to many analysts, the diesel fuel prices tend to increase in the long-term.
- Use of electrical locomotives will help to reduce the air pollution including volatile organic compounds, nitrogen oxides, and sulphur oxides compared to diesel locomotives. This advantage of electrical railways become more important especially in the urban areas.
- Selecting cleaner energy sources compared to petroleum-based liquid transportation fuels will help to reduce the greenhouse gas emissions. Based on that, electric powered and diesel-powered locomotives in terms of GHG emissions has been evaluated and breakdown of the calculations is given in the Appendix O of this ESIA. According to the assessment, electric powered locomotives save up to 20% of the GHG emissions compared to the diesel-powered locomotives.

2.4.3 Construction and Engineering Techniques Selection

In addition to the analysis of engineering techniques related to tunnels and bridges, blasting pattern optimization studies were also carried out within the scope of the Project in order to reduce the adverse vibration impacts resulting from the blasting activities on close sensitive receptors.

During the construction phase of the Project, blasting activities will take place in quarries, tunnels and also some parts of the railway route. According to the vibration assessment study results, blasting patterns were optimized for rock quarries and railway route in order to minimize the environmental impacts arising from the Project.

2.4.4 No-Project Option

"No project option" implies that Project will not be realized (i.e., the no go alternative), no construction activities will occur and therefore there will be no positive and negative environmental and social risks connected to the Project. Furthermore, no socio-economic benefits would accrue to the nearby communities and the government.

In order to ensure faster and safer travel between cities, high-speed train projects will need to be implemented on economical lines. In this respect, 2019-2023 Strategic Plan of TCDD aims to develop and expand the national rail network.

Failure to implement the proposed Project would involve missing the following opportunities:

- Loss opportunity to contribute to the national goal of increasing the ratio of railways in the intercity transportation of TCDD Strategic Plan,
- Loss opportunity to develop fast, safe and economical transportation in Türkiye,
- Loss opportunity to increase in integration with other rail system lines,
- Loss of opportunity to create direct employment to workers.
- Loss of GHG emission savings

2.5 Land Use

The Project includes approximately 140 km railway and in total 359 Project units including 15 tunnels, 6 escape tunnels, 18 bridges, 118 underpasses, 18 overpasses, 15 (9 NATM and 6 Cut&Cover) tunnels and 184 culverts. The existing land use of the Social Local Study Area (LSA) will be affected by the construction of the Project and its components as well as by the associated facilities. There will be loss of public and private lands, since the project execution will require partial or complete acquisition of land.

In total 2,338 parcels comprising 2,095 private parcels and 243 public lands, will be needed. Detailed breakdown of the affected parcel numbers by settlements is given in Table 7. Although the lands that will be affected by the Project have been identified, the expropriation process has not yet started.

Table 7: Numbers of Affected Parcels per Settlements

Province	District	Settlement	No. of affected parcels	No. of Private lands	No. of Public lands
Yozgat	Yerköy	Yamuklar	42	40	2
		Cakcak	29	11	18
		Eskiyerköy	23	11	12
		Kahya	9	6	3
		Karaosmanoğlu	35	30	5
		Yüzüncü Yil	142	120	22
		Delice	44	39	5
	Şefaattli	Hamzali	56	54	2
		Kuzayca	148	81	67
		Akçakoyunlu	71	71	0
		Alifakili	19	19	0
		Başköy	42	33	9

Province	District	Settlement	No. of affected parcels	No. of Private lands	No. of Public lands
		Caferli	10	10	0
		Cankili	9	9	0
		Çaydoğan	22	21	1
		Dedeli	40	40	0
		Kazlıuşağı	127	127	0
		Tahiroğlu	113	108	5
	Yenifakili	Yiğitler	109	109	0
		Fehimli	90	73	17
		Mehmetakifersoy	83	80	3
		Yazlak	120	111	9
	Boğazlıyan	Özler-Fetih	13	9	4
Nevşehir	Kozaklı	Kanlıca	111	107	4
		Karasenir	100	97	3
Kayseri	Kocasinan	Boğazköprü	73	63	10
		Beydeğirmeni	35	28	7
		Düver	140	136	4
		Elmalı	66	66	0
		Himmetdede	73	71	2
		Kalkancık	22	22	0
			29	29	0
		Karakimse	9	9	0
		Mahzemin	41	36	5
		Molu	8	6	2
		Oymaağaç	58	55	3
Yemliha	177	158	19		
Total			2,338	2,095	243

2.6 Project Schedule

2.6.1 Construction Phase

Doğuş-Çelikler-Özkar Joint Venture's scope of work is to start the construction activities from the alignment where design work and EIA processes have been completed. The construction activities along the route will commence the following the finalization of the design and permitting studies of the related alignments. The construction of the tunnel works and infrastructure works will be started initially. The construction phase of the

Project will be planned as 1,800 days (see Figure 9 for detailed construction schedule). During the construction phase, total of 3,208 personnel is expected to be employed.

2.6.2 Operation Phase

After the completion of the construction works of the Project, the Project will be commissioned with its transfer from AYGM to TCDD including all the structures and other elements included in the Construction Contract. Operation of the stations and high-speed railway which are the subject of this Project will be conducted by TCDD. According to the Local EIA, the operation period of the Project is planned as 30 years. Approximately 15 personnel are planned to be employed during the operation phase of the Project.

2.6.3 Closure Phase

There is not an expected lifetime of the Project and decommissioning is not warranted at an estimated time. Although an exact project life span is not determined, a minimum of 30 years is projected in the EIA for the Project.

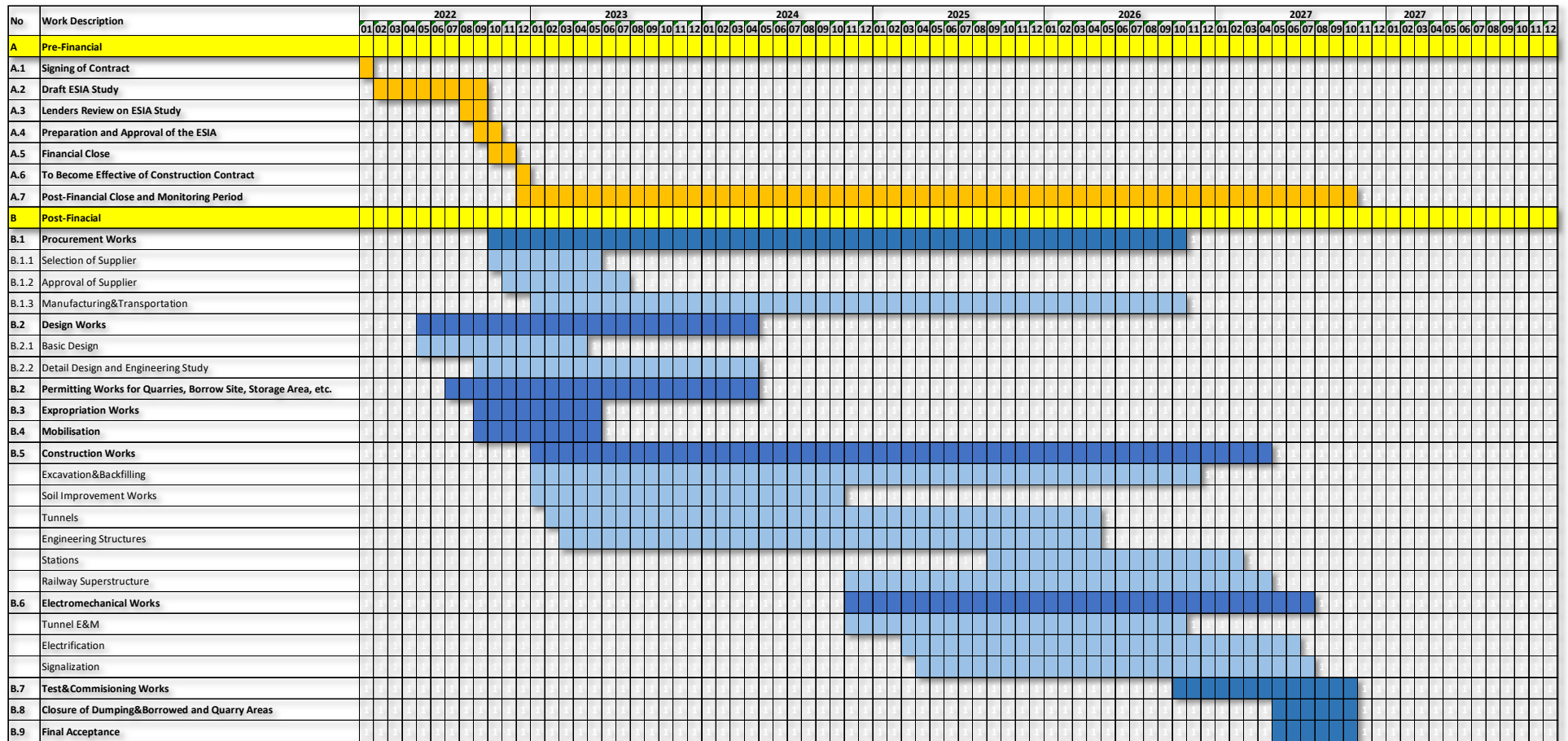


Figure 9: Project Schedule

3.0 MANAGEMENT OF ENVIRONMENTAL AND SOCIAL ISSUES

In order to assess the environmental and social impacts of the Project, an Environmental and Social Impact Assessment Report¹ has been prepared with the following objectives:

- Identification and assessment of environmental and social impacts, both adverse and beneficial, in the Project's area of influence,
- Evaluation of the main environmental and social risks and potential impacts of the Project,
- Presentation of Environmental and Social Management and Monitoring Plan (ESMMP), Environmental and Social Management System (ESMS), Stakeholder Engagement documentation, and grievance mechanism (GM) in line with the Equator Principles (EP) 4 and IFC Performance Standards (PSs),
- Description of the management, mitigation, monitoring and compensation measures, including the ESMS, the ESMMP, and the thematic action or management plans,
- Cumulative impact assessment (CIA) (as required by the EP 4 and IFC PSs),
- Assessment of associated facilities,
- Main components of the assessment include:
 - The potential environmental and social impacts of the Project throughout the full life cycle,
 - A public consultation to ensure that local communities and other key stakeholders are informed of the Project and have an opportunity to express their opinions concerning the Project,
 - Proposed mitigation activities to minimize adverse environmental and social impacts,
 - The nature and significance of residual impacts (those adverse impacts that occur after mitigation has been applied) and ongoing monitoring and management plans to address them,
 - The nature and significance of cumulative impacts.

