
MERSİN-ADANA-GAZİANTEP HIGH STANDARD RAILWAY PROJECT

ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN

NOVEMBER 2021

ANKARA



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1 INTRODUCTION

This plan presents the Environmental and Social Management and Monitoring Plan (ESMMP) for the proposed Mersin-Adana-Gaziantep (MAG) High Standard Railway Project and will be implemented as part of the proposed Project's Environmental and Social Management System (ESMS).

This ESMMP sets out a formal system by which the Project can manage mitigation commitments during the construction and operational phases of the proposed Railway.

1.1 Objective and Scope

The ESIA process has identified the key environmental, social and health issues, impacts and risks associated with the Project requiring the implementation of mitigation measures. These include:

- all the Project commitments (including relevant national regulations and legal requirements and lenders requirements),
- mitigation measures that have been identified from the impact assessment, and
- other best practice measures designed to avoid, minimize or reduce negative impacts and enhance positive impacts.

The purpose of this ESMMP is to establish how the mitigation commitments made through the ESIA process will be implemented, monitored and sustained. The content of the ESMMP is essential to bridge the findings of the ESIA with the implementation of the mitigation measures and to provide an early framework of management and monitoring that will ensure the implementation of these ESIA commitments.

The ESMMP also provides information and instructions on how environmental, social, and health commitments of the Project will be managed from design, pre-construction through the construction and operation phases. The ESMMP is a living document which:

- Incorporates the environment and social mitigation measures identified as a result of the ESIA process into a comprehensive framework to facilitate and ensure appropriate management throughout the Project life cycle.
- Provides a framework to incorporate commitments into the Project plans and procedures for construction and operation activities.
- Presents the division of responsibilities for achieving the ESMMP requirements including the provision of training.
- Provides a framework for the implementation of specific management plans by the Contractor and Operator that will meet the requirements of the national legislation as well IFC/WB Group Performance Standards.

- Provides the monitoring/verification and reporting program (including corrective actions).

This ESMMP is applicable to the following stages of the Project's lifecycle:

- Design;
- Construction; and
- Operation.

This ESMMP represents a commitment by AYGM (design and construction) and TCDD Transport (operation) to environmental and social sustainability, and this commitment will also apply their contractors and sub-contractors and supply chain. The potential effects and associated mitigation measures and management procedures in this ESMMP are based on the information and assessments provided in the:

- SLIP Package 1 including E&S Governance Document and the ESIA Report,
- SLIP Package 2 including:
 - Supplementary Social Impact Assessment (SIA) Report,
 - Human Rights Impact Assessment (HRIA),
 - Updated Stakeholder Engagement Plan (SEP),
 - Cultural Heritage Impact Assessment Report including Cultural Heritage Management Plan and Chance Find Procedure,
 - Supplementary Terrestrial Ecology Survey Report (including flora, fauna and avifauna),
 - Supplementary Aquatic Biodiversity Survey Report,
 - Biodiversity Management Plan,
 - Critical Habitat Assessment,
 - Route Evaluation Table (including constraints),
 - Noise Measurements, Modeling and Assessment Report,
 - Air Quality Modeling and Assessment Report,
 - Climate Change Risk Assessment,
 - Flood Risk Assessment,
 - Updated/prepared new ESMMP including impacts, mitigations and monitoring as well as organizational structure,
 - Updated Non-Technical Summary (NTS),
 - ESAP (*to be confirmed and provided by Ramboll*).
- Resettlement Action Plan (RAP) and Livelihood Restoration Plan (LRP);
- Contractor Management Plan (CMP);
- Emergency Response Framework (ERF) and
- Railway Safety Plan (RSP)

The aim of this document is to communicate to the Project Team (including contractors and sub-contractors); the potential environmental, health, safety, and social (EHSS) issues

associated with the Project and the procedures and mitigation measures that are required to be implemented.

AYGM and TCDD Transport will utilize this ESMMP during Project execution to achieve appropriate and effective EHSS management. This ESMMP should be read in conjunction with the SEP, RAP, BMP, CMP, ERF and RSP.

AYGM will be responsible for ensuring their Contractor develops this ESMMP into a Construction Environmental and Social Management Plan (CESMP), and TCDD Transport will be responsible for developing this ESMMP into an Operational Environmental and Social Management Plan (OESMP) for the Project. The CESMP and OESMP will each include, but not be limited to:

- Introduction, background, objectives and structure of the document;
- The Project's EHSS policies and goals;
- The Project's EHSS regulatory framework and safeguards;
- EHSS management roles and responsibilities;
- Register of environmental and social effects and mitigation measures;
- Issue-specific environmental and social management plans;
- EHSS management procedures;
- Institutional arrangements and implementation;
- Training requirements;
- Project resourcing and budget allocation;
- Project implementation schedule; and
- Monitoring, management review and reporting requirements.

1.2 Roles and Responsibilities

The broad role of each party involved in the Project in relation to the ESMMP is identified below in Table 1-1 and the minimum EHSS resources they will be required to appoint to ensure effective implementation of the Project EHSS requirements, is shown in Figure 1-2. In addition, Key Parties involved in the Project Financing and related definitions is presented in **Box 1** and Figure 1-1.

Box 1. Definitions of Key Parties involved in the Project Financing	
Definitions	
Borrower	: Ministry of Treasury and Finance
Buyer	: Ministry of Transport and Infrastructure (MoTI)
Project Owner	: General Directorate of Infrastructure Investments (AYGM) of the MoTI
Contractor	: Rönesans International Construction Investment Industry and Trade Inc. (REC)
Operator	: TCDD Transport for Operational Phase
Project	: Mersin-Adana-Gaziantep (MAG) High Standard Railway Project
Lenders	: Financing parties comprising of Industrial and Commercial Bank of China (ICBC), Internationale Nederlanden Groep (ING), Banque Nationale de Paris S.A. (BNP) Paribas, Deutsche Zentral-Genossenschaftsbank (DZ) and Export Credit Agencies (ECAs) UK Export Finance (UKEF) and Swedish Exportkreditnämnden (EKN) financed through AB Svensk Exportkredit (SEK) (the financing arm of EKN)

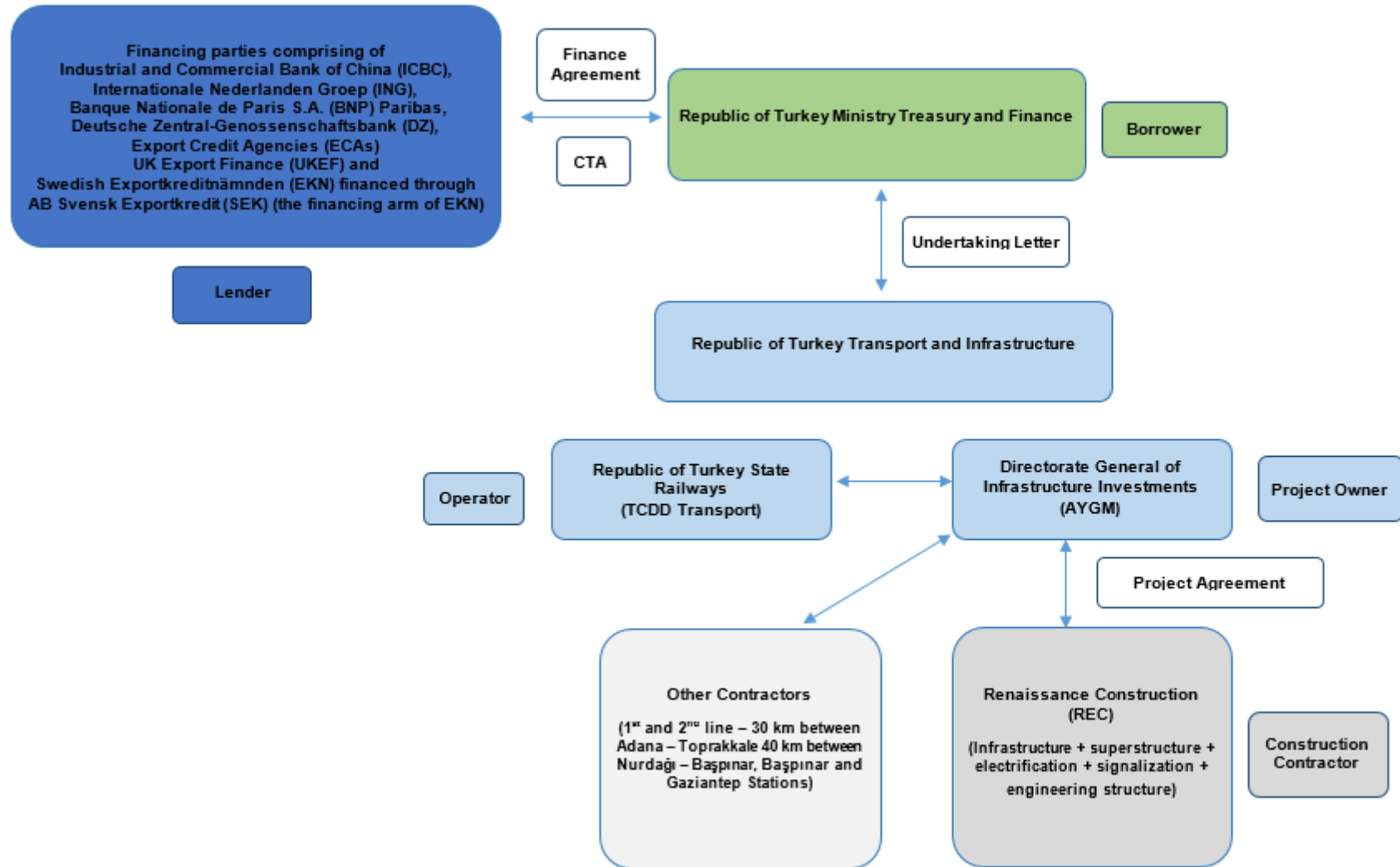


Figure 1-1. Key Parties involved in the Project Financing

Table 1-1. Roles and Responsibilities

Name of the Authority	Responsibilities
Borrower – Ministry of Treasury and Finance	Ensure allocation of sufficient resources for the implementation of bi-annual monitoring of the ESMMP, in line with Lender requirements.
Project Owner - AYGM	<p>As the Project Owner, AYGM has the following Environmental & Social responsibilities:</p> <ul style="list-style-type: none"> • Completion of the national EIA processes for the railway route (finalized) and carry out the EIA process of the relevant facilities. • Obtaining permits and licenses of relevant facilities. • Carrying out the remaining expropriation procedures and to make all expropriation payments in accordance with the Expropriation Law. • Operating the Project in line with all relevant international and national environmental, health and safety legislation and commitments as detailed in the ESIA, SLIP packages and EIA reports. • Preparation of policies, procedures and plans within the scope of national and international legislation and standards to which the project is subject, to ensure their implementation and to inform all relevant parties. • Creating funds for the compensation amounts determined within the scope of the Resettlement Plan (RAP) and to ensure that they are paid to the relevant parcel owners. <p>In line with the ESMMP, AYGM will be responsible for:</p> <ul style="list-style-type: none"> • Overseeing the implementation of this ESMMP during design and construction. • Overall responsibility of the Project with respect to applicable national and international standards. • Ensuring the allocation of sufficient resources for the implementation of their commitments within the ESMMP. • Overall implementation of the Project-level grievance mechanism (GM) to ensure that all grievances and/or objections (raised by affected stakeholders or communities) are received, acknowledged and addressed as per the GM set out in the SEP. REC will assist. • Ensuring stakeholder engagement and grievances related to land acquisition and expropriation activities are managed in line with the agreed Project SEP and RAP. • Reviewing the RECs site-specific implementation plans to ensure that they meet the requirements of and support the implementation of this ESMMP. • Periodic review of the ESMMP effectiveness in line with the provisions of this plan. • Reporting of significant incidents in line with Lender requirements.
Construction Contractor - REC	<p>During the construction activities and warranty period, all Environmental and Social requirements to which the project is subject will be planned and implemented in all works/services to be performed by the contractor's project team, subcontractors and major suppliers within the supply chain. The followings are the REC's (Contractor) commitments to be fulfilled and continuously improved:</p> <ul style="list-style-type: none"> • Take overall responsibility for construction execution of the Project with respect to applicable national and international standards, • Ensure the allocation of sufficient resources (personnel, materials and equipment) are consistent with achieving the objectives and requirements for the implementation of their commitments within the ESMMP, • Assign clear responsibilities and expectations with respect to implementing the Contractor's responsibilities and commitments within the ESMMP. • Employ Community Relations/liason Officer to manage, review and monitor a social program to meet Project requirements, including commitment within the ESMMP.

Name of the Authority	Responsibilities
	<ul style="list-style-type: none"> • Employ Environmental Officer/manager to manage, review and monitor the environmental program to meet Project requirements, including commitment within the ESMMP. • Employ Health and Safety Officer/manager to manage, review and monitor the occupational health and safety program to meet Project requirements, including commitment within the ESMMP. • Prepare site specific implementation plans that meet the requirements of and support the implementation of this ESMMP. • Promote and implement the ESMMP by incorporating the appropriate provisions into Project policies, plans and procedures. • Ensure stakeholder engagement and grievances related to construction activities are executed in line with the Contractor responsibilities and commitments in the agreed Project SEP and RAP. • Identify environmental and social risks as part of its planning processes and through implementation of appropriate mitigation measures and communicating these to its workforce. • Establish self-verification of its own compliance by maintaining a system to manage environment and social aspects and impacts in line with ESIA requirements. • Perform environmental and social monitoring activities prescribed within the national EIA Study and ESIA. • Establish an ES&H program of internal reporting that includes incident reporting and investigation, system to record observations, non-conformance and actions that includes ESMMP performance indicators. • Provide training to Project and subcontractor staff in their responsibilities with respect to compliance with the ES&H program. • Report environmental and social performance to Project Owner and Lenders in line with agreed KPIs on periodical basis in a commonly agreed format. • Ensure stakeholder engagement and grievances related to construction activities are managed in line with the agreed Project SEP. • Develop awareness campaign on the Project SEP and Grievance Mechanism and address accordingly any grievances received that are related to construction activities. • Prepare Human Resources policies and procedures that meet the requirements of national legislation and IFC/WB performance standards. • Participate in ESMMP Implementation Group.
Project Operator – TCDD Transport	<p>As an operator, TCDD Transport has the following Environmental & Social responsibilities:</p> <ul style="list-style-type: none"> • To ensure the necessary coordination between other subcontractors within the scope of cumulative impact assessment in order to complete the relevant assessments (flora, fauna, archaeological, social impact, etc.) within the scope of MAG Project Environmental and Social requirements. • To ensure compliance of other subcontractors working in the relevant parts of our project (These projects are not subject to international credit) with the environmental and social requirements within the scope of Turkish legislation.

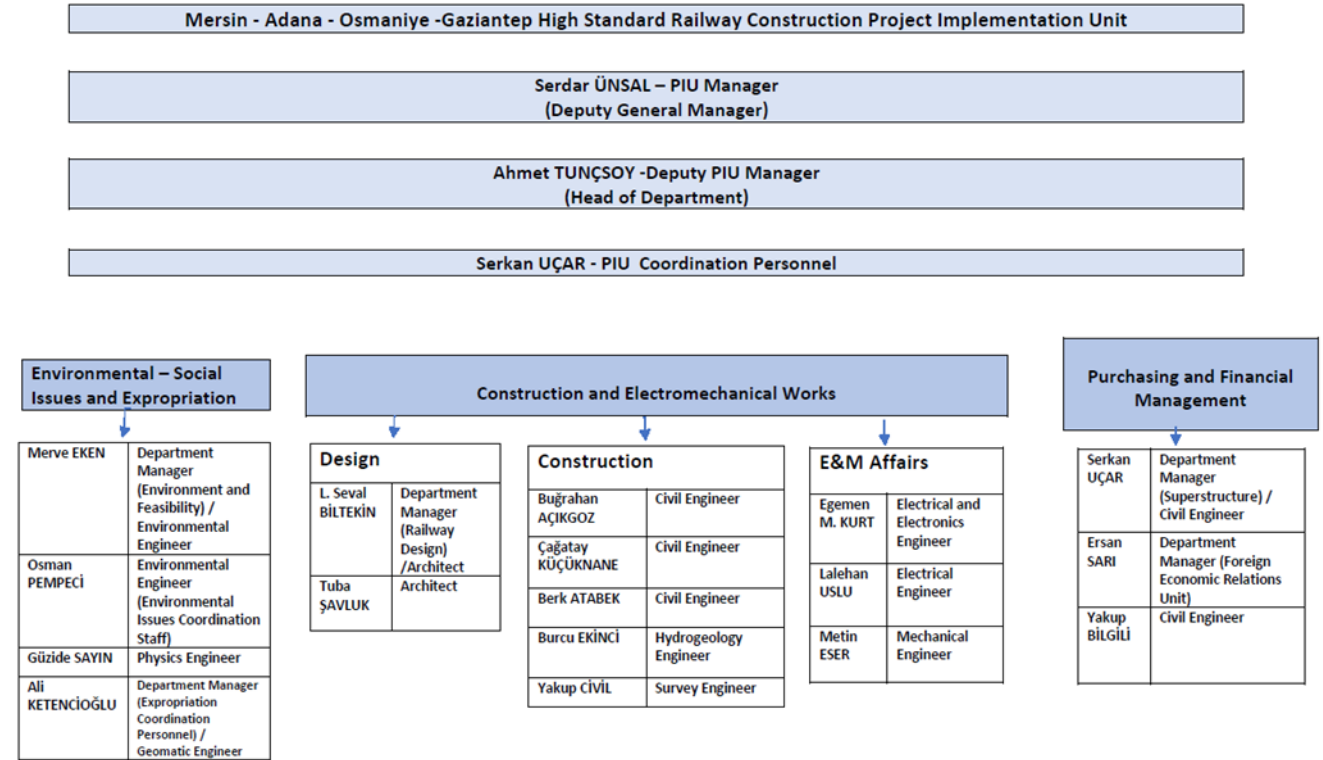


Figure 1-2. Organization Chart for Implementation of the ESMMP

AYGM will be responsible for appointing technical specialists to effectively audit the implementation of EHSS measures and processes. These specialists will include:

- PIU Coordination Personnel** - Responsible for supervising the Contractor to ensure that recommendations and requirements, as set out in the disclosure package, are applied. They will be responsible for continuous monitoring of the processes and activities undertaken by the Contractor, and specifying measures to be implemented by the Contractor, to address any areas of non-compliance. This includes periodic audits, inspections, and/or spot checks of project locations or work sites and/or of records and reports compiled by contractors.
- PIU Department Manager (Environmental and Feasibility / Environmental Engineer)** will be responsible for supervising the implementation of all environmental and biodiversity measures, as specified within the disclosure package of the Project, and regular reporting to AYGM PIU.
- PIU Environmental Engineer (Environmental Issues Coordination Staff)** will be responsible for overseeing the implementation of all environmental and biodiversity measures, as specified within the disclosure package of the Project, and regular reporting to AYGM PIU.
- PIU Physics Engineer** who is responsible for supervising health and safety for the Project.

•**PIU Department Manager (Superstructure / Civil Engineer)** will be responsible for overseeing the implementation of all health, safety and social measures, as specified within the disclosure package of the Project, and regular reporting to AYGM PIU.

•**PIU Department Manager (Expropriation Coordination Personnel)** will be responsible for overseeing the implementation of the RAP, livelihood and PR5 matters in relation to expropriation supporting the monitoring of the RAP and appointing the external RAP monitoring consultant. Responsible for overseeing the implementation of the SEP and supervising the activities of the Contractor's Expropriation Specialist.

•**PIU Department Manager (Railway Design)** - Responsible for supervising, monitoring and auditing the Contractor Design Office Manager, implementing their responsibilities in the Railway Safety Plan within coordination of Construction and E&M Affairs departments.

•**PIU Survey Engineer** - Responsible for supervising the Contractors archaeologists. Including regular site inspections and regular reporting to AYGM PIU, and ensure the Regional Board is engaged and notified, as required.

•**PIU Civil Engineer** – Responsible for supervising, monitoring and auditing labor management.

1.2.1 REC

REC will predominantly be responsible for ensuring that all their work and staff activity is compliant with the legislation, policies and standards for EHSS and the permits provided by national (and local) regulators and the Project EHSS requirements. Key responsibilities for the Contractor include:

- Utilising this ESMMP to prepare and implementing the CESMP and associated sub-plans, as well as applicable sections of other plans including the SEP, RAP, BMP, ERF and RSP.
- Undertaking stakeholder engagement as set out in the SEP. This requires the establishment of a worker's grievance mechanism.

The Contractor will be responsible for appointing specialists to ensure EHSS mitigation is implemented in accordance with the Project EHSS requirements. These specialists will include as a minimum:

Headquarter E&S Manager: Responsible for managing infrastructure and superstructure projects regarding environmental and social governance issues and member of the Executive E&S Committee on behalf of the REC.

Headquarter Infrastructure HSE Manager: Responsible for managing infrastructure projects regarding health, safety and environmental issues.

REC Project Manager - responsible for overseeing the construction of the Project, including planning and delivery. They will be suitably competent and have a strong understanding of construction best practice. The Project Manager is accountable for overall HSE performance and making the human and financial resources available to ensure compliance with HSE requirements of the Contract. The Project Manager will be responsible for coordinating the internal management response of the Contractor to a major emergency. The Project Manager will also be responsible for appointing First Aid competent person(s) on site, as well as a team responsible for site security.

Construction Manager - responsible for implementation of the CESMP measures through method statements and site working practices.

Environmental Engineer- responsible for reporting and supervising environmental activities on site. Environmental Engineer will be suitably competent and have a strong understanding of environmental best practice including the Project HSE requirements.

Ecological Specialist (Subcontractor): will provide biodiversity support in advance of, and throughout construction, including pre-construction surveys. Given the scale of the Project, it may be necessary for a 'team' to be employed at certain points. This role will have a wide-ranging brief but ultimately will focus on ensuring required ecological mitigation is appropriately undertaken and measures are maintained throughout construction, in accordance with the ESMP and BAP. The specialist will be suitably competent and have ecological knowledge.

Project HSE Manager - responsible for the implementation of health and safety practices during construction. Project HSE Manager will be suitably competent and have a strong understanding of health and safety best practice including the Project EHSS Requirements.

Human Resources Chief - Responsible for managing all matters relating to human resources management for the Contractor. Responsible for employee relations, communication with workforce representatives / committees and co-ordination of the workforce grievance mechanism together with the Human Resources Lead.

Expropriation Specialist - Responsible for temporary land acquisition during construction, in accordance with the processes and compensation measures in the RAP, including land entry and exit protocols, and permissions to enter permanently acquired for the Project. Also responsible for the return of land to either AYGM or landowners, and the resolution of any grievance related to the contractor's land acquisition processes. Responsible for obtaining any permits required from the provincial authorities.

CLO - Responsible for reporting and supervising social activities on site, stakeholder engagement and grievance management and consultation on temporary land acquisition, providing affected communities with information on the timing of key activities, and identifying and responding to grievances. CLOs will be based on or near the Project area on a permanent basis.

Archaeological Specialist (Subcontractor) - Responsible for overseeing all matters related to archaeology during construction, including implementing the chance finds procedure.

Responsible for submitting the CHMP to the regional board and notifying them of the timing of the works at potentially important archaeological sites.

Design Office Manager - Responsible for ensuring railway safety practices are implemented during construction, in accordance with the Common Safety Method-Risk Assessment (CSM-RA) and the Preliminary Hazard Record. Design Office Manager is responsible for the implementation of Contractor and sub-contractor obligations within the Railway Safety Plan.

Certain specialists will be defined as Key Personnel in the Contract and all personnel shall be proposed to the AYGM for non-objection in advance of hiring, to ensure they comply with the requirements of this ESMMP.

EHSS Leads will have the authority to suspend works when necessary, and allocate all resources, personnel and equipment required to take any corrective actions.

The above noted personnel will be equipped with the necessary resources to operate independently and get to all locations of the Project area without delay. This may include:

- A suitable vehicle and the necessary operating budget;
- A complete IT workstation: computer, printer, Internet access;
- Field equipment: GPS, digital camera;
- One communication equipment per person adapted to the context (mobile phone, satellite phone, or, should coverage not be adequate, a long-range two-way radio).

Lists of equipment will be maintained on site for inspection by PIU.

1.2.2 TCDD Transport

TCDD Transport will have responsibility for the Project during operation, and will oversee the implementation of the Lenders requirements, overseeing the maintenance contractor(s), maintenance subcontractor(s) and other involved third parties. TCDD will also be responsible for implementing this ESMMP and developing the OESMP.

TCDD Transport will be responsible appointing the following specialists during operation:

•**Executive E&S Committee Project Manager (Department Head / Branch Manager /Head of Department)** will be ultimately responsible for overseeing the activities undertaken by the AYGM/TCDD specialists (listed below), overseeing the implementation of mitigation measures and management procedures specified within the disclosure package of the Project, and overseeing the preparation and implementation of a CESMP, which will be based on this ESMP.

•**Executive E&S Committee Environmental, Health and Safety, and Social (EHSS) Manager (Specialist / Engineer)** will be responsible for overseeing all matters that relate to environment, health, safety and social aspects of the Project. Also, s/he will be appointed to

be responsible for supporting the implementation of the SEP, by conducting regular consultation with affected communities on any concern regarding the Project. CLOs will also have responsibility for disseminating the Project disclosure package as described in the SEP. They will also conduct regular inspections of records relating to grievances received and their resolution. S/He will report regularly to AYGM PIU.

1.2.3 The Lenders

The Lenders will require the submission of progress reports that monitor the EHSS performance of the Project against its set of specific Performance Requirements (PRs) for key areas of environmental and social sustainability.

2 PROJECT DETAILS AND KEY STAKEHOLDERS

A national Environmental Impact Assessment (EIA) study was carried out for the Project back in and the EIA Positive Decision was secured for a period of five years from 2011 to 2015 when construction works of separate sections of the Project route have been started to be awarded to different contractors.

Figure 2-1 shows the different sections of the entire MAG Project route with their corresponding construction contractors.

The Project is considered as “Category A” Project and to meet the environmental and social (E&S) requirements of the Lenders, Assystem Envy Enerji ve Çevre Yatırımları A.Ş. has been retained by REC to carry out an E&S Impact Assessment (ESIA) study for the construction and operation phases of the Project in line with the national environmental, health and safety (EHS) legislation including international conventions and treaties, and the related international standards such as IFC’s Performance Standards (PSs).

The ESIA Report was prepared based on the outcomes of the Gap Analysis and Scoping Study (finalized in April 2021) and built upon the existing technical Project documentation (reflecting the latest status of approved Project design) provided by the Contractor, information relevant to the Project in the publicly available resources, outcomes of the consultations conducted with the key stakeholders, findings of the baseline field surveys carried out by qualified specialists and assessment of potential Project impacts and/or risks in accordance with internationally accepted methodologies as part of the ESIA process. The ESIA Report assesses both the construction and operation phase E&S impacts.

The ESIA Report prepared by Assystem ENVY has been reviewed by Ramboll of UK as the IESC to identify the gaps in the scope of an Environmental and Social Due Diligence (ESDD) study done on behalf of lenders. Gaps including supplementary studies were issued in a Gap Analysis Report. 2U1K Mühendislik ve Danışmanlık A.Ş. (2U1K) has been awarded by REC to carry out supplementary studies in order to fulfill the gaps and prepare Supplementary Lender Information Package (SLIP) for the MAG High Standard Railway.

Figure 2-1. Contractors Chart along the MAG Project Route

Section	Sub-section	Section Description	Section KM		Number of Lines			Length (km)			Scope of Work (per Contractor)						
			Start KM	End KM	Existing (Convention al-in Operation) to be Renovated			Open Route (km)	Tunnel (km)	Total (km)	Tunnelling (incl. Superstructure)	Infrastructure	Superstructure	Electrification	Signalization	Telecommunication	Renovation of Existing Conventional Lines
Section 1	1a	Mersin-Adana	0+000	380+818	2	2	4	68	0	68	N/A	Nuhoglu (%80)	REC	REC	REC	REC	REC (1st Line + 2nd Line)
	1b	Çukurova CR			0	2	2	10	0	10	N/A	KGM	REC	REC	REC	REC	N/A
Section 2	2a	Adana-Ceyhan	380+818	447+000	1	1	2	49	0	49	N/A	REC	REC	REC	REC	REC	REC (1st Line)
	2b	Ceyhan-Toprakkale			1	1	2	30	0	30	N/A	Çelikler	Çelikler	REC	REC	REC	Çelikler (1st Line)
Section 3	(-)	Toprakkale-Bahçe	0+000	57+000	0(*)	2	2	49	8	57	Demce	REC	REC	REC	REC	REC	REC (*)
Section 4	(-)	Bahçe-Nurdağ	0+000	17+000	0	2	2	7	10	17	Intekar	Intekar	Intekar	REC	REC	REC	N/A
Section 5	5a	Nurdağ-T6	78+000	131+438	0	2	2	23	17	40	Fernas	Fernas	Fernas	REC	REC	REC	N/A
	5b	T6-Başpınar			0	2	2	14,75(*)	1,25	16	Fernas	REC	REC	REC	REC	REC	N/A
Gaziray		Başpınar-Gaziantep			0	2	2	0	25,5	25,5	N/A	Kolin-Kalyon-Gülermak					N/A

(*) Only the existing conventional railway line between Toprakkale and Tebci (18 km) will be renovated.

(*) As per the information received by the Contractor from the AYGM, the infrastructure works in Section 5b will potentially be constructed by Fernas as Fernas has started the tunnel construction in this section.