The ESIA Report aims to assess the environmental and social impacts of all Project sections as a whole.

As a key step in the ESIA process; various studies have been conducted to collect information on the existing environmental and social baseline conditions. Apart from the desktop and relevant literature review, the following activities were performed (along the entire route including associated facilities) for the collection of information on environmental and social baseline conditions:

- Air quality measurements were conducted at selected locations along the representative surroundings of the Project route and associated facilities.
- Ambient noise and vibration measurements were conducted at selected locations along the representative surroundings of the Project route and associated facilities.
- Surface water quality measurements were conducted at selected points along the Project route.
- Soil quality measurement activities were conducted at selected points along the Project route.

¹ The responsible parties of cultural heritage and social components of the ESIA report are Regio Cultural Heritage Management Consultancy ("Regio") and Çınar Engineering and Consultancy Inc. ("Çınar"). companies respectively. No duty is undertaken, nor warranty nor representation made to any of these parties and third parties in respect of the opinions, advice, recommendations or conclusions stated related to cultural heritage and social components by WSP-Golder Türkiye. WSP-Golder Türkiye accepts no liability on the contribution of other responsible parties (Regio and Çınar) since they performed the work and defined their scope independently from WSP-Golder Türkiye.

- Site visit was performed by the experts of WSP-Golder Türkiye for the identification of environmental components of the impact assessment study.
- Site visit was performed by biodiversity experts on behalf of WSP-Golder Türkiye for the identification of the biological components of the impact assessment study.
- Site visit was performed by Çınar Engineering and Consultancy Inc. (“Çınar”) for mapping of the social baseline of the study area; the data is collected by Çınar through community level surveys and household surveys. Qualitative and quantitative methods have been used during the baseline data gathering.
- Site visit performed by Regio Cultural Heritage Management Consultancy (“Regio”) for the assessment of the archaeological issues.

The study area of the Project is given in Figure 10.

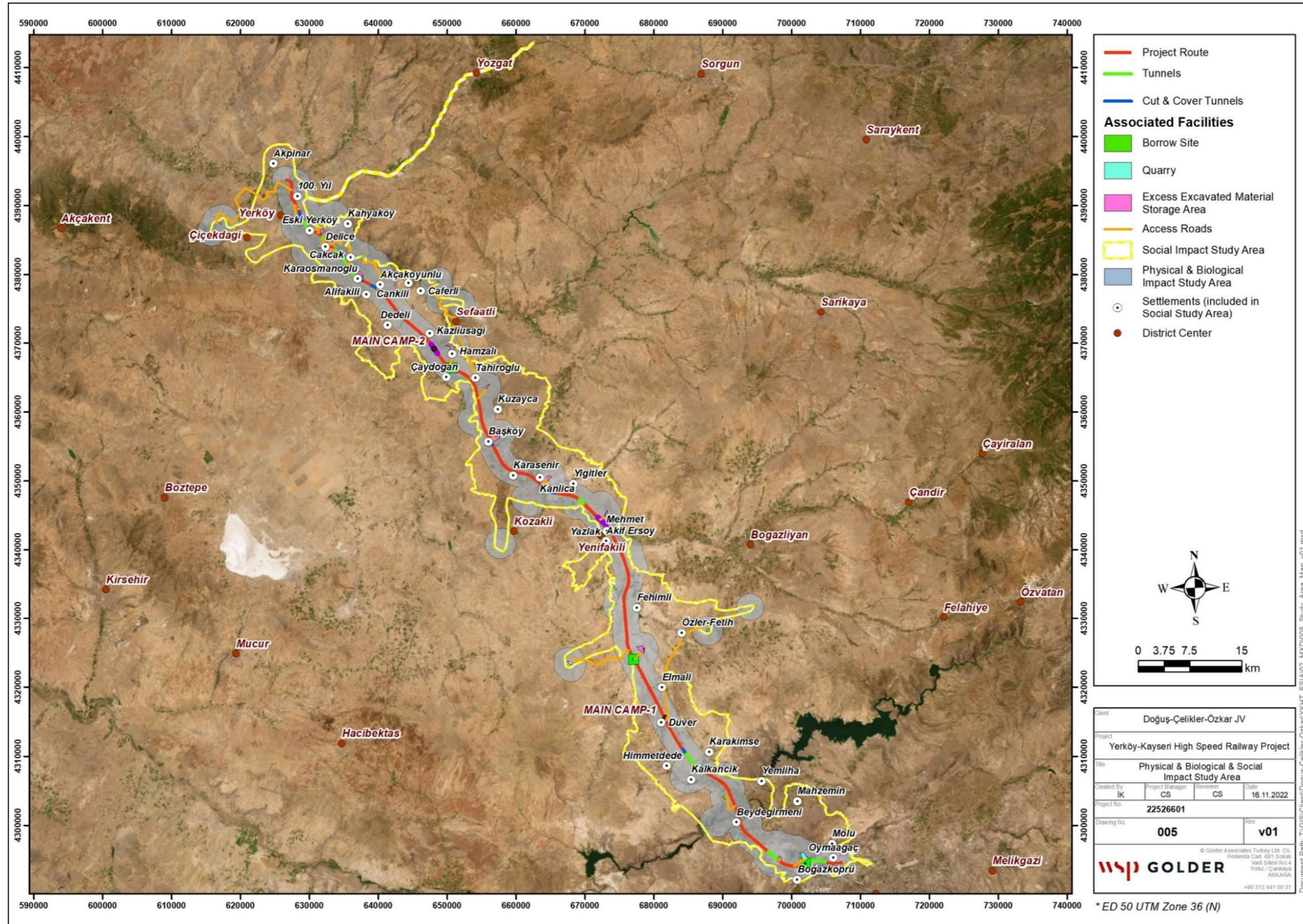


Figure 10: Study Area of the Project

Summary of the Impacts and Mitigation & Monitoring Activities

Main Features of Current Situation	Potential Impacts	Mitigation Measures	Monitoring Activities
Geology and Geomorphology			
<p>The study area is generally located in the Central Anatolia region. General relief of the region is composed of high singular groups formed by closed basins, plateaus, mountain ranges, and volcanic cones represented by mountainous areas. The relief formed due to volcanism in the Kayseri region is common.</p>	<p>Potential changes in the local morphology is expected during construction phase due to ground surface levelling and grading, excavation, filling, temporary stockpiling of material, use of quarries and borrow sites, disposal areas.</p> <p>No impact is expected during operation phase.</p> <p>The impacts are expected to be at low level after taking necessary mitigation measures during activities.</p>	<ul style="list-style-type: none"> ■ Worksite will be minimized to the smallest extent possible meeting Project's works and activities, ■ Several structures will be developed as part of the Project and these will all be designed according to Turkish and international design standards (requiring specific structural characteristics related to slopes of cuts and fills, footing sizes of viaducts and many other considerations), ■ Excess excavation will be transported to excess excavated material storage areas. Suitable cut material will be used as backfill material for the Project where applicable. Optimization of cut and fill will be implemented during the construction process, ■ Quarry rehabilitation plans will be implemented as per the regulatory requirements, ■ Excess excavated material storage areas will be rehabilitated as per the regulatory requirements, <p>Additional mitigation measures are given in the Landscape Management Plan.</p>	<p>No specific monitoring activities are required for this component.</p> <p>Quarry and excess excavation material storage area rehabilitation works should be ensured.</p>
Natural Hazards and Seismology			
<p>The Project area is in a low-risk earthquake area.</p>	<p>Rockslides/rockfalls is potentially expected due to rock slope excavations during construction works.</p> <p>Seismic activity - The Project area is in a low-risk earthquake area.</p> <p>Landslides and Subsidence -No critical landslide areas have been detected on the Project route based on the Geology-Geotechnical Study Conducted for the Project Area.</p> <p>The impacts are expected to be at low level after taking necessary mitigation measures during design stage and site activities.</p>	<p>Several structures will be developed as part of the railroad (road base, viaducts, embankment supports, bridge, etc) and these will all be designed according to Turkish and international design standards requiring specific structural characteristics related to slopes of cuts and fills, footing sizes of viaducts and many other considerations.</p> <p>The Project area is in a low-risk earthquake area. Detailed investigations will be conducted for assessing the stability conditions for the structural elements for both normal operation loads and under seismic loads. During the construction activities in the Project Area, the Project design and engineering will comply with the provisions of the "Türkiye Building Earthquake Regulation" published in the 30364 numbered and 18.03.2018 dated Official Gazette (O.G.). The Regulation requires certain parameters to be determined prior to the construction. These parameters were determined by the geological and geotechnical investigations for the Project Area.</p>	<p>No specific monitoring activities are required for this component.</p>
Soil and Sub-soil			
<p>24 soil samples were taken from different sampling points within the Project area to identify the baseline conditions.</p>	<p>Topsoil and lower soil removal will be performed via excavation works to be carried out during construction period.</p> <p>Pollutant emissions to the soil could be realized due to accidental spill of hazardous materials during</p>	<ul style="list-style-type: none"> ■ Appropriate treatment-spill control systems must be placed in water crossings, fresh water sources and protected areas where surface runoff may adversely affect soil, surface water and ground water media, ■ Aboveground storage tanks (ASTs) will be designed and built according to the recognized industrial standards. Containment measures for gas/petrol stations will be in compliant to the Turkish Standard TSE 12820 for gas/petrol stations and the 	<ul style="list-style-type: none"> ■ Routine site inspections will be carried out and reported to identify any possible leakages as per stated in the Soil and Topsoil Management Plan, ■ Regular site inspections will be carried out to ensure that the planned construction site boundaries are not expanded,

Main Features of Current Situation	Potential Impacts	Mitigation Measures	Monitoring Activities
	<p>construction phase and during maintenance activities of operation phase.</p> <p>Occupation of land will be expected due to construction activities and Project's facilities during operation.</p> <p>Impacts are expected to be at low level with the realization of proposed mitigation measures.</p>	<p>IFC EHS guideline for retail petroleum networks. Secondary containment systems will be used for ASTs to prevent the uncontrolled release of fuels,</p> <ul style="list-style-type: none"> ■ Corrosion protection will be used in underground steel tanks and piping, which may consist of coating with a suitable dielectric material or by cathodic protection, ■ Leak detection systems will be provided to detect the presence of liquid or petroleum vapour within the interstitial space of double-walled tanks, ■ Spill and overflow alarm, automatic shut-off devices and/or catch basin around fill pipes will be equipped for the tanks. Fill pipes on ASTs will be located within the tank's secondary containment structures. <p>Additional mitigation measures are given in the Soil and Topsoil Management Plan.</p>	<ul style="list-style-type: none"> ■ Training on Emergency Response Plan on spill response, use of containment and clean-up material for the workers (including the subcontractors' workers) will be recorded, ■ Review of Emergency Response Plan implementation requirements ensure adequate amount of spill-response material such as spill-kits and metal trays will be present at the site and in each heavy machinery and records will be kept, ■ Routine maintenance programme will be set-up and maintenance records will be kept for all vehicles and machinery/equipment.
Hydrology and Surface Water Quality			
<p>A total of 21 locations were aimed to be sampled in the scope of baseline water quality assessments. Three of these locations were observed as dry and samples were taken from 18 of these locations during the field studies. Most of the locations were classified as Class-III according to the Regulation on Surface Water Quality classifications due to high orthophosphate as P, and phosphorus concentrations.</p>	<p>Hydrological change is expected due to use of water during construction activities and hydraulic structures (i.e. bridges, culverts, etc.) which could impede flow during times of flood</p> <p>Surface water pollution could be expected as a result of silty/soiled water arising from construction activities (i.e. excavations, exposed ground, stockpiles of soil, quarries, topsoil placing etc.), discharge of wastewater generated during construction and operation phases and accidental release of hazardous substances during construction works and maintenance works during operation.</p> <p>Impacts are expected to be at low to negligible level with the realization of proposed mitigation measures.</p>	<ul style="list-style-type: none"> ■ Flooding assessment on a regional scale has been conducted to assess the flooding conditions for the drainage structures and the necessary changes will be incorporated into the design. A supplemental assessment of stormwater drainage risks to the environment has been undertaken to verify that stormwater drainage designs effectiveness in mitigating impacts on surrounding land use, surface and groundwater or sensitive ecological receptors therein. ■ State Hydraulic Works and AYGM will be consulted regarding the hydrological studies and surface water quality and any additional studies will be conducted upon the opinions of these institutions prior to the construction phase. ■ The following management plans (but not limited to) have been prepared to mitigate and manage hydrological and water impacts: <ul style="list-style-type: none"> ▪ Spill Prevention and Response Plan ▪ Water and Wastewater Management Plan ▪ Hazardous Material Management Plan ▪ Water Crossing Techniques and Rehabilitation Plan 	<p>The monitoring program to be used for the surface water quality will be based on site specific risk assessments as well as specific guidelines for surface water quality standards. The framework for the monitoring program will be summarized as follows:</p> <ul style="list-style-type: none"> ■ Wastewater treatment plant discharges in construction and operation phases based on Turkish regulations and relevant IFC guidelines requirements, ■ Upgradient and downgradient locations of stream/river crossings testing for low flow and high flow conditions (seasonal) will be tested routinely tested during construction and operation phases, ■ Drainage outfalls will be tested routinely at locations as well as during repair activities at ecologically sensitive locations as well as upgradient of surface water resources, ■ Assessment of surface water runoff and of flooding conditions after heavy rainfall events for efficiency of water conveyance systems will be implemented, ■ Water quality and sedimentation should be monitored at the surface water monitoring locations given in ESIA Report during the construction and operation phases.
Hydrogeology and Groundwater Quality			
<p>The amount and quality of groundwater vary depending on the geological conditions of the region in Yozgat. In the Boğazlıyan sub-basin, where intensive irrigation is used, the average water level is around 90.00 meters in the dry period and 60.00 meters in the wet period.</p>	<p>Hydrogeological change is expected due to groundwater abstraction for water supply and</p>	<ul style="list-style-type: none"> ■ State Hydraulic Works and AYGM will be consulted regarding the hydrogeological studies and groundwater quality and any additional studies will be conducted upon the opinions of these institutions prior to the construction phase. ■ The use of groundwater resources will be subject to State Hydraulic Works approval. State Hydraulic Works will allow the drilling and use of extraction wells 	<ul style="list-style-type: none"> ■ The monitoring of the groundwater resources will be based on guideline to be developed following the hydrogeological investigations. The guideline will be based on the Guidance on Groundwater Monitoring,

Main Features of Current Situation	Potential Impacts	Mitigation Measures	Monitoring Activities
<p>Nevşehir is located within the subbasins of the Kızılırmak and Konya watersheds, the groundwater levels vary based on the topography and hydrogeological conditions.</p> <p>Kayseri Province is located within the subbasins of the Kızılırmak and Ceyhan watersheds.</p> <p>Groundwater quality was assessed through the collection of nine groundwater samples within the Project area.</p>	<p>construction activities (such as tunnel construction).</p> <p>Groundwater pollution could be originated from wastewater discharges, accidental spill of hazardous chemicals and poor waste management during construction and operation phases.</p> <p>Impacts are expected to be at low level with the realization of proposed mitigation and management measures.</p>	<p>in case the groundwater supply is adequate. Such approvals are based on the availability of water supply.</p> <ul style="list-style-type: none"> ■ Extraction tests will be carried out by the JV when the wells will be drilled, within the scope of the necessary permits to be obtained from DSI. The effects on the groundwater basin and the aquifer will be evaluated with the data to be obtained as a result of the tests, and the water sustainability study will be carried out by the JV. Groundwater and extraction tests assessment will be based on relevant standards. ■ In case groundwater is encountered during the construction, groundwater should be abstracted from the work area; treatment, storage and disposal should be done according to the regulatory requirements after necessary analyses have been performed and relevant permits are obtained. ■ A monitoring program for each groundwater abstraction location will be developed and groundwater abstraction will be optimized or alternatives in case adverse impacts are observed during monitoring will developed. ■ Groundwater levels will be monitored within potentially impacted areas during tunnelling to assess impact on groundwater levels and confirm levels rebound to previous conditions post tunnel construction works. ■ The following management plans (but not limited to) have been prepared to mitigate and manage hydrogeological and water impacts: <ul style="list-style-type: none"> ▪ Spill Prevention and Response Plan ▪ Water and Wastewater Management Plan ▪ Hazardous Material Management Plan ▪ Emergency Response Plan ▪ Water Crossing Techniques and Rehabilitation Plan 	<p>Common Implementation Strategy for the Water Framework Directive (2000/60/EC),</p> <ul style="list-style-type: none"> ■ The provided trainings on spill response, use of containment and clean-up material for the workers (including the subcontractors' workers) will be recorded, ■ Routine site inspections will be carried out to ensure adequate amount of spill-response material such as spill-kits and metal trays will be present at the site and in each heavy machinery and records will be kept, ■ Routine maintenance programme will be set-up and maintenance records will be kept for all vehicles and machinery/equipment, ■ The contact of the dewatered groundwater with potential chemicals will not be allowed by appropriate sealing mechanisms (enclosed conveyance of the extracted groundwater to the settlement structures). Discharges will be periodic tested to meet Turkish and international standards (eg. IFC General EHS Guidelines, EU standards) <p>Additional mitigation measures for water management are given in Water and Wastewater Management Plan.</p>
Air Quality			
<p>Baseline air quality measurements were conducted at 48 locations along the route and near settlements. PM₁₀, PM_{2.5}, settled dust, NO₂ and SO₂ measurement values are in compliance with both Turkish and EU limits as well as IFC standards.</p>	<p>Decrease in air quality is expected due to construction activities that may generate exhaust emissions of construction equipment and emission of dust caused by a combination of cut excavation / backfilling activities and the production activities in the material sites to be operated in order to supply the filling and concrete aggregate material required in the Project.</p> <p>The construction phase emissions were calculated, and atmospheric dispersion of air pollutants were modelled by using internationally accepted models and assessed.</p>	<p>The following actions are recommended to reduce the dust generation in the construction areas:</p> <ul style="list-style-type: none"> ■ Use of water suppression at construction sites and transportation routes, especially in hot-dry seasons, ■ Loads in all trucks transporting dust-generating materials will be sprayed with water to suppress dust, ■ Use of water suppression for control of loose materials on paved or unpaved road surfaces, ■ Use of dust suppression techniques, such as covers, water suppression, or increased moisture content for open materials storage piles, ■ Speed reduction for the means travelling inside the construction site. <p>In order to reduce the air emissions from construction vehicles, the following actions shall be implemented:</p> <ul style="list-style-type: none"> ■ Activities will be conducted trying to use the minimum required number of means at the same time, 	<p>Monitoring campaign is recommended to be conducted at the baseline measurement locations close to the active construction sites and active associated facilities in order to observe the air quality during the construction activities and the results will be compared with the Project Standards as per Air Quality Management Plan.</p>