	Started But Not Completed (Suspended)
	Completed
	Ongoing
	Not Started

3 DOCUMENTATION AND REPORTING

Documentation is an important element linked to the implementation of the ESMMP. The construction Contractor will establish a documentation and record keeping system in keeping with their Environment and Social Management System (ESMS) and will include the commitments within the ESMMP. Responsibilities will be assigned to relevant personnel for ensuring that the ESMMP documentation system is maintained, document controlled and distributed to the identified personnel. The following plans, procedures, and reports will be included in the Contractor's ESMS:

- HSE Plan
- Procedure for Control of Life Critical Activities
- Camp Management Plan
- Quarry Management Plan
- Community Health, Safety and Security Plan
- Soil Management Plan
- HSE Leadership and Key Performance Indicators Procedure
- HSE Training Procedure
- HSE Incentives Procedure
- Work Permit Procedure
- Change Management Procedure
- Subcontractor Management Procedure
- Control of Dangerous Energy Procedure
- Subcontractor HSE Assessment Procedure
- Orderliness Procedure
- Color Coding Procedure
- Purchasing and Supplier Evaluation Procedure
- Air Quality and Emission Control Procedure
- Noise and Vibration Management Procedure
- Labour Management Procedure
- Waste Management Plan
- Medical Waste Management Plan
- Hazard and Risk Management Procedure
- HSE Discipline Procedure
- Construction Machine and Equipment Procedure
- Working at Height Procedure
- Scaffold Safety Procedure
- Traffic Management Procedure (including Construction Travel Plan)
- Excavation Works Procedure
- Personal Protective Equipment Procedure
- Electrical Safety Procedure

- Working With Dangerous Chemicals Procedure
- Fire Safety Procedure
- Surface Water and Wastewater Management Plan
- Storage and Stacking Procedure
- Emergency Response Framework
- Accident and Incident Management Procedure
- HSE Monitoring Verification and Evaluation Procedure
- Cultural Heritage Management Plan
- Biodiversity Management Plan
- Community and Employee Grievance Procedure
- Personnel Selection and Employment Procedure
- Chance Find Procedure
- Landscaping Management Plan
- Rail Safety Plan

Each sub-plan will be based on a standard format covering: (i) Cross references to applicable legislation and Project EHSS standards; (ii) Roles and responsibilities; (iii) Cross reference to other procedures; (iv) Identification of construction activities with potential risks in the field of concern; (v) Description of impact specific and site specific mitigation measures; (vi) Implementation, monitoring and adaptive management process; (vii) Technical description or measurement / monitoring methods; (viii) Timeframe.

The Contractor will provide timely submissions of reports with the agreed level of detail.

In addition to the commercial contract requirements the Contractor's Construction Log and Construction Diary will include other observations that support the implementation of the ESMMP, such as community relations grievances.

Operational Environmental and Social Management Plan

TCDD Transport as the operator will be required to develop the ESMMP into the OESMP prior to the start of the operational phase. The OESMP will elaborate the measures for implementing the activities specified in the ESMMP during the operational phase of the Project. The OESMP will include sub plans including:

- Operational Emergency Response Plan (based on the ERF)
- Landscape Management Plan;
- Operational Soil Management Plan;
- Waste Management Plan;
- Operational Maintenance Plan;
- Tunnel Operational Management Plan;
- Employment Plan;
- Labour Management Plan;

- Supply Chain Management Plan;
- Community Health, Safety and Security Plan;
- Health, Safety and Security Plan; and
- Rail System Plan.

3.1 External Reporting

All external reporting will be managed by the Project Owner/Employer within their obligations to the Turkish government entities under the national legislation and to the Lenders.

3.2 Internal Reporting

Internal reporting with regards to the Contractor's commitments within the ESMMP will be managed jointly by the E&S Manager, Headquarter HSE Manager, Project CLO, Project HSE Manager and Project Environmental Engineer. The Project will share, as appropriate, inspection and audit findings with their suggested measures regularly with the Project management, the ESMMP Implementation Committee and employees. To maintain an open communication between the employees and management on occupational health, safety, environmental and social issues the following tools will be used:

- Team Briefings,
- On-site work group meetings,
- Work Specific Instructions.

3.3 EHS Non-conformances

Non-conformities detected during inspections carried out jointly by the AYGM and/or PIU and Contractor are subject to a process adapted to the severity of the situation. The non-conformities will be defined as deviations from the requirements of the contract, the ESMMP, the CESMP and supporting EHSS documentation. Non-conformities are divided into 4 categories as follows:

Notification of observation of minor non-conformities: The non-conformity results in a notification to the Contractor's Representative, followed-up by a signed notification of the observation prepared by the PIU. The multiplication of notifications of observation, or absence of corrective actions by the Contractor, can result in the severity of the non-conformity being raised to that of level 1.

Level 1 non-conformity: Non-conformities that do not represent a serious immediate risk for health, environment, social or safety. The non-conformity is the subject of a report addressed to the Contractor and which shall be resolved within 5 days. The Contractor addresses to the PIU a report explaining how the non-conformity has been corrected. Further to an inspection and a favourable evaluation of effectiveness of the corrective action, the PIU signs a close-out

report for the non-conformity. In all cases where a non-conformity of level 1 is not resolved within one (1) month, the severity of the non-conformity is raised to level 2.

Level 2 non-conformities: applies to all non-conformities that represent a risk with major consequences to health and/or the environment, social or safety. The same procedure as for level 1 non-conformities is applied. Corrective action shall be taken by the Contractor within 3 days. The Contractor addresses a report explaining the corrective actions implemented. All level 2 non-conformities, which are not resolved within 1 month, are raised to level 3.

Level 3 non-conformities: applies to all non-conformities that have resulted in damage to health or the environment, or which represent a high safety hazard or high social risk. The highest levels of the Contractor's and PIU's hierarchies present in Turkey are informed immediately and the Contractor has 24 hours to bring the situation under control. A level 3 non-conformity results in the staged reduction of interim payments until the non-conformity has been resolved. Following the resolution of the Level 3 non-conformity the reduction(s) will be included in the next Interim Payment Certificate for payment. No interest will be paid on any reductions or suspended payment amounts. If the situation requires, the PIU can order the suspension of work until the resolution of the non-conformity.

3.4 Design Control Process

During the preparation of the ESMMP, the construction team, the design team and the SLIP Consultant, 2U1K, held weekly meetings. The supplementary studies outputs are shared with REC's design team. An evaluation has been conducted on whether the design is sufficient for the management of the perceived risk. The effects of climate change on the Project, such as flood risk, were shared with the design team and the extent to which the design covers such risks was discussed. Turkey has not fulfilled the legislative changes related to climate change risks in such infrastructure projects yet. However, considering the possible changes that may occur in the national legislation, the current legislation requirements have been discussed. The reflection of this issue in the project design is left to the discretion of AYGM.

3.5 ESMMP Review

The ESMMP will be periodically reviewed to address changes in the responsible parties' organization, process or regulatory requirements.

Following any reviews, the Contractor will coordinate through the ESMMP Implementation Group to make any necessary amendments in the ESMMP, with, the updates communicated to all responsible parties and employees on the Project.

3.6 Training

The Project will implement a training and awareness program covering ESMMP expectations and commitments of the Project. As a minimum, this should be implemented as an induction for all employees and sub-contractors engaged during pre-construction, design, construction and operation phases, with further training to be implemented depending on the level of responsibility for implementing the ESMMP.

The training program will cover the following aspects:

- Purpose of ESMMP in relation to the Project activities,
- Requirements of the management and monitoring plans,
- Understanding of the sensitive environmental and social receptors within and surrounding the Project areas, and
- Aware of the potential risks from the Project activities.

The Project will ensure that all personnel responsible for the implementation of this ESMMP are competent on the basis of education, training and experience. All Project personnel will be provided with environmental and social training appropriate to their scope of activity and level of responsibility.

3.7 Monitoring

A monitoring, review and auditing program will be implemented during construction to monitor implementation of the ESMMP requirements and environment and social commitments. The Project Owner/Employer will be responsible for ensuring that the Contractor and its sub-contractors are complying with the applicable national regulations as well as lenders requirements.

In line with the commercial contract, the Contractor will develop its own monitoring plan in conjunction with the Project PIU and relevant Project documents (EIA Studies, Preconditions of relevant authorities and ESIA). Responsibilities and cost of implementation of monitoring activities should be harmonized with EIA Studies requirements.

3.8 Management of Change Procedure

The ESIA has assessed impacts and developed mitigation measures for the Project. Any changes to the design within the Project area have been assessed and will not require re-assessment or approval by the Lenders, subject to Contractors complying with the mitigation measures set out in the disclosure documents.

Changes beyond the Project area will require screening and may be subject to assessment, and will require approval from AYGM, and potentially the Lenders where there are material changes. This process is set out in the Management of Change Procedure (MCP).

The MCP provides a process for determining how the potential environmental and social implications of design changes are assessed. The assessment of any design changes ensures appropriate mitigation is identified and implement to avoid or minimise any adverse effect results from a design change.

4 LEGAL FRAMEWORK

This section presents a summary of national legislations and international standards, guidelines and requirements that are relevant to the Project and its activities. Table 4-1 presents the summary of national laws and regulations to reduce the potential and social impacts that may arise from the construction and operation activities of the Project.

Table 4-1. National Environmental and Social Legal and Policy Framework

Environmental Issues	Turkish Legislations
General	<ul style="list-style-type: none"> • Municipality Law No. 5393 (Official Gazette dated 13.07.2005 and numbered 25874) • Environment Law No. 2872 (Official Gazette dated 11.08.1983 and numbered 18132) and all relevant Regulations • Environmental Impact Assessment Regulation (Official Gazette dated 25.11.2014 and numbered 29186), • Environmental Permit and License Regulation (Official Gazette dated 10.09.2014 and numbered 29115), • Regulation on Environmental Audit (Official Gazette dated 12.06.2021 and numbered 31509).
Nature Protection	<ul style="list-style-type: none"> • Regulation on the Procedures and Principles Regarding the Protection of Game and Wild Animals and Their Lives; Pest Control (Official Gazette dated 24.10.2005 and numbered 25976), • Regulation on the Conservation of Wetlands (Official Gazette dated 04.04.2014 and numbered 28962), • Regulation on Pasture (Official Gazette dated 31.07.1998 and numbered 23419), • Land Hunting Law No. 4915 (Official Gazette dated 11.07.2003 and numbered 25165), • National Parks Law No. 2873 (Official Gazette dated 11.08.1983 and numbered 18132), • Conservation of Cultural and Natural Entities Law No. 2863 (Official Gazette dated 23.07.1983 and numbered 18113), • Red Data Book for Turkish Bird Species (Kızıroğlu, 2008).
Soil Quality	<ul style="list-style-type: none"> • Soil Protection and Land Use Law No. 5403 (Official Gazette dated 19.07.2005 and numbered 25880) • Expropriation Law No. 2942 (Official Gazette dated 08.11.1983 and numbered 18215) • Regulation on Soil Pollution Control and Contaminated Sites by Point Source (Official Gazette dated 08.06.2010 and numbered 27605).
Climate Change	<ul style="list-style-type: none"> • Regulation on Ozone Depleting Substances (Official Gazette dated 07.04.2017 and numbered 30031), • Regulation on Monitoring of Greenhouse Gas Emissions (Official Gazette dated 17.05.2014 and numbered 29003).
Air Quality	<ul style="list-style-type: none"> • Regulation on Control of Industrial Air Pollution (Official Gazette dated 03.07.2009 and numbered 27277), • Regulation on Exhaust Gas Emission Control (Official Gazette dated 11.03.2017 and numbered 30004), • Regulation on Assessment and Management of Air Quality (Official Gazette dated 06.06.2008 and numbered 26898), • Regulation of Control of Air Pollution Originated from Heating (Official Gazette dated 13.01.2005 and numbered 25699).
Water Quality	<ul style="list-style-type: none"> • Groundwater Law No. 167 (Official Gazette dated 23.12.1960 and numbered 10688) • Regulation of Urban Wastewater Treatment (Official Gazette dated 08.01.2006 and numbered 26047),

Environmental Issues	Turkish Legislations
	<ul style="list-style-type: none"> Regulation on Control of Pollution Caused by Hazardous Substances in the Aquatic Environment and Its Surroundings (Official Gazette dated 26.11.2005 and numbered 26005), Regulation Concerning Water Intended for Human Consumption (Official Gazette dated 17.02.2005 and numbered 25730), Water Pollution Control Regulation (Official Gazette dated 31.12.2004 and numbered 25687), Regulation on Fishery Products (Official Gazette dated 10.03.1995 and numbered 22223), Regulation on Quality of Surface Water (Official Gazette dated 30.11.2012 and numbered 28483), Regulation on Protection of Groundwater Against Pollution and Deterioration (Official Gazette dated 07.04.2012 and numbered 28257), Monitoring of Surface and Groundwater Regulation (Official Gazette dated 11.02.2014 and numbered 28910), Regulation on Water Intended for Human Consumption (Official Gazette dated 17.02.2005 and numbered 25730).
Waste Management	<ul style="list-style-type: none"> Regulation on the Control of Packaging Waste (Official Gazette dated 26.06.2021 and numbered 31523), Regulation on Waste Management (Official Gazette dated 02.04.2015 and numbered 29314), Regulation on the Control of Waste Tires (Official Gazette dated 25.11.2006 and numbered 26357), Regulation on Control of Medical Wastes (Official Gazette dated 25.01.2017 and numbered 29959), Regulation on Control of Waste Batteries and Accumulators (Official Gazette dated 31.08.2004 and numbered 25569), Regulation on Waste Oil Control (Official Gazette dated 21.12.2019 and numbered 30985), Regulation on Control of Waste Vegetable Oil (Official Gazette dated 06.06.2015 and numbered 29378), Regulation on Control of Excavated Soil, Construction and Demolition Wastes (Official Gazette dated 18.03.2004 and numbered 25406), Regulation on Control of Waste Electrical and Electronic Appliances (Official Gazette dated 22.05.2012 and numbered 28300),
Management of Chemicals	<ul style="list-style-type: none"> Regulation on Safety Data Sheets Regarding Hazardous Substances and Mixtures (Official Gazette dated 13.12.2014 and numbered 29204), Regulation on Classification, Labeling and Packaging of Substances and Mixtures (Official Gazette dated 11.12.2013 and numbered 28848), Regulation on Transportation of Hazardous Substances (Official Gazette dated 24.04.2019 and numbered 30754)
Noise	<ul style="list-style-type: none"> Regulation on Assessment and Management of Environmental Noise (Official Gazette dated 04.06.2010 and numbered 27601), Regulation on Control of Ambient Noise Emissions Originating from Equipment used Outdoor (Official Gazette dated 30.12.2006 and numbered 26392),
Health and Safety	<ul style="list-style-type: none"> Labor Law No. 4857 (Official Gazette dated 10.06.2003 and numbered 25134), Occupational Health and Safety Law No. 6331 (Official Gazette dated 30.06.2012 and numbered 28339), Public Health Law No. 1593 (Official Gazette dated 06.05.1930 and numbered 1489) Regulation on Health and Safety Requirements for Temporary or Fixed Term Works (Official Gazette dated 23.08.2013 and numbered 28744), Regulation on Transportation of Hazardous Substances (Official Gazette dated 24.04.2019 and numbered 30754)

Environmental Issues	Turkish Legislations
	<ul style="list-style-type: none"> Regulation on Personal Protective Equipment (Official Gazette dated 01.05.2019 and numbered 30761), Regulation on Usage of Personal Protective Equipment in Workplaces (Official Gazette dated 02.07.2013 and numbered 28695), Regulation on Safety and Health Signs (Official Gazette dated 11.09.2013 and numbered 28762) First Aid Regulation (Official Gazette dated 29.07.2015 and numbered 29429)
Traffic and Transport	<ul style="list-style-type: none"> Highways Traffic Law (Official Gazette dated 8.10.1983 and numbered 18195) Law on the Liberalization of Turkey Railway Transport (Official Gazette dated 01.05.2013 and numbered 28634) Regulation on Transportation of Hazardous Substances (Official Gazette dated 24.04.2019 and numbered 30754) Communique on Dangerous Goods Safety Consultancy (Official Gazette dated 22.05.2014 and numbered 29007) Highways Traffic Regulation (Official Gazette dated 18.07.1997 and numbered 23053) Regulation on Road Infrastructure Safety Management (Official Gazette dated 21.10.2018 and numbered 30572)

In addition to national laws and regulation, project related International Conventions and Treaties, which are already signed by Turkey, are listed below;

- Paris Agreement, 2015 (Turkey 2021)
- Stockholm Convention on Persistent Organic Pollutants, 2001 (Turkey 2001),
- European Landscape Convention, Florence 2000 (Turkey 2003),
- Convention on Biological Diversity, Rio de Janeiro 1992 (Turkey 1996),
- United Nations Framework Convention on Climate Change, 1992 (Turkey 2004),
- Kyoto Protocol to the United Nations Framework Convention on Climate Change, 1992 (Turkey 2009),
- Montreal Protocol on Substances that Deplete the Ozone Layer, 1987 (Turkey 1990),
- Vienna Convention for the Protection of the Ozone Layer, 1985 (Turkey 1990),
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES Convention, Turkey 2001),
- Convention on the Conservation of European Wildlife and Natural Habitats, Bern 1979 (Turkey 1984),
- Convention concerning the Protection of the World Cultural and Natural Heritage, Paris 1972 (Turkey 1983),
- International Convention for the Protection of Birds, Paris 1959 (Turkey 1966),
- 1983 Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) and Agreement (bird and mammals and their habitats, 1994),

- 1971 International Convention on Wetlands of International Importance especially as Waterfowl Habitat (RAMSAR Convention) and the as amended by 1982 Protocol,
- 1951 International Plant Protection Convention,
- 1950 International Convention for the Protection of Birds,
- 1979 Convention on Long-range Transboundary Air Pollution and its protocols,
- 1998 Aarhus Convention on the Access to Information, Public Participation in Decision-Making, and Access to Justice in Environmental Matters,
- 1989 ILO Convention Concerning Indigenous and Tribal Peoples in Independent Countries.
- ILO Convention: C182 Worst Forms of Child Labour Convention, 1999
- ILO C148, Working Environment (Air Pollution, Noise and Vibrations) Convention, 1977)

Lender guidelines to be adopted by the Project is presented in Table 4-2.

Table 4-2. International Finance Institutions' Requirements

International Finance Institutions' Requirements	
UK Export Finance (UKEF)	Impact Assessments and Environmental and Social Management Plans produced by the project sponsor against host country laws and the relevant international standards, typically the International Financial Corporation (IFC) Performance Standards (PSs). UKEF, also adopted the Equator Principles. Similarly, Equator Principles refers to IFC Performance Standards on Environmental and Social Sustainability and the World Bank Group Environmental, Health and Safety Guidelines for the project type (Toll Roads), which is of concern for financial support.
IFC Requirements	IFC requires the Project Parties to carry out an environmental and social assessment of Project-related impacts according to the PSs as; PS 1: Assessment and Management of Environmental and Social Risks and Impacts PS 2: Labour and Working Conditions PS 3: Resource Efficiency and Pollution Prevention PS 4: Community, Health Safety and Security PS 5: Land Acquisition and Involuntary Resettlement PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources PS 7: Indigenous Peoples PS 8: Cultural Heritage;
Equator Principles	The Principles comprise a set of ten broad principles that are underpinned by the environmental and social policies, standards and guidance of the IFC as follows; Principle 1: Review and Categorization; Principle 2: Environmental and Social Assessment; Principle 3: Applicable Environmental and Social Standards; Principle 4: Environmental and Social Management System and Action Plan; Principle 5: Stakeholder Engagement; Principle 6: Grievance Mechanism; Principle 7: Independent Review; Principle 8: Covenants Principle 9: Independent Monitoring and Reporting; and Principle 10: Reporting and Transparency

In addition, the following Guidelines of the IFC, which are deemed relevant to the Project, have been followed during the preparation of the ESMMP study:

- General EHS General Guidelines (2007),
- EHS Guidelines for Railways (2007),
- EHS Guidelines for Construction Materials Extraction (2007)

5 ENVIRONMENTAL AND SOCIAL MANAGEMENT SYSTEM (ESMS)

PIU shall prepare an overarching corporate level ESMS to cover all projects receiving international financing, which will be applicable to the Project. The key environmental and social requirements for the Contractor(s) to implement will be set out during the Contractor selection process, for inclusion in the Contractor ESMS (as required in the CMP).

The Contractor will be responsible for implementing an ESMS that is in line with international standards, the Lender requirements, and PIU's corporate ESMS.

The Contractor will need to fulfil national legislation requirements, and the performance requirements of the Lenders as set in the CMP. Project EHSS requirements include:

- The Lenders Environmental and Social Requirements;
- International Conventions and Protocols Turkey is a party to;
- World Bank Group Environmental, Health, and Safety (EHS) Guidelines; and
- National legislative requirements, including all permits, licenses and approvals.

If, and when, national regulations differ from international substantive environmental standards, the Project will be expected to meet the most stringent of these.

5.1 Environmental and Social Management and Monitoring

Monitoring will be conducted for the Project activities to confirm effectiveness of management and mitigation measures within the ESMMP to ensure compliance with Project standards (national legislation and IFC/WB performance standards).

Periodical monitoring will be conducted during the life of the Project to confirm the effectiveness of the management plans. A reporting mechanism for the monitoring results is essential and will ensure the review of the Project seniors and lenders. The ESMMP Audit Reports shall cover the status of ES&H -related aspects such as permits, status of compliance with obligations arising from licenses or permits, non-compliance with regulatory environmental standards with root cause analysis, corrective measures, as well as conformance with the ESMMP. The audits must address the performance of both the Project Owner and the Contractor or its Subcontractors.

A management and monitoring plan has been prepared for the construction, construction and operation phases of the Project in below. In addition, activities and plans for design phase is also given in below.

5.1.1 Environmental and Social Management

5.1.1.1 Activities and Plans for Design Phase

Ref No	Issue	Action	Responsibility	Reporting	Indicator
Project Planning Phase					
PF1	Environmental Social Management System (ESMS)	<p>AYGM shall set up a PIU, who will be responsible for implementing AYGMs corporate ESMS in relation to the Project.</p> <p>The key Environmental and Social commitments in the ESMS will be set out in the contract of Contractor, for inclusion in the Contractor ESMS.</p>	Preparation – PIU ; and Approval - AYGM Senior Management.	PIU; and Reported to the Lenders in monthly ESHS reports.	<ul style="list-style-type: none"> Auditing and approval of the ESMS.
PF2	Environmental, Health, Safety and Social (EHS&S) Incident Report Procedure	Set up, maintain and continually review an EHSS Incident Reporting Procedure (or equivalent) to ensure accidents and incidents are accurately recorded, maintained and reported. The procedure must be fully integrated into the Project and communicated to the contractor, who will have clearly specified responsibilities.	Preparation – PIU; and Approval - AYGM Senior Management.	<p>PIU to report to the Lenders on incidents in the monthly EHSS Report; and</p> <p>Measures to remedy non-compliance to be discussed with Construction Supervisor and agreed by PIU.</p>	<ul style="list-style-type: none"> Establishment of PIU incident reporting procedure, and inclusion of requirements in the contract of Contractor.
PF3	Stakeholder Engagement Plan (SEP)	<p>PIU, with support from the Contractor, will implement the SEP.</p> <p>The SEP is a public document which sets out PIU's commitments to stakeholder engagement, consultation and disclosure activities in connection with the Project</p>	Preparation – PIU; and Approval - AYGM Senior Management.	<p>PIU to provide monthly report to the Lenders; and</p> <p>Measures to remedy non-compliance to be discussed with Construction Supervisor approved by Senior Management of PIU.</p>	<ul style="list-style-type: none"> SEP elaborated into a detailed SEP. Appointment of CLOs.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
PF4	Project-level Grievance Mechanism (GM)	The Project Grievance Mechanism Process, as set out in the SEP will be implemented by the PIU, with support from the Contractor.	Preparation – PIU; and Approval - AYGM Senior Management.	PIU to provide monthly report to the Lenders; and Measures to remedy non-compliance to be discussed with Construction Supervisor and approved by Senior Management of PIU.	<ul style="list-style-type: none"> Establishment of GM and feedback service.
PF5	Biodiversity Management Plan	Implement the Biodiversity Management Plan (BMP).	Implementation Contractor.	PIU Monthly reporting on BMP action / monitoring outcomes; ECoW approval reports that confirm alignments have been checked and cleared prior to access; and Updates included in monthly EHSS progress reports to the Lenders.	<ul style="list-style-type: none"> Outline BMP Plan approved and made available to the Contractor.
PF6	Contractor Management Plan (CMP)	Implement the requirements in the CMP during Construction. The CMP is a live document, any changes occurring in relation to the requirements for the Contractor will need to be updated.	Preparation PIU; and Implementation - PIU / Contractor.	PIU Measures to remedy non-compliance to be discussed with Construction Supervisor and approved by Senior Management of PIU. Updates included in monthly EHSS progress reports to the Lenders.	<ul style="list-style-type: none"> Contractor undertakes construction in accordance with the requirements in the CMP.
PF7	Emergency Response Framework (ERF) and	Implement the Emergency Response Framework (ERF), which covers all activities that have the potential to generate emergency events during construction and operation.	Construction – PIU to approve ERPs prepared by the Contractor and oversee implementation; and	PIU Any requests for changes to the ERF must be addressed to	<ul style="list-style-type: none"> Contractor (construction) TCDD / (operation), elaborates the ERF to prepare

Ref No	Issue	Action	Responsibility	Reporting	Indicator
	Emergency Response Plans (ERPs)	<p>The ERF is applicable to all Project facilities (e.g. construction work areas, construction compounds, train stations, etc.), Project personnel (AYGM the Contractor and their Sub-Contractors involved in the Project, and all authorised visitors to the Project).</p> <p>PIU will be responsible for approving the Emergency Response Plans prepared by the Contractor and will ensure its implementation.</p>	Operation - TCDD to elaborate and implement.	<p>PIU during construction and will be subject to their review and approval.</p> <p>Updates provided in monthly EHSS progress reports to the Lenders.</p>	<p>Emergency Response Plans.</p> <ul style="list-style-type: none"> Contractor / TCDD / implement the requirements in the ERF.
PF8	Resettlement Action Plan (RAP)	<p>Implement the RAP during pre-construction, construction and operation, to ensure that project-affected peoples (PAPs) and communities are properly resettled and compensated for any losses, in a manner such that their well-being is restored to at least pre-Project levels.</p> <p>The RAP identifies eligible persons, types of impacts and entitlements to be provided, supported by the stakeholder engagement included in the SEP.</p>	<p>PIU (Social Specialist and Resettlement Specialist) with support from</p> <p>CLOs, external independent monitoring consultant and other</p> <p>Contractor (Expropriation Specialist).</p> <p>Operation - TCDD</p>	<p>Updates provided in monthly EHSS progress reports to the Lenders.</p> <p>PIU, with review from external independent monitoring consultant, will prepare bi-monthly reports on performance monitoring (internal monitoring) to the Lenders.</p> <p>External independent monitoring consultant and CLOs will prepare a 6- monthly report on Impact monitoring (external monitoring) to the Lenders</p> <p>External independent monitoring consultant to prepare a completion audit and long-term review on completion of RAP timetable as agreed between PIU and Lenders, and yearly for 3 years post-completion.</p>	<ul style="list-style-type: none"> RAP implemented in accordance with requirements, as confirmed by the monitoring and completion audit.
PF9	Land Delivery Protocol	Develop and implement the Land Delivery protocol to transfer land acquired by AGMY/TCDD to the Contractor, as required in the RAP.	Develop and implement the Land Delivery protocol to transfer land acquired by AGMY/TCDD to the	PIU, with review from external independent monitoring consultant, will prepare bi-monthly reports on	<ul style="list-style-type: none"> RAP implemented in accordance with requirements, as confirmed by the

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<p>Land delivery will be regulated by a Land Delivery Protocol that will be signed by the representatives of PIU and the Contractor. The Land Delivery Protocol shall clearly identify each land parcel in the expropriation corridor and/or any other sites that shall be transferred to the Contractor.</p> <p>The Land Delivery Protocol shall contain the following attachments:</p> <ul style="list-style-type: none"> Land acquisition drawings identifying the exact location of the Project alignment and centreline, the boundaries of the acquired expropriation corridor that are subject to transfer, the identification of parcel boundaries and land parcel numbers for all land affected land parcels; List of coordinates to allow the setting out of the expropriation corridor boundaries in the field; and List of landowners and land users or tenants for all transferred land parcels. <p>In cases that land acquisition activities have not yet been completed for individual land parcels within a section of the expropriation corridor subject to delivery to the Contractor, these individual land parcels shall be listed on the relevant Land Delivery Protocol and upon availability shall then be transferred by another, individual Land Delivery Protocol.</p> <p>The Contractor shall under no circumstances enter into land that has not been delivered through a Land Delivery Protocol or for which they have established rights through a rental agreement with the relevant landowner.</p>	<p>Contractor, as required in the RAP.</p> <p>Land delivery will be regulated by a Land Delivery Protocol that will be signed by the representatives of PIU and the Contractor. The Land Delivery Protocol shall clearly identify each land parcel in the expropriation corridor and/or any other sites that shall be transferred to the Contractor. The Land Delivery Protocol shall contain the following attachments:</p> <ul style="list-style-type: none"> Land acquisition drawings identifying the exact location of the Project alignment and centreline, the boundaries of the acquired expropriation corridor that are subject to transfer, the identification of parcel boundaries and land parcel numbers for all land affected land parcels; 	<p>performance monitoring (internal monitoring) to the Lenders.</p> <p>External independent monitoring consultant and CLOs will prepare a 6- monthly report on Impact monitoring (external monitoring) to the Lenders</p> <p>External independent monitoring consultant to prepare a completion audit and long-term review on completion of RAP timetable as agreed between PIU and Lenders, and yearly for 3 years post-completion.</p> <p>Updates provided in monthly EHSS progress reports to the Lenders.</p>	<p>monitoring and completion audit.</p>

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		The Contractor will then follow the Land Entry Protocol.			
PF10	Labour Management and Monitoring	<p>To reduce and mitigate effects associated with child labour, forced labour and employment relations, the following measures will be implemented:</p> <ul style="list-style-type: none"> PIU will document their human resources policy and procedures, ensuring they are in line with both national legislation, applicable ILO standards and recommendations and PR2. PIU will ensure that the Project construction tendering process includes clauses and policies on minimum working age, normal working hours, freedom to collective bargaining, good working conditions, supply chain management, and measures to eradicate the risk of forced labour. 	Preparation – PIU; and Approval – PIU Senior Management	Updates provided in monthly EHSS progress reports to the Lenders.	<ul style="list-style-type: none"> Human resources policy and procedures are aligned with both national legislation, applicable ILO standards and recommendations and PR2; and Construction tendering process includes clauses and policies on minimum working age, normal working hours, freedom to collective bargaining, good working conditions, supply chain management, and measures to eradicate the risk of forced labour.
Pre-Construction Phase (Design)					
PCD-1	Management of Change Procedure (MCP)	<p>Establish a Management of Change Procedure (MCP) which is aligned with the design finalisation, any design changes required during construction or other changes during construction, including any additional land which is required outside of the expropriation corridor.</p> <p>Where relevant, MCP to include the methodology for the assessment and identification of any additional mitigation measures that are required to manage the</p>	Implementation Contractor; and Approval – PIU	- PIU Updates / design changes to be provided / notified in monthly EHSS progress reports to the Lenders.	<ul style="list-style-type: none"> MCP in place; and Management of design change report produced, and assessment of changes undertaken, as required.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<p>EHSS impacts and ensure continued compliance with the Project EHSS requirements.</p> <p>The MCP shall be submitted for approval within 30 days of the contract commencement date</p> <p>Undertake consultation on the design finalisation, and any design changes that have the potential to result in impacts on the local communities.</p>			
PCD-2	Cultural Management Plan (CMP)	Implement relevant measures in the CMP during the development of the final design and construction.	Implementation Contractor.	- PIU to report to the Lenders on incidents in the monthly EHSS Report	<ul style="list-style-type: none"> CMP measures implemented during the development of the final design and construction.
PCD-2	BMP Design Mitigation Measures	<p>The Design Mitigation Measures in the BMP will be included in the design.</p> <ul style="list-style-type: none"> Adapted fencing with poles Animal underpasses and mammal ledges within culverts and Anti-perching structures on catenary structures 	Implementation Contractor.	- PIU to report to the Lenders on incidents in the monthly EHSS Report	<ul style="list-style-type: none"> Design Mitigation Measures in the BMP included in the final design.
PCD-3	Railway Safety Plan	Implement the design related measures in the Railway Safety Plan including the development of a Hazard Log, during the development of the final design.	Implementation Contractor.	- PIU to report to the Lenders on incidents in the monthly EHSS Report	<ul style="list-style-type: none"> Compliance with Railway Safety Plan.
PCD-4	Surface Water Design Measures	<p>Ensure the design of all watercourse crossings and drainage systems will have sufficient capacity for a Q100 flood event, the ESIA identified high risk areas.</p> <p>Ensure the Project will be located above the maximum level of water within surface water sources.</p> <p>Once the extent of impermeable surfaces is known, undertake a detailed assessment and, if required,</p>	Implementation Contractor.	- PIU to report to the Lenders on incidents in the monthly EHSS Report	<ul style="list-style-type: none"> Detailed Hydrological assessment covering the noted issues. Measures included in design.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<p>provision of attenuation to reduce rate and volume of increased runoff from impermeable surfaces.</p> <p>Further consideration to potential impacts to fluvial floodplain storage and conveyance in high risk areas, and provision of appropriate mitigation such as flood relief culverts beneath embankments or reprofiling of low- vulnerability land to provide compensation, i.e. to create additional flood storage capacity (for example agricultural land) in agreement with the relevant land owners.</p> <p>Set back bridge piers from within watercourse where possible to remove any impacts on flow conveyance. Piers within watercourses designed to reduce displacement of water.</p> <p>Bridge piers have been designed to reduce scour with the design foundation level for the piers being at least 1m below the lowest identified point in the bed of the watercourse. Provision of scour protection measures to the piers, which could include rock armour, concrete bagwork and concrete scour mattress.</p> <p>Further consideration to flood risk to the Project from adjacent fluvial floodplains. If the operational risks are not considered acceptable to the potential impact on train service interruption the Project may need to be raised above adjacent ground level or other flood defence / management measures installed to improve the resilience of the Project.</p> <p>Further consideration of the potential effects of climate change to flood flows and the extent/depth of the floodplain.</p> <p>Provision of erosion control upstream and downstream of all watercourse crossings to prevent</p>			

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<p>scour and impact to watercourse hydromorphology and geomorphology (e.g. rock armour, concrete bagwork and concrete scour mattress).</p> <p>Further consideration of stability risks where the Project is located in close proximity to watercourses.</p> <p>Obtain agreement from the relevant DSi Regional Directorates for any changes to existing drainage systems or increase in wastewater discharge, and/or any changes to existing water supply systems or increase in water demand.</p>			
PCD-5	Potential Impact on Soil Erosion due to Construction Activities	<p>The detailed design of the Project will incorporate the following measures to reduce the likely release of loose material or material with the potential to become loose in- situ:</p> <ul style="list-style-type: none"> ○ Slope stabilisation - including mulching (straw mulching), brushwood mulching, erosion control blankets (protective nets), soil binders (e.g. polyacrylamide), hydro-seeding and gravelling; ○ Retaining walls - to retain loose materials on slopes where it would not naturally be held, for example on near vertical or vertical slopes; ○ Sediment traps and basins - which will intercept and retain sediment-laden runoff; ○ Drainage channels - which will divert run-off water; ○ Treatment systems - to remove material contained within the run-off water; and ○ Revegetation - to increase the stability of the loose materials and surfaces which become exposed during the construction phase of the Project 	Implementation Contractor.	- PIU to report to the Lenders on incidents in the monthly EHSS Report	<ul style="list-style-type: none"> • Measures included in the design

Ref No	Issue	Action	Responsibility	Reporting	Indicator
PCD-5	Potential Effects on Groundwater Quality, Flow, and Recharge	<p>Contractor to undertake the following studies and investigations to inform the final design:</p> <ul style="list-style-type: none"> Foundation Risk Assessments and Piling Risk Assessments for bridges, viaducts, overpasses, underpasses and cut and cover tunnels. They should be used to develop measures to protect groundwater resources as part of the design and during construction. 	Implementation Contractor.	- PIU to report to the Lenders on incidents in the monthly EHSS Report	<ul style="list-style-type: none"> Measures included in the design.
PCD-6	Design Standards	The Project will comply with applicable national design standards, which include Eurocodes, this will include designing appropriate environmental parameters (flood, wind, lightning, ground stability) including climate change. Design standards apply to controls and systems and civil infrastructure	Implementation Contractor.	- PIU to report to the Lenders on incidents in the monthly EHSS Report	<ul style="list-style-type: none"> Design complies with design standards.
PCD-7	Noise and Vibration Design Mitigation	<p>The Project benefits from cuttings at sensitive locations. These structures will provide a noise level reduction of between 5 and 10 dB when line-of-sight is obstructed.</p> <p>Noise barriers have been modelled and predicted to be installed in the following locations:</p> <ul style="list-style-type: none"> Akdeniz, 0+750-1+300, Height 3m Akdeniz, 3+500-3+900, Height 3m Akdeniz, 3+600-4+000, Height 3m Akdeniz, 4+450-4+550, Height 3m Akdeniz, 4+400-5+000, Height 3m Akdeniz, 5+500-6+000, Height 3m Akdeniz, 6+000-6+250, Height 3m Akdeniz, 6+800-7+000, Height 3m Akdeniz, 7+600-7+850, Height 3m Akdeniz, 8+050-8+200, Height 3m Akdeniz, 7+750-8+950, Height 3m Akdeniz, 13+000-13+250, Height 3m Akdeniz, 18+600-20+000, Height 3m Tarsus, 40+250-40+900, Height 3m 	Implementation Contractor.	- PIU to report to the Lenders on incidents in the monthly EHSS Report	<ul style="list-style-type: none"> Noise mitigation is included in the design.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<ul style="list-style-type: none"> Tarsus, 41+650-43+200, Height 3m Tarsus, 42+000-43+100, Height 3m Seyhan, 350+800-351+400, Height 3m Seyhan, 367+650-368+050, Height 3m Ceyhan, 404+200-404+750, Height 3m Ceyhan, 410+900-411+150, Height 3m Ceyhan, 411+150-411+300, Height 3m Ceyhan, 441+400-441+600, Height 3m Toprakkale, 446+600-447+000, Height 3m Toprakkale, 448+400-448+850, Height 3m Hasanbeyli, 2+800-3+150, Height 3m Hasanbeyli, 6+850-7+100, Height 3m Düziçi, 41+400-42+300, Height 3m Bahçe, 3+000-3+650, Height 3m Nurdağı, 13+500-14+500, Height 3m Nurdağı, 13+500-14+500, Height 3m Nurdağı, 16+300-78+300, Height 3m Nurdağı, 96+150-96+300, Height 3m Nurdağı, 97+000-97+600, Height 3m Nurdağı, 97+80-98+800, Height 3m <p>Noise barriers should comply with the design requirements set in BS EN 1793:1998, Road traffic for noise reducing devices - Test method for determining the acoustic performance, Part 2, or equivalent. The airborne sound insulation for the barrier panels should be at least 24 dB.</p> <p>The Contractor should undertake optimisation of the noise barriers (height and length), to refine their dimensions and locations.</p> <p>Vibration impact have been modelled and at following locations rail pads are suggested to intalled in order to minimize the vibration impact to surrounding builds and structures:</p>			

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<ul style="list-style-type: none"> Tarsus, 27+100 - 27+500 Tarsus, 28+200 - 28+500 Tarsus, 41+700 - 42+000 Seyhan, 367+550 - 368+000 Seyhan, 368+250 - 368+600 Toprakkale, 447+200 - 447+500 Hasanbeyli, 2+900 - 3+050 Nurdağı, 16+550 - 16+700 Şehitkamil, 124+650 - 125+000 			
PCD-8	Resource Management	<p>Set out the specification of recycled and secondary content in imported materials;</p> <p>Consider the use of low-carbon cement, where it meets the required specifications;</p> <p>Demonstrate the reduction in GHG that has been achieved through the detailed design and selection of materials.</p> <p>Ensure the Project is designed for deconstruction and disassembly;</p> <p>Identify materials and products that afford higher sustainability performance than typical industry standards;</p> <p>Materials will be selected that are able to withstand temperatures up to 6°C hotter than current temperatures; and</p> <p>Selected materials will be able to withstand scour.</p>	<p>Implementation Contractor</p> <p>Approval – PIU</p>	- PIU to report to the Lenders on incidents in the monthly EHSS Report	<ul style="list-style-type: none"> The recycled and secondary content in imported materials is specified. The Project is designed for deconstruction and disassembly. Materials and products that afford higher sustainability performance than typical industry standards are used.
PCD-9	Micro-Routing	As required in the RAP, the Contractor will need to consider the implementation of the outlined micro-routing to reduce the number of people who will be affected by expropriation.	<p>Implementation Contractor</p> <p>Approval – PIU</p>	- PIU to report to the Lenders on incidents in the monthly EHSS Report	<ul style="list-style-type: none"> Micro-routing report with recommendations and justification for final proposed routing.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
Pre-Construction					
PC-1	Development of a Construction ESMMP (CESMP)	<p>The Contractor will elaborate the ESMMP to prepare a CESMP which must be aligned with the PIUs ESMS;</p> <p>The CESMP will be submitted to the PIU and PIU for approval at least 30 days prior to taking possession of any work site. No access to the Site will be allowed until the CESMP is approved by the PIU and the PIU; The commencement of construction in each area shall be authorised by the PIU and the PIU only after non-objection of the related specific EHSS management procedures.</p> <p>The CESMP will include the Management of Procedure (MCP) established during the finalisation of the design;</p> <p>New topic specific or site specific ESMMPs may also need to be developed by the Contractor during the construction phase or the CESMP updated. These new/updated plans will also need to be approved by the PIU and the PIU;</p> <p>As part of the CESMP, the Contractor will need to liaise with the contractors of any adjacent construction projects (with the support of AYGM / PIU, if required), to reduce the potential for cumulative effects; and</p> <p>The CESMP will include a requirement to implement the CMP, RAP, SEP and RSP during construction</p> <p>The Contractor will ensure that adequate resources are mobilised to implement the CESMP, including input from any specialist resources necessary to ensure effective planning and implementation of measures.</p>	<p>Preparation - Contractor; and</p> <p>Approval - PIU</p>	<p>The Contractor will prepare monthly reports for the PIU on the status of the CESMP and EHSS performance; and</p> <p>PIU will prepare monthly EHSS reports for the Lenders, drawing on the Contractors monthly reports.</p>	<ul style="list-style-type: none"> Contractor's CESMP approved by PIU

Ref No	Issue	Action	Responsibility	Reporting	Indicator
PC-2	Development of sub-plans of the CESMP	<p>Prior to the start of works and as part of the CESMP the Contractor shall prepare the following plans in line with the Lenders requirements and national legislation, this ESMMP and the PIU ESMS:</p> <ul style="list-style-type: none"> Construction Biodiversity Management Plan (which elaborates the BMP); Construction Emergency Response Plan (which elaborates the ERF); Design Change and Management Procedure; Supply Chain Management Plan; Air Quality and Dust Management Plan; Construction Traffic Management Plan; Construction Travel Plan; Construction Compound Selection and Management Plan; Construction Worker's Accommodation Management Plan; Cultural Heritage Management Plan; Landscape Management Plan (and Landscape / Planting Plans); Noise and Vibration Management Plan; Waste Management Plan and Materials Management Plan; Health, Safety and Security Plan; Surface Water Management Plan; Spoil Management Plan; Construction and Design Risk Register; Employment Plan; Labour Management and Monitoring Plan; Risk Assessments and Method Statements; Training Plan; and Workforce Demobilisation Plan 	<p>Preparation - Contractor; and</p> <p>Approval - PIU</p>	PIU to prepare monthly progress reports, signed off by the PIU, for the Lenders.	<ul style="list-style-type: none"> Sub-plans approved as part of the Contractor CESMP.
PC-3	Construction Biodiversity Management Plan	<p>The Contractor will elaborate the BMP to prepare and implement the full BMP throughout construction. The BMP is a live document and should be updated to reflect increased understanding of Project</p>	<p>Preparation / Implementation Contractor; and</p>	<p>PIU</p> <p>Monthly reporting on BMP action / monitoring outcomes;</p>	<ul style="list-style-type: none"> Preparation and implementation of a Construction BMP.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		programme and design, and should be informed by any new information which may be obtained from ecology pre-construction surveys, invasive plant species surveys, botanical surveys, and any other ongoing/pre-construction surveys, or from relevant Project stakeholders.	Approval - PIU	ECOW approval reports that confirm alignments have been checked and cleared prior to access; and Updates included in monthly EHSS progress reports to the Lenders	
PC-4	Construction Compound - Site Selection and Management Plan	<p>The Contractor will be responsible for negotiating agreements with landowners, to temporarily use land for construction compounds and construction access in accordance with the RAP.</p> <p>Site of construction compounds will be selected in consultation with affected communities, as required in the SEP.</p> <p>Construction compounds are required to be located away from sensitive receptors to minimise any adverse impacts as a result of construction activities, using the Construction Compound Site Selection criteria, which is as follows:</p> <ul style="list-style-type: none"> ○ Not currently used for residential or commercial purposes; ○ At least 1 km from any residential areas; ○ At least 50m from any surface watercourse; ○ At least 2km from any internationally or nationally protected area; and ○ Situated in areas where there are no known heritage assets. <p>Any deviation from these separation distance must be supported by sufficient justification and additional mitigation measures, and the location and mitigations must be approved by the PIU.</p> <p>The Contractor will be responsible for the provision of utilities (water, electricity and plumbing).</p>	<p>Preparation / Implementation - Contractor; and Approval - PIU</p>	The PIU will arrange independent audits and inspections of the construction sites and construction compounds every 6 months to ensure compliance with both national legislation and applicable ILO standards and recommendations.	<ul style="list-style-type: none"> • Preparation and implementation of a Construction Compound Selection and Management Plan.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<p>wastewater and waste management as well as telecommunications to construction compounds.</p> <p>Foul drainage from construction compounds / construction workers accommodation must be disposed of appropriately, with robust treatment and according to the requirements of the Regulation on Control of Water</p> <p>Pollution and with required agreements obtained from the DSI Regional Directorates.</p> <p>Provision of water to the construction compounds will be done in accordance with the Regulation on the Quality and Treatment of Water Intended for Potable Water Supply and as agreed with the relevant DSI Regional Directorates.</p> <p>The Contractor will provide private site security for the construction compounds, in co-ordination the General Directorate of Security.</p> <p>The Contractor will conduct due diligence investigations for all their security personnel to make sure they have the appropriate permits / licencing from the Ministry of Internal Affairs, training and experience, they will also be given the training set out in the Training Plan.</p> <p>The Contractor will ensure all dirt and debris are cleaned on construction sites.</p> <p>Upon completion, areas used as construction compounds will be returned to their original use and state, prior to being returned to the landowner via the land exit protocol.</p> <p>The Construction Workers Accommodation will meet the requirements..</p>			

Ref No	Issue	Action	Responsibility	Reporting	Indicator
PC-5	Land Entry Protocol	<p>Implement the following land entry protocol, as required in the RAP:</p> <ul style="list-style-type: none"> Following the possession of the site by the Contractor through either the Land Delivery Protocol, or rental agreement, the Contractor shall notify the affected landowners and/or tenants and sign a Land Entry Protocol at least 3 days prior to physically entering any land in the expropriation corridor. The Land Entry Protocol shall be signed between the landowner/land user of the land and the representative of the Contractor, being witnessed by representatives of AYGM and the Mukhtar; Once the Land Entry Protocol has been signed, the Contractor will stake out the construction site and prepare construction plans and procedures to be submitted to AYGM; and For land, which is being use temporarily for construction activities, via a rental agreement, records should be taken to document the existing condition of the land, and a commitment made to re-reinstate land to the existing condition, or better 	<p>Implementation Contractor; and</p> <p>Approval - PIU</p>	<p>Quarterly monitoring by the external RAP Monitoring consultant, appointed by the PIU.</p> <p>Completion Audit and Long-Term Review.</p> <p>Updates provided in monthly EFISS progress reports to the Lenders.</p>	<ul style="list-style-type: none"> RAP implemented in accordance with requirements, as confirmed by the monitoring and completion audit.
	Land Exit Protocol	<p>Implement the following land exit protocol, as required in the RAP.</p> <p>The Contractor is responsible for the return of the land temporarily used to its original state and to the original owner and/or land tenant.</p> <p>The return of the land shall be documented in a Land Exit Protocol that shall be concluded between the Contractor and the original owner and/or the land tenant and witnessed by AYGM.</p>	<p>Implementation Contractor, with AYGM responsible for providing the information pamphlet</p>	<p>Updates provided in monthly EHSS progress reports to the Lenders.</p> <p>AYGM, with review from external independent monitoring consultant</p>	<ul style="list-style-type: none"> RAP implemented in accordance with requirements, as confirmed by the monitoring and completion audit.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<p>In the Land Exit Protocol, it will be confirmed by the landowner/tenant that all eventual claims of the landowner or tenant towards the Contractor have been addressed and settled. During the land exit, the landowner/tenant shall receive and confirm the receipt of an information pamphlet or paper provided by AYGM addressing the operation and emergency procedures for the Project and specifically any restrictions that may be imposed onto the land.</p> <p>The process is presented below:</p> <ul style="list-style-type: none"> ○ Completion of all construction, installation and testing works and site clean-up works; ○ Completion of all reinstatement work (e.g. slope stabilisation and erosion and surface reinstatement); ○ Formal Request for Land Exit by Contractor with completion of works to AYGM's Social and Resettlement Specialist; ○ Distribution of land re-use conditions pamphlet to landowners/land users; and ○ Signing of Land Exit Protocol with landowner/land user in the presence of AYGM representative (e.g. CLO). ○ For land that is being permanently acquired for the Project, the Contractor will be responsible for the return of land to AYGM. The Land Exit Protocol for returning land to AYGM will consist of the following: <ul style="list-style-type: none"> ○ Completion of all construction, installation and testing works; ○ Completion of all site clean-up works to ensure the site is tidy and not contaminated; ○ Completion of all activities within the Landscape / ○ Planting Plan for revegetation; 			

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<ul style="list-style-type: none"> Agreement from AYGM that the site is in a suitable condition to be handed back. Signing of Land Exit Protocol between the Contractor and AYGM. 			
PC-6	Construction Emergency Response Plan (based on the ERF)	<p>The Contractor shall elaborate the ERF, which provides an overarching framework to be used to identify and manage potential emergency events, to prepare the Construction Emergency Response Plan (ERP).</p> <p>The Construction ERP will be reviewed after any emergency event or training exercise to provide opportunity for continual improvements.</p>	Preparation - Contractor (Health and Safety Lead).	<p>Contractor to provide weekly progress report to the PIU.</p> <p>PIU to prepare monthly progress reports, signed off by the PIU, for the Lenders.</p>	<ul style="list-style-type: none"> Construction ERP approved by the PIU prior to construction and implemented during construction.
PC-7	Supply Chain Management Plan	<p>The Contractor shall ensure that:</p> <ul style="list-style-type: none"> All EHSS requirements for the Contractor, including Lender's requirements, Turkish legislation and the Project EHSS requirements, will apply to subcontractors; All sub-contractors will be supplied with copies of the CESMP, CESMP sub-plans, CMP and plans with EHSS requirements, as identified in the CMP; and All sub-contractors will be required to appoint a safety representative who will be available on the Site throughout the contract period, unless the PIU gives the sub-contractor exemption from this in writing. <p>The Supply Chain Management Plan will also require the Contractor to:</p> <ul style="list-style-type: none"> Ensure that all sub-contractors have human resources policies and procedures on minimum working age, normal working hours, freedom to collective bargaining, good working conditions and eradicating risks of forced labour; 	<p>Preparation - Contractor; and</p> <p>Approval - PIU.</p>	<p>Contractor to provide weekly progress report to the PIU. Undertake 6 monthly monitoring of suppliers.</p> <p>PIU to prepare monthly progress reports, signed off by the PIU, for the Lenders.</p>	<ul style="list-style-type: none"> Supply Chain Management Plan is approved by the PIU / PIU and reported to the Lenders; and Provisions are included in all sub-contractor agreements

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<ul style="list-style-type: none"> Ensure sub-contractors have employment contract for all permanent and temporary employees in accordance with Labour law. and Undertake regular (every 6 months) monitoring of suppliers to avoid risks associated with child labour and forced labour. 			
PC-8	Air Quality and Dust Management Plan (AQ&DMP)	<p>In line with the mitigation measures expressed in this ESMMP, the Contractor will prepare an AQ&DMP, which will include a requirement for monitoring of dust deposition, dust flux, real-time PM10 monitoring and/or visual inspections;</p> <p>Daily on-site inspections to monitor compliance with the AQ&DMP will be carried out and results recorded.</p>	<p>Preparation / Implementation - Contractor</p> <p>Approval - PIU</p>	<p>Contractor.</p> <p>Liaison with affected communities (CLOs), as required in the SEP.</p> <p>PIU to prepare Monthly progress reports, signed off by the PIU, for the Lenders.</p>	<ul style="list-style-type: none"> Plan approved by PIU; and Plan implemented by Contractor.
PC-9	Construction Traffic Management Plan	<p>The Contractor will prepare a Construction Traffic Management Plan (CTMP) to ensure all construction works, logistics and travel movements are planned to enable them to be delivered safely and in a manner that minimises congestion, road safety risks and disruption to all road users and local access.</p> <p>The CTMP will set out mitigation measures provided in this ESMMP to control the logistics of construction traffic, including criteria to ensure the Contractor selects suitable access and construction access routes for the site traffic.</p>	<p>Preparation / Implementation - Contractor; and</p> <p>Approval - PIU</p>	<p>Liaison with affected communities (CLOs) and Mukhtars, as required in the SEP.</p> <p>PIU to prepare monthly progress reports, signed off by the PIU, for the Lenders.</p>	<ul style="list-style-type: none"> Plan approved by PIU; and Plan implemented by Contractor.
PC-10	Construction Travel Plan	<p>A Construction Travel Plan that ensures the provision of transport for the workforce to the worksite to minimise disruption, health and safety risks and emissions. As a minimum this shall include:</p> <ul style="list-style-type: none"> Provisions of buses to transfer workers from the workers accommodation and from local communities to the work-site and back Minimise the number of private vehicles entering the construction compounds (where 	<p>Preparation / Implementation - Contractor; and</p> <p>Approval - PIU</p>	<p>PIU to prepare monthly progress reports, signed off by the PIU, for the Lenders.</p>	<ul style="list-style-type: none"> Plan approved by PIU; and Plan implemented by Contractor.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<p>the workers accommodation will be), or construction compounds of worksites</p> <ul style="list-style-type: none"> ○ Ensure there is sufficient car parking space at the workers accommodation and work site within the land allocated to the Project ○ Measures to ensure car-sharing or other sustainable travel (public transport, cycling, walking,) is promoted 			
PC-11	Construction Workers' Accommodation Management Plan	<p>Prior to the start of site works, the Contractor will be required to employ a HSE team who will develop a Construction Workers Accommodation Management Plan, informed by the Checklist for Worker's Accommodation given in CMP.</p> <p>The Construction Workers Accommodation Management Plan will include the following:</p> <ul style="list-style-type: none"> ○ Coordination of all accommodation site activities with neighbouring land uses; ○ The accommodation sites will be staffed and equipped with Accident and Emergency / Medical Emergency facilities for all workers, to avoid straining the available health facilities that serve local communities; ○ The plan will cover accommodation sites, as well as any sites considered as associated facilities, and will require due diligence and approval; ○ The plan will set out best practice measures, with a particular focus on the prevention of gender-based violence and the promotion of a gender-sensitive working environment; ○ It will set out the arrangements for the provision of utilities (water, electricity and plumbing), wastewater and waste management, as well as telecommunications; and ○ The construction camp shall be in compliance with all applicable national requirements and 	Preparation / Implementation - Contractor; and Approval - PIU	PIU to prepare monthly progress reports, signed off by the PIU, for the Lenders	<ul style="list-style-type: none"> • Plan approved by PIU; and • Plan implemented by Contractor.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<p>permits (e.g. environmental, water supply, wastewater discharge, electricity, access roads etc);</p> <ul style="list-style-type: none"> Back-up generators will be available in the event of an emergency; and The Contractor will be responsible for maintenance, clean-up and reinstatement of accommodation sites and respecting the rights of local land users, as per the land exit protocol. Demonstration of compliance with the below national requirements and IFC Guidance on Workers' accommodation: processes and standards (2009) <p>Accommodation for workers will meet the following standards under the OHS Law:</p> <ul style="list-style-type: none"> Be non-flammable. Be away from hazards created by the construction work. Have heating, cooling and ventilation systems, good illumination, and safe electrical installations, fire and lightening protection systems. Have sufficient width and sufficient number of tables and chairs, enough bedsteads, clean beds, blankets, a recreation room and lockers. Have an adequate shower, toilet, washbasin and cleaning equipment etc. Have good hygiene standards, with fresh drinking water, and separate cooking and eating areas. Have separate facilities for men and women. Have 24-hr security personnel and CCTV. 			
PC-12	Cultural Heritage	The CHMP will be used to inform all the requirements, procedures, resources and skills and	Preparation / Implementation -	Liaison with the Ministry of Culture and Tourism / Regional Directorate, as required in the SEP.	<ul style="list-style-type: none"> Plan approved by PIU and Plan implemented by Contractor.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
	Management Plan (CHMP)	<p>timeline needed to minimise adverse cultural heritage effects.</p> <p>The CHMP aims to minimise the chance of damage to heritage assets during construction and to present a methodology and procedure for adequately mitigating for 'chance finds' should they be discovered.</p> <p>The CHMP will outline the cultural heritage management principles and procedures to be followed during construction and operation in accordance with the Project's policies and Turkish legal requirements.</p> <p>The CHMP will include:</p> <ul style="list-style-type: none"> ○ A description of roles and responsibilities of AYGM and the Contractor. The Contractor will appoint a Qualified Archaeological Specialist, responsible for the CHMP implementation; ○ A procedure for a pre-construction walk-over to verify the findings of the walkover undertaken for this assessment and confirm no changes to assets has occurred; 	Contractor; and Approval - PIU	PIU to prepare monthly progress reports, signed off by the PIU, for the Lenders.	
PC-13	Landscape Management Plan	<p>The PIU / Contractor will prepare and implement a Landscape Management Plan (LMP) in line with the mitigation measures provided in this ESMMP in order to cover the activities regarding construction phase.</p> <p>The LMP will cover actions to suitably manage and maintain the growth and health of planting in year 1 (establishment), the first 5 years of growth (strengthening), and post 5-year longer-term typical management and maintenance requirements:</p>	Preparation / Implementation - Contractor; and Approval - PIU	PIU to prepare monthly progress reports, signed off by the PIU, for the Lenders.	<ul style="list-style-type: none"> • Plan approved by PIU and • Plan implemented by Contractor.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
PC-14	Noise and Vibration Management Plan	The Contractor will prepare and implement a Noise and Vibration Management Plan in line with the mitigation measures provided in this ESMMP in order to cover the activities regarding construction phase.	Preparation / Implementation - Contractor; and Approval - PIU	PIU to prepare monthly progress reports, signed off by the PIU, for the Lenders.	<ul style="list-style-type: none"> Plan approved by PIU / PIU; and Plan implemented by Contractor.
PC-15	Waste and Materials Management Plan	<p>The Contractor will prepare a Waste and Materials Management Plan to cover all activities associated with the production of wastes during construction and maximise reuse and recycling.</p> <p>The WMMP will need to be submitted for approval to the relevant Provincial Directorate of Environment and Urbanisation which outlines the Contractor's plans to avoid and reduce waste.</p>	Preparation - Contractor; and Authorisation – PIU and relevant Environment and Urbanisation	PIU to prepare monthly progress reports, signed off by the PIU, for the Lenders.	<ul style="list-style-type: none"> Plan approved by PIU / PIU; and Plan implemented by Contractor.
PC-16	Health, Safety and Security Plan	<p>The Contractor will be responsible for developing and implementing a Health, Safety and Security Plan which sets out the measures to manage occupational risks, cross referencing the following sub-plans of the CESMP;</p> <ul style="list-style-type: none"> ○ Air Quality and Dust Management Plan; ○ Construction Travel Plan; ○ Construction Traffic Management Plan; ○ Lifting Operations Management Plan; and ○ Risk Assessments and Method Statements. <p>Each construction day will begin with a tool-box talk focusing on a single environment, health, or safety matter applicable to the current site activities or stage of construction;</p> <p>The Contractor will be responsible for taking all necessary precautions to maintain the safety of construction activities, construction plant, construction facilities, the construction workforce</p>	Preparation / Implementation - Contractor; and Approval - PIU	<p>Consultation with the local community, AYGM, providers of local facility and local stakeholders.</p> <p>Contractor and PIU will Review health risks and update in response to changes</p>	<ul style="list-style-type: none"> Plan approved by PIU; and Plan implemented by Contractor

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<p>and the local communities. This includes provision of appropriate lighting, providing appropriate safety signage and barriers, and providing a first aid department to manage workplace accidents;</p> <p>The Health, Safety and Security Plan will set out measures to manage potential occupational health and safety hazards including, but not limited to:</p> <ul style="list-style-type: none"> ○ Exposure to chemicals (asphalt fumes, pulverized silica, rail lubricants, fuels, solvents, paints); ○ Welding hazards (Aluminium thermit welding fume emissions, burns and radiation); ○ Excavations; ○ Confined spaces; ○ Landslides; ○ Vibration of heavy construction equipment; ○ Dust, noise, fall hazards; ○ Traffic accidents; ○ Lifting of heavy materials (viaduct / bridge beams, rails, sleepers, etc.); ○ Accidents with exposed rebars; ○ Ergonomic hazards during construction; ○ Explosion hazard; ○ Environmental hazards (insects, wasps, bees, etc.); ○ Electrocutions and arc fault burns; ○ Working in proximity to the existing operational railway line; and ○ Electrical works. <p>The Contractor will also be responsible for providing private site security and fire protection, in co-ordination with the Fire Authority and the General Directorate of Security;</p> <p>The Health, Safety and Security Plan will include details of the medical facilities provided on-site. It will</p>			