Main Features of Current Situation	Potential Impacts	Mitigation Measures	Monitoring Activities
	<p>The modelling results were also assessed cumulatively by using recent air quality data measured at the closest sensitive locations within the impact area of the Project.</p> <p>As a result of the studies, negligible level of degradation in air quality is expected with the implementation of necessary mitigation measures.</p>	<ul style="list-style-type: none"> ■ Vehicle engines and other machinery shall be kept turned on only if necessary, avoiding any unnecessary emission, ■ All equipment and machinery must be maintained for compliance with standards and technical regulations for the protection of the environment and have appropriate certification, ■ Machinery and equipment shall be periodically checked and maintained to ensure their good working condition, ■ Monthly monitoring campaign will be conducted during the construction phase at baseline locations close to the active construction sites and active associated facilities. <p>Additional mitigation measures are given in the Air Quality Management Plan.</p>	
Greenhouse Gas Emissions			
<p>According to Türkiye's National Inventory Report submitted to the United Nations Framework Convention on Climate Change (UNFCCC), Türkiye-wide GHG emissions for the year 2019 is 506,080,420 tonnes CO₂e/year which is 2% of the total GHG emissions of the country' who had reported to the UNFCCC.</p>	<p>Contribution to climate change by causing greenhouse gas emissions to be resulted from fossil-fuel combustion, electricity consumption and blasting during construction phase; and electricity consumption during operation phase.</p> <p>The combined annual emissions from the construction phase of the Project are estimated about 80,344.56 t CO₂e per annum. This annual value surpasses the 25,000 t CO₂e threshold defined in IFC PS3 and Equator Principles IV which requires annual monitoring and reporting.</p> <p>The combined annual emissions from the operation phase of the Project are about 7,241.69 t CO₂e per annum.</p> <p>The contribution of the proposed Project to the GHG emissions is expected to be at low level.</p>	<ul style="list-style-type: none"> ■ The Best Available Techniques should be taken into consideration in Project design as much as possible. The applicability of the Best Available Techniques (BATs) developed within the European regulatory framework [i.e., Integrated Pollution Prevention and Control, "IPPC", BAT Reference Documents (BREFs) according to the European Directive 2010/75/EU (IED)] should be evaluated and integrated into the Project design, ■ All employees will be provided climate, resource and energy efficiency awareness training, ■ The most efficient equipment in terms of fuel usage and effective operation will be chosen. Maintenance of all machinery and equipment will be periodically conducted to ensure efficient fuel use and effective operation as well, ■ Efficient resource and material use will be promoted through the development and implementation of a Resource Efficiency and Pollution Prevention Plan to reduce direct and indirect GHG emissions due to the Project, ■ No idling and out-of-scope operation of the machinery and equipment will be allowed, ■ During the closure phase, rehabilitation of land will help to recover lost carbon sink by converting the disturbed land to its original state as much as possible, which will act as a long-term mitigation measure, ■ Green Energy Certificate which indicates that a certain amount or entire electricity used by the Project comes from renewable energy sources, should be obtained in order to induce a decrease in Scope 2 related GHG emissions which is linked to the construction and operation phases of the Project. 	<p>GHG emission levels (combined Scope 1 and Scope 2 Emissions, and, if appropriate, the GHG efficiency ratio) from the facilities owned or controlled within the physical project boundary, as well as indirect emissions associated with the off-site production of energy used by the Project will be quantified and reported publicly on annual basis during the construction phase.</p>
Noise and Vibration			
<p>Baseline noise and vibration measurements were conducted at 48 locations. The measurement results are below the limit values defined by IFC and Turkish Legislation, except for the locations N39 and N41 at where night-time measurement results exceed the IFC night-time limit values. These baseline measurements were conducted at the Project Local Study Area without any activities before construction. The vibration measurement results at all receptors are below the associated limit.</p>	<p>Potential impacts of noise during the construction phase of the Project will mainly originated from the operations of heavy equipment/machines that will be used in the infrastructure and superstructure construction.</p> <p>In terms of vibration, potential impacts are foreseen due to the</p>	<p>The construction and operation phase noise emissions were assessed by noise modelling studies. The modelling results were also assessed cumulatively by using the recent baseline noise measurement results. Based on the modelling studies following actions are recommended to reduce the noise emissions:</p> <ul style="list-style-type: none"> ■ Limiting the hours of operation for specific pieces of equipment or operations, especially mobile sources operating through community areas, ■ Reducing Project traffic routing through community areas wherever possible, ■ Carrying out the regular maintenance of the construction equipment in order to minimize the possible high noise levels generated by the equipment, 	<ul style="list-style-type: none"> ■ A monitoring programme of noise at the baseline locations and receptors exceeding the limit values during construction and operation phases will be in place. The monitoring campaign will be conducted by 48 hours continuous measurements at the locations, ■ During the blasting activities, vibration measurement studies will be performed for frequency ranges on the closest receptors to the blasting locations.

Main Features of Current Situation	Potential Impacts	Mitigation Measures	Monitoring Activities
	<p>blasting activities to be carried out at quarries, tunnel openings, etc.</p> <p>For the operation phase, noise and vibration generation is expected due to the operation of trains.</p> <p>As a result of the modelling and assessment studies, negligible increase in noise level and vibration level is expected with the implementation of necessary mitigation measures.</p>	<ul style="list-style-type: none"> ■ During the construction phase, in case of any noise related grievance, noise measurement campaign will be carried out immediately at the area where noise related grievance is received. If monitoring results indicate that noise levels are above the defined limits, noise barriers will be installed without any gaps and with a continuous minimum surface density of 10 kg/m² in order to minimize the transmission of sound through the barrier, ■ During the operation phase, in case of any noise related grievance, noise measurement campaign will be carried out immediately at the area where noise related grievance is received. In cases when monitoring results indicate that noise levels are above the defined limits, then noise abatement measures will be implemented (e.g. noise barriers along railways or next to receptor buildings, soundproofing, relocation of the sensitive receptor etc). <p>The construction and operation phase vibration impacts were assessed by vibration calculations. Based on the calculations following actions are recommended to reduce the vibration impacts:</p> <ul style="list-style-type: none"> ■ All blasting activities which will be carried out in quarries, tunnels and along the railway route, with current pattern will be carried out at least 255 m, 63 m and 255 m away from receptors/settlements, respectively. If blasting activities will be carried out at a location closer than these distances, blasting pattern and explosive quantities will be optimised to be in line with the vibration effect as below the 5 mm/s at the sensitive receptors, ■ Proper and timely communication and information exchange between the Project team and residents, are essential to prevent unnecessary concerns. Therefore, residents will be informed about the proposed blasting times and/or any deviation from this programme, ■ Construction and blasting activities will be scheduled to minimise potential vibration related impacts. <p>Additional noise and vibration mitigation measures are given in the Noise and Vibration Management Plan.</p>	<ul style="list-style-type: none"> ■ Surveys of existing building structure and integrity at receptors close to the blasting sites will be undertaken both prior to any blasting activity and monthly during the construction phase, ■ During the construction and operation phases of the Project, in case of any vibration related grievance, vibration measurement campaign will be carried out immediately at the area where vibration related grievance is received.
Traffic and Infrastructure			
<p>The access roads to be used within the scope of the Project, are already exist. However, some extension works might be performed in case of need.</p> <p>The land traffic in the construction phase will be generated by the machinery, equipment, material and staff to be transported to the Project construction sites.</p>	<p>Movement of trucks entering and leaving the Project area for the transportation of machinery, equipment, construction material (e.g., concrete, building materials) and staff are expected to affect the existing traffic load of the Project area.</p> <p>With the mitigation measures defined in the ESIA, increase in road traffic is expected to be at low level during construction and operation periods.</p>	<ul style="list-style-type: none"> ■ Consideration will be given to traffic volumes at the rush hours of the day and delivery of equipment and materials will be utilised at quieter periods to avoid increased congestion on the roads used by the nearby communities, ■ In case of any damage on the roads resulting from the Project activities, necessary maintenance works will be undertaken, ■ When necessary, cooperation will be made with local authorities prior to blasting activities, to ensure safety of nearby roads by controlling traffic during the time of blasting, ■ Changes of the condition of the roads will be monitored regularly and necessary road correction remediation actions will be taken where necessary, ■ An external grievance mechanism will be established for the affected communities to express their concerns about the traffic management, ■ Project disclosure activities will include informing communities about the project traffic management controls and grievance mechanism. Collaboration with local communities and responsible authorities will be ensured to improve signage, visibility, road safety conditions especially near the roads and other locations where children may be present, 	<ul style="list-style-type: none"> ■ Investigation of the incidents and accidents and use of lesson's learned to improve traffic mitigations, ■ Following of the licenses and medical surveillance of the operators to ensure that they are up to date, ■ Monitoring condition of the roads to ensure safe driving, ■ Controlling maintenance records of the vehicles to ensure regular maintenance activities take place, ■ Weather forecast monitoring to ensure safety of the operators, ■ Closely monitoring the compliance with speed limits to protect the health and safety of both public and employees, ■ Following the comments and/or complaints received via grievance mechanism to improve traffic mitigations and

Main Features of Current Situation	Potential Impacts	Mitigation Measures	Monitoring Activities
		<ul style="list-style-type: none"> ■ Appropriate traffic signs, signals, lights and markings will be placed at the required areas to prevent potential accidents/incidents. Barriers will be placed at the required areas to protect both human and assets. <p>Additional mitigation measures are given in the Traffic Management Plan.</p>	<p>to prevent air quality, noise and vibration impacts, if any.</p>
Visual			
<p>The closest settlements to the Project components and some associated facilities were taken into account in identification of the sensitive receptors.</p>	<p>Visual impacts could be arising from emission of dust, emission of light, vegetation cleaning and introduction of buildings/infrastructures.</p> <p>With the mitigation measures defined, the impact is expected to be at negligible level during construction phase and medium level due to introduction of permanent buildings/infrastructures during operation phase.</p>	<ul style="list-style-type: none"> ■ During the construction phase, restricted hours of working will be proposed especially for built up areas, ■ After the completion of construction, the areas used as construction area will be returned to their original use, ■ The housekeeping of the entire Project Area will be given importance throughout the life of the Project, ■ Regular monitoring of the affected people's grievances with regard to visual impacts. <p>Additional mitigation measures are given in the Landscape Management Plan.</p>	<p>Monitoring of visual impacts includes monitoring of community and stakeholders. Related grievances will be recorded and dealt with via the Grievance Mechanism, within the Project's Stakeholder Engagement Plan, continuously in construction and operation phases.</p>
Wastewater Management			
<p>The water supply for construction activities will be provided by the groundwater wells that will be drilled within the scope project in the main camp sites. The water demand of the subcontractor camps will be provided with the water tanks filled by the main camp groundwater well. In the main camp sites, water treatment plant will be established for treatment of groundwater with respect to Project's standards.</p> <p>During the construction phase of the project, maximum 3208 workers will be employed. Assuming that daily water demand per capita is 200 L/day, the maximum daily amount of water to be used will be 642 m³/day. (Please see ESIA Report for the detailed calculations)</p> <p>For the dust emission raising from the construction activities, sprinkler (water truck) will be used. 12.5 m³/day water is estimated to be used for the dust suppression during the construction phase of the Project for one section.</p> <p>Drinking water needs of personnel will be supplied by bottled waters during both the construction and operation phases.</p> <p>Water demand during the operation phase will be due to the passengers and the railway workers. The railway stations within the scope of the project remains within the residential areas, therefore the city water network will be used at the stations. The water needed in the trains will be supplied from the city network waters supplied to the stations.</p> <p>Construction</p> <ul style="list-style-type: none"> ■ Wastewaters will be generated at the construction sites and camps sites due to water consumption of the personnel. No wastewater generation is expected as a result from dust suppression activities, since the water to be used for dust suppression activities is expected to evaporate. ■ In terms of main camp sites, package wastewater treatment plant (WWTP) with domestic wastewater collection system will be established at each main camp site. For the subcontractor camp sites, generated domestic wastewaters will be collected in portable leak-proof quality septic tanks and wastewaters then will be disposed to the main camp site package WWTPs. ■ For the associated facilities and construction sites along the route, leak-proof quality septic tanks will be provided for the collection of the generated domestic wastewaters. Collected wastewaters will either be collected by vacuum trucks and disposed of to the nearest licensed WWTP as per the agreements/protocols to be executed with the related municipalities/licensed companies or to the main camp site package WWTPs. ■ No wastewater generation is expected during the concrete production process as the settled wastewater is recirculated to concrete production process. <p>Operation</p> <ul style="list-style-type: none"> ■ During the operation phase of the project, domestic wastewater will be generated from passengers and the personnel to be employed. Wastewaters generated at the railway stations will be disposed to the municipality sewage systems. In case there is no sewage system, wastewater treatment plants will be established in line with the regulatory requirements where necessary approval and environment permits will be obtained, and discharge standards will be complied with. <p>Mitigation measures for wastewater management are given in Water and Wastewater Management Plan.</p>			

Main Features of Current Situation	Potential Impacts	Mitigation Measures	Monitoring Activities
Waste Management			
<p>Construction</p> <ul style="list-style-type: none"> During all phases of the project, domestic solid waste generation is expected from the daily activities of personnel and passengers. During the construction phase, maximum number of employees planned to be employed are 3208 workers. Assuming that average daily domestic solid waste per capita is 1 kg/person/day (average of 1.10 kg/person/day for Yozgat, 0.96 kg/person/day for Nevşehir and 0.94 kg/person/day for Kayseri), the amount of daily expected solid waste production during construction phase will be 3.5 ton/day. <i>(Please see ESIA Report for the detailed calculations)</i> During the construction phase, domestic solid waste from the workers will be collected in closed containers located at various points of the construction site area. These solid wastes will be transported to the solid waste collection system belonging to closest Municipality be at certain intervals and be disposed of. Any recyclable solid waste such as plastics, papers, glass etc. will be collected separately for recycling purposes. Principles set in the Regulation on Waste Management will be followed in the Project. Necessary measures will be in place to comply with the Regulation on Zero Waste and Regulation on Waste Management. <p>Operation</p> <ul style="list-style-type: none"> During the operation phase, the amount of domestic solid waste will depend on the number of personnel employed in the Project including the locomotive personnel and station personnel and also the number of passengers. During the operation phase, similar waste management principles applied in the construction phase will apply for the Project. 			
Biodiversity Components			
<p>Field studies on the terrestrial flora and habitats in the Project Local Study Area were carried out in 39 sampling points on 2nd-3rd July 2022 and on 21st-22nd August.</p> <p>The sampling stations were selected to be representative of the study areas in terms of position, to ensure coverage of the entire local study area, and habitats investigated.</p> <p>The Project is not located within any protected or internationally recognized areas.</p> <p>The great majority of the habitats present within the study area are characterized by Modified habitats (76%) and in particular unmixed crops (I1.1 and I1.3, 70%) and residential building (4%).</p> <p>Natural habitats present in the study area (24%) are fragmented and often limited to slopes and riparian vegetation. The main natural habitats found in the area are steppes (E1.01 and E1.2, 16%) and shrublands (F3.1 and F9.3, 7%). Watercourses, woodlands and other grassland habitats are also present with a limited distribution.</p> <p>Natural habitats present in the Local Study Area are characterized by medium to high anthropic disturbance levels, mainly due to overgrazing and fragmentation from agricultural activities.</p> <p>As a result, 5 species (flora, fish and bird) were identified as potentially triggering critical habitat based on the criterion explained in the ESIA.</p>	<p>Impacts on biodiversity during construction phase is expected due to:</p> <ol style="list-style-type: none"> vegetation and topsoil removal changes in local hydrology and water quality increase in vehicular traffic emission of noise and vibration introduction and spreading of alien species <p>Impacts on biodiversity during operation phase is expected due to:</p> <ol style="list-style-type: none"> presence of new buildings/infrastructures changes in local hydrology and water quality emission of noise and vibration highspeed railway traffic Introduction and spreading of alien species <p>As a result of environmental impact assessment studies, the impacts on natural habitat and critical habitats are expected as low level with the implementation of mitigation measures defined in the ESIA as well as Biodiversity Management Plan.</p>	<p>The mitigation measures listed below follow the mitigation hierarchy and are proposed for the construction phase for the entire area that will be disturbed by the Project:</p> <ul style="list-style-type: none"> Avoidance <p>Avoidance measures have been considered particularly during the design of the facilities and include:</p> <ul style="list-style-type: none"> minimisation of the footprint of individual facilities; avoid/minimize impact on Natural Habitats: the Project eliminated some associated facilities originally planned on natural habitats, <ul style="list-style-type: none"> Minimization <ol style="list-style-type: none"> vegetation and topsoil removal: <ul style="list-style-type: none"> limits of clearing and construction areas will be clearly signed or fenced. seeds of flora species found within the Project area of influence that are considered threatened at national level but that do not trigger critical habitat will be collected within the Project LSA to be used during rehabilitation of temporary facilities. topsoil present under the temporary facility footprint shall be stripped before construction activities and it will be used for restoration at the end of the construction phase. vehicle movement will be restricted to the existing roads that connect the construction sites with the surrounding areas and vehicle speed will be restricted to ≤35km/h. if erosion phenomena are observed environmental engineering techniques will be put in place to stop the erosion and ensure soil protection and the development of natural vegetation. changes in local hydrology and water quality: <ul style="list-style-type: none"> culverts/channels will be used as appropriate in correspondence of river crossing or drainage features to avoid the interruption of waterways and drainage features and the formation of stagnant water. 	<ul style="list-style-type: none"> indirect and direct inadvertent impacts on natural habitats and river crossing present around the construction site will be monitored monthly in order to assess eventual footprint creep outside designated areas; accidents involving wildlife or the observation of live animal or carcasses along the access road or on the construction site will be recorded. Additional mitigation measures to discourage wildlife presence on site and avoid roadkill will be taken if needed. the presence of signs of erosion or stagnant water accumulation, waste or hazardous substances spill will be monitored a within and around the construction sites at least every three months during construction. presence and spreading of invasive flora species within and around the construction sites will be monitored at least twice a year during the vegetative season by an expert botanist, if necessary, extirpation campaigns will be put in place in order to avoid the spreading of the invasive species <p>Additional monitoring activities are defined in the Biodiversity Management Plan.</p>