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<p>also identify the medical facilities in the local area that may be required for more severe incidents, and how to access them, when required. This provision will have been agreed with these facilities in advance.</p> <p>Regular health checks of construction workers will be undertaken, and a policy for HIV/AIDS related diseases developed.</p> <p>The plan will cover both existing risks and risks related to the Project such as the in-migration of construction workers, including increased impacts to women and vulnerable groups.</p> <p>The plan will set out measures for the prevention of unauthorised access to construction sites, construction compounds and construction workers' accommodation.</p> <p>The plan will be informed by consultation with the local community, AYGM, providers of local facility and local stakeholders.</p> <p>Contractor to conduct due diligence investigation for all their security personnel to make sure they have appropriate licensing, experience and training.</p>			
PC-17	Surface Water Management Plan	The Contractor will be responsible for implementing a plan to manage surface water during construction. The Plan will be prepared in line with the mitigation measures given in this ESMMP.	Preparation Implementation Contractor; and Approval - PIU	/ - PIU to prepare monthly progress reports, signed off by the PIU, for the Lenders.	<ul style="list-style-type: none"> Plan approved by PIU; and Plan implemented by Contractor.
PC-18	Spoil Management Plan	A Spoil Management Plan will be implemented prior to Plan commencement of the generation of surplus earthworks containing commitments and supporting evidence.	Preparation Implementation Contractor; and Approval - PIU	/ - PIU to prepare monthly progress reports, signed off by the PIU, for the Lenders.	<ul style="list-style-type: none"> Plan approved by PIU; and Plan implemented by Contractor.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
PC-19	Construction Plans and Method Statements	<p>The Contractor will prepare and implement specific plans and method statements for temporary activities, such as storage areas, and the construction of ancillary structures (e.g. bridges, tunnels, viaducts, overpasses and underpasses). The method statements will include activity specific erosion protection measures, such as temporary vegetation planting, drainage, and slope stabilisation measures.</p> <p>The slope stabilisation measures will be determined by the Contractor ahead of construction. These should include a monitoring plan and a risk assessment which focusses on the ancillary structures along the Project (such as embankments for bridges and viaducts, cuttings for tunnel portals, cuttings for overpasses and embankments for underpasses). The monitoring will ensure that the slopes do not show signs of slippage or movement which has the potential to cause harm. Further monitoring of the slopes should be undertaken particularly after period of intense rainfall, snow-melt or earthquakes for possible traces of erosion which could destabilise the slopes.</p>	Preparation Implementation Contractor; and Approval - PIU	/ - PIU to prepare monthly progress reports, signed off by the PIU, for the Lenders.	<ul style="list-style-type: none"> Plan approved by PIU; and Plan implemented by Contractor.
PC-20	Employment Plan	<p>To enhance employment opportunities for locals within the Project area, the Contractor will employ local workers by providing preference to suitably qualified and experienced applicants from the local communities that are in close proximity to the Project, and develop and implement Employment Plan, which will include:</p> <ul style="list-style-type: none"> Details of a recruitment process which is transparent and fair, non-discriminatory and provides equal opportunities for both men and women; 	Preparation Implementation Contractor; and Approval - PIU	/ - PIU to prepare monthly progress reports, signed off by the PIU, for the Lenders.	<ul style="list-style-type: none"> Plan approved by PIU and Plan implemented by Contractor.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<ul style="list-style-type: none"> Details of the employment opportunities for locals; Details of how employment opportunities will be advertised (such as advertisements on AYGM and Ministry of Transport websites, on district governorship offices bulletin boards and providing information to the affected mukhtars, accessible advertisements in local communities); Details of the training opportunities which will be provided for graduates and employees on technical, health and safety and manual work where suitable. 			
PC-21	Labour Management and Monitoring Plan	<p>The Contractor will develop and implement a Labour Management and Monitoring Plan to:</p> <ul style="list-style-type: none"> Ensure that all workers (including sub-contractors) have employment contracts; Ensure that all workers (including sub-contractors) employment contracts are in line with both national legislation, applicable ILO standards and recommendations and PR2; Ensure all workers (direct and indirect) have access to human resources policy and procedures; 	<p>Preparation / Implementation - Contractor; and Approval - PIU</p>	PIU to prepare monthly progress reports, signed off by the PIU, for the Lenders.	<ul style="list-style-type: none"> Plan approved by PIU and Plan implemented by Contractor.
PC-22	Training Plan	<p>A Training Plan will be prepared for personnel and workers on the Project. The plan will include details of training programs for EHSS aspects of the Project including:</p> <ul style="list-style-type: none"> Applicable HR policy provisions and procedures, Project-level and Worker Grievance Mechanisms, including the need to refer public grievances to the CLOs, Construction Workers' Code of Conduct, with emphasis on provisions intended to combat gender-based violence and harassment 	<p>Preparation / Implementation - Contractor; and Approval - PIU</p>	PIU to prepare monthly progress reports, signed off by the PIU, for the Lenders.	<ul style="list-style-type: none"> Plan approved by PIU and Plan implemented by Contractor.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<p>(GBVH) and sexual exploitation and assault (SEA),</p> <ul style="list-style-type: none"> Materials management, and Environmental protection. <p>All workers will be required to undertake a construction site induction before commencing work. This training will explain the safety rules and controls in place on site, hazards that workers might be exposed to, and how to work safely on site.</p> <p>Regular toolbox talks will be delivered covering single environmental, health or safety aspect applicable to the Project, or stage of construction, via a brief presentation.</p> <p>Refresher training will be provided by the Contractor periodically to ensure all workers are up to date on best site practices.</p> <p>Contractors employed to provide security services will be trained on the implementation of the Voluntary Principles for Security and Human Rights.</p>			
PC-23	Construction Workers' Code of Conduct	<p>The Contractor elaborate and apply the Construction Workers' Code of Conduct set out in the CMP.</p> <p>The Construction Workers' Code of Conduct shall be clearly displayed at the different Project Areas and posted in the Contractor's vehicles and machinery driving cabs.</p> <p>New Contractor's personnel and existing Contractor's personnel are made aware and acknowledge their understanding of the Worker's Code of Conduct and the associated provisions. The Workers' Code of Conduct is initialled by all Contractors' personnel prior to the start of any physical work at any Project Area. Compliance with</p>	<p>Preparation Implementation Contractor; and Approval - PIU</p>	<p>/ -</p> <p>PIU to prepare monthly progress reports, signed off by the PIU, for the Lenders.</p>	<ul style="list-style-type: none"> Completion of Code of Conduct and subsequent implementation.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<p>the Code of Conduct shall be a condition in all workers' employment contracts.</p> <p>The Code of Conduct will include a list of acts considered as requiring a disciplinary procedure by the Contractor, or by the PIU if the Contractor is not acting in due course.</p> <p>Should the Contractor's personnel repeatedly commit any of the listed offences despite awareness of the Code of Conduct, and this is without prejudice to any legal action by any public authority for non-compliance with applicable regulations, then this would be regarded to be serious misconduct. Serious misconduct shall result in immediate dismissal from any Project Area. Acts requiring the implementation of a disciplinary procedure and where repeated failure or where the severity of such cases may result in serious misconduct and instant dismissal are as follows:</p> <ul style="list-style-type: none"> ○ Drunkenness during working hours, leading to risks for the safety of local inhabitants, customers, users and personnel; ○ Punishable statements or attitudes, and sexual harassment in particular; ○ Violent behaviour and physical aggression; ○ Intentional damage to the assets and interests of others, or the environment; ○ Repeated negligence or imprudence leading to damage or prejudice to the environment, the population or properties, particularly breaching provisions intended to prevent the spreading of STD and AIDS; ○ Drug including marijuana use; ○ Possession and/or consumption of meat or any other part of an endangered animal or plant as 			

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<p>defined in the Washington convention (CITES) and national regulations.</p> <ul style="list-style-type: none"> Entering property of neighbouring people without permission of the landowners or those cultivating/renting the land. <p>Serious misconduct, and therefore instant dismissal, shall also apply if workers are found to be involved in any of the following activities: organisation of sex trade (pimping), committing paedophilia, drug trafficking, deliberate and severe pollution, trading and/or trafficking in all or part of protected species. Anyone found to be committing such offences shall be immediately dismissed as of the first report of misconduct detected, in application of the Code of Conduct and labour laws.</p> <p>The Contractor establishes a record for each case of serious misconduct, and a copy will be provided to the Contractor's personnel in question, indicating all action taken to terminate the misconduct by the Contractor's personnel in question and to bring the attention of other Contractor's personnel to the type of incident detected. This record will be provided to the Implementation Consultant as an attachment to the EHSS monthly progress report</p> <p>The Contractor shall without delay inform the Implementation Consultant who in case of serious misconduct shall immediately inform the PIU and PIU.</p>			
PC-24	Railway Safety Plan	<p>Pre-construction - implement the manufacturing related measures in the Railway Safety Plan), including updating the Hazard Log.</p> <p>Construction and Commissioning - Implement the integration, system validation and system</p>	Preparation / Implementation - Contractor and Independent	PIU to prepare monthly progress reports, signed off by the PIU, for the Lenders.	<ul style="list-style-type: none"> Compliance with Railway Safety Plan; and ISA/AsBo acceptance of the technical and

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		acceptance related measures in the Railway Safety Plan, including updating the Hazard Log.	Safety Assessor/Assessment Body (ISA/AsBo); and Approval - PIU		operational safety cases.
PC-25	Workforce Demobilisation Plan	The Contractor will be responsible for fulfilling any national obligations and legal requirements with regards to employment termination at the end of the construction phase of the Project.	Preparation / Implementation - Contractor; and Approval - PIU	PIU to monitor implementation of Plan, and reporting progress regularly to the PIU throughout the post-employment stage of construction.	<ul style="list-style-type: none"> Compliance with national and legal obligations for dismissal of workforce.
	Operational Phase				
O-1	Development of an OESMP	TCDD, with support from the PIU, shall prepare an OESMP. The OESMP will set out the processes and responsibilities for implementation of the requirements of permits, licenses, lenders and regulations associated with the operation and maintenance of the Project.	Preparation - TCDD Transport; and Approval - TCDD Transport.	TCDD Transport to prepare annual progress reports for the Lenders.	<ul style="list-style-type: none"> OESMP and plans developed and implemented.
O-2	Development of OESMP sub-plans	Prior to operation and as part of the OESMP TCDD shall prepare the following plans in line with the Lenders requirements and national legislation, this ESMMP and the AYGEM ESMS: <ul style="list-style-type: none"> Operational Biodiversity Management Plan Operational Landscape Management Plan; Operational Soil Management Plan; Operational Waste Management Plan; Operational Maintenance Plan; Tunnel Operational Management Plan; Employment Plan; Labour Management Plan; Supply Chain Management Plan; Health, Safety and Security Plan; Community Health, Safety and Security Plan; 	Preparation - TCDD Transport; and Approval - TCDD Transport.	TCDD Transport to prepare annual progress reports for the Lenders.	<ul style="list-style-type: none"> Development and implementation of OESMP and plans.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<ul style="list-style-type: none"> Operational Cultural Heritage Management Plan; Gender Plan; Railway Safety Plan. Operational Emergency Response Plan 			
O-3	Stakeholder Engagement Plan (SEP)	<p>TCDD Transport will update the Project SEP and GMs for the operational phase;</p> <p>The SEP will be implemented and regular consultation activities with local communities will be organised;</p> <p>The CLO shall manage consultation activities and workshops and implement the SEP with local communities;</p> <p>Consultation events will be organised (including for women and vulnerable groups) as and when required; and</p> <p>The SEP will be updated on an annual basis.</p>	<p>Preparation - TCDD Transport; and</p> <p>Approval - TCDD Transport.</p>	TCDD Transport to prepare annual progress reports for the Lenders.	<ul style="list-style-type: none"> Approval and implementation of SEP during operational phase.
O-4	Biodiversity Management Plan	<p>Develop and implement the full BMP for the operational phase in line with the outline BMP. The full operational BMP will cover actions to safeguard and conserve biodiversity, that could be affected by the planned activity. Compliance with the plan will be the responsibility of TCDD/TCDD Transport and rail operations and monitored by TCDD Transport.</p> <p>The full BMP will include specific actions to be implemented through the lifetime of the Project and enhance biodiversity in the area and include;</p> <ul style="list-style-type: none"> Surveys of chainages identified in the BMP will be undertaken, comprising monthly walkovers during year 1 of operation and then with decreasing frequency. Additionally, should any areas of increased perceived collision risk be 	<p>Preparation - TCDD Transport; and</p> <p>Approval - TCDD Transport.</p>	<p>TCDD Transport to prepare annual progress reports for the Lenders.</p> <p>The operational surveying and monitoring requirements are set out in the BMP.</p>	<ul style="list-style-type: none"> Development and implementation of full BMP for operational phase.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<p>identified during the pre-construction surveys, these will be added as a monitoring component;</p> <ul style="list-style-type: none"> Survey efforts will comprise monitoring of identified areas to assess the adequacy of the mitigation, and inform any amendments required to ensure continued efficacy of these measures; and Adaptive management will be informed by findings from monitoring activities. Where it is identified that BMP targets are not being met, TCDD will be responsible for rectifying this through appropriate adaptive management. These measures may include: <ul style="list-style-type: none"> Increased fauna crossing points installations; Increased planting, and/or refined planting locations; Supplementary seed-collection and plant propagation; Targeted limits on train speeds; and Increased invasive non-native species (INNS) management. 			
O-5	Operational Maintenance Plan	<p>Maintenance of the Project will be the responsibility of TCDD Transport, and will involve routing, planned maintenance and system testing, as well as ad-hoc maintenance and repairs;</p> <p>Maintenance activities will be planned to enable them to be delivered safely and in a manner that minimises disruption where practicable. The existing railway line will be used for maintenance activities. The maintenance of trains will be carried out at the existing maintenance stations.</p> <p>A robust maintenance regime for the Project elements will be developed and implemented. Inspections must be conducted and managed by suitably qualified and experience engineers and in</p>	TCDD Transport.	<p>Inspection and maintenance records to be kept; and</p> <p>TCDD Transport to prepare annual progress reports for the Lenders.</p>	<ul style="list-style-type: none"> Operational Maintenance Plan prepared by the TCDD and implemented during operational phase.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<p>line with appropriate Turkish and international standards;</p> <p>A specific programme of inspection and maintenance will also be developed for all structures including viaducts, bridges, tunnels, overpasses and underpasses, as well as railway tracks, drainage systems, and all safety features of the Project;</p> <p>This plan will set out the storage requirements for materials required for the maintenance of the Project, including storage locations and procedures; and</p> <p>TCDD will ensure that a sufficient resource of qualified and competent personnel is available to plan, conduct, supervise and interpret the results of any inspection and maintenance programs.</p>			
O-6	Tunnel Operational Management Plan	<p>TCDD will prepare a Tunnel Operational Management Plan which will include the following requirements;</p> <ul style="list-style-type: none"> Working condition ventilation will be maintained; Firefighting equipment and other facilities will be maintained and provided in a working condition; Tunnel staff will be adequately trained in case of emergencies, including rescue, recovery and prevention of access to additional vehicles; Ensure tunnels is cleaned regularly; Ensure that exit doors to the gallery and passages are not blocked; and An inspection routine will be specified. 	TCDD Transport	TCDD Transport to prepare annual progress reports for the Lenders.	<ul style="list-style-type: none"> Plan prepared by the PIU / TCDD Transport and implemented during operational phase.
O-7	Railway Safety Plan	Implement the operation, maintenance and performance monitoring related measures in the Railway Safety Plan.	TCDD Transport.	TCDD Transport to prepare annual progress reports for the Lenders.	<ul style="list-style-type: none"> Plan prepared by PIU / TCDD Transport and implemented by TCDD Transport

Ref No	Issue	Action	Responsibility	Reporting	Indicator
					during operational phase.
O-8	Operational Cultural Heritage Management Plan	<p>TCDD will ensure those undertaking maintenance activities are aware of the potential for previously undiscovered buried heritage remains to exist when undertaking any intrusive below ground activity; and</p> <p>In line with national legislation, TCDD will require the maintenance contractor to establish a policy and procedure for managing any chance finds during maintenance activities.</p>	Implementation - TCDD Transport and Maintenance Contractor.	TCDD Transport to prepare annual progress reports for the Lenders.	<ul style="list-style-type: none"> Plan prepared by PIU / TCDD Transport and implemented by TCDD Transport during operational phase.
O-9	Landscape Management Plan	<p>TCDD will continue to implement the LMP to ensure it is implemented for a full five years;</p> <p>The LMP will cover actions to suitably manage and maintain the growth and health of planting in year 1 (establishment), the first 5 years of growth (strengthening), and post 5-year longer-term typical management and maintenance requirements.</p> <p>Compliance with the plan will be the responsibility of TCDD and rail operations, and monitored by TCDD;</p> <p>The LMP will outline the tasks to establish and maintain the trees, grass and vegetation identified on the Landscape Design/Planting Plans;</p> <p>Planting measures will be designed to provide visual screening and reduce risk of bird strikes where required as well as provide enhancement to local landscape character;</p> <p>Planting measures will also be designed to provide connectivity within the wider landscape where possible; and</p> <p>Planting should make use of species of local/regional provenance.</p>	<p>Implementation - The contractor will begin the implementation of the LMP and TCDD Transport will continue the implementation of the LMP and any post-5 year activities; and</p> <p>Authorisation - TCDD Transport.</p>	TCDD Transport to prepare annual progress reports for the Lenders.	<ul style="list-style-type: none"> TCDD to develop and implementation of LMP.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
O-10	Operational Soil Management Plan	<p>In order to prevent soil erosion, loss and degradation along the Project alignment the Operational Soil Management Plan (OSMP) will be prepared. It will include measures to:</p> <ul style="list-style-type: none"> ○ Maintain sediment traps and basins, drainage channels and treatment systems; ○ Maintain slope stability (cuttings and embankment). <p>The OSMP will include measures for revegetation and/or maintenance of vegetation to increase the stability of potentially loose materials and surfaces which may develop during the operational phase of the Project.</p>	TCDD Transport.	TCDD Transport to prepare annual progress reports for the Lenders.	<ul style="list-style-type: none"> • TCDD Transport to prepare and implement Plan during operational phase.
O-11	Operational Waste Management Plan	<p>The Operational Waste Management Plan (OWMP) is to be implemented Management Plan n the Project operational phase by TCDD. It is noted that operational waste management will be dependent on the corporate governance controls put in place by occupiers;</p> <p>Appropriate collection and disposal of waste products including oil from maintenance stations.</p>	TCDD Transport.	TCDD Transport to prepare annual progress reports for the Lenders.	<ul style="list-style-type: none"> • TCDD Transport to prepare and implement Plan during the operational phase.
O-12	Employment Plan	<p>To enhance employment opportunities for locals within the Project area, the following measures will be implemented:</p> <ul style="list-style-type: none"> ○ TCDD will employ local workers by providing preference to suitably qualified and experienced applicants from local communities; and ○ Develop an Employment Plan, which will include; <ul style="list-style-type: none"> - Details of a recruitment process which is transparent and fair; - Details of the employment opportunities for locals; 	TCDD Transport.	TCDD Transport to prepare annual progress reports for the Lenders.	<ul style="list-style-type: none"> • TCDD Transport to prepare and implement Plan during the operational phase.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<ul style="list-style-type: none"> - Details of how employment opportunities will be advertised (such as advertisements on TCDD Transport's and Ministry of Transport websites, on district governorship offices bulletin boards and providing information to the neighbourhood mukhtars); - Details of the training opportunities which will be provided for graduates and employees on technical (including train driving), health and safety and manual work where suitable; and - Details of the process for collaborating with local schools and universities to develop apprenticeship and graduate programmes. 			
O-13	Labour Management and Monitoring Plan	<p>To reduce and mitigate effects associated with labour risks, the following measures will be implemented:</p> <ul style="list-style-type: none"> o Develop and implement a Labour Management and Monitoring Plan to: <ul style="list-style-type: none"> - Ensure that all workers have employment contracts; - Ensure that all workers employment contracts are in line with national legislation, applicable ILO standards and recommendations and PR2; and - Ensure all workers (direct and indirect) have access to human resources policy and procedures. o Provide and implement a grievance mechanism for employees and any suppliers; o Ensure employees and any suppliers have access to human resources policies; o Ensure employees are aware of their rights to join local trade unions; and 	TCDD Transport.	TCDD Transport to prepare annual progress reports for the Lenders.	<ul style="list-style-type: none"> • TCDD Transport to prepare and implement Plan during the operational phase.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<ul style="list-style-type: none"> Undertake independent audits and inspections of the stations and operational workspace every 6 months to ensure compliance with both national legislation and applicable ILO standards and recommendations. 			
O-14	Supply Chain Management Plan	<p>To reduce and mitigate effects associated with the operational supply chain, the following measures will be implemented:</p> <ul style="list-style-type: none"> Develop a Supply Chain Management Plan to cover the operation stage, and as a minimum to cover the following: <ul style="list-style-type: none"> Ensure that any tendering process includes clauses and policies on minimum working age, normal working hours, freedom to collective bargaining, good working conditions and eradicating risks of forced labour; and Include labour management clauses (as specified in bullet point above) in procurement contracts. 	TCDD Transport.	TCDD Transport to prepare annual progress reports for the Lenders.	<ul style="list-style-type: none"> TCDD Transport to prepare and implement Plan during the operational phase.
O-15	Community Health, Safety and Security Plan	<p>In order to mitigate effects in relation to community health, safety and security, the following measures will be implemented:</p> <ul style="list-style-type: none"> Develop a Community Health, Safety and Security Plan, which will include measures relating to the health, safety and security of the local communities; On-going consultation with local communities to ensure any potential issues are addressed; and Provide and implement a grievance mechanism for the local community (as detailed in the SEP). <p>In order to mitigate effects in relation to community access, the following measures will be implemented:</p>	TCDD Transport.	TCDD Transport to prepare annual progress reports for the Lenders.	<ul style="list-style-type: none"> TCDD Transport to prepare and implement Plan during the operational phase.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<ul style="list-style-type: none"> Ensure that adverts are issued (inclusive of newsletters issued to affected communities) with details of the new crossings (overpasses and underpasses); Ensure that signage for the new crossings are displayed along the Project alignment; Conduct regular consultation with affected users and communities to ensure that the crossings are working effectively; and Ensure all the new crossings are maintained and inspected regularly for any potential damage, in accordance with the Operational Maintenance Plan. 			
O-16	Gender Plan	<p>To mitigate gender related effects, the following measures will be implemented:</p> <ul style="list-style-type: none"> Ensure the maintenance of infrastructure and train facilities which are accessible for elderly, disabled and those with reduced mobility (both men and women) and pregnant women (in accordance with the Operational Maintenance Plan); A zero-tolerance process will be in place for discrimination against women workers; Provide training to human resource personnel of TCDD Transport to address and deal with discrimination issues in the workplace; Collaborate with Ministry of Family, Labour and Social Services and local Non-Governmental Organisations, such as CEID, on gender related (including GBVH) raised concerns and complaints to address the gender related issues at regional level; and Undertake regular consultation with locally affected women on their issues about the operational phase of the Project. 	TCDD Transport.	TCDD Transport to prepare annual progress reports for the Lenders.	<ul style="list-style-type: none"> TCDD Transport to prepare and implement Plan during the operational phase.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
		<ul style="list-style-type: none"> ○ A third-party consultant will be engaged to assist with undertaking the following activities; ○ Promote open discussions about gender related concerns through implementing an effective employee and public grievance mechanisms and provision of training on GBVH aspects to key responsible people (such as a local CLO and human resources manager (or equivalent)); ○ Develop STEM subject workshops with local schools which are open to girls; ○ Collaborate with local schools and universities to develop apprenticeship and graduate programmes which are open to women; ○ Promote and develop mentoring programme for women in the rail sector; and ○ Provide transparency on pay to close gender pay gap. 			
O-17	Health Safety and Security Plan	<p>To mitigate any OHS risks, TCDD will implement a Health, Safety and Security Plan, which will include control measures to minimise fatigue for train drivers (for example, railway operators' rest breaks should be scheduled at regular intervals, and for night operations, rest break practices should be in line with the international standards to maximise the effectiveness of rest breaks, to the extent possible).</p> <p>TCDD Transport will appoint an occupational safety specialist.</p> <p>Additional measures to manage OHS risks will be set out in the following OESMP sub-plans:</p> <ul style="list-style-type: none"> ○ Railway Safety Plan (update), ○ Operational Maintenance Plan, and ○ Tunnel Operational Management Plan. 	TCDD Transport.	TCDD Transport to prepare annual progress reports for the Lenders.	<ul style="list-style-type: none"> • TCDD Transport to prepare and implement Plan during the operational phase.

Ref No	Issue	Action	Responsibility	Reporting	Indicator
O-18	Emergency Response Plan	TCDD Transport will prepare a detailed Operational Emergency Response Plans (OERP) aligned with the ERF. The OERPs must be developed prior to the operational phase commencing to achieve appropriate and effective emergency preparedness and response activities for foreseeable emergency events should they arise. This must also include consultation with the national emergency services and authorities and agreement of roles and responsibilities in the context of emergency response.	TCDD Transport.	AYGM to prepare annual progress reports for the Lenders.	<ul style="list-style-type: none">TCDD Transport to prepare and implement Plan during the operational phase.

5.1.1.2 Construction Phase

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
Surface Water								
1.	Spillage/leakage to Surface Water	PS 1 PS 3	<ul style="list-style-type: none"> The Project will include Surface Water Management Plan, Waste Management Plan and Materials Management Plan, Construction Emergency Response Plan and other plans that were listed in Chapter 8.3's text and their procedures will be implemented in the Construction Phase. Accidental spills will be avoided through good practice and restriction of refueling near watercourses. Safe fueling and gasoline handling procedures will be practiced in the construction areas. If heavy equipment cannot be moved to appropriate fueling locations, an impervious surface (such as a drip-tray) will be used for refueling this equipment to prevent accidental releases to groundwater aquifers. Re-fueling of all plant, vehicles and machinery will be carried out at minimum 50 m of any watercourse, drain or channel leading to a water course. Hazardous materials will not be stored in excavated areas. Exposure to hazardous materials in open areas will be kept to a minimum in size and time. All temporary hazardous material or waste storage areas used during construction works will be connected to a closed impervious sump or wastewater treatment facility and/or bounded with secondary containment. Secondary containment structures will consist of berms, dikes, or walls capable of containing the larger 	REC and PIU	Locations where Project overlaps with Rivers/streams (See Route Evaluation Table for detail) Upstream and downstream of construction sites	Surface Water Management Plan, Waste Management Plan and Materials Management Plan Construction Emergency Response Plan	Visual inspection and observation Incident/accident reports Site inspection reports Water quality measurements	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<p>of 110% of the largest tank or 25% of the combined tank volumes in areas where hazardous materials are handled such as fuel stores and loading areas, concrete mixing, hazardous material stores to prevent hazardous materials entering the site drainage.</p> <ul style="list-style-type: none"> • Oil separator will be used for silty/soiled water from construction activities and after silty/soiled water is brought to national and international discharge criteria will be discharged to suitable receiving environment. • Scheduling of construction activities near water bodies during period of heavy rainfall will be considered. High sediment producing activities will be avoided as much as possible and exposed surfaces and stored materials covered/dampened as necessary to reduce erosion of sediments to surface water. • Sensitive areas of rivers and drains will be protected from impact due to vehicles and other construction activities with appropriate fencing such as orange safety barrier fencing or other appropriate ways. • Spills will be immediately contained on site and all contaminated materials including soils will be removed from the site for suitable treatment and disposal. • Water quality measurements will be made at baseline measurement points, as well as other overlaps of the Project with water bodies and upstream + downstream of construction sites. • All staff and subcontractors will report any spill incidents, and these will be subject to investigation and close out remedial and preventive actions. 					