Main Features of Current Situation	Potential Impacts	Mitigation Measures	Monitoring Activities
		<p>3) increase in vehicular traffic:</p> <ul style="list-style-type: none"> ▪ install speed limits and animal crossing signs on the access road and enforce speed limit along the site access road. ▪ avoid the accumulation of stagnant water and organic waste within the construction site and on the roads, that could attract wildlife, especially amphibians ▪ awareness among employees and contractor working on site about the protected species/habitats potentially present in the area will be developed. <p>4) emission of noise and vibration:</p> <ul style="list-style-type: none"> ▪ night works in proximity of natural habitats will be avoided (from 8 pm to 6 am) ▪ rock blasting activities will be performed during daytime and at regular times to enhance local fauna habituation to noise and to avoid disturbance during critical hours for many species (dusk and dawn). <p>5) introduction and spreading of alien species:</p> <ul style="list-style-type: none"> ▪ the use of non-native flora species, and especially of species classified as invasive alien species must be avoided during rehabilitation/restoration works ▪ if spreading of invasive species is observed, an appropriate eradication program will be developed and implemented. <p>■ Rehabilitation/Restoration</p> <p>Areas cleared during construction for temporary use, such as quarries, borrow sites, storage area for excess excavated material and blasting areas as well as Open-Close tunnels, will be restored, as soon as possible, with the goal of producing a stable vegetative cover to minimize erosion, dust and spreading of invasive alien species, and the aim of re-establish the original habitat with a positive impact on biodiversity.</p> <p>Additional mitigation measures are defined in the Biodiversity Management Plan.</p>	
Social Components			
<p>Within the study area, 36 villages and neighborhoods are located in the directly affected area of the Railway route.</p> <p>Social studies were carried out in the provinces of Yozgat, Nevşehir and Kayseri as the following</p> <ul style="list-style-type: none"> ▪ 36 Villages were visited, ▪ 286 Household Level Survey were conducted, ▪ 45 qualitative consultations (catch interviews (CI)) were held, ▪ 7 institutions and organizations were visited and in-depth interviewed were held with the representatives and experts of the institutions. 	<p>Population changes</p> <p>Demand for workforce</p> <p>Demand for goods and services</p> <p>Demand for infrastructure</p> <p>Economic contribution</p> <p>Change in Traffic</p> <p>Physical displacement</p> <p>Loss of agricultural land</p> <p>Access to ecosystem services</p> <p>Temporary loss of livelihoods</p> <p>Community Health and Safety</p>	<ul style="list-style-type: none"> ▪ Appropriate personnel to be employed during the construction phase will be recruited from settlements close to the Project site in order to limit the negative impacts on population flow and contribute to local employment. ▪ The locally employed population will continue to reside in existing settlements without creating additional pressure. ▪ Persons whose livelihoods are affected due to Project impacts will be given priority in Project employment. ▪ Workers' accommodation will be provided in accordance with IFC and EBRD standards. ▪ Basic needs of workers will be provided in camp sites-accommodation areas in order to limit the interaction of workers outside of local employment who come to work in the Project. ▪ "Cultural Heritage Management Plan" and "Chance Find Procedure" should be implemented during all activities that require soil intervention within the scope of the project. This plan and procedure should be shared with other construction subcontractors of the project, and subcontractors should prepare and implement a more detailed Cultural Heritage Management Plan and Chance Find Procedure for their activities during the project. 	

Main Features of Current Situation	Potential Impacts	Mitigation Measures	Monitoring Activities
<p>Within the scope of the Project, Stakeholder Engagement Plan (SEP), Social Impact Assessment (SIA), Resettlement Action Plan Including Livelihood Restoration and Human Rights Impact Assessment (HRIA) were prepared.</p> <p>The expropriation process has not started as of September 2022. A total of 2338 parcels are needed entirely or partially for the construction of the components of the project. There are 2095 private lands and 243 public lands in the expropriation corridor containing the needed lands. Although physical resettlement has been minimized, 5 houses still need to be relocated. No workplace relocation is required in the parcels affected by the project's land acquisition.</p> <p>It is planned to pass some sections of the Project route with tunnels in rugged or hilly areas, and with excavation, cut and fills in other sections. Assessment and results for cultural heritage were made in accordance with the above Project plan.</p> <p>The number of tangible cultural heritage assets within the impact corridor and Other Project Site is 67 based on the data provided in November 2022. 58 of them are registered and 56 are cultural heritage assets identified for the first time during the ESIA field studies.</p>			

Environmental and Social Management System

To ensure the effective implementation of the mitigation measures proposed for the Project, adequate resources and project management planning will be undertaken, guided by an Environmental and Social Management Plan (ESMP) package available for the project.

The ESMP is an integral part of ESIA as it is a systems specification document for the Project and its contractors and represents a commitment to environmental and social sustainability that applies to the Project's entire lifecycle.

The Environmental and Social Management System (ESMS) will be implemented (for both construction and operation phases) to ensure that the Project:

- complies with all applicable Turkish legislation as well as relevant IFC guidelines provided in the ESIA
- implements Good International Industry Practices (GIIP) to minimize potential environmental and social impacts during the construction, operation and decommissioning phases
- is executed in compliance with the commitments addressed in this report for the minimization of potential environmental and social impacts;
- works in accordance with high standards of safety
- cares for the protection of own employees and public
- promotes its policies through training, supervision, regular reviews and consultation
- generates local socio-economic benefits by using local and regional labour forces
- engages and communicates with the local community and other stakeholders through a stakeholder engagement programme.

The minimum requirements of an ESMS have been defined and will be established for the project in order to mitigate the risks associated with:

- Environmental and Social Aspects
- Environmental and Social Management Plan
- Occupational Health and Safety, Labour Issues and Community Health & Safety aspects

Doğuş-Çelikler-Özkar JV has developed a set of ESMPs and procedures consistent with their policies and commitments, addressing the environmental and social impacts and relevant mitigation measures identified in the ESIA for each component. The full set of ESMPs that are prepared and will be implemented for fulfilling the commitments undertaken by the Project are presented in the table below with the relevant IFC PSs that each will contribute to comply with.

Table 8: ESMPs

Relevant IFC PS	Plans / Procedures
IFC PS1 5-24: Assessment and Management of Environmental and Social Risks and Impacts	<ul style="list-style-type: none"> ■ Environmental and Social Governance Manuel ■ Environmental and Social Management and Monitoring Plan ■ Environmental and Social Training Plan ■ Stakeholder Engagement Plan ■ Management of Change Procedure ■ Monitoring and Review Procedure ■ Landscape Management Plan

Relevant IFC PS	Plans / Procedures
	<ul style="list-style-type: none"> ■ Water Crossing Techniques and Rehabilitation Plan ■ Pre-Construction Survey Procedure
IFC PS2: Labour and Working Conditions	<ul style="list-style-type: none"> ■ Camp Site Management Plan (including Workers' Accommodation) ■ Labor Management Plan ■ Contractor and Subcontractor Management Plan ■ Supply Chain Management Plan ■ Covid-19 Management Plan ■ Occupational Health and Safety Plan ■ Hazard and Risk Assessment Procedure ■ Work Permit Procedure ■ Occupational Health and Safety Procedure in NATM Tunnels ■ Blasting Procedure
IFC PS3: Resource Efficiency and Pollution Prevention IFC EHS Guidelines	<ul style="list-style-type: none"> ■ Resource Efficiency and Pollution Prevention Plan ■ Waste Management Plan ■ Soil and Topsoil Management Plan ■ Spill Prevention and Response Plan ■ Water and Wastewater Management Plan ■ Air Quality Management Plan ■ Noise and Vibration Management Plan ■ Hazardous Material Management Plan
IFC PS4: Community Health, Safety, and Security IFC EHS Guidelines	<ul style="list-style-type: none"> ■ Traffic Management Plan ■ Security Management Plan ■ Community Health and Safety Management Plan ■ Emergency Preparedness and Response Plan ■ Blasting Procedure
IFC PS5: Land Acquisition and Involuntary Resettlement	<ul style="list-style-type: none"> ■ Resettlement Action Plan (including Livelihood Restoration)
IFC PS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	<ul style="list-style-type: none"> ■ Biodiversity Management Plan
IFC PS7: Indigenous Peoples	<ul style="list-style-type: none"> ■ Not applicable
IFC PS8: Cultural Heritage	<ul style="list-style-type: none"> ■ Cultural Heritage Management Plan ■ Chance Find Procedure

The ESMPs will be implemented:

- Across the Doğuş-Çelikler-Özkar JV Project organization, including, contractors, subcontractors and primary suppliers over which Doğuş-Çelikler-Özkar JV has control or influence and

- inside the study area including the associated facilities (as defined by IFC PS1: “facilities that are not funded as part of the project and that would not have been constructed or expanded if the project did not exist and without which the project would not be viable”).

ESMPs will provide the objectives of the document, reference legal requirements, roles and responsibilities for its implementation, links to other management plans where necessary, a list of mitigation measures, monitoring and reporting requirements, qualitative or quantitative Key Performance Indicators (KPIs), Performance Indicators (PIs) and measures to be used to monitor the effectiveness of mitigation measures identified during the impact assessment process, training requirements where necessary. Alongside a similar structure, the level of detail and complexity of each management plan will be commensurate with the anticipated impacts and risks of the Project as identified in the ESIA. Each management plan will include mitigation measures identified in the relevant sections of the ESIA and will be disclosed to stakeholders as specified in the SEP. The ESMPs will be shared with all contractors to enable them to develop their own equivalent management plans, procedures and work instructions in line with the ESMP, with additional mitigation measures specific to their activities where necessary.

4.0 STAKEHOLDER ENGAGEMENT

A Stakeholder Engagement Plan (SEP) is prepared for the Yerköy-Kayseri HSR Project by Çınar within the scope of the Environmental and Social Impact Assessment as a public document. The aim of SEP is to organise, record and formalise all engagement and consultation processes with the various stakeholders and corporate their views and concerns and addressed in them in the entire Project life.

Previous Stakeholder Engagement Activities

Within the scope of the Yerköy-Kayseri HSR Project, Public Participation Meetings (PPMs) were conducted in each affected provinces including Yozgat, Nevşehir and Kayseri Provinces to inform the stakeholders on the Project activities and to receive their opinions and suggestions in compliance with the Article-9 of the “EIA Regulation”, dated 25/11/2014 and numbered 29186.

The outputs of the PPMs including locations, dates, number of the participants and the general outputs are summarized in table below.

Table 9: Public Participation Meetings

Province/ District	Meeting Place	Date / Time	Number of Participants**	Outputs*
Kayseri/ Kocasinan	Himmeddede Neighborhood Republic Square	30/10/2017 02:00 PM	Approximately 24 people	In Kayseri Province, the project was approved by the General Directorate of Infrastructure Investments. Suggestions were made about the need to pass through the route.
Nevşehir/ Kozaklı	Karasenir Village Coffehouse	31/10/2017 10:00 AM	Approximately 19 people	The outputs of the Nevşehir PPM are similar with Kayseri and Yozgat provinces. A station was requested in Nevşehir Province. However according to the technical works it has been stated that it is not planned to construct a station. Another issue raised during the PPM in Nevşehir Province is related with the operation phase of the Project especially community health and safety issues including possible fire and the participants were informed on the applicable mitigation measures.
Yozgat/ City center	Intercessive Family Life Center	31/10/2017 02:00 PM	Approximately 26 people	In Yozgat Province, the technical and physical characteristics of the Project, speed limits, and the access points including culverts etc. and the

Province/ District	Meeting Place	Date / Time	Number of Participants**	Outputs*
	Conference Hall			information on the expropriation process were asked and detailed explanations and the mitigation measures were explained to the participants. Also, expropriation questions were asked about the processes.

*References: Yerköy – Sefaattli – Kayseri Railway Project, Final EIA Report, 2019

** Public participation report was not given in the final EIA report. The approximate number of people has been determined from the photographs.

In the first phase of the fieldwork, surveys were conducted directly with (278 households for 463 parcels) and indirectly (5) households with 283 households, 36 surveys with headmen at community level, and 45 capture interviews with Project Affected People (PAPs). After the obtained data were checked, in the second stage of the field study, a field study was carried out to fill the gap.

The following engagement activities were carried out with mukhtars, institutions and women living in Project's Area of Influence. Details of Stage 2 Social Area studies are given in the table below.

Table 10: Featured Topics in the Phase 2 Social Field Study

Date	Institution	Interviewed Unit	Featured topics
29/07/2022	Yerköy Irrigation Association	İsmail Gizlenci / Expert	District lands irrigation methods Land qualities
29/07/2022	Yerköy Municipality	Mayor of Yerköy Reconstruction and Urbanization Unit	The effect of the YHT route on the urban area The effect of the YHT route on the rural area Impact of the Project on workforce and employment Project opportunities and impacts
29/07/2022	Yerköy District Directorate of Agriculture and Forestry	District Agriculture Manager District Agricultural Experts	Agricultural products with significant added value locally Distribution of agricultural activities Irrigation Agricultural problems Potential impacts of the Project on agricultural activities Potential impacts of the Project on agricultural lands
29/07/2022	Yenifakılı District Directorate of Agriculture and Forestry	District Agriculture Manager District Agricultural Experts	Agricultural products with significant added value locally Distribution of agricultural activities Irrigation Agricultural problems Potential impacts of the Project on agricultural activities Potential impacts of the Project on agricultural lands
29/07/2022	Şefaattli District Directorate of	District Agriculture Manager District Agricultural Experts	Agricultural products with significant added value locally

Date	Institution	Interviewed Unit	Featured topics
	Agriculture and Forestry		Distribution of agricultural activities Irrigation Agricultural problems Potential impacts of the Project on agricultural activities Potential impacts of the Project on agricultural lands
30/07/2022	Yerköy-Yenifakılı-Women's Focus Group meeting	Yenifakılı -Yiğitler Women's Focus Group meeting	Concerns and views of women on Project construction and operational process impacts Project opportunities and women's suggestions The place of women in labor and employment Possible impacts of the Project on daily life
30/07/2022	Interview with the owners/users of residences and workplaces affected by the project	In Yenifakılı Yazlak 442/8, a workplace survey was conducted with the business located in the parcel where the household survey was conducted. The household was visited and discussed in depth.	Economic level of livestock commercial activities in the workplace Socio-economic livelihoods of households and workers Evaluation of project impact
30/07/2022	In-depth interview and workplace survey with the workplace affected by the project	Yuzuncuyil District passes by taking a part of YHT Pırlanta Wedding Hall parcel. In-depth interviews and workplace surveys were conducted.	Economic level of business activities in the workplace The owner and operator of the workplace, the household, and the socio-economic livelihoods of the employees Evaluation of project impact
30/07/2022	Yerköy-Yenifakılı-Şefaati workplace and residential site visits in affected districts	Interviews were held with the owners of the houses in Cakcak 137/1 and 137/2	Evaluation of the current vulnerability of households over the age of 65 Evaluation of the impact of the project impact on households and housing Socio-economic status of the household
31/07/2022	Kozaklı-Kocasinan workplace and residential site visits in affected districts Woman depth-interview Kanlıca/ Molu Villages	A workplace/commercial meeting was held with the vineyards directly affected by the project expropriation and with the owner of the production facility, Formation Molu. In-depth interviews were held on women in the company affected by the Project, which has a wide field of activity in women's employment.	Economic and social impacts resulting from the project impact Workplace workers and livelihoods Produced products and added value Women's employment and the role of the workplace in women's labor force participation
01/08/2022	Kayseri ORAN Development Agency	Meeting with Rural and Social Development Unit Manager Yasin Sicin and Institution Specialist Ali Bey.	Opinions on the railway route The impact of the railway route on the Kayseri workforce Effects on the railway route and urban area Impacts on the railway route and the countryside

Date	Institution	Interviewed Unit	Featured topics
			Project impacts on workforce and employment in Kayseri Possible impacts of the Project on rural development
01/08/2022	Kocasinan District Directorate of Agriculture and Forestry	Meeting with the Deputy Director and Experts of Kocasinan District Agriculture and Forestry Directorate	Agricultural products with significant added value locally Distribution of agricultural activities Irrigation Agricultural problems Potential impacts of the Project on agricultural activities Potential impacts of the Project on agricultural lands

Disclosure Process

As part of the disclosure process that will begin after the plans for the Project are approved, the ESIA information package (ESIA including Human Rights Impact Assessment, NTS, SEP, Resettlement Action Plan) will be published on the project website (www.yerkoykayseriyht.com).

NTS, SEP and management plans will be explained in Turkish using appropriate disclosure methods in line with the relevant requirements of international standards. Hard copies of the ESIA package will be kept at the project site for stakeholder review.

It will be kept especially in mukhtars, NGOs or institutions working with vulnerable groups. During the disclosure process, support will be provided to inform all vulnerable groups within the Project Area of Influence. Methods such as facilitating access to meetings, holding direct private meetings with sensitive groups, and having one-on-one meetings will also be used during the disclosure process.

The social expert / Public relations specialist who will be involved in the project will be in contact with the local communities and stakeholder engagement activities will be recorded in the stakeholder participation registration list.

5.0 GRIEVANCE MECHANISM

The Grievance Mechanism (GM) Procedure is one of the basic elements of stakeholder engagement management.

It is one of the most important tools of the stakeholder engagement management process that enables stakeholders to convey their problems, complaints and concerns about the project to the relevant units of the project, and to resolve the complaints submitted with the right methods and in a healthy communication.

The Grievance Mechanism Procedure aims to ensure that problems, complaints or concerns conveyed by stakeholders are dealt with effectively without delay, and to maintain healthy stakeholder engagement based on trust.

Internal (Worker) Grievance Management Process

Employees, who may be direct workers or third party/subcontractor's workers, are encouraged to submit written complaints, comments and concerns. Since the confidentiality of the complainant should be preserved, grievances are collected in grievance boxes which will be placed in areas workers can easily access, including dining rooms. Through these forms, workers will also be able to make anonymous complaints. Information on how to express complaints, opinions and suggestions to workers will be provided during the orientation training

process. Written submissions will not be shared and used in any way to force or intimidate those submitting the complaints.

External Grievance Management Process

The steps of the grievance management process consist of receiving the grievance, assessing, sending acknowledgment, investigating, feedback to stakeholder, implementing the remediation activities and closeout which process are defined in diagram below. These steps are also the management process of the internal grievance of the Project.