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
2.	Working near Rivers and on water body	PS 1 PS 3 PS 6	<ul style="list-style-type: none"> Re-fueling of all plant, vehicles and machinery will be carried out at a minimum 50 m distance of any watercourse, drain or channel leading to a water course. Storage and handling of fuels, oils and other hydrocarbons through a controlled process, involving measures to prevent soil and water contamination. Those should include fuel and oil storage on sealed surfaces and within secondary containment. All sites near rivers will be protected by fencing and other means to prevent loss of construction materials, particularly hazardous materials. Movement of equipment inside rivers, streams, or on their banks, will be prevented except when it is unavoidable due to the construction of a structure or in an emergency situation. In the case of working on a water body/dam /river (construction of a bridge pillar): <ul style="list-style-type: none"> After ensuring the permit via State Hydraulic Works (DSI) or any other relevant legal authority to hold the water (in particular, dry seasons will be chosen) and dry the location for the construction for a period of 3-4 months, finalize the construction before the re-entry of water to the location. Training will be provided to machine operators regarding the sensitivities and working procedures, with attention to machine and equipment inspection for leaks prior to use, safe storage and handling of fuels/oils/hydrocarbons near the watercourse and/or precautionary measures to prevent contamination of soil and watercourse 	REC and PIU	The locations where the Project and rivers/streams overlaps (monthly measurements) and baseline measurement points' monitoring once in a 6-month period.	Construction Emergency Response Plan Surface Water Management Plan, Waste Management and Materials Management Plan	Visual Inspections and observations Water quality measurements Warnings/penalties given by public authorities Complaint records	Pre-Construction and Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> Construction Emergency Response Plan will be followed by all staff working on or near the river. 					
3.	Change in River Water Quality	PS 1 PS 3	<ul style="list-style-type: none"> In general, no significant water quality change in the river is expected, and possible sediment pollution should be prevented by means described in other sections. The sampling points' water quality analysis results will be monitored, and in case a Project-related event deteriorate the quality above the set limits, necessary measures will be taken up to temporary cease of construction works. Fuels and potentially hazardous construction materials will be stored in bunded areas with external cut-off drainage and fuel will be stored in double skinned tanks with 110% capacity. 	REC	Intersections of engineering structures and rivers	Surface Water Management Plan	Water Quality Monitoring report and results Spill/leak incident reports	Construction
4.	Flooding and Flood Risk	PS 1	<ul style="list-style-type: none"> State Hydraulic Works and relevant local institutions will be consulted for buildings/structures to be operated in flood risk areas. Stockpile of excavates and other materials will not be in the vicinity of river or flood basins, where this is impossible, barriers will be constructed to prevent sediment discharge to surface water bodies State Hydraulic Works and relevant local institutions will be consulted for buildings/structures to be constructed in flood risk areas. Build pumping stations in flood-prone locations at sensitive essential infrastructure to enable flood water to be quickly pumped away when needed. 	REC and PIU	Rivers/stream and their tributaries (See Route Evaluation Table for detail) The Project and Operational Project Facilities	Construction Emergency Response Plan	Visual observation Flood incident records	Construction + Operation

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> Incorporate flood resilience measures when renewing the lines in flood prone areas, including where feasible installing the tracks and signalling equipment at a higher level so it's less likely they'll be impacted by flooding. Where suitable, deploy flood defence systems, including barriers with a membrane that seals to prevent water getting through, and inflatable barriers filled with water. In case a flood does occur, above-mentioned precautions and measures should be followed and the incidents, interventions, and the results should be elaborately recorded for further inquiry. 					
5.	Wastewater generation	PS 1 PS 3	<ul style="list-style-type: none"> During site arrangement, the potential wastewater sources from camp/site and facilities, and quarries will be defined. Depending on the availability of the waste treatment facilities, these sources can be connected to local sewerage system, which should be ended with proper wastewater treatment facility that the effluent meet the national and international standards. In case of additional camp-site or operation that will generate wastewater, its connection to the wastewater network of the nearby municipalities will be ensured. In case of a discharge, all wastewater discharges (all domestic) from all construction components must comply with the relevant legal requirements. 	REC and PIU	Rivers/streams and their tributaries (See Route Evaluation Table for detail)	Construction Workers' Accommodation Plan Construction Emergency Response Plan Surface Water Management Plan, Waste Management and Materials Management Plan	Water quality measurements. Warnings/penalties given by public authorities Complaint records.	Pre-Construction and Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
6.	Impacts on present infrastructure related to water		<ul style="list-style-type: none"> Any damage caused to surface water infrastructure such as supply systems, irrigation systems, flood defences and drainage ditches must be rectified by the REC. 	REC and PIU	Location of the impacted infrastructure	Construction Emergency Response Plan Surface Water Management Plan,	Monitoring Report	Construction
Groundwater								
7.	Leakage to Groundwater	PS 1 PS 3	<ul style="list-style-type: none"> Fuelling and storage areas will be planned and designed with containment to prevent releases to ground. Accidental spills will be avoided through good practice and restriction of re-fueling near watercourses. Safe fueling and gasoline handling procedures will be practiced in the construction areas. Where the construction equipment cannot be moved to fueling points, an impervious surface (such as drip-trays) will be used during re-fueling of construction equipment to prevent accidental leakage to groundwater. Hazardous materials will not be stored in excavated areas. Exposure to hazardous materials in open areas will be kept to a minimum in size and time. 	REC and PIU	Shallow Aquifers (1m - 6 m groundwater table level) (See Route Evaluation Table for detail)	Construction Emergency Response Plan Surface Water Management Plan, Waste Management and Materials Management Plan	Incident/accident reports Visual Inspection and observation Groundwater quality measurements.	Construction
8.	Alteration of Groundwater Level	PS 3	<ul style="list-style-type: none"> The use of groundwater resources will be subject to approval by the local Authority (State Hydraulic Works). The Authority may allow the extraction wells to be drilled and used if the groundwater supply is sufficient. These 	REC and PIU	Aquifers throughout the Project Area (See Route Evaluation	Construction Emergency Response Plan	Groundwater level nearby Project route and facilities	Pre-construction baseline and Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<p>approvals are based on the availability of the water source. Where the use of ground water is as water source for the construction works (including Project facilities), all permits will be secured before the use.</p> <ul style="list-style-type: none"> Excessive drawdown below the groundwater level will not be conducted. Groundwater level will be regularly monitored from existing groundwater wells located near the construction site. Groundwater use shall not exceed the permitted level. 		Table for detail)	Surface Water Management Plan, Waste Management and Materials Management Plan		
Air Quality and Climate								
9.	Dust Generation	PS 1 PS 3	<ul style="list-style-type: none"> The Project Environmental Management Plan (EMP) will include Air Quality Management procedures that will be implemented. If there is a requirement for unpaved roads close to settlements to be used by vehicles, surface-binding agents may be used, options include salt to or gravel coat the road. 20kph speed limit will be applied on unpaved surfaces close to settlements. Vehicles will be kept clean, so that no dirt is carried on the vehicles into and out of the area. Where the mitigation measures are inadequate, surface-binding agents will be used in exposed earthworks. Localized watering/dampening and activity-specific watering/dampening will be used to reduce localized dust emissions. 	REC and PIU	Nearest settlements to construction sites Natural habitats and agricultural fields along the construction sites	Air Quality and Dust Management Plan	Air quality monitoring results Maintenance records of vehicles and equipment. Warnings/penalties given by public authorities Complaint records.	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> Stockpiling of stripped surface material, eg. rock, sand and soil, stockpiling of unwashed materials, will be limited. Stockpiles should be kept as enclosed as possible or covered. Stockpiles will be placed as far away from receptors as possible. Design of stockpiles will be optimized to maintain a low profile without a sharp change in shapes. Wind breaks or dust protection systems (including sprinklers) should be built around the main construction activities where necessary and, if possible, near potentially dusty works to minimize the impact of nearby residential receptors. Good practice should be applied for selection of Project vehicles that meet the latest emission standards (e.g. EURO 3 or US EPA Tier 2 emission standards) and maintained in a reasonable working order. When not in use, vehicles should be shut down unless it is due to health and safety reasons (e.g. maintenance of the air conditioner). During transportation on public roads, the excavated materials will be covered with nylon canvas or suitable materials with a grain size greater than 10 mm in public roads as good practice. To reduce fugitive dust emission during vehicle operation on public roads and at construction sites, service roads and quarry/material borrow/storage sites, dust suppression methods (i.e. watering with water trucks, applying 					

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			nontoxic chemicals, speed limits for mobile vehicles, using well-maintained vehicles/equipment) should be used.					
10.	GHG Emissions		<ul style="list-style-type: none"> Design optimisation to reflect the carbon reduction hierarchy should be considered; <ul style="list-style-type: none"> Reduce the elements required for the Project; Reduce the requirement for construction materials and excavation; Substitute construction elements for lower-carbon alternatives (e.g. specifying concrete with a higher portion of ground-granulated blast furnace slag (GGBS) content which is widely available in Turkey); and Use efficient construction processes, such as design for manufacture and assembly. Materials and products with reduced embodied GHG emissions including through material substitution, recycled or secondary content and from renewable sources can be specify ; Energy consumption including fuel usage by, for example, reducing the requirement for earth movements to/from and within the construction site can be minimised; The local sourcing of materials and local waste management facilities can be maximised; The Project with a view to maximising the potential for reuse and recycling of materials/elements at the end-of-life stage can be specified and constructed; and 	REC and PIU	<p>Nearest settlements to construction sites</p> <p>Natural habitats and agricultural fields along the construction sites</p>	Air Quality and Dust Management Plan	Annual GHG Emission Report	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> High efficiency mechanical and electrical equipment can be specified and constructed. 					
11.	Climate Change Risk	PS1 PS8	<ul style="list-style-type: none"> For adapting and mitigating climate change risks on the Project: <ul style="list-style-type: none"> Relocate facilities to higher elevations Relocating utility infrastructures to higher elevations would reduce risks from coastal flooding and exposure as a result of coastal erosion or wetland loss. Build flood barriers to protect infrastructure Flood barriers to protect critical infrastructure include levees, dikes and seawalls. A related strategy is flood proofing, which involves elevating critical equipment or placing it within waterproof containers or foundation systems. Diversify options for water supply and expand current sources Diversifying sources helps to reduce the risk that water supply will fall below water demand. Examples of diversified source water portfolios include using a varying mix of surface water and groundwater, employing desalination when the need arises and establishing water trading with other utilities in times of water shortages or service disruption. Increase water storage capacity Increased drought can reduce the safe yield of reservoirs. To reduce this risk, increases in available storage can be made. Methods for accomplishing this may include raising a dam, practicing aquifer storage and recovery, removing accumulated sediment in reservoirs or lowering water intake elevation. 	REC and PIU	Construction site including all Project Facilities	Air Quality and Dust Management Plan		Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> ○ Conduct climate change impacts and adaptation training <p>An important step in developing an adaptation program is educating staff on climate change. Staff should have a basic understanding of the projected range of changes in temperature and precipitation, the increase in the frequency and magnitude of extreme weather events for their region and how these changes may affect the utility's assets and operations. Preparedness from this training can improve utility management under current climate conditions as well.</p> <ul style="list-style-type: none"> ○ Develop emergency response plans <p>Emergency response plans (ERPs) outline activities and procedures for utilities to follow in case of an incident, from preparation to recovery. Some of the extreme events considered in ERPs may change in their frequency or magnitude due to changes in climate, which may require making changes to these plans to capture a wider range of possible events.</p> <ul style="list-style-type: none"> ○ Participate in community planning and regional collaborations <p>Effective adaptation planning requires the cooperation and involvement of the community. Water utilities will benefit by engaging in climate change planning efforts with local and regional governments, electric utilities and other local organizations</p> <ul style="list-style-type: none"> • Resource efficient methods (in terms of capital costs, data collection and analysis time) may be developed to assess the current condition and resilience of existing infrastructure to weather events. The development of a comprehensive database of infrastructure assets, use of remote 					

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<p>condition monitoring and GIS may be methods to consider.</p> <ul style="list-style-type: none"> An assessment of the vulnerability of particular assets including knock-on effects both from and to third party assets should be carried out. Consistent recording of flooding events should be carried out to capture the necessary data that can be used in more detailed flood risk modelling. Earthworks as an asset class require careful management during wet weather and therefore opportunities to further refine management procedures should be examined. REC should develop a business case for replacing or relocating vulnerable assets based on lifecycle cost comparisons. As part of this, research will be conducted to identify options for potential new locations and routes for the most vulnerable and costly assets including modal shifts (high precipitation, high sea levels and storm surges). It should be assessed whether electronic design temperature thresholds are still appropriate given projected climate change. More specifically, <ul style="list-style-type: none"> It should be better understood the temperature sensitivity of semaphore signal cables which are subject to similar sag problems as Overhead Line Equipment (OLE) cables (high temperatures). A cost benefit analysis of temperature control options should be undertaken for any planned upgrades of location cases. 					

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> It should be explored how changing from diesel to electric power generation and from AC to DC energy transmission will affect future temperature-related risks given climate change projections (high temperatures, low temperatures) REC should identify alternative design options for OHL (Overhead Line) cable posts to reduce wind risks (high winds, high precipitation, low precipitation). REC should review the latest temperature design ranges for information and communication technologies (ICT) and electronics equipment, as well as those for the buildings which contain them. 					
Noise and Vibration								
12.	Noise Pollution	PS 1 PS 3	<ul style="list-style-type: none"> The Contractor should prepare and implement Noise and Vibration Management Plan that will be define the sensitive receptor locations, monitoring program and specific mitigation measures to be implemented. Construction Traffic Management Plan and construction Method Statements will include any agreed noise and vibration mitigation measures. Empty vehicles will not have loose chains or other noise “generating parts on the loading platform. During off-loading, materials will dropped from an appropriate height to avoid noise disturbance to the surrounding receptors or to minimize noise from the site in general. 	REC and PIU	Nearest settlements to construction sites Natural habitats along the construction sites	Noise and Vibration Management Plan Construction Traffic Management Plan	Noise monitoring results Warnings/penalties given by public authorities Complaint records Maintenance records of vehicles	Pre-construction and Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> Position of all auxiliary plant (e.g. generators, compressors) should be determined to cause minimal noise disturbance. Additional driver training, temporary speed restrictions, improved driving monitoring, etc., will be provided as necessary or required. Movement of construction traffic through sensitive receptor community areas will be prevented or limited, wherever possible. If this cannot be avoided, additional measures defined in the Traffic Management Plan such as slower driving rules, physical speed restrictions) will be applied. Working hours for some construction equipment or operations with greater noise and vibration impact will be limited to core daytime hours or routes where the area is less susceptible to noise. In order to overcome construction noise related problems possible alternative mitigation should be applied by the contractor which suits best the practical dynamics of the construction activities; <ul style="list-style-type: none"> Speed limit applications should be applied throughout site for the project vehicles that will transport construction materials/equipment. Where possible, noise generating activities will be avoided during quiet times of the day. Machinery, equipment and vehicles with lower sound power levels and sound reduced models will be preferred. 					

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> Properly refurbished and/or new machinery, equipment and vehicles will be use to the extent possible. Maintenance of construction vehicles will be conducted regularly by means of a regular vehicle maintenance and repair program as per the recommendations of the manufacturer. Where applicable, silencers will be installed on the exhaust of vehicles. Portable barriers and acoustic enclosures will be put around equipment where necessary. Natural topography will be used to create a barrier against noise where feasible. Construction traffic through the settlements will be avoided, whenever alternative routes and/or service roads are available. Idling of construction vehicles will be avoided. Noise monitoring will be carried out throughout the active construction sites in order to prevent any kind of public complaint and nuisance. 					
13.	Vibration	PS 1 PS 7	<ul style="list-style-type: none"> Within the scope of the Project, a ground survey study should be carried out and the vibration impact assessment should be updated by evaluating the outputs of this study. Additional measures will be taken to reduce vibration effects if standards are exceeded, and, if necessary, to change operating methods to use equipment that generates lower vibration levels. 	REC and PIU	Nearest settlements to construction sites, Project Facilities Natural habitats along the construction sites	Noise and Vibration Management Plan	Vibration measurements Quality Inspection Records Warnings/penalties given by public authorities Complaint records	Pre-Construction and Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
Geology, Soil and Landuse								
14.	Earthquake¹	PS 1 PS 4	<ul style="list-style-type: none"> The Project will comply with the relevant National regulatory requirements related to seismic design and risk assessment (2). Construction Emergency Response Plan (CERP) will be implemented. 	REC and PIU	Construction sites and Project Facilities	CERP- Construction Emergency Response Plan	Incident Reports Emergency Training Documents Emergency Drill Records	Pre-Construction and Construction
15.	Erosion	PS 1 PS 4	<ul style="list-style-type: none"> The Project will comply with measures stated in the IFC EHS Guidelines: Construction and Decommissioning (2007) as: <ul style="list-style-type: none"> Scheduling to avoid heavy rainfall periods (i.e., during the dry season) to the extent practical, Contouring and minimizing length and steepness of slopes Mulching to stabilize exposed areas Re-vegetating areas promptly Designing channels and ditches for post-construction flows Lining steep channel and slopes (e.g., use jute matting). Also, the Project will comply with the IFC Environmental, Health, and Safety Guidelines Railways (2007). 	REC and PIU	Construction site including all Project Facilities Seyhan and Ceyhan Rivers tributaries	WDP - Workforce Demobilization Plan	Visual inspections Incident Reports	Pre-Construction and Construction
16.	Soil Pollution caused by Construction Activities	PS 1 PS 3	<ul style="list-style-type: none"> Construction equipment, machines and vehicles will be parked on arranged locations. 	REC and PIU	Construction site and Project Facilities	SWMP - Surface Water Management Plan	Visual Inspections	Pre-Construction and Construction

¹ The Project will not create any seismic activity as a result, it is not expected any earthquake caused by the Project. In this section, the impact of the earthquake on the Project area and mitigations is evaluated.

² Depending on the ground conditions and the seismic characteristics of the region, design and design verification will be carried out according to Regulation on Building Earthquake in Turkey.

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> Parking surfaces (soil, gravel, and rock) will be protected from pollution by oil, oil derivate, naphtha and naphtha derivate. In case of pollution, measures will be taken in accordance with the Law on Soil Protection ("Official Gazette of RS" no. 112/15). All petroleum and its derivatives manipulations during construction works, like machine supply, will perform on defined place with maximum precautions to avoid spilling. Where heavy equipment cannot be moved to fueling points, an impervious surface will be used for refueling this equipment to prevent accidental leakage to groundwater. The construction contractor will avoid refueling near watercourses. If it comes to soil pollution due to oil spilling or in some other way, polluted soil should be removed and taken away on permanent landfill. Washing of equipment, machinery and vehicles will be prohibited within construction area. Concrete mixer washout areas will be designated and any other washing of concrete mixer and uncontrolled removal of the remaining parts of concrete mass on any surface outside road area will be prohibited. Excavated material will be re-used to the extent possible. Excess materials will be used during site arrangement and reinstatement activities. Before storage of excess excavated materials, soil samples form excess material and proposed storage site will be sampled to understand the suitability of the proposed area for the storage. 			WMP - Waste Management Plan WDP - Workforce Demobilization Plan	Soil quality analysis Warnings/penalties given by public authorities Complaint records	

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> Hazardous materials will not be stored in excavated areas. Exposure to hazardous materials in open areas will be kept to a minimum in size and time. 					
17.	Land Degradation	PS 1	<ul style="list-style-type: none"> Soil waste areas will be designed in accordance with the mitigation measures within the national EIA and any permit conditions (outside the alignment expropriation boundaries). Soil waste areas will be executed according to design specifications, method statements and reinstatement plans. 	REC and PIU	Construction site and Project Facilities	WMP - Waste Management Plan MMP - Materials Management Plan WDP - Workforce Demobilization Plan	Visual Inspections Site inspection reports	Pre-Construction and Construction
Resource and Waste								
18.	Solid waste management	PS 3 PS 6	<ul style="list-style-type: none"> Construction Emergency Response Plan will be developed and implemented. Waste Management Plan and Materials Management Plan will be developed and implemented. 	REC and PIU	Construction sites and Project Facilities	Construction Emergency Response Plan Waste Management Plan Materials Management Plan	Visual inspection to ensure the effectiveness of the mitigation measures Waste disposal records. Records of the contractual agreements.	Pre-Construction and Construction
19.	Quarries	PS 3	<ul style="list-style-type: none"> REC will not open and operate new quarries since it will use the existing quarries for material supply. The existing quarries have been already operated by their current operators. Those quarry operations will be in compliance with 	REC and PIU	All quarries to be use for Project	Material Management Plan	Visual inspection to ensure the effectiveness of the	Pre-Construction and Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			national legislation. In other words, the existing (fully licensed) quarries will be used instead of opening new quarries and they will be assessed to ensure that the permits are valid and that operations are appropriate and in accordance with national and international standards.				mitigation measures	
20.	Disposal of excavated waste soil	PS 1 PS 3	<ul style="list-style-type: none"> Waste Management Plan and Spoil Management Plan will include best management practices for excavated waste soils. Excavated soils will be reused as much as possible and, where applicable, alternative uses of surplus residues will be investigated. <ul style="list-style-type: none"> The final destination will be outlined, and especially the case where it will be used for the future construction case will be defined. Temporary storage of the excavated soil will be outlined for both pre-disposal and reuse cases, where possible. Where both reuse and disposal are impossible, relevant municipalities will be consulted for managing the excavated surplus soil. Excavated soil stockpiles will be designed and managed to minimize degradation, dust generation, material loss and damage. To control erosion, upstream runoff will be diverted and managed, and in any case of water erosion, downstream runoff will be treated to hold the sediments. Fertile (vegetative) topsoil will be properly and separately managed to keep its fertility for future agricultural valorization. 	REC and PIU	Construction site and Project Facilities	Waste Management Plan Materials Management Plan Spoil Management Plan	Visual inspection Records of the third-party agreement for disposal of the excavated soil	Pre-Construction and Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> There are some proposed final disposal / dump sites for excess materials/excavated soil of which all relevant permits must be checked prior to the use. Access roads to disposal/dump sites need to be considered in a way to minimise the potential impacts on local communities due to traffic and it should be covered within the Traffic Management Plan for Construction. 					
21.	Hazardous waste generated during construction activities	PS 1 PS 3	<ul style="list-style-type: none"> Waste Management and Material Management Plan will be prepared and implemented. Hazardous waste generated during construction will be recorded, and disposed properly according to Waste Management Regulation (Official Gazette 29314, date 02/04/2015) and relevant additional regulations and standards. The registry and safety data sheets regarding these hazardous materials/wastes will be kept by the REC. Hazardous waste will be collected and disposed by a licensed waste contractor. 	REC and PIU	Construction site and Project Facilities	Materials Management Plan, Waste Management Plan	Records of the third-party agreement for disposal of the hazardous waste Hazardous waste generation record (separately for contamination and direct generation)	Pre-Construction and Construction
22.	Resource Efficiency	PS 3	<ul style="list-style-type: none"> Considering the increased demand on water for construction activities, the Contractor shall adopt measures that avoid or reduce water usage so that the project's water consumption does not have significant adverse impacts on resources. These measures include, but are not limited to, <ul style="list-style-type: none"> the use of additional technically feasible water conservation measures within the construction activities, the use of alternative water supplies, water consumption offsets to reduce total demand for water resources to within the available supply 	REC and PIU	Construction site and project construction facilities	Waste Management Plan Materials Management Plan	Reports regarding waste and materials management plans	Pre-Construction and Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> The Contractor will avoid the release of pollutants or, when avoidance is not feasible, minimize and/or control the intensity and mass flow of their release according to the mitigation measures given in this ESMMP. This applies to the release of pollutants to air, water, and land due to routine, non-routine, and accidental circumstances with the potential for local, regional, and transboundary impacts. The material stockpiles open to air will be dampen in dry and windy weathers to prevent dust generation and material lose via winds. 					
23.	Disposal of waste	PS 3	<ul style="list-style-type: none"> Where waste generation cannot be avoided, the Contractor will reduce the generation of waste, and recover and reuse waste in a manner that is safe for human health and the environment. Where waste cannot be recovered or reused, the Contractor will treat, destroy, or dispose of it in an environmentally sound manner that includes the appropriate control of emissions and residues resulting from the handling and processing of the waste material. If the generated waste is considered hazardous, the client will adopt GIIP alternatives for its environmentally sound disposal while adhering to the limitations applicable to its transboundary movement. For organic waste, composting will also be considered for disposal, and later use of it as a soil conditioner and/or fertilizer. The Contractor will establish a waste segregation mechanism and will realize its proper functioning throughout the required facilities 	REC and PIU	Construction site and project construction facilities	Waste Management Plan	Reports regarding waste and materials management plans Percentage reuse/recycle and landfill of wastes	Pre-Construction and Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> Although there will not be any use of asbestos containing material, in case of any site preparation work, if asbestos-containing waste is encountered, its disposal will be managed according to the Waste Management Regulation and The Regulation on Health and Safety Measures in working with Asbestos (Official Gazette 28539, dated 25/01/2013) Onsite disposal of waste oils and solvents (especially direct disposal to soil surfaces) will be avoided. 					
Terrestrial and Freshwater Ecology								
24.	Damage or loss of terrestrial habitats	PS6	<ul style="list-style-type: none"> Delineation of areas to be cleared before the beginning of the construction activities in order to limit as much as possible the surface of vegetation to be cleared. Project construction sites and access roads will be separated from sensitive areas with appropriate fencing and signage. Appropriate fencing such as orange safety barrier fencing will be installed to protect sensitive habitats. In sensitive habitat areas, pedestrian, equipment and vehicle access will be limited to the designated access to construction sites. Parking and driving off the designated access roads will not be allowed. Waste generated from construction work and activities will be stored at designated areas and then disposed. Solid waste will not be allowed to be left at natural habitats. Licensed/approved facilities for solid and liquid waste disposal will be used and a duty of care 	REC and PIU	Construction site and Project Facilities	BMP - Biodiversity Management Plan LMP - Landscape Management Plan	Visual Inspections Site inspection reports.	Pre-construction Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			and chain of custody for all waste leaving the site will be followed.					
25.	Habitat fragmentation	PS6	<ul style="list-style-type: none"> Fauna crossing points (i.e., culverts) will be designed and installed along the railway. Culverts for animals are primarily constructed as safe crossing points for mammals. 	REC and PIU	Construction site and Project Facilities	BMP - Biodiversity Management Plan	The crossing success of the fauna species. Reported number of incidents/accidents.	Construction
26.	Loss of sensitive plant species	PS6	<ul style="list-style-type: none"> Seeds of three endemic / restricted range flora species which are described in BMP will be collected from the construction area to be used in the post-construction landscaping phase Collected seeds of endemic / restricted range flora will be delivered to the Plant Gene Bank, for conservation purposes. Measures to reduce dust and air quality will be taken as mentioned "Air Quality" section 	REC and PIU	Construction site and Project Facilities	BMP - Biodiversity Management Plan	The germination success of the planted seeds.	Pre-construction Construction
27.	Loss of sensitive fauna species	PS6	<ul style="list-style-type: none"> Where possible, gradual vegetation clearance will be planned to enable fauna to move to other areas. Pre-construction surveys for target fauna will be undertaken within high sensitive areas by a competent ecologist to assess their presence in the construction site. Seeds of three endemic / restricted range flora species which are described in BMP will be collected from the construction area to be used in the post-construction landscaping phase Vegetation clearance will be avoided, whenever feasible, during fauna breeding and wintering periods. 	REC and PIU	Construction site and Project Facilities	BMP - Biodiversity Management Plan	Achievement of the targets/measures provided in Biodiversity Management Plan.	Pre-construction and Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> Speed of construction vehicles will be limited, in order to limit emission of dust in non-paved access roads and avoid the risk of accidents with fauna. Existing roads in the construction area will be used whenever possible Sensitive habitats will be protected by the use of appropriate fencing such as orange safety barrier fencing. Protective measures will be implemented especially in locations of active construction works to also avoid the entry fauna and avoiding accidents. Fences that will completely enclose the route will be applied at the tunnel entrances and exits. This fence will be 2 m high and additional pole sections will be installed to increase this height to 3 m and colored stripes / tapes will be attached to these poles, which will affect bird flight behavior. ▪ Fence height should be increased to 3m in additional pole sections. Poles will be strong enough to withstand wind / weather effects. 					
28.	Increase in noise, visual and vibration which may cause disturbance or displacement of fauna	PS6	<ul style="list-style-type: none"> Measures to reduce noise will be taken as mentioned in "Noise and Vibration" section. Noise, waste and spills created during the construction activities will be managed under an Environmental Management Plan, to limit the disturbance to fauna. Environmental Awareness training will be provided to all personnel to increase awareness about the impact of disturbance, waste and spills on habitats and fauna. 	REC and PIU	Construction site and Project Facilities	BMP - Biodiversity Management Plan WMP - Waste Management Plan Environmental Awareness Training	Site inspection reports. Achievement of the targets/measures provided in Biodiversity Management Plan. Noise measurement results.	Pre-construction Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
29.	Introduction of Alien invasive species	PS6	<ul style="list-style-type: none"> Intrusion of any invasive flora species into the project area and its surroundings will be prevented. For this purpose, especially vehicles used for vegetation clearance and/or plant transfer will be washed/cleaned prior to use. Project employees will not be allowed to bring any live animals or plants into the construction site to avoid the risk of pest/invasive species establishing in the Project area. Planting of alien species will be prohibited within the Project Area or any areas associated with project, including landscaping of revegetated areas. Prompt revegetation (i.e. sowing of native herbaceous species and/or planting native shrubs/trees) on bare soil with natural or semi-natural vegetation will reduce the spread of alien species. Revegetation (i.e., the sowing of native herbaceous species on top-soils and/or the planting of native shrubs/trees) will be undertaken as soon as possible after clearance and construction. 	REC and PIU	Construction site and Project Facilities	BMP - Biodiversity Management Plan LMP - Landscape Management Plan	Visual Inspection Achievement of the targets/measures provided in Biodiversity Management Plan.	Construction Post-construction
30.	Damage to Freshwater Ecosystem	PS6	<ul style="list-style-type: none"> Temporary culverts proposed for river and stream crossings as mitigation measure to protect sensitive aquatic habitats will be designed to allow fish crossing both high and low flows (i.e. bottomless culverts). Construction work (bridge structures, drainage, temporary crossings and temporary works for structures) on rivers/streams and its tributaries between April and June will be avoided. The natural structure of the riparian vegetation which forms the spawning and sheltering area 	REC and PIU	Rivers/Streams and its tributaries	BMP - Biodiversity Management Plan SWMP - Surface Water Management Plan WMP - Waste Management Plan LMP - Landscape Management Plan	Site inspection reports. Achievement of the targets/measures provided in Biodiversity Management Plan. Water quality measurement results.	Pre-construction Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<p>for many aquatic organisms, will be preserved where possible.</p> <ul style="list-style-type: none"> Vegetation clearance works will be planned and executed to avoid damage to the riparian vegetation. To avoid any increase of the turbidity levels, sediment traps will be used, excavated materials will not be deposited or stored in or near freshwater features. The bottom structure of the river crossing zone will be restored to its natural state by laying the same material shortly after the work is completed. Measures to avoid spills will be taken as mentioned in Sub-section Spillage/Leakage to Surface Water. 					
Archaeological and Cultural Resources								
31.	Chance of Destruction of Archaeological and Cultural Resources	PS 8	<ul style="list-style-type: none"> The Cultural Heritage Management Plan will be used to inform all the requirements, procedures, resources and skills and timeline needed to minimise adverse cultural heritage effects. The Project Owner will provide all the conditions and enable smooth and constant monitoring of works during the entire duration of the earthworks, by the archaeological supervision. The Contractor will follow the national and international requirements with respect to “chance finds” which may emerge during construction. Regional Councils for the Conservation of Cultural Property will be the only decision maker on any intervention, which would be made on the site after the chance find. 	REC and external experts to conduct the field surveys.	Archaeological and Cultural Heritage Site List (see Appendix 1 Cultural Heritage Management Plan Appendix 1-1)	Chance Find Procedure	<p>Visual check</p> <p>Site inspection reports</p> <p>Training Records</p> <p>Review of Chance Find Report Form</p>	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> The Project Owner will be responsible for the management of all cultural heritage assets during the construction phase of the Project and implementation of related management plan and the chance find procedure. The Project Owner will be mobilize cultural heritage/archaeological monitoring expert/s for the monitoring of ground disturbance activities within project including impact areas also will ensure that Chance Find Procedure is adequately enforced during all ground disturbance activities. They will be also responsible for the monitoring of the implementation of the Cultural Heritage Management Plan (CHMP) and the Chance Find Procedure. In case of any further actions is required to identify the Chance Find (test pit or salvage excavation, other needed services), Project Owner will mobilize an archaeology team (including necessary expertise and other work-power) and provide the necessary equipment. The Project Owner is responsible for giving necessary training to the field staff about the implementation of the cultural heritage, chance find procedure and archaeological aspects of the Project. The Project Owner will record all chance finds on the Chance Find Report Form and on the Chance Find Register as per the Chance Find Procedure given in Appendix 2. During the construction work, if archaeological or historical sites and objects are discovered the Contractor shall mark and secure new identified sites (with a protective railing or other means of protection) to avoid damage in the course of 					