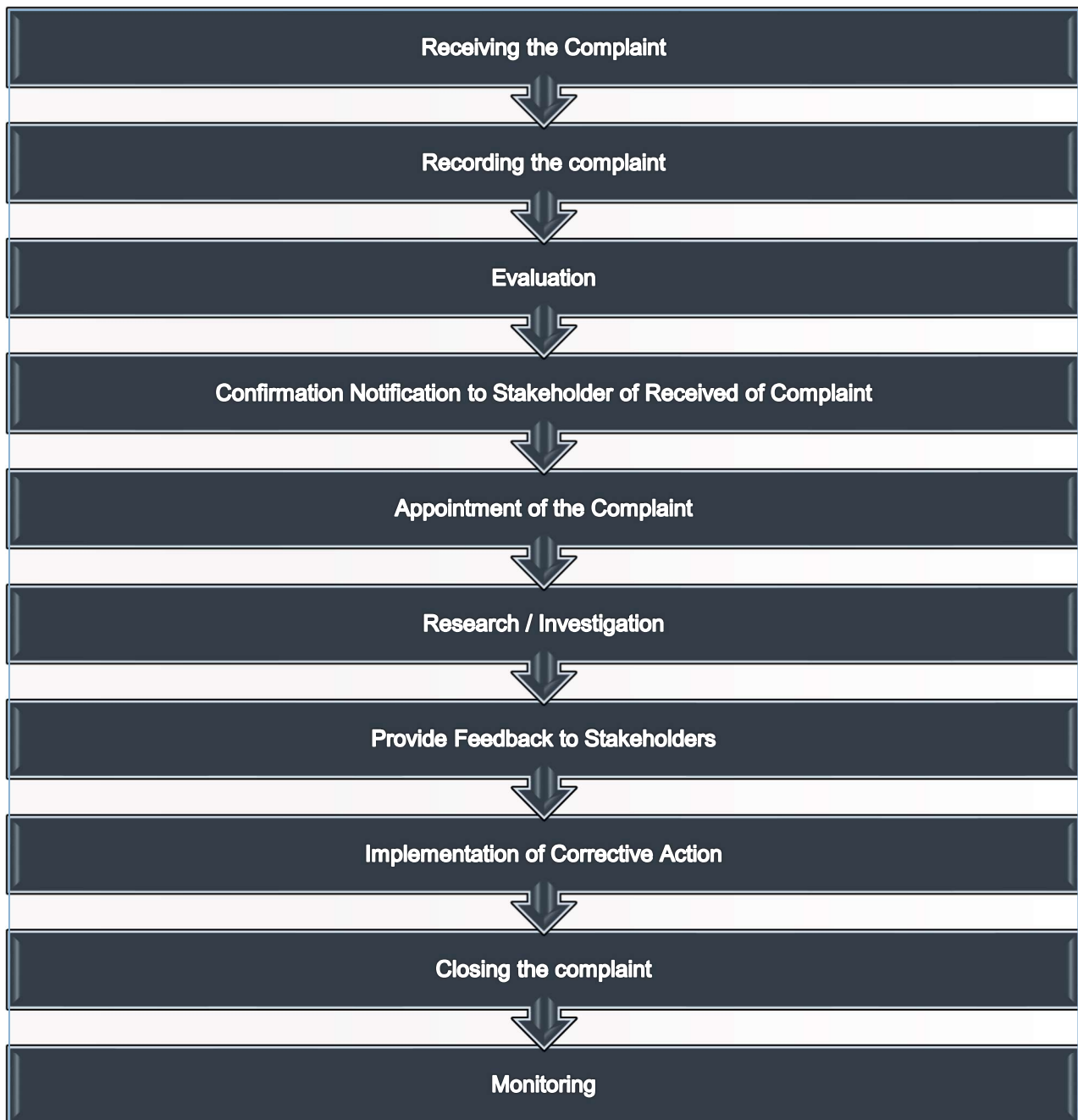


Figure 11: Grievance Mechanism Workflow Chart

Details of the running time of the flow chart given above and the schedule, are given in the table below.

Table 11: Runtime Details and Timeline of Flowchart Chart

Workflow steps	
Receiving the Complaint	Complaints can be made verbally or in writing using any of the tools described in the Stakeholder Engagement Plan
Recording the Complaint	Receiving complaint is recorded within 2 days at the latest.
Evaluation	The Public Relations and Communications Officer (CLO) or social expert will evaluate and categorize the subject, content of the complaint, which unit it falls under, immediately after the complaint is registered.
Confirmation of Stakeholder of Received Complaint	The stakeholder will be notified that the grievance has been received and recorded. Feedback will be sent based on the transmission method of the complaint (mail, telephone, etc.).
Appointment of the Complaint	The Public Relations and Communication Officer (CLO) or the social expert will assign the complaint to the relevant unit or person who needs to develop a solution/ corrective action according to the complaint.
Research / Investigation	The relevant unit, which has taken action, develops solutions and corrective actions within 10 days, obtains the necessary approvals and notifies the Public Relations and Communication Officer (CLO) or social expert of the action result of the complaint evaluation.
Provide Feedback to Stakeholders	Corrective action will be explained to the complainant, consulted and agreed.
Implementation of Corrective Action	The existing complaint will be eliminated by applying a solution / corrective action.
Closing the complaint	It will be determined that the existing problem or complaint has been resolved / approval of the complainant will be obtained, and then the complaint will be closed within 30 days at the latest from the date of registration.
Monitoring	<p>The source of the complaint</p> <p>The result of corrective action,</p> <p>The effectiveness of the corrective action,</p> <p>Evaluation of residual risks or impacts,</p> <p>Complainant satisfaction will be recorded and the process will be monitored.</p> <p>If it could not be closed or an agreement could not be reached, the evaluation and additional studies planning report will be prepared and submitted to the management.</p>

The Project will have communication tools such as public relation office, Project website. In addition to this, grievances can be filed through the interviews by face-to-face, on-line or telephone. Grievance forms will also be found in easily accessible places such as common usage areas in the settlements, public relation office and Project management office. The grievance forms (please see Appendix A) will be kept in print where wish-

complaint boxes placed at specific points and will be used for the submission of both anonymous and public complaints.

Table 12: Current Contact Details of the Yerköy-Kayseri HSR Project*

Contact Details	
Project Website	www.yerkoykayseriyht.com
Phone Number	+90 539 935 84 61
E-mail	info@yerkoykayseriyht.com

**Since the construction of the Yerköy-Kayseri HSR Project has not been started as of February 2023, the names of the responsible persons have not been designated yet. During the update of the Project SEP report, the names and the communication details will be presented in detail.*

When both external and internal stakeholders experience problems, concerns, or difficulties in providing their contact information, identification information, complaints submitted by stakeholders will be initially evaluated and recorded as anonymous complaints or anonymous suggestions.

Stakeholders can send all their wishes and complaints, without specifying their names, to the wish-complaint boxes placed at specific points for external stakeholders or via hotline.

Grievances are received anonymously and assessed by applying the steps defined in the workflow. Within the scope of the complaint, it will be evaluated through investigation / examination processes and each stage will be recorded in the complaint mechanism system. Third parties will not be informed about complaints that need to be kept confidential.

When the complaint is concluded, although there will be no formal feedback on the solution to be implemented, if it is an issue that needs to be informed by the public and if deemed necessary, it can be announced to the stakeholders through common boards/ public and general communication tools.

Signature Page

Golder Associates (Turkey) Ltd. ŞTI

Registered in Turkey Registration No. 53/3069

Vat No. 396 056 79 79

<https://wsonline->

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APPENDIX A

Grievance Form



AYGEM
AKTİF İNTERNETLER GENEL MÜDÜRLÜĞÜ

ŞİKAYET FORMU
COMPLAINT FORM



Şikâyetin Alındığı Yer/ Location Of Complaints Received		Tarih/ Date
Alan Yetkilinin Adı/ Name Of Person In Charge		Şikâyet Kayıt No/ Complaint Register Number
Şikâyete Konu Alanın Koordinatları/ Coordinates Of The Area Subject To Complaint		
ŞİKÂYET SAHİBİ HAKKINDA BİLGİ / COMPLAINANT INFO Şikâyet Sahibi kimlik bilgilerini vermeden anonim olarak doldurabilir, ancak kendisine geri dönüş şeklini bu formda belirtmesi gerekmektedir. / The Complainant may submit application anonymously, however in this form the Complainant should indicate the feedback mechanism to respond.		
Ad Soyad/ Name Surname		Şikâyetin Geliş Yolu / Form of Complaint:
TC Kimlik No/ Identification Number		Telefon- Ücretsiz hat / Phone –Free phone line <input type="checkbox"/>
Telefon/ E-Posta Telephone/ E-mail		İstişare Toplantısı/ Consultation meeting <input type="checkbox"/>
Mahalle-Köy-İlçe-İl/ Neighborhood-Village –District - Province		Dilekçe / Petition <input type="checkbox"/>
ŞİKÂYET DETAYLARI / DETAILS OF COMPLAINT		
Şikâyet Konusu / Complaint		
Şikâyet sahibi tarafından talep edilen çözüm / Solution requested by the Complainant		
Şikâyeti Alan Yetkilinin Ad Soyad ve İmzası / Şikâyet Sahibinin Ad Soyad ve İmzası / Name Surname and Signature of the Registerer Name Surname and Signature of Complainant		
Şikâyet Kapatma Numarası: Grievance Closure No:		
Alınması Gereken Acil Önlemleri Tanımlayın: Identify the urgent actions		
Alınması Gereken Uzun Vadeli Önlemleri Tanımlayın (Gerekli ise): Identify the long term actions (if necessary)		
Tazminat Talebi Bulunuyor Mu? Is there a claim for compensation?	<input type="checkbox"/> Evet/Yes	<input type="checkbox"/> Hayır/No



AYGEM
AKTIF YATIRIMCI GENEL MÜDÜRLÜĞÜ

ŞİKAYET FORMU
COMPLAINT FORM



DÜZELTİCİ FAALİYETİN KONTROLÜ VE KARARI / CONTROL AND DECISION OF CORRECTIVE ACTION

Düzeltilici Faaliyetin Aşamaları
Stages of Corrective Action

Verilen Sürenin Sona Erdiği Tarih ve Yetkili Kuruluşlar
Date of Expiration of the Given Period and Authorized Institutions

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

Sorumlu Departmanlar

Accountable departments

Sonlandırma Tarihi

Sign off date

Tazminat Eylemi & Sonlandırılması

Compensation Action & Sign off

Bu bölüm şikayetçi tarafından, tazminatı aldığı ve dosya kapandığında doldurulup imzalanacaktır.

This part will be filled and signed by the complainant when he/she receives the compensation and file is closed.

Tarih / Date: .../.../...

İsim Soyadı ve İmza:

Name Surname and Signature:

wsp **GOLDER**

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