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<p>road construction and immediately notify the relevant Institute for the Protection of Cultural Monuments.</p> <ul style="list-style-type: none"> Ministry of Culture and Tourism is the responsible authority and Mersin Museum, Adana Museum, Osmaniye Museum, Gaziantep Museum and Kahramanmaraş Museum Directorates are responsible to provide experts for the sites as soon as possible after being informed and to officially identify the Chance Find (described in Appendix 2). Museum directorates are responsible for the excavation of chance find areas. 					
Visual Landscape								
32.	Change of landscape due to changes in land use	PS1 PS3	<ul style="list-style-type: none"> Landscape Management Plan (LMP) will be implemented to cover the construction phase. The LMP will cover actions to suitably manage and maintain the growth and health of planting in year 1 (establishment), the first 5 years of growth (strengthening), and post 5-year longer-term typical management and maintenance requirements. 	REC and PIU	All Municipalities in the AoI	LMP - Landscape Management Plan WMP - Waste Management Plan	Visual inspections Grievance Records	Construction
33.	Visibility of new structures from Settlements	PS1 PS3						
34.	Visibility of new structures from Recreational Areas	PS1 PS3	<ul style="list-style-type: none"> During the construction, restricted hours of working will be implemented within built-up areas, where the works are likely to impact on residential properties, and the use of machinery during the hours when residents are most likely to be at home will be avoided. Screening vegetation will be reinstated, subject to land take, and availability of suitable land area. In some instances where the Project is located within built-up areas, the availability of land for mitigation planting will be restricted. No planting is proposed directly within the rail 					

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<p>corridor, itself due to electrical overhead lines, structures, and clearances. Mitigation planting should be as close as possible to areas of loss or for maximum screening benefit, as health and safety requirements allow.</p> <ul style="list-style-type: none"> Stockpiled storage mounds will have a maximum height of 2m. Where topsoil is to be stored for a prolonged period, the mounds will be temporarily seeded with an appropriate grass seed mix to reduce the visual prominence of the temporary soil mounds further within view. Construction sites will be kept tidy, and workers will have necessary knowledge/training about the issue. Construction footprint will be as minimal as practicable. 					
SOCIAL								
Population								
35.	Increased risk of illicit behavior and crime	PS-1	<ul style="list-style-type: none"> Workers will be paid adequately to prevent theft potential. Workers will be paid into bank accounts. Priority should be given to the local labor where possible and practical. Worker accommodation facilities should be include leisure areas to reduce the interaction of the workers with the local communities. Code of Conduct will be developed in compliance with the national legislation. Hard copies will be provided in English and the native languages of the workforce. All workers (including expats) will be trained in their native languages about the Code of 	REC and PIU	Construction site, Project Facilities	Grievance Mechanism Cultural Awareness Training Local Employment Plan	Grievance Records Percentage of local employment compared to the overall workforce. Cultural Awareness Training records Skill development training content for local labour	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			Conduct and dismissal policy in particular in criminal cases.					
36.	Risk of social conflict	PS-1	<ul style="list-style-type: none"> Code of Conduct will be developed in compliance with the national legislation. Hard copies will be provided in English and the native languages of the workforce. The Construction Workers' Code of Conduct shall be clearly displayed at the different Project Areas and posted in the Contractor's vehicles and machinery driving cabs. Contractor's personnel should be aware and acknowledge their understanding of the Worker's Code of Conduct and the associated provisions. The Workers' Code of Conduct should be initialed by all Contractors' personnel prior to the start of any physical work at any Project Area. Compliance with the Code of Conduct shall be a condition in all workers' employment contracts. All workers (including expats) will be trained in their native languages about the Code of Conduct. All workers (including expats) will receive Project Orientation and Cultural Awareness training that covers sensitive issues on the local communities. Should the Contractor's personnel repeatedly commit any of the listed offences despite awareness of the Code of Conduct, and this is without prejudice to any legal action by any public authority for non-compliance with applicable regulations, then this would be regarded to be serious misconduct. Serious misconduct shall result in immediate dismissal from any Project Area. Acts requiring the 	REC and PIU	Construction site, Project Facilities	Code of Conduct Training Project Orientation and Cultural Awareness training SEP	Training records on the Code of Conduct, Project Orientation and Cultural Awareness Consultation records and proof of interactions of local CLOs with communities in the vicinity of the camp accommodation.	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<p>implementation of a disciplinary procedure and where repeated failure or where the severity of such cases may result in serious misconduct and instant dismissal are as follows:</p> <ul style="list-style-type: none"> ○ Drunkenness during working hours, leading to risks for the safety of local inhabitants, customers, users and personnel; ○ Punishable statements or attitudes, and sexual harassment in particular; ○ Violent behaviour and physical aggression; ○ Intentional damage to the assets and interests of others, or the environment; ○ Repeated negligence or imprudence leading to damage or prejudice to the environment, the population or properties, particularly breaching provisions intended to prevent the spreading of STD and AIDS; ○ Drug including marijuana use; ○ Entering property of neighbouring people without permission of the landowners or those cultivating/renting the land. <ul style="list-style-type: none"> • Serious misconduct, and therefore instant dismissal, shall also apply if workers are found to be involved in any of the following activities: organisation of sex trade (pimping), committing paedophilia, drug trafficking, deliberate and severe pollution, trading and/or trafficking in all or part of protected species. Anyone found to be committing such offences shall be immediately dismissed as of the first report of misconduct detected, in application of the Code of Conduct and labour laws. • The Contractor will be establish a record for each case of serious misconduct, and a copy will be provided to the Contractor's personnel in 					

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			question, indicating all action taken to terminate the misconduct by the Contractor's personnel in question and to bring the attention of other Contractor's personnel to the type of incident detected. This record will be provided to the Implementation Consultant as an attachment to monthly progress report.					
37.	Influx of additional population	PS-1	<ul style="list-style-type: none"> • Employment Plan will be prepared and implemented to prevent spontaneous influx of job seekers. • Employment capacity and the qualifications required for the construction will be disclosed to the public to prevent unrealistic expectations. • Cooperation will be developed with the local municipalities, NGOs, organizations and local employment agencies. 	REC and PIU	Construction site, Project Facilities	Employment Plan	Number of the local employees Announcement of employment opportunities. CV pool. Employment tools.	Construction
38.	Impacts on community dynamics	PS-1	<ul style="list-style-type: none"> • Mitigation measures will aim to prevent burden on the communal services and Area of influence. • Worker accommodation will be established to reduce pressure on the facilities of the local communities. • Workers' accommodation should include arrangements to enable persons with disabilities, women and disadvantaged groups to access and work in the workplace. • Worker accommodation will be in compliance with the Guidance by IFC Workers' Accommodation: Processes and Standards. • Construction Worker's Accommodation Management Plan will be developed and include (but not limited to) IFC Guidance for worker accommodation, such as: 	REC and PIU	Area of Influence(Aol) Construction site, Project Facilities	Construction Worker's Accommodation Management Plan	Construction Worker's Accommodation Management Plan Visual inspections Accommodation Inspection reports	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> Basic collective social/rest spaces such as multi- purpose halls, designated areas for radio, TV, cinema. Standarts for nutrition and food safety Laundry, canteen and cooking facilities Medical facilities Rooms/dormitory toilet, shower/bathrooms and other sanitary facilities Dedicated places for religious observance. Access to public phones at affordable/ public prices (that is, not inflated). Internet facilities. 					
39.	Gender Based Violence	PS-1	<ul style="list-style-type: none"> Grievance Mechanism will be developed and gender based complaints and necessary measures will be taken accordingly. Discrimination behavior or practice arising from any reason such as gender, age, ethnicity, religion, language, race, physical characteristics, and disability will be recorded and examined. All staff will be trained to prevent gender-based violence and promote a gender-sensitive work environment. 	REC and PIU	Construction site, Project Facilities	Grievance Mechanism SEP Code of Conduct Training Employment Plan	Employment of women CLO. Training Records on Code of Conduct. Grievance records.	Construction
40.	Local inflation of prices:	PS-1	<ul style="list-style-type: none"> Market rates for procurement of goods, services, land and labour should be paid in order to avoid directly causing an increase in the price of local goods, services, land and labour. 	REC, Subcontractors and supply chain	All business within the borders of Social Aol	Grievance Mechanism	Grievance Records Annual reports of the governmental bodies. Market price analysis	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
Infrastructure								
41.	Pressure on the local healthcare infrastructure as a result of incoming construction workforce	PS 1 PS 4	<ul style="list-style-type: none"> A Grievance Mechanism will be developed to record, avoid and address incidents caused by the construction activities (e.g. Electricity and water cutoffs, traffic blockages, disruption of local roads where patients are travelling to hospitals daily). 	REC, Subcontractors and supply chain	All Municipalities in the social Aol	ERP CMP Grievance Mechanism	Statistics on workforce using accommodation facilities. Grievance records.	Construction
42.	Impacts on local infrastructure	PS 1 PS 4	<ul style="list-style-type: none"> The Project will implement a Grievance Mechanism and address infrastructure related grievances in line with the Stakeholder Engagement Plan (SEP) of the Project. Infrastructure improvement/rehabilitation will be implemented when necessary. Training construction workers regarding to good practices on resource efficiency. 	REC and PIU	All Municipalities in the social Aol	ERP SEP CMP Grievance Mechanism	Incident/accident records regarding local infrastructure Community engagement records Grievance records	Construction
43.	Impacts on the local road network	PS 1 PS 4	<ul style="list-style-type: none"> Engagement will be made with local authorities on the issue of traffic movement during construction phase. Residents in nearby communities will be informed about the transport routes to be used and used. Landfill irrigation system will be applied to prevent dust formation on the road. Regular and frequent irrigation will be applied especially in the dry period for dust reduction. Where there are sensitive products, dust screening measures will be applied. The grievance mechanism will be strengthened and operated along the entire route, all 	REC and PIU	All Municipalities in the social Aol	Construction Traffic Management Plan(CTMP) ERP Grievance Mechanism	Visual inspections approved TMPs Incident Reports number and type of traffic incidents/accidents Training Records Vehicle Inspection records and driver logs Grievance records	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			complaints will be recorded and resolved in accordance with the GRM procedure. <ul style="list-style-type: none"> In case of complaints, additional measurements will be made and the results will be shared with the complainant. Road improvement/rehabilitation will be implemented when necessary. 					
44.	Sewage System	PS 1 PS 4	<ul style="list-style-type: none"> Project Owner is recommended to be cooperate with responsible authorities in case necessary improvements will be required for local infrastructure. 	REC and PIU	All villages in the Aol, Construction site, Project Facilities	SEP Waste Management Plan Grievance Mechanism	Statistics Grievance records (regarding accommodation)	Construction
Economy								
45.	Employment	PS 2	<ul style="list-style-type: none"> In order to increase employment opportunities for local people within the Project area, the Contractor will employ local workers, preferring suitably qualified and experienced applicants from local communities close to the Project. While recruiting Syrians under temporary protection and all employees, legal work permits will be checked. Environmental and social arrangements will be made to ensure working conditions that take into account gender equality and offer equal opportunities to all segments in the business area, office areas and all other working areas. Local people and mukhtars affected by the project will be informed about employment opportunities and women will be encouraged to apply for job opportunities. 	REC and PIU	All Municipalities in the social Aol	Human Resource Policy Workers Grievance Mechanism	Statistics on workforce from the social Aol Project-specific Human Resources Policy and relevant procedures Grievances records	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> Procurement and employment opportunities within the targeted geographic area or targeted group should be announced, for example, in District and neighborhood offices and through notice boards, print media (newspapers, etc.), recruitment agencies or job and career fairs. Job postings will be prepared using an anti-discrimination language, and recruitment processes will be carried out in a transparent and accountable manner. Information about job opportunities should be communicated to NGOs, organizations or institutions working on the workforce, local human resources, vocational training or vulnerable groups. Employment opportunities listing required qualifications for all employment categories will be published and communicated throughout the city, through relevant organizations, and outside the region if vacancies cannot be filled. Goods and services should be proactively procured from local businesses and entrepreneurs in affected settlements and members of targeted vulnerable groups. Capacity enhancement benefits will be increased through training programs for contractors and subcontractors on related policies, as well as phased capacity building and targeted training programs for national and local suppliers agreed with local government and industry organizations to benefit local capacity enhancement. 					
46.	Impact on Agriculture		<ul style="list-style-type: none"> A Resettlement Action Plan (RAP) and a Livelihood Restoration Plan (LRP) will be prepared and implemented. 	REC and PIU	All Locations where land	RAP	The indicators that will be	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> The Project Owner/Employer will encourage and interact with Ministry of Agriculture to include the PAPs within their training programs (eg. reskilling, opportunity, diversity). Necessary compensation will be paid to PAPs whose products are found to be damaged due to project activities. Residents in nearby communities will be informed about the transport routes to be used and used. Landfill irrigation system will be applied to prevent dust formation on the road. Regular and frequent irrigation will be applied especially in the dry period for dust reduction. Where there are sensitive products, dust screening measures will be applied. The grievance mechanism will be strengthened and operated along the entire routes, all complaints will be recorded and resolved in accordance with the GRM procedure. In case of complaints, additional measurements will be made and the results will be shared with the complainant. Monitoring, evaluation and compensation support will be provided for PAPs who have lost income due to the project. Road improvement/rehabilitation will be implemented when necessary. 		acquisition is occurring Social Area of Influence(Aol)		provided within the scope of RAP Grievances records	
Land Acquisition and Resettlement								
47.	Permanent acquisition of lands	PS 5	<ul style="list-style-type: none"> A Resettlement Action Plan (RAP) and a Livelihood Restoration Plan (LRP) will be prepared and implemented. 	REC and PIU	All affected people from the land	RAP SEP	Documentation associated with implementation of RAP	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> The Project SEP including the grievance mechanism will be implemented and all grievance related with the expropriation process will be recorded and monitored. Fair and transparent compensation, which is determined by official institutions, will be provided to the shareholder users and informal users. All users/ shareholders will be informed about the aim of expropriation process. Informal users and vulnerable shareholder users will be determined and consulted and incase of the livelihood loss necessary assistance will be provided. The amount of land occupied during the construction will be minimized. Construction workers will be trained to stay within the border of the construction areas and expropriation corridor and avoid trespass on private land. For exceptional cases when the privately-owned land has to be used but the expropriation or court processes have not been finalized yet, no work will be started until bilateral agreements are settled and official consent letters are taken from the legal owners. If complaints related with unauthorized use of privately-owned lands, damages on adjacent lands, etc. are received through Project's Grievance Mechanism, evaluation/inquiry will be conducted on a case-by-case basis and where necessary, corrective actions will be planned and implemented. In case of any direct damage on private property as a result of the activities of the Project 		acquisition and resettlement	Grievance Mechanism	Documentation associated with implementation of Livelihood Restoration Plan Grievances records	

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			contractors or subcontractors, the Contractor will ensure that relevant corrective measures (e.g. repair, maintenance, rebuilding, restoration, etc.) are implemented.					
48.	Impacts on Agricultural lands		<ul style="list-style-type: none"> Impacts to agricultural and pasture lands will be minimized as far as possible by keeping the Project construction footprint as narrow as possible, and efficiently restoring any damaged areas. Necessary compensation will be paid to PAPs whose products are found to be damaged due to project activities. Residents in nearby communities will be informed about the transport routes to be used and used. Landfill irrigation system will be applied to prevent dust formation on the road. Regular and frequent irrigation will be applied especially in the dry period for dust reduction. Where there are sensitive products, dust screening measures will be applied. The grievance mechanism will be strengthened and operated along the entire route, all complaints will be recorded and resolved in accordance with the GRM procedure. In case of complaints, additional measurements will be made and the results will be shared with the complainant. Monitoring, evaluation and compensation support will be provided for PAPs who have lost income due to the project. Road improvement/rehabilitation will be implemented when necessary. 	REC and PIU	All affected people from the land acquisition Social Area of Influence(Aol)	RAP SEP Grievance Mechanism	Documentation associated with implementation of RAP Documentation associated with implementation of Livelihood Restoration Plan Grievances records	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
49.	Temporary land allocation		<ul style="list-style-type: none"> In case of temporary land allocation all disturbed private land will be rehabilitated as appropriate and agreed upon, following the completion of construction works. 	REC and PIU	All locations where temporary land allocation is occurring	RAP SEP Grievance Mechanism	Protocols with land owners Grievances records	Construction
50.	Damage to crops during construction		<ul style="list-style-type: none"> The Project will minimize damage to crops by minimizing the area of disturbance caused by vehicle movement and other construction activities. If complaints related with unauthorized use of privately-owned lands, damages on adjacent lands, etc. are received through Project's Grievance Mechanism, evaluation/inquiry will be conducted on a case-by-case and where necessary, corrective actions will be planned and implemented. 	REC and PIU	All locations where damage may occur	RAP SEP Grievance Mechanism	Protocols with land owners Grievances records	Construction
51.	Physical and economic displacement of PAPs		<ul style="list-style-type: none"> Pay compensation and all resettlement rights must be secured before physical or economic displacement and construction work begins. The Resettlement Action Plan should be implemented under close supervision throughout the project implementation. 	REC and PIU	All affected people from the land acquisition and resettlement	RAP SEP Grievance Mechanism	Employment records Grievances records	Construction
Ecosystem Services								
52.	Access to Forest Lands	PS 5 PS 6	<ul style="list-style-type: none"> Local authorities and the villagers will be informed before the construction activities within the forest land not to create any limitation on firewood collection, herbs collection and hunting. Hunting and collection of wild animals will be strictly prohibited within the Project area. 	REC and PIU	All PAP who are accessing the forest land	Grievance Mechanism RAP SEP	Visual inspections and records of information tools & consultation Environmental measurement records	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> • Maintain ongoing engagement between the Project and local communities, with communities informed in advance of any vegetation clearing to allow pre-harvesting of resources such as wood fuel, mushrooms, building materials or other useable resources. • For households who obtain income from timbering activities commercially, compensate for unavoidable loss through in-kind restoration or other type of compensation methods applicable to the IFC requirements. • Piles of woody vegetation cleared for construction activities are to be made available to communities to access it for use as wood fuel or other purposes. • Landfill irrigation will be done to prevent dust formation and to minimize damage to the environment, especially during the hot dry period; • If there is a temporary road or level crossing restriction due to construction, alternative crossings will be given, • -These project-affected areas and settlements will be monitored and followed during the construction intensification, • It will be ensured that all people living in these Project affected areas and settlements are aware of the Project grievance lines and grievance reporting tools, • Necessary announcements, announcements, contact numbers will be posted in the necessary and visible common areas, and information meetings will be held on the impact of the project. 				<p>Traffic incident/accident reports</p> <p>Training records on traffic management</p> <p>Biodiversity monitoring records</p> <p>Visual inspections and records of vegetation clearing</p> <p>Grievances records related to restrictions on designated hunting areas</p>	

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
53.	Impact on Apiculture	PS 5 PS 6	<u>Construction</u> <ul style="list-style-type: none"> Monitoring will be held within the scope of the RAP to analyze the livelihood impacts of the beekeepers 	REC and PIU	All PAP carried out apiculture	Grievance Mechanism RAP SEP	Statistics on beekeepers and activities Environmental measurement records - dust & noise Resettlement action records (if required) Grievance records related with beekeeping activities.	Construction
Labour and Working Conditions								
54.	Labour Risks and Impacts Related to Women Employment and Non-Discrimination and Equal Opportunity	PS 2	<ul style="list-style-type: none"> The Contractor and Operator will apply equal opportunities to women in all of their branches. Further measures will be put in place to encourage female participation in indirect workforce, such as providing specific training where required, enabling flexibility and job-sharing opportunities for women with children to participate. Job postings will be prepared using an anti-discrimination language, and recruitment processes will be carried out in a transparent and accountable manner. Local people and mukhtar affected by the project will be informed about employment opportunities and women will be encouraged to apply for job opportunities. 	REC and PIU	Construction area and Project Facilities	Worker Grievance Mechanism Human Resource Policy	Workforce statistics Grievance records Workforce statistics	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> Publish vacancies (listing the required qualifications for all categories of employment) within project-affected communities 					
55.	Labour Risks and Impacts Related to Subcontractor and Supply Chain Management (Including Child and Forced)	PS 2	<ul style="list-style-type: none"> The Contractor and Operator will not employ nor permit any subcontractor to use child labour, and in accordance with Turkey legislation, any person under the age of 18 may not be assigned to any hazardous work within the Project. The Contractor and Operator will prohibit the use of forced labour by ensuring full compliance with national legislation and the provisions of relevant conventions and other international standards To reduce and mitigate effects associated with the operational supply chain, the following measures will be implemented: Develop a Supply Chain Management Plan to cover the operation stage, and as a minimum to cover the following: <ul style="list-style-type: none"> Ensure that any tendering process includes clauses and policies on minimum working age, normal working hours, freedom to collective bargaining, good working conditions and eradicating risks of forced labour; and Include labour management clauses (as specified in bullet point above) in procurement contracts. 	REC and PIU	Construction area and Project Facilities	Worker Grievance Mechanism Human Resource Policy	Workforce statistics	Construction
56.	Worker Conditions and term of employment	PS 2	<ul style="list-style-type: none"> Workers will have contracts which clearly state the terms and conditions of their employment and their legal rights. Information will include, but not be limited to: <ul style="list-style-type: none"> entitlement to wages, hours of work, overtime arrangements and overtime compensation, and any benefits (such as 	REC and PIU	Construction area and Project Facilities	Worker Grievance Mechanism Human Resource Policy	Work contracts in line with Turkey Law and the IFC PS2. Labor Report(s) Audit	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<p>leave for illness, maternity / paternity or holiday)</p> <ul style="list-style-type: none"> able to join trade unions of their choice and have the right to collective bargaining contracts will be verbally explained in their native languages to all workers where this is necessary to ensure that workers understand their rights prior to any employment contract to be signed. Cultural Awareness Training will be provided an on-boarding requirement to all non-local workers, and in particularly foreign workers. Worker Grievance Mechanism will be developed and will: <ul style="list-style-type: none"> be open to all the staff and their contractors, be publicly advertised by the Project in the workforce, be easily accessible by workers be free of retribution allow anonymous complaints to be raised and addressed. All Project parties will require all contractors to sign an anti-corruption and responsible procurement policy. For all contractor contracts, the Project will make explicit reference to the need to abide by IFC standards and ILO conventions in relation to labor and welfare standards, freedom of association and reference must be made to child and forced labor. Emphasis will also be placed on anti-discrimination measures. Where young people below the age of 18 years are employed, it will be made clear that they will not be 				Training Records	

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<p>employed in hazardous work and their work will be subject to an appropriate risk assessment.</p> <ul style="list-style-type: none"> Construction Worker's Accommodation Management Plan will be developed and comply with 'Workers' accommodation: processes and standards, a guidance note by IFC Design of the accommodation camp will include measures for managing the camp to ensure adherence to international standard for providing a safe environment that is clean, and adequate sanitary. Measures will include: <ul style="list-style-type: none"> waste management provision of potable water, provisions of minimum amount of space for each worker laundry facilities cooking facilities (separate area for the foreign personnel, if necessary) provision of first aid and medical facilities provision of heating and ventilation. Camp Management Project will include a Code of Conduct for construction workers, During the construction phase, the Contractor's HSE plans and procedures include requirements for induction and training on expected behaviors and on disciplinary procedures (including dismissal procedures for unacceptable conduct). During the construction phase, the Contractor's HSE plans and procedures include requirements for induction and training on expected behaviors and on disciplinary procedures (including dismissal procedures for unacceptable conduct). 					

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> In case of a collective dismissal required, Labour Management and Monitoring Plan will be developed by the Contractor to mitigate adverse effects of job losses on the workers concerned. Retrenchment of workers is likely to be required across the lifespan of the Project, particularly during the transition from construction to operation. Retrenchment of workers will be undertaken in line with national law and international best practices, and will include providing skills to enable individuals to secure alternative employment. The effectiveness of all retrenchment should be monitored including the timely close out of retrenchment-related grievances 					
Occupational Health and Safety								
57.	Health and Safety Risks due to General Occupational Health and Safety Hazards	PS 2	<ul style="list-style-type: none"> REC will establish Health, Safety and Security Plan (including occupational health and safety (OHS)) with special focus on (but not limited to): movement of vehicles and traffic management, working at heights, working in confined spaces, working with hazardous materials, management of electrical hazards, prevention of unintended ground movements and collapse. OH&S Management Plan will acknowledge and reference to IFC EHS Guidelines for Toll Roads (2007) and IFC General EHS Guidelines (2007). Contractual conditions will ensure that all sub-contractors to follow the Health, Safety and Security Plan (including occupational health and safety (OHS)). Organization of the work schedule will include specific risks e.g. flood. 	REC and PIU	Construction area and Project Facilities	Grievance Mechanism Human Resource Policy OHS Management Plan	OHS Performance Reports including accident/incidents, corrective actions, trends, risks, Subcontractor & supply chain performance Training Records	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> Communication skills across the workforce will be multi lingual. Enforcement, self-verification & consequence management will be implemented. Appropriate number of EH&S officers per workforce group (e.g. risk based) will be employed to implement the EH&S program, including risks assessment, training, supervision of high risks tasks, subcontractor induction. Site-specific factors which may contribute to excavation slope instability will be controlled. Good cooperation with the local medical services will be ensured. An OHS system will be established for the reporting and recording of occupational accidents and dangerous occurrences/incidents. Personal Protective Equipment will be selected based on the specific hazards and risks of the task to be performed and properly maintained to keep them effective and operational throughout their use. Individuals shall only carry out tasks for which they are competent and authorized to do so. Individuals shall only operate and use plant or equipment for which they are trained and authorized. Copies of all operator certificates will be retained. Emergency contact numbers will be made available at the work sites. This will include the fire and rescue service and the environmental inspection. 					
58.	Health and Safety Risks due to	PS 2	<ul style="list-style-type: none"> The area around which elevated work is taking place will be barricaded to prevent unauthorized 	REC and PIU	Construction area and	Grievance Mechanism	OHS Performance Reports including	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
	Physical and Chemical Hazards		<p>access and working under personnel on elevated structures will be avoided</p> <ul style="list-style-type: none"> • Hoisting and lifting equipment will be rated and properly maintained, and operators trained in their use. • Elevated working platforms will be maintained and operated according to established safety procedures including use of fall protection measures (e.g. railings), equipment movement protocols (e.g. movement only when the lift is in a retracted position), repair by qualified individuals, and installation of locks to avoid unauthorized use by untrained individuals. • Ladders will be used according to pre-established safety procedures for proper placement, climbing, standing, as well as the use of extensions. • When working at height, proper fall protection measures will be implemented. Fixtures will be installed on bridge components. Safety harnesses with proper thickness and of suitable materials ensuring sufficient strength will be used. Rope safety harnesses will be replaced before signs of ageing or fraying of fibers become evident. • When operating power tools at height, workers will use a second (backup) safety strap. • Personnel exposed to high levels of noise will be required to use personal hearing protection devices/equipment. Where required for specific works, work rotation programs will be implemented to reduce cumulative exposure. • Weather forecasts will be monitored for outdoor work to provide advance warning of extreme 		Project Facilities	<p>Human Resource Policy</p> <p>Health, Safety and Security Plan (including occupational health and safety (OHS))</p>	<p>accident/incidents, corrective actions, trends, risks, Subcontractor & supply chain performance</p> <p>Training Records</p>	

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<p>weather and schedule the work accordingly. Protective clothing will be used where required.</p> <ul style="list-style-type: none"> • Properly maintained construction machinery, equipment and vehicles will be used to minimize air emissions. • Engine idling time will be reduced in construction sites. • Direct diesel exhaust will be properly removed to minimize exposure of the operators. • Indoor working areas where vehicles or engines are operated will be ventilated or the exhaust gases will be properly diverted. • Lead-containing paint will be avoided, and appropriate respiratory protection will be used when cutting galvanized steel. • At work sites where dust levels are excessive, dust masks will be used by relevant personnel. 					
59.	Health and Safety Risks due to Emergencies	PS 2	<ul style="list-style-type: none"> • Construction Emergency Response Plan (based on the ERF) will be prepared and cover specific project risks such as spill containment and clean-up, flood, working over water, fire, rescue from height • Sub-Contractors will develop and take site-specific emergency measures in line with the Contractor Management Plan.. • Relevant emergency preparedness and response measures will be taken during emergency situations arising at the construction/work sites and Camp Sites. • The Health, Safety and Security Plan (including occupational health and safety (OHS), which includes the measures to be taken regarding the pandemic, will be implemented according to the current situation regarding Covid-19. The Health 	REC, Subcontractors and PIU	Construction area and Project Facilities	<p>Grievance Mechanism</p> <p>Human Resource Policy</p> <p>Health, Safety and Security Plan (including occupational health and safety (OHS))</p> <p>Construction Emergency Response Plan (based on the ERF)</p>	<p>OHS Performance Reports including accident/incidents, corrective actions, trends, risks, Subcontractor & supply chain performance</p> <p>Training Records</p>	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<p>Plan will take into account the Decree (Official Gazette No. R 31/2020) on the functioning of employers during the state of emergency: The following measures have been adopted by the Government::</p> <ul style="list-style-type: none"> ○ During the state of emergency, the employer must enable employees to perform work remotely (i.e. outside of the employer's business premises (teleworking and work from home)), at all workplaces where such work can be organized in line with the general enactment (i.e. the employment rulebook or collective bargaining agreement of the employer, whichever is applicable) and the employment contract. ○ If the general enactment and the employment contract do not provide for the possibility for remote work, the employer may issue a decision allowing for work outside of the business premises, if organizational conditions allow so. Such a decision must contain the duration of working hours and the manner of supervision of the work of employees. The employer is obligated to keep records of employees who work outside of the business premises. ○ If the nature of the activity of the employer does not allow for organization of work in the manner provided above, such an employer must adjust its operations to the conditions of the state of emergency as follows: ○ arrange shift work, if possible and without requiring additional resources, so that as few persons (employees and all other engaged persons) as possible work simultaneously at one premises. 					

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> enable that all business meetings are held via electronic or other appropriate means (video link, video call, etc.); postpone business trips in Turkey and abroad, in accordance with the authority's ban / temporary restriction of entry and movement. In order to ensure the protection and health of employees, engaged personnel and clients, employers must provide all general, special and extraordinary measures related to the hygienic safety of facilities and persons in accordance with the Law on Protection of Citizens from Contagious Diseases. For employees and engaged personnel who are in direct contact with clients or share a workspace with multiple persons, it is necessary to provide sufficient quantities of protective equipment in accordance with special regulations. 					
60.	Health and Safety Risks due to Construction Traffic	PS 2	<ul style="list-style-type: none"> A Construction Traffic Management Plan(CTMP) will be developed and implemented; All subcontractors will be ensured to comply with this plan, School bus drivers will be informed about the busiest hours of project activities, Necessary training and awareness training will be given to heavy vehicle drivers, A follow-up mechanism will be established to continuously monitor and inspect the speed control of heavy vehicles, the routes they use, and the transportation routes, 	REC and PIU	Construction area and Project Facilities	Grievance Mechanism Human Resource Policy CTMP	OHS Performance Reports including accident/incidents, corrective actions, trends, risks, Subcontractor & supply chain performance Training Records	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> Regulations and laws regarding the transportation of materials and loads by heavy vehicles will be implemented and additional measures will be taken. Tarpaulin, closed transport, load limits, maintenance and measurements of vehicles will be checked, environmental and social security measures will be taken, The grievance mechanism will be used effectively, and traffic related complaints will be recorded, evaluated, resolved and managed. Before starting the high-speed train construction, traffic regulation road crossing works will be carried out in consultation with the relevant stakeholders. Safe work zone will be established to separate workers on foot from the traffic; For the construction works to be conducted at location where traffic exists, safe work zones will be established by taking relevant measures (closure of roads, diversion of traffic, use of protective barriers, cones, warning lights, etc.). Weather forecasts will be monitored to provide advance warning of extreme weather to drivers and schedule the work accordingly. Temporary traffic control devices, such as signage, warning devices, paddles, and concrete barriers will be set up where required in a consistent manner throughout the work zone to provide passing motorists with advanced warning of upcoming work zones; Traffic control workers will be trained in topics such as traffic flow, work zone setup, and proper placement of channelizing devices. 					

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> All workers will wear high-visibility safety apparel. 					
61.	Health and Safety Risks on Accommodation	PS 2	<ul style="list-style-type: none"> Worker accommodation will be designed and maintained to meet the standards defined in IFC guidance on accommodation. The standards of the rooms or dormitory facilities should be designed to allow workers to rest properly and to maintain good standards of hygiene. This includes cafeteria, medical room, shower and toilets, wastewater treatment plants/septic tanks, water supply facilities (i.e. water well) Worker accommodation conditions will be maintained to ensure a good standard of personal hygiene and hygiene in canteens need to be ensured to prevent contamination and the spread of diseases which result from inadequate sanitary facilities and may affect the community health and safety as well. Medical facilities (first-aid facilities, additional medical facilities) will be maintained to ensure good standards of workers' health and to provide adequate responses in case of health emergency situations. Basic leisure, social and telecommunication facilities will be provided for workers to rest and also to socialize during their free time. These requirements at the camp accommodation facilities should be optimized to minimize potential impacts on the workers' welfare and risk of work-related accidents and maximize the overall productivity. Worker Grievance Mechanism will be established that will provide means for all Project personnel to lodge their complaints. 	REC and PIU	Camp Sites	Grievance Mechanism Human Resource Policy Health, Safety and Security Plan (including occupational health and safety (OHS))	OH&S Induction personnel working on site Task specific training (Project employees, subcontractors & suppliers)	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> Only concrete plants will be located at the Camp Sites; asphalt and mechanical plants will be sited close to the quarries to the extent feasible. 					
62.	Labour Risks and Impacts Related to Subcontractor and Supply Chain Management (Including Child and Forced Labour Risks)	PS 2	<ul style="list-style-type: none"> The Contractor will not employ nor permit any subcontractor to use child labour, The Contractor will prohibit the use of forced labour by ensuring full compliance with national legislation and the provisions of relevant conventions and other international standards. These measures will be reflected in the Project's Employment Plan Document. 	REC and PIU	Construction area and Project Facilities	Grievance Mechanism Human Resource Policy Health, Safety and Security Plan (including occupational health and safety (OHS))	OH&S Induction personnel working on site Number of grievances Worker Contracts	Construction
Community Health and Safety								
63.	Disturbance to environmental health, quality of life and wellbeing during construction phase	PS 4	<ul style="list-style-type: none"> Health, Safety and Security Plan (including occupational health and safety (OHS)), will include awareness of community health and safety issues. The Health, Safety and Security Plan (including occupational health and safety (OHS), which includes the measures to be taken regarding the pandemic, will be implemented according to the current situation regarding Covid-19 Construction work schedule will be distributed to the affected settlements in a timely manner to inform any road closures and construction related cautions. Air and noise monitoring will be undertaken in accordance with local regulations. Establish in advance a relationship with municipal environmental department. 	REC and PIU	All villages in the Aol	Health, Safety and Security Plan (including occupational health and safety (OHS)) SEP Grievance Mechanism	Grievance records Consultation records Environmental measurements - air quality, noise	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> Operational area in access roads, work sites, construction camp sites, batch plant and etc. will be regularly monitored for air quality parameters such as PM10, PM2.5, SO₂, GHG Emissions etc. Construction work schedule will be distributed to the affected settlements in a timely manner to inform any road closures and construction related cautions. Dust suppression mitigation measures such water sprinkling will be implemented in sensitive locations. Operational areas in in borrow areas, access roads, work sites, construction camp sites, batch and etc. will be regularly monitored for noise levels representing all hours of a typical work shift. In case of noise exceedance, silencers or acoustic enclosures on machines as well as portable sound barriers around stationary equipment, should be installed where applicable. Movement of construction traffic through sensitive receptor community areas will be prevented or limited, wherever possible. If this cannot be avoided, additional measures defined in the Traffic Management Plan (TMP) such as slower driving rules, physical speed restrictions) will be applied. Movement of construction traffic through sensitive receptor community areas will be prevented or limited, wherever possible. If this cannot be avoided, additional measures defined in the Traffic Management Plan (TMP) such as 					

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<p>slower driving rules, physical speed restrictions) will be applied.</p> <ul style="list-style-type: none"> • Sensitive receptors (e.g. hospitals, nursing homes, schools) will be provided with advanced notification of noisy works and project specific additional mitigation measures. • Special acoustic insulation and related mitigation measures will be evaluated on a case-by-case basis. • 20kph speed limit will be applied on unpaved surfaces close to settlements. • Wind breaks or dust protection systems (including sprinklers) should be built around the main construction activities where necessary and, if possible, near potentially dusty works to minimize the impact of nearby residential receptors. • During transportation on public roads, the excavated materials will be covered with nylon canvas or suitable materials with a grain size greater than 10 mm in public roads as good practice. • To reduce fugitive dust emission during vehicle operation on public roads and at construction sites, service roads and quarry/material storage • Dust suppression methods (i.e. watering with water trucks, applying nontoxic chemicals, speed limits for mobile vehicles, using well-maintained vehicles/equipment) should be used. • In case of a Grievance, additional measurements will be implemented, and the results will be shared with the complainant. If the results of the measurements will not fit with the commitments given in the relevant 					

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			environmental Chapters of the report, additional mitigation measures will be implemented.					
64.	Increased risk of communicable diseases and burden on local health services:	PS 4	<ul style="list-style-type: none"> All workers will be informed on the Tetanus and Sexually Transmitted Diseases (STDs) including HIV during the orientation period and condoms will be provided to expats. If required, vaccinating workers against Tetanus will be applied. First aid facility including health and wellbeing facility will be established within the Camp accommodation. All workers will be informed about the closest Public healthcare facilities. If an increase in cases of disease or use of public health facilities is observed awareness raising training will be coordinated with the local health authorities. 	REC and PIU	All villages in the AoI	OHS Management Plan SEP Grievance Mechanism	SEP engagement records Health trends Training Records on health topics, community awareness, code of conduct	Construction
65.	Increased traffic and rise in accidents	PS 4	<ul style="list-style-type: none"> Traffic Management Plan (TMP) will be developed and implemented include good practice and specific mitigations for sensitive areas. 	REC and PIU	All villages in the AoI	Health, Safety and Security Plan (including occupational health and safety (OHS))	Grievance Records Traffic Accident Records	Construction

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> Traffic Management Plan (TMP) will be shared with the local authorities for their approval. Local authorities will be informed regarding the date, time and route of the transportation activity. Traffic signals and signs will be set up and will be clear and visible Traffic flagmen will be appointed where necessary. Temporary traffic control methods will be applied at intersections and connections that hold higher risk for accidents. All drivers will obey the national speed limits and the drivers will be trained on the all Turkey traffic rules. Contractor to ensure construction area provides measures and signage for safe pedestrian crossing. Crossing locations should take into account community preferences, including those related to convenience or personal safety. Installation of barriers (e.g. fencing, plantings) to deter pedestrian access to the Project except at designated crossing points. Supervision and escort for heavy machinery (which requires escort and permit in line with national Legislation) will be provided. Supervision for vehicles carrying construction materials and equipment that pass over public or private roads and railway crossings will be provided. Project related traffic will be regulated during certain dates and times where local community will require to commute (to/from schools, commercial areas etc.) or take on any 			TMP SEP Grievance Mechanism	Training Records on drivers TMP approved by local authorities Visual inspections of the traffic control devices Training Records of the road safety awareness trainings within community & schools, Visual inspections of the warning signs during road and railway crossings.	

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<p>agricultural activity (animal grazing or other farming activities etc.).</p> <ul style="list-style-type: none"> • Temporary access to private property or appropriate accessing alternatives will be determined in consultation with the land owners or users. • Local authorities and community will be provided with detailed information on closure of roads during the road and railway crossings. • Methods for every road crossing will be determined and agreed upon with authorities prior to taking any action. All methods and construction techniques proposed by the Contractor will aim to minimize possible disruptions caused by road crossings. • Contractor will ensure that road safety training will be provided to employees. • The schools nearby the Project site will be informed about the peak movements of the vehicles and vehicle traffic will be minimized during hours when children are traveling to and from school. • Heavy machinery and vehicles utilized in transportation activities (including transportation of personnel) will be used by qualified and licensed drivers. • All drivers will know and comply with all traffic signs, are will be made aware of hotspots of intense traffic that are expected along the route and are trained properly for on and off-road conditions. • Managing and monitoring of working and resting hours drivers will be undertaken according to Turkey Legislation. 					

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
			<ul style="list-style-type: none"> Monitoring security arrangements for loads, vehicles and drivers will be undertaken according to Turkey Legislation. All project work sites, Project Facilities, temporary roads, and traffic management works will be signposted in line Turkey Legislation and as required by the Traffic Management Plan TMP). Night drive/transportation will be limited as much as possible to reduce the risk of accidents and obtaining necessary permits shall night transportation be required. Compensating damages caused by an accident due to project activities will be undertaken according to national legislative requirements and the Grievance Mechanism defined in the Stakeholder Engagement Plan (SEP) of the Project. A Grievance Mechanism Procedure will be set up for communities and individuals to formally communicate their concerns, complaints and grievances and facilitate resolutions that are mutually acceptable by the parties. The routes of the roads that will be used and the peak hours of the usage of the roads will be shared with village heads and management of the schools. The CLOs of the contractors will provide awareness trainings to schools if there is a school located on the route of the roads that will be used. Installation of barriers (e.g. fencing,) to deter pedestrian access to the Project construction area except at designated crossing points 					

Ref No.	Subject	IFC PS	Mitigation measures	Responsible Party	Location	Related Plans	Monitoring Tool	Monitoring Period
66.	Security around the Project site	PS 4	<ul style="list-style-type: none"> Engagement activities prior to construction will ensure that local stakeholders are informed of the risks and consequences of entering the site; Security personnel will patrol the site area to prevent any unauthorized access onto the site. They will also ensure that protocols for entering the construction site are enforced; A management plan for security personnel will be developed and implemented by the Contractors, outlining expectations around security, The Grievance Mechanism for the Project will capture all grievances raised in relation to security and safety issues. These will be addressed promptly, and actions will be taken. 	REC and PIU	All villages in the Aol	Health, Safety and Security Plan (including occupational health and safety (OHS)) SEP Grievance Mechanism ERP	Training Records – community consultations Training Records - security personnel Incident Records - security incidents.	Construction
67.	Flood risk during construction	PS-4	<ul style="list-style-type: none"> The items in the Flood Risk Assessment report will be followed. <ul style="list-style-type: none"> In case the construction does not finish during the dry season the construction will be suspended in the rainy season until the next dry season comes There should be adequately trained personnel and equipment to act quickly to risky areas. Personal Protective Equipment will be selected based on the specific flood risks Employees must have full PPE. For any meteorological extremity, the State Hydraulic Works and the Turkish State Meteorological Service will be in constant communication and the weather will be monitored to stop the construction in an emergency. 	REC and PIU	MAG High Standard Train Project and Operational Facilities	Operational Maintenance Plan Community Health, Safety, and Security Plan Operational Emergency Response Plan	Grievance Records Incident Records	Construction

5.1.1.3 Operation Phase

Ref No.	Subject	Requirements	Mitigation measures	Responsible Party	Location	Related Plan	Monitoring Indicator	Monitoring period
Surface Water								
1.	Spillage/Leakage to Surface Water	PS 1 PS 3	<ul style="list-style-type: none"> Storm water collection channels are regularly (visually) inspected for its integrity. Any spillages will be immediately contained on site and all contaminated materials including soils will be removed from the site for suitable treatment and disposal. All staff and subcontractors will be required to report any incidents and these will be subject to investigation and remedial and preventive actions will be taken. 	TCDD Transport	The Project and Operational Project Facilities	Operational Maintenance Plan Operational Maintenance Plan Operational Emergency Response Plan	Water turbidity and suspended solids, dissolved oxygen, oil and grease measurements Visual inspection of storm water collection channels	Operation
2.	Wastewater Management	PS 3	<ul style="list-style-type: none"> Domestic wastewater to be generated within the scope of the project will be discharged into the sewage line Any wastewater discharge to the environment will be prohibited. 	TCDD Transport	Operational Project Facilities		Checking the integrity of the wastewater collection system at the stations.	Operation
3.	Flood risk during operation	PS 4	<ul style="list-style-type: none"> For any meteorological extremities, the State Hydraulic Works and Turkish State Meteorological Service will be in constant communication to regulate train service in an emergency situation and the weather will be monitored. Send adequately trained people and equipment to the risk areas so as to act quickly. 	TCDD Transport in coordination with Local Authorities (Governorship/Municipality)	All municipalities crossed by the Project	Operational Maintenance Plan Community Health, Safety, and Security Plan	Grievance Records Incident Records	Operation

Ref No.	Subject	Requirements	Mitigation measures	Responsible Party	Location	Related Plan	Monitoring Indicator	Monitoring period
			<ul style="list-style-type: none"> Clear out branches, leaves and debris in ditches, culverts, and other drainage systems which might reduce or prevent effective water runoff. In case the water rises to the railway, have sufficiently trained personnel to regulate the train speed to prevent any damage. More specifically; <ul style="list-style-type: none"> When the flood is below the railhead, continue to operate as usual When it is at least as deep as the railhead, the maximum of 5 miles per hour is allowed. Report the flooding events elaborately including; <ul style="list-style-type: none"> Whether the ballast was dislodged by flood Whether the floodwater is moving, The relative depth of the floodwater to railhead. Whether it is below the top or bottom of the railhead or above the head. The decisions regarding the flood and managing it should be recorded and kept for future inspection and inquiry. 			Operational Emergency Response Plan		
Surface water								
4.	Accidental Spillage and Surface Runoff Contaminated Water	PS 1 PS 3	<ul style="list-style-type: none"> In the event of a major spillage accident, site assessment studies will be carried out in the spillage area and monitoring requirement will be determined accordingly. Storm water collection channels are regularly (visually) inspected for its integrity. 	TCDD Transport	Rivers/streams and their tributaries (See Route Evaluation Table for details)	Operational Maintenance Plan Operational Emergency Response Plan	Incident/accident records - spill accidents and heavy rainfall events	Operation
Air Quality and Climate								
5.	Gaseous Pollutant Generation	PS 1	<ul style="list-style-type: none"> No mitigation is required. 	TCDD Transport	MAG High Standard Railway route and Operational Project Facilities	Air Quality Management Plan	Annual GHG Monitoring Report	Operation

Ref No.	Subject	Requirements	Mitigation measures	Responsible Party	Location	Related Plan	Monitoring Indicator	Monitoring period
6.	Climate Change Risk	PS1	<ul style="list-style-type: none"> A database of assets, including buildings that are vulnerable to one or more of the following should be compiled: excess rainfall; drought; fluvial flooding and/ or coastal flooding. <ul style="list-style-type: none"> Ensure that there is better recording of, and attribution to, weather conditions alongside incident reports where relevant (all climate variables). Capture and assess delay minutes associated specifically with rainfall-related incidents and failures (high precipitation) Identify any regional variations in the exposure of assets to rainfall-related risks (high precipitation) Weather-related staff and workforce safety standards and procedures should be review and improve. <ul style="list-style-type: none"> Establishing relevant thresholds and definitions of 'appropriate' forms of PPE to be issued in different weather conditions. Establishing requirements for different working hours in different seasons/ conditions (all climate variables) Better understanding of the effects of cold weather on staff health and safety and decision making (low temperatures) Better recording and action to reduce cases of slips in stations from wet and icy conditions (low temperatures, high precipitation) Limiting the exposure of staff working and walking in high temperatures and high humidity, which will reduce risk of dehydration, sunburn, heat stress and heat stroke (high temperatures) 	TCDD Transport	MAG High Standard Railway route and Operational Project Facilities	Operational Emergency Response Plan Health, Safety and Security Plan Rail System Plan Operational Maintenance Plan	Grievance Records Incident Records	Operation

Ref No.	Subject	Requirements	Mitigation measures	Responsible Party	Location	Related Plan	Monitoring Indicator	Monitoring period
			<ul style="list-style-type: none"> ○ Establishing consistent and effective standards and procedures for staff to deal with flood emergencies (high precipitation, high sea levels and storm surges) • Reducing the need for staff to undertake routine tasks and inspections during adverse or extreme weather events by increasing the use of automation or remote monitoring (all climate variables) should be considered. • A feasibility study for installing temperature monitoring equipment both inside and outside trains (high temperatures, low temperatures) should be undertaken. ○ Examine cost-effective ways of reducing risks to trains, passengers and freight from adverse or extreme weather. ○ How on-board internal temperatures during hot weather can be reduced e.g. by painting roofs or sides of trains with heat reflective paint or coatings (high temperatures) ○ Whether certain types of rolling stock or particular train components are more susceptible to icicle formation during periods of low temperatures, in order to identify mitigation options (low temperatures) ○ Design and maintenance options which can increase the resilience of existing and new rolling stock to flooding and water ingress (high precipitation, high sea levels and storm surge) ○ Whether certain types of rolling stock perform better than others during autumn conditions (high precipitation, high winds) • The location of all critical lineside equipment and equipment cabinets should be established. As part 					

Ref No.	Subject	Requirements	Mitigation measures	Responsible Party	Location	Related Plan	Monitoring Indicator	Monitoring period
			<p>of this, research to obtain data about observed temperatures at these locations (external, internal, ambient and surface) and flood risk of all types (high temperatures, high precipitation, high sea levels and storm surges) should be undertaken.</p> <ul style="list-style-type: none"> Options for heat and flood risk mitigation measures based on current good and best practice knowledge and research outputs from relevant sectors e.g. the power and energy sector (high temperatures, high precipitation, high sea levels and storm surges) should be identified. For example, high internal temperatures are often managed by air conditioning systems. This tends to be a high maintenance option which is susceptible to failures Overhead Line (OHL) failures due to high temperatures according to whether the OHL is fixed or auto tensioned type (high temperatures) and to better understand OHL problems due to ice build-up (low temperatures) should be examined. Monitoring and metering of heating, electricity and water for rail buildings (e.g. stations, depots and larger equipment cabinets) and concessions (e.g. shops in stations) should be introduced. This will help to manage energy, water usage and carbon emissions, and the targeting of efficiency measures (high temperatures, low temperatures, and low precipitation). It should be examined how climate change will affect long-term thermal comfort on board trains. For example, whether adjustments need to be made to sizing and performance criteria for heating and cooling systems (High temperatures, low temperatures). The Operator should review the current vulnerability of OHL assets to wind including the 					

Ref No.	Subject	Requirements	Mitigation measures	Responsible Party	Location	Related Plan	Monitoring Indicator	Monitoring period
			<p>impact of trees, branches and third-party objects which cause OHL shorting through contact.</p> <ul style="list-style-type: none"> ○ Undertake a study to improve the resilience and structural integrity of OHL supports due to high winds combined with soil movement. • The Operator should ensure whether buildings maintain the temperatures required by the equipment (high temperatures, low temperatures) • The Operator should explore opportunities for increased use of radar, or satellite observations to manage weather and climate-related risks. • The Operator should have a focus on lineside management issues which affect infrastructure. More specifically; <ul style="list-style-type: none"> ○ The Operator should develop and implement research options for long-term vegetation strategies to ensure the stability of earthworks and soil structure and reduce risks from high winds, leaf fall and flooding of all types given projected climate change. ○ The Operator should review available machinery and equipment that can install drainage at the same speed and volumes as the other track installation equipment to achieve efficiencies (high precipitation) ○ The Operator should study the effect climate change might have on the occurrence of lineside fires (high temperatures, low precipitation, lightning, and electrical storms). • As climate science develops, relevant stakeholders representing all systems need to engage with key providers of weather/ climate data and information. This will improve understanding of the impacts on the railway and allow data to be applied in the railway context. 					

Ref No.	Subject	Requirements	Mitigation measures	Responsible Party	Location	Related Plan	Monitoring Indicator	Monitoring period
			<ul style="list-style-type: none"> The Operator should identify opportunities for shared learning and collaboration with highways, aviation, electricity, and other sectors relating to intelligent infrastructure and information communication technologies. This will help prepare for and respond to extreme weather and changes in average or expected climate conditions (all climate variables). The Operator should consider re-locating or re-routing the most vulnerable and costly assets based on the business case developed as a short-term recommendation including modal shifts (e.g. shifting from rail to road, air or sea travel) (high precipitation, high sea levels and storm surges) 					
Noise and Vibration								
7.	Noise Pollution	PS 1 PS 7	<ul style="list-style-type: none"> Continuous noise monitoring will be carried out in the sensitive receptors. The noise barriers adjacent to the rout will be used. The building insulations will be improved (for example, sound insulation of windows and walls), where necessary. In cases where insulation is not possible, compensation will be considered. 	TCDD Transport	Bahçe (Receiver 18-1, Nurdağı (Receiver 19-1, Receiver 19-3) (see in noise and vibration modeling study for details)	Noise and Vibration Management Plan	Environmental monitoring - noise levels Grievance records (complaints related with noise)	Operation
8.	Vibration	PS 1 PS 7	<ul style="list-style-type: none"> To mitigate the estimated railway vibration levels at impacted receivers, rail pads and resilient fasteners are recommended. In detailed railway vibration assessments, weight of the vehicles, propagation conditions of the ground (elastic modulus) need to be known. In detailed design stage it is strongly recommended to conduct vibration assessment especially in city crossings and locations where rails are close to buildings. Different limiting values may be applied for critical buildings which electron 	TCDD Transport	Bahçe (Receiver 18-1, Nurdağı (Receiver 19-1, Receiver 19-3) (see in noise and vibration modeling study for details)	Noise and Vibration Management Plan	Warnings/penalties given by public authorities Grievance records (complaints related with vibration)	Operation

Ref No.	Subject	Requirements	Mitigation measures	Responsible Party	Location	Related Plan	Monitoring Indicator	Monitoring period
			microscopes can be in use. As a mitigation measure using high resilience fasteners along the line is suggested.					
Geology and Soil								
9.	Earthquake	PS 1 PS 4	<ul style="list-style-type: none"> The Project will comply with the relevant National regulatory requirements related to seismic design and risk assessment. Operational Emergency Response Plan (OERP) will be implemented for the operation phase. 	TCDD Transport	MAG High Standard Train Route and Operational Facilities	OERP - Operational Emergency Response Plan	Records of emergency drills	Operation
10.	Erosion		<ul style="list-style-type: none"> In order to prevent soil erosion, loss and degradation along the Project alignment the Operational Soil Management Plan (OSMP) will be prepared. It will include measures to: <ul style="list-style-type: none"> Maintain sediment traps and basins, drainage channels and treatment systems, Maintain slope stability (cuttings and embankment). The OSMP will include measures for revegetation and/or maintenance of vegetation to increase the stability of potentially loose materials and surfaces which may develop during the operational phase of the Project. 	TCDD Transport	MAG High Standard Train Route and Operational Facilities	OSMP - Operational Soil Management Plan	Progress Reports	Operation
11.	Runoff from the Railway and Accidental Spillage	PS 1	<ul style="list-style-type: none"> Storm water drainage designs will be designed effective to mitigate impacts on soil quality therein. Measures will be taken, such as the use of sand layers, which should be used as filters in leakage pits, to prevent the penetration of harmful substances into deeper soil layer. Operational Emergency Response Plan (OERP) will be developed for accidental spillage. 	TCDD Transport	Seyhan and Ceyhan Rivers tributaries MAG High Standard Train Route and Operational Facilities	OERP - Operational Emergency Response Plan	Incident / accident records	Operation
Waste Management								

Ref No.	Subject	Requirements	Mitigation measures	Responsible Party	Location	Related Plan	Monitoring Indicator	Monitoring period
12.	Generation of Waste	PS 1 PS 3 PS 6	<ul style="list-style-type: none"> Mitigation measures will take into account the requirements of national regulations and IFC General EHS Guidelines. <ul style="list-style-type: none"> An appropriate training should be provided to all personnel in operational project facilities to show where different types of waste will be placed. Solid waste will be collected regularly and disposed of properly at an appropriate disposal site. Waste containers will be capable of handling the solid wastes in an appropriate and safe manner and will not be affected by weather conditions. Waste containers required to have labels identifying the type of waste. Proper waste segregation will prevent mixing of hazardous waste and non-hazardous solid waste. Reuse/recycling methods will be considered to minimize the generation of solid waste. Certified/licensed facilities will be used for the final disposal of solid wastes which cannot be reused/recycled. Sediments and sludge from storm drainage systems required to be managed and disposed appropriately. All hazardous waste should be properly collected, marked and disposed at approved location in accordance with the procedure prescribed within Waste Management Regulation (Official Gazette 29314 date 02/04/2015). 	TCDD Transport and its contractor	The Project area and operational Project Facilities	Waste Management Plan	Visual inspections Waste including disposal records Audits disposal	Operation
Terrestrial and Freshwater Ecology								

Ref No.	Subject	Requirements	Mitigation measures	Responsible Party	Location	Related Plan	Monitoring Indicator	Monitoring period
13.	Accidental loss of fauna	PS6	<ul style="list-style-type: none"> Hard fences are erected to prevent the access of animals onto tracks. They are mostly constructed to reduce accidents due to collisions. The disadvantage of hard fences is that they increase the barrier effect. In most cases, hard fences must therefore be combined with wildlife passages. In these cases, they fulfill an important role in guiding animals to the crossing points. Hard fences will always be built on both sides of a tracks. The ends of the hard fences are danger points: animals may go around the end of the hard fence and get trapped on the tracks. Hard fences will therefore end at structures like bridges. Train speeds will be reduced 70 km/h in order to avoid collisions with birds at tunnel entrances and exits where there are intense bird flights and also IBAs 	TCDD Transport	MAG High Standard Railway route and Operational Project Facilities	Biodiversity Management Plan	Visual observations, Photographic records Inspection records	Operation
14.	Barrier effect in fauna	PS6	<ul style="list-style-type: none"> Culverts for animals are primarily constructed as safe crossing points for mammals. Target species are usually mammals. Small fauna species may readily use these culverts as well. As a minimum when using culverts a ledge will be incorporated where species can cross alongside the river even at times of high flow. It can also be used on bridges to be built on the rivers to prevent barrier effect. Vegetated area will be left between the bridge abutment and the riverbank. Culverts with dimensions of at least 2 m x 2 m and Pipe culverts with diameters to be between 60 and 140cm will be placed in natural habitats where the species most likely to be crossing to reduce habitat fragmentation. 	TCDD Transport	MAG High Standard Railway route and Operational Project Facilities	Biodiversity Management Plan	Visual observations, Photographic records Inspection records The crossing success of the fauna species	Operation

Ref No.	Subject	Requirements	Mitigation measures	Responsible Party	Location	Related Plan	Monitoring Indicator	Monitoring period
			<ul style="list-style-type: none"> Regular maintenance and cleaning will be done to prevent flood-carrying materials from blocking the culvert inlets 					
Visual and Landscape and Land Use								
15.	Change of landscape due to changes in land use	PS1 PS3	<ul style="list-style-type: none"> Landscape Management Plan (LMP) will be prepared. Planting measures will be designed to provide visual screening and reduce risk of bird strikes where required as well as provide enhancement to local landscape character. 	TCDD Transport	All municipalities in the AoI	LMP - Landscape Management Plan	Visual observations, photographic records, and inspection records	Operation
16.	Visibility of new structures	PS1 PS3	<ul style="list-style-type: none"> Planting measures will also be designed to provide connectivity within the wider landscape where possible. Planting should make use of species of local/regional provenance. Landscape design will be coherent with regional landscape identity to the extent possible. 	TCDD Transport	All municipalities in the AoI	LMP - Landscape Management Plan	Visual observations, photographic records, and inspection records	Operation
SOCIAL								
Population								
17.	Gender Equality	PS 1	<ul style="list-style-type: none"> To mitigate gender related effects, the following measures will be implemented: <ul style="list-style-type: none"> Ensure the maintenance of infrastructure and train facilities which are accessible for elderly, disabled and those with reduced mobility (both men and women) and pregnant women (in accordance with the Operational Maintenance Plan); A zero-tolerance process will be in place for discrimination against women workers; 	TCDD Transport	All villages in the Social AoI	Grievance Mechanism	Grievance records	Operation

Ref No.	Subject	Requirements	Mitigation measures	Responsible Party	Location	Related Plan	Monitoring Indicator	Monitoring period
			<ul style="list-style-type: none"> Provide training to human resource personnel of the operator to address and deal with discrimination issues in the workplace; Undertake regular consultation with locally affected women on their issues about the operational phase of the Project. 					
Infrastructure								
18.	Sewage System	PS 1 PS 4	<ul style="list-style-type: none"> The operator to be in close coordination with the related local authorities to curtail inconvenience to the residents of the Project area. 	TCDD Transport	All villages in the Social Aol	SEP Waste Management Plan Grievance Mechanism	Statistics Grievance records (regarding accommodation)	Operation
Economy								
19.	Direct and Indirect Employment Opportunities	PS 1 PS 2	<ul style="list-style-type: none"> Environmental and social arrangements will be made to ensure working conditions that take into account gender equality and offer equal opportunities to all segments in the business area, office areas and all other working areas. Employment policy and procedures of the Employer should aim to provide opportunities for employment of local workforce to the extent possible considering unskilled, semi-skilled, and skilled workforce, and giving priority to vulnerable persons (especially those who will be economically disabled). Priority will be given to Social Aol. The operator should require and develop policies for a fair and transparent, gender neutral recruitment process for all job openings. The 	TCDD Transport	All municipalities in the Social Aol	Statistics SEP Grievance Mechanism Human Resource Policy	Statistics on workforce (inc. breakdown of direct and contracted workers, ratio of people hired from the local) Labour Audit Repots Written Project-specific Human Resources Policy and relevant procedures	Operation

Ref No.	Subject	Requirements	Mitigation measures	Responsible Party	Location	Related Plan	Monitoring Indicator	Monitoring period
			Project Owner should seek to employ PAPs on each Sector of the Project route.				Grievances records (recruitment) Number of female staff recruited Worker Grievance Procedure	
20.	Increase in Economic Development in the Region	PS 1	<ul style="list-style-type: none"> The operation phase of the MAG High Standard Train will seek to promote local employment (including job training for the operational activities) and purchase local goods and services to the extent possible. 	TCDD Transport	All municipalities in the Social Aol	Statistics SEP Grievance Mechanism	Procurement records Number of local employees Number of local services acquired Grievance Records	Operation
Ecosystem Services								
21.	Access to Ecosystem Services		<ul style="list-style-type: none"> Access to the ecosystem services will be ensured by providing required overpasses and underpasses. An ecological bridge will be constructed at suitable point. In case any damage to Irrigation system, damaged channels will be re-constructed. A detailed "Resettlement Action Plan" will be implemented to identify PAPs who will be affected by the impacts on their livelihoods as a result of access to ecosystem services. 	TCDD Transport	All affected people from the accessing forest land and ecosystem services	RAP Grievance Mechanism SEP	Grievance Mechanism	Operation

Ref No.	Subject	Requirements	Mitigation measures	Responsible Party	Location	Related Plan	Monitoring Indicator	Monitoring period
<ul style="list-style-type: none"> Labour and Working Conditions 								
22.	Local Employment	PS 2	<ul style="list-style-type: none"> The workers will have contracts which clearly state the terms and conditions of their employment and their legal rights. Information will include, but not be limited to, entitlement to wages, hours of work, overtime arrangements and overtime compensation, and any benefits (such as leave for illness, maternity / paternity or holiday). All workers will be able to join trade unions of their choice and have the right to collective bargaining. Contracts will be verbally explained to all workers where this is necessary to ensure that workers understand their rights prior to any employment contract to be signed. The Project will put in place a worker grievance mechanism. The grievance mechanism will be open to all the staff and their contractors. The grievance mechanism will be publicly advertised by the Project in the workforce. It will be easily accessible by workers, free of retribution and will allow anonymous complaints to be raised and addressed. The Operator will establish human resources policy for all operational employees with information regarding their rights under national labour law, including their rights related to wages and benefits. The policy will cover working conditions, right to organize, non-discrimination, grievance mechanisms, child labour, and forced labour. All contractor contracts, the Project will make explicit reference to the need to abide by Turkey Labour Law. IFC standards and ILO conventions in relation to labor and welfare standards, freedom of association and reference must be made to 	TCDD Transport	MAG High Standard Train Project and Operational Facilities	Human Resource Policy Workers Grievance Mechanism	Worker Contracts Training Records Grievance Records Labour Audit Repots	Operation

Ref No.	Subject	Requirements	Mitigation measures	Responsible Party	Location	Related Plan	Monitoring Indicator	Monitoring period
			child and forced labor. Emphasis will also be placed on anti-discrimination measures. Where young people below the age of 18 years are employed, it will be made clear that they will not be employed in hazardous work and their work will be subject to an appropriate risk assessment.					
Occupational Health and Safety								
23.	Health and Safety Risks due to General Occupational Health and Safety Hazards	PS 4	<ul style="list-style-type: none"> Occupational Health and Safety Management Plan specific to operational activities will be prepared and OH&S Management Plan will acknowledge and reference to IFC EHS Guidelines for Toll Roads (2007) and IFC General EHS Guidelines (2007). A system will be established for the reporting and recording of occupational accidents and dangerous occurrences/incidents. Personal Protective Equipment will be selected based on the specific hazards and risks of the task to be performed and properly maintained to keep them effective and operational throughout their use. Individuals shall only carry out tasks for which they are competent and authorized to do so. Individuals shall only operate and use plant or equipment for which they are trained and authorized. Copies of all operator certificates will be retained. Emergency contact numbers will be made available at the assigned areas. This will include the fire and rescue service and the environmental inspection. Occupational safety analysis should be performed to identify specific potential occupational hazards and industrial hygiene surveys, as appropriate, to monitor and verify exposure levels to chemicals 	TCDD Transport	MAG High Standard Train Project and Operational Facilities	OHS Management Plan	Training Records including inductions, code of conduct, cultural awareness, environmental awareness, toolbox talks. Stop Work Incident Records Quality Audits including subcontractors	Operation

Ref No.	Subject	Requirements	Mitigation measures	Responsible Party	Location	Related Plan	Monitoring Indicator	Monitoring period
			and to compare them with applicable occupational exposure standards.					
24.	Health and Safety Risks due to Physical and Chemical Hazards	PS 4	<p>All hazardous waste should be properly collected, marked and disposed at approved location in accordance with the procedure prescribed within Waste Management Regulation (Official Gazette 29314 date 02/04/2015).</p> <ul style="list-style-type: none"> Personal Protective Equipment will be selected based on the specific hazards and risks of the task to be performed and properly maintained to keep them effective and operational throughout their use Personal Protective Equipment will be selected based on the specific physical and chemical hazards Employees must have full PPE. 	TCDD Transport	MAG High Standard Train Project and Operational Facilities	Community Health, Safety and Security Plan; Health, Safety and Security Plan	Incident Records Grievance Records	Operation
25.	Health and Safety Risks due to Emergencies	PS 4	<ul style="list-style-type: none"> An Emergency Preparedness and Response Plan, covering the emergency situations (involving vehicles and pedestrians) that may occur during the operation phase, should be prepared and implemented by trained personnel in order to avoid significant risks. 	TCDD Transport	MAG High Standard Train Project and Operational Facilities	Community Health, Safety and Security Plan; Health, Safety and Security Plan Operational Emergency Response Plan (based on the ERF)	Incident Records Grievance Records	Operation
26.	Health and Safety Risks due to Railway maintenance	PS 4	<ul style="list-style-type: none"> Workers will only work in live lane(s) once advance signs are in place to warn road users of their presence. Where possible, operatives should face the oncoming traffic, or work with a lookout. Works vehicles will support operatives and minimize the need to cross the carriageway. They should be positioned to prevent funneling of 	TCDD Transport	MAG High Standard Train Project and Operational Facilities	Health, Safety and Security Plan		

Ref No.	Subject	Requirements	Mitigation measures	Responsible Party	Location	Related Plan	Monitoring Indicator	Monitoring period
			<p>drivers toward the work area or into the path of oncoming traffic.</p> <ul style="list-style-type: none"> Incidents where vehicles have struck or displaced traffic management equipment or entered the works area should be recorded. This will allow the traffic management design to be reviewed and altered, if appropriate, to maintain the safety of drivers and workers. Reflective signs and equipment will be kept clean to maintain clear visibility. Replacing dirty or damaged equipment rather than cleaning or repairing it in situ will reduce time at the roadside. Night workers (i.e. those regularly working between 11 pm and 6 am) unless specified elsewhere in a written agreement. Lone working should be assessed to determine if one person can do the tasks safely and if particular precautions are needed. 					
Community Health and Safety								
27.	Level crossings safety	PS-4	<ul style="list-style-type: none"> In order to mitigate effects in relation to community access, the following measures will be implemented: <ul style="list-style-type: none"> Ensure that adverts are issued (inclusive of newsletters issued to affected communities) with details of the new crossings (overpasses and underpasses); Ensure that signage for the new crossings are displayed along the Project alignment; Conduct regular consultation with affected users and communities to ensure that the crossings are working effectively; and Ensure all the new crossings are maintained and inspected regularly for any potential 	TCDD Transport	MAG High Standard Train Project and Operational Facilities	Grievance Mechanism OHS Management Plan TMP	Grievance Records Incident Records Training Records	Operation

Ref No.	Subject	Requirements	Mitigation measures	Responsible Party	Location	Related Plan	Monitoring Indicator	Monitoring period
			damage, in accordance with the Operational Maintenance Plan.					
28.	Noise during operation	PS-4	<ul style="list-style-type: none"> Noise level measuring during operation will be performed at annual intervals and in case of complaints by the local population. Noise barriers will be used in the sensitive locations such as schools, hospitals and residential areas to reduce the sound as required 	TCDD Transport	MAG High Standard Train Project and Operational Facilities	Grievance Mechanism OHS Management Plan TMP Method Statements	Grievance records related to noise complaints	Operation
29.	Flood risk during operation	PS-4	<ul style="list-style-type: none"> For any meteorological extremities, the State Hydraulic Works and Turkish State Meteorological Service will be in constant communication to regulate train service in an emergency situation and the weather will be monitored. Send adequately trained people and equipment to the risk areas so as to act quickly. Clear out branches, leaves and debris in ditches, culverts, and other drainage systems which might reduce or prevent effective water runoff. In case the water rise to the railway, have sufficiently trained personnel to regulate the train speed to prevent any damage. More specifically; <ul style="list-style-type: none"> When the flood is below the railhead, continue to operate as usual When it is at least as deep as the railhead, the maximum of 5 miles per hour (8,05 kph) is allowed. (Rail Safety and Standards Board, 2015) Report the flooding events elaborately including; <ul style="list-style-type: none"> Whether the ballast was dislodged by flood 	TCDD Transport	MAG High Standard Train Project and Operational Facilities	Operational Maintenance Plan Community Health, Safety, and Security Plan Operational Emergency Response Plan	Grievance Records Incident Records	Operation

Ref No.	Subject	Requirements	Mitigation measures	Responsible Party	Location	Related Plan	Monitoring Indicator	Monitoring period
			<ul style="list-style-type: none"> Is the floodwater moving, The relative depth of the floodwater to railhead Is It below the top or bottom of the railhead or above the head The decisions regarding the flood and managing it should be recorded and kept for future inspection and inquiry. 					
30.	Transport of dangerous goods	PS-4	<ul style="list-style-type: none"> The proper screening acceptance procedure will be implemented with development of Operational Emergency Response Plan (based on the ERF) including spillage response. Speed limit will be implemented for the hazardous material carriage. 	TCDD Transport	MAG High Standard Train Project and Operational Facilities	Grievance Mechanism Operational Emergency Response Plan (based on the ERF) TMP ERP	Relevant certificates	Operation

5.1.2 Environmental and Social Monitoring

5.1.2.1 Construction Phase

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
Air Quality					
1.	<p>A Method Statement will be prepared for air quality monitoring during the pre-construction and construction phase. The Method Statement will make provision for:</p> <ul style="list-style-type: none"> Periodic visual inspections of activities resulting in impact to air quality. Visual inspections will reflect the ethos of 'see it, own it', in terms of identifying and addressing significant air quality impacts. Where significant impacts are observed, these will be recorded and closed out. Regular inspections during the site preparation phase to review air and dust issues and dust suppression techniques altered as required. If significant dust complaints are received, passive monitoring of dust deposition upwind and downwind of key construction areas will be undertaken. Monitoring will be undertaken using an internationally recognised technique. 	<p>Nearest settlements to construction sites</p> <p>Natural habitats and agricultural fields along the construction sites</p>	<p>During construction.</p> <p>Monitoring data reviewed monthly</p>	<ul style="list-style-type: none"> Dust monitoring results compliant to performance criteria. Recommendations and corrective actions taken when dust generation or combustion sources are noted. Complaints arising from air quality emissions managed through the Grievance Mechanism. 	REC and PIU
Greenhouse Gas Emissions					
2.	<p>GHG emissions during the construction phase would surpass the IFC PS3 threshold of 25,000 tCO₂e per year. Given this exceedance the Project will quantify and monitor direct GHG emissions from the Project in accordance with internationally recognized methodologies and in accordance with the requirements included in Annex A of the IFC PS3.</p>	Not Applicable	<p>During construction.</p> <p>Annual report</p>	<ul style="list-style-type: none"> Quantification of Project GHG emissions during the construction phase. Monitoring results which can be used to evaluate project performance. 	REC and PIU
Noise and Vibration					
3.	<p>A Method Statement will be prepared for noise monitoring during the pre-construction and construction phase. The Method Statement will make provision for:</p>	Nearest settlements to	<p>Regular noise level checks will be carried out</p>	<ul style="list-style-type: none"> Noise monitoring results compliant to performance criteria. Noise monitoring records. 	REC and PIU

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
	<ul style="list-style-type: none"> Monthly noise measurements with portable noise meter at the nearest noise sensitive receptor locations to key Project activities (viz. Construction Camp and Plant; and active work sites). Inspection of vehicle/machinery/equipment maintenance records. Noise monitoring at nearest noise sensitive receptors if significant complaints received. 	construction sites Natural habitats along the construction sites	on a monthly basis during construction and when significant noise complaints are received.	<ul style="list-style-type: none"> Recommendations and corrective actions taken when high audible incidents are noted. Complaints arising from excessive noise managed through the Grievance Mechanism. 	
4.	Piling works A Method Statement will be prepared for piling and earthworks activities. The Method Statement will make provision for monitoring of vibration during piling works and vibratory compaction. Monitoring programme will: <ul style="list-style-type: none"> ensure work is in compliance with national vibration limits at the nearest structure/building. focus on identifying the effectiveness of the adopted vibration reductions measures. recommend control measures. Monitoring of ground vibration will be performed using an instrument such as seismograph (or equivalent), which detects and records movement. In the event that the vibration criteria are exceeded in proximity to the closest buildings, other control methods will be considered to reduce vibration levels as far as is practicable.	Nearest settlements to construction sites Natural habitats along the construction sites	During construction. If piling or vibratory compaction activities will occur near sensitive structures or if significant complaints are received during these construction activities.	<ul style="list-style-type: none"> Vibration monitoring results compliant to performance criteria. Recommendations and corrective actions taken when vibration incidents are noted. Complaints arising from excessive vibrations and managed through the Grievance Mechanism. 	REC and PIU
Water					
5.	Flood Incidents Record and management of the flood events	In flooding events	During construction	<ul style="list-style-type: none"> Flood incident records 	REC and PIU
6.	Working on/near river <ul style="list-style-type: none"> The good conduct of the construction operations that will take place on riverbed or in their proximity 	Overlaps of engineering structures of the Project and	During construction	<ul style="list-style-type: none"> Compliant records Warnings/penalties records given by relevant public authority on permission to work on river. 	REC and PIU

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
		surface water bodies			
7.	<ul style="list-style-type: none"> Groundwater levels in private and community wells located within 1 km of Project, water abstraction boreholes will be monitored on a quarterly basis. 	Groundwater table (see ESIA's Table 4.75 and 4.76 for measured groundwater table levels)	Pre-construction to obtain a seasonal baseline for capturing multi-seasonal data and 1-yr post construction Quarterly	<ul style="list-style-type: none"> Water levels in private / community wells 	REC and PIU
8.	Surface water quality. <ul style="list-style-type: none"> Water quality measurements should be conducted in all locations where there are camp sites and that the Project overlaps with surface water bodies. Measurements will also be conducted in waters near to the possible new camp sites, such as Yenice. The sampling and analyses will be performed by laboratories accredited by the Ministry of Environment, Urbanization and Climate Change The analyses reports will be kept on-site and upon request and/or when required, they will be submitted to the relevant authorities. Lateral drainage systems will be established for all groundwater and surface water discharges with seasonal flow within the site. 	Overlaps of engineering structures of the Project and surface water bodies	During construction	<ul style="list-style-type: none"> Water quality results compliant to performance criteria. Visual inspection for spill/leak detection 	REC and PIU

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
9.	Ground water quality. <ul style="list-style-type: none"> Samples will be taken, during the construction period, from groundwater sources analyzed as part of the baseline studies within scope of the project, and the groundwater quality will be constantly monitored The monitoring of the groundwater throughout the construction twice a year The sampling and analyses by laboratories accredited by the Ministry of Environment, Urbanization and Climate Change Measuring the groundwater quality below the impact of drilling works and any spill/leak incidents 	Where the groundwater table is near surface (see ESIA's Table 4.75 and 4.76 for measured groundwater table levels) and from baseline measurement points Construction sites	During construction	<ul style="list-style-type: none"> Groundwater quality measurements Incident/accident reports Visual inspection and observation to detect leak events 	REC and PIU
10.	Domestic Wastewater <ul style="list-style-type: none"> Wastewater effluents of the construction campsites to the nearby wastewater treatment plant of the municipality. 	Near surface water bodies	During construction	<ul style="list-style-type: none"> Analysis of the wastewater according to the parameters required in the Water Pollution Control Regulation Monitoring reports (Checking the integrity of the connection system to the wastewater network) Compliant records 	REC and PIU
Biodiversity					
11.	Damage or loss of terrestrial habitats <ul style="list-style-type: none"> Detail mapping of natural habitat could be made through remote sensing of satellite imagery prior to the start of construction within each section, and ground-truthing to confirm the status of the habitat at a scale of 1:5000 or 1:1000 (including construction components that lead to loss of vegetation). Habitats should be classified as either natural or modified based on the requirements of the PS6. A specialized ecologist should define the present ecological condition of habitats, describe the presence of species of 	Natural habitats in Construction site and Project Facilities	Prior to the start of construction and during the construction using Constraints Maps	<ul style="list-style-type: none"> Biodiversity Management Plan defining the methodology to be used based on PS6. Report for railway presenting accurate maps and estimates of natural habitat loss. 	REC and PIU

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
	<p>conservation concern, the impacts, and transformation at the time of the survey.</p> <ul style="list-style-type: none"> GIS tools should be used to calculate the loss of natural habitat from an overlay of the actual construction footprint over the extent of natural habitat. 				
12.	Habitat fragmentation <ul style="list-style-type: none"> Monitoring of fauna killed on the roads used by Contractor vehicles during construction. Records should include date, species, location, gender, approximate age and freshness of the carcass. 	Natural habitats in Construction site and Project Facilities	<p>As and when incidents are encountered from the start of construction through to the start of the operational phase.</p> <p>Quarterly</p>	<ul style="list-style-type: none"> The crossing success of the fauna species. No encounters with fauna deaths. 	REC and PIU
13.	Loss of sensitive plant species <ul style="list-style-type: none"> Monitoring of relocated and seeded plants that are moved and collected from sites to be cleared. Records should include species identification, date of uprooting, date of transplanting, date of collecting, date of seeding and equipment used. Visual inspection of success rate of establishment. 	Endemic and threatened flora species	<p>Monitoring post planting</p> <p>Quarterly</p>	<ul style="list-style-type: none"> Success of transplanting and germination of the plants 	REC and PIU
14.	Loss of sensitive fauna species <ul style="list-style-type: none"> Monitoring of fauna loss due to death within the construction site during construction. Records should include date, species, location, gender, approximate age and freshness of the carcass. 	Endemic and threatened fauna species	<p>As and when incidents are encountered from the start of construction through to the start of the operational phase.</p> <p>Quarterly</p>	<ul style="list-style-type: none"> No encounters with fauna deaths. 	REC and PIU

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
15.	Introduction of Alien invasive species <ul style="list-style-type: none"> Monitoring of introduced alien invasive species in the construction site during construction. Records should include alien invasive species identification, density, height, stages of reproduction (germination, flowering, fruiting, and seed production), dates since disturbance, effectiveness of control measures. 	Construction site and Project Facilities	During construction Seasonal basis	<ul style="list-style-type: none"> No encounters with alien invasive species 	REC and PIU
16.	Damage to Freshwater Ecosystem <ul style="list-style-type: none"> In order to address the seasonal baseline for capturing multi-seasonal data, aquatic biomonitoring (eg. counting the fish species) will be conducted in all aquatic habitats supporting flowing water that are crossed by the railway. Preconstruction Aquatic Ecology baselines will be used to establish baseline and compared against data during construction. Post construction Aquatic Ecology data will be compared against data from the preconstruction baselines. Visual monitoring of fish deaths during construction. Records should include date, species, location, and freshness of the carcass. 	Rivers/Streams and its tributaries Endemic and threatened fish species	Twice a year (May and October) At least 2 years after construction	<ul style="list-style-type: none"> No major change against baseline data. No incident with fish deaths. Compliance with mitigation measures construction in Method Statements 	REC and PIU
Visual Landscape					
17.	Change of landscape due to changes in land use <ul style="list-style-type: none"> Monitoring the visibility of landscape changes 	Settlements nearby MAG High Standard Train Route	During construction Quarterly	<ul style="list-style-type: none"> Before and after photographic documentation at sensitive receptors Complaints in visual quality in immediate settlements affected. Grievance arising from visual managed through the Grievance Mechanism 	REC and PIU
Waste					
18.	<ul style="list-style-type: none"> Contractors will be audited to ensure that facilities and waste disposal/treatment/recycling / reclamation processes are suitable and in line with national and international good practice standards. 	Construction site and Project Facilities	During construction Bi-annually	<ul style="list-style-type: none"> Waste contractor facilities and process fully licensed and in line with national and international standards 	REC and PIU

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
				<ul style="list-style-type: none"> Waste contractor performance is in line with national and international standards. 	
19.	<ul style="list-style-type: none"> Regular Inspections of waste disposal areas at active work areas and waste storage facilities at the Construction Camp will be undertaken to ensure compliance with this ESMMP, Environmental License conditions and relevant legislation. 	Construction site and Project Construction Facilities	During construction Visual inspections on an regular basis	<ul style="list-style-type: none"> Monitoring records <ul style="list-style-type: none"> Total waste generated Ratio of Recovered/reused/recycled waste to landfilled waste Ratio of generated hazardous waste to total hazardous waste (by generation + by contamination) Checking the quality of waste segregation 	REC and PIU
20.	<ul style="list-style-type: none"> Grievance Mechanism (within SEP) to include complaints regarding waste management. 	PAPs	During construction Visual inspections on an regular basis	<ul style="list-style-type: none"> Up-to-date register of complaints. 	REC and PIU
Spills					
21.	<ul style="list-style-type: none"> Spill Response Kit inspection checklist to include missing response equipment, personal protection equipment, fire extinguishers or documentation (licenses, permit), number to replaced, location. 	Locations where Project overlaps with Rivers/streams Locations where Project overlaps with Shallow Aquifer	During construction Monthly	<ul style="list-style-type: none"> No missing response equipment, personal protection equipment or documentation. 	REC and PIU
22.	<ul style="list-style-type: none"> Spill pollution prevention measures inspection checklist to identify condition and preventative maintenance required, as well as what preventative maintenance was performed. 	Locations where Project overlaps with Rivers/streams Locations where Project overlaps	During construction Monthly	<ul style="list-style-type: none"> Well implemented preventative maintenance programme. Spill/leak incident/accident report 	REC and PIU

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
		with Shallow Aquifer			
23.	<ul style="list-style-type: none"> All spills will be reported and investigated. Effectiveness of corrective and prevention action will be audited. 	Locations where Project overlaps with Rivers/streams Locations where Project overlaps with Shallow Aquifer	During construction	<ul style="list-style-type: none"> Spill/leak incident/accident report Site Inspection Reports for spill/leak incident Water quality measurements after spill (in case the incident was near surface or groundwater bodies) 	REC and PIU
Social Monitoring					
Population					
24.	<ul style="list-style-type: none"> To reduce the risk of illicit behavior and crime, training will be provided to all workers including expatriates workers. Including Orientation, Code of Conduct and Cultural Awareness Trainings, Grievance Mechanism. Also workers will be paid adequately via bank accounts to prevent theft potential. Priority should be given to the local labor where possible and practical Worker accommodation facilities will be include leisure areas to reduce the interaction of the workers with the local communities and priority should be given to the local labor where possible and practical. 	Project Affected People, within the borders of Social AoI Project Workers	During construction Quarterly	<ul style="list-style-type: none"> Records community Grievance Mechanism related to illicit behavior of the workers Number of local workers. Training records 	REC and PIU
25.	<ul style="list-style-type: none"> To reduce the risk of social conflict training will be provided to all workers including expatriates workers. Including Orientation, Code of Conduct and Cultural Awareness Trainings, Grievance Mechanism. Community Liaison Officer will provide engagement with the nearby communities. 	Project Affected People, within the borders of Social AoI	During construction Quarterly	<ul style="list-style-type: none"> Training records Engagement records and proof of introduce of local CLOs to the nearby communities to the campsites. 	REC and PIU
26.	<ul style="list-style-type: none"> To minimize the Influx of additional population ("followers") equal recruitment opportunity will be provided to local population. Employment Plan will be prepared and 	Project Affected People within	During construction Quarterly	<ul style="list-style-type: none"> Number of the local employees. 	REC and PIU

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
	implemented to prevent spontaneous influx of job seekers. Employment capacity and the qualifications required for the construction will be disclosed to the public to prevent unrealistic expectations. Cooperation will be developed with the local municipalities, local NGOs, organizations and local employment agencies, human resources.	the borders of Social AoI		<ul style="list-style-type: none"> Announcement of employment opportunities. CV pool. Employment tools. 	
27.	<ul style="list-style-type: none"> To prevent the potential negative impacts on the dynamics between the workers and the local community, the worker accommodation areas will include social facilities and services for the Project workers. 	Project Affected People, within the borders of Social AoI Project Workers	During construction Quarterly	<ul style="list-style-type: none"> Inspection records of all camp accommodation facilities in compliance with Guidance by IFC Accommodation: Processes and Standards. Inspection to include: <ul style="list-style-type: none"> leisure, social telecommunications facilities. medical facilities standards for nutrition and food safety laundry facilities Canteen, cooking and laundry facilities toilet facilities Rooms/dormitories facilities water heating, air conditioning, ventilation and light wastewater and solid waste showers/bathrooms and other sanitary facilities 	REC and PIU
28.	<ul style="list-style-type: none"> To minimize the burden on and competition for public services (eg. electricity, water, etc) worker accommodation facilities will include additional or separate supply systems. 	Project Affected People, within the borders of Social AoI Project Workers	During construction Quarterly	<ul style="list-style-type: none"> Grievances records related with the pressure on the public services and infrastructure. Visual inspections Accommodation Inspection reports 	REC and PIU
29.	<ul style="list-style-type: none"> To prevent the gender-based discrimination Code of Conduct training be provided to workers and women Community Liaison Officer will be hired where possible. 	Project Workers	During construction Quarterly	<ul style="list-style-type: none"> Recruitment of women CLO. Records of training on Code of Conduct. 	REC and PIU

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
	<ul style="list-style-type: none"> Grievance Mechanism will be developed and gender based complaints and necessary measures will be taken accordingly. Discrimination behavior or practice arising from any reason such as gender, age, ethnicity, religion, language, race, physical characteristics, and disability will be recorded and examined. 			<ul style="list-style-type: none"> Grievance records. 	
30.	<ul style="list-style-type: none"> Local inflation and the prices will be monitored. 	All business within the borders of Social AoI	During construction Annually	<ul style="list-style-type: none"> Grievance Records. Annual reports of the governmental bodies. Market price analysis 	REC and PIU
Infrastructure					
31.	<ul style="list-style-type: none"> Pressure on the local healthcare infrastructure as a result of incoming construction workforce will be monitored as part of the various management plans including Grievance Mechanism and the statistics of the workforce using the accommodation and medical facilities . 	Project Affected People, within the borders of Social AoI	In case of a complaint Quarterly	<ul style="list-style-type: none"> Statistics on workforce using on-site accommodation medical facilities. Grievance records. 	REC and PIU
32.	<p>Traffic management plan (TMP) will be used to monitor;</p> <ul style="list-style-type: none"> The potential impacts on the local road network as a result of the construction activities (i.e. transportation workers, material and equipment, waste disposal, etc.) road crossings and damage to local roads from heavy traffic movement disruption to road infrastructure and reduced access due to road cuttings <p>The necessary training and awareness training records to be given to drivers, reported number of incidents/accidents, grievance record will be monitored.</p>	Project Affected People, within the borders of Social AoI	During construction Complaints or damage to local roads	<ul style="list-style-type: none"> Visual inspections to ensure the effectiveness of the mitigation measures in CTMP CTMP in place and implemented Reported number of incidents/accidents Driver training records and driver logs in place Grievance Mechanism 	REC and PIU

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
33.	<ul style="list-style-type: none"> Pressure on waste management system including the pressure on the sewage system will be monitored through WMP, legal permits and Grievance Mechanism. 	Project Affected People, within the borders of Social AoI	Complaints	<ul style="list-style-type: none"> Number of grievances raised in relation to accommodation Permits in place 	REC and PIU
Economy					
34.	<ul style="list-style-type: none"> Employment of the local people and direct and indirect job opportunities will be monitored through the Grievance Mechanism, HR policy and the workforce statistics. 	Project Affected People, within the borders of Social AoI	During construction Quarterly	<ul style="list-style-type: none"> Workforce statistics including: <ul style="list-style-type: none"> - breakdown of direct and contracted worker - percentage of the skilled, semi-skilled and unskilled - number of female staff recruited - workforce hired from within the social AoI - grievances raised in relation to recruitment Written Project-specific Human Resources Policy and relevant procedures in place Grievance Procedure in place and implemented 	REC and PIU
35.	<ul style="list-style-type: none"> Supply Chain Management will be monitored through the procurement plan and the Grievance Mechanism. 	Project Affected People, within the borders of Social AoI	During construction Quarterly	<ul style="list-style-type: none"> Number / type of business identified and contracted Supply Chain Management Plan Supply Chain Management monitoring records Grievances raised and means of reporting 	REC and PIU
36.	<ul style="list-style-type: none"> Livelihoods based on agricultural sector will be monitored through the SEP, community development programs and Grievance Mechanism. 		During construction Annually	<ul style="list-style-type: none"> Grievance Records Engagement Records with the stakeholders 	REC and PIU

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
• Land Acquisition and Resettlement - Input and Output Monitoring					
37.	<ul style="list-style-type: none"> A Livelihood Restoration Plan (LRP) and Resettlement Action Plan(RAP) will be monitored. All grievances related to the expropriation process will be recorded and the implementation of the Project SEP including the Grievance mechanism will be monitored. Fair and transparent compensation, which is determined by official institutions, will be provided and monitored to the shareholder users and informal users. In case of loss of livelihoods of informal users and users with sensitive shareholders, the necessary compensation process will be monitored. If complaints related with unauthorized use of privately-owned lands, damages on adjacent lands, etc. are received through Project's Grievance Mechanism, evaluation/inquiry will be conducted on a case-by-case basis and where necessary, corrective actions will be planned and all process will be monitored. In case of any direct damage on private property as a result of the activities of the Project, relevant corrective measures (e.g. repair, maintenance, rebuilding, restoration, etc.) will be monitored. 	PAPs who experience expropriation within the borders of Social AoI	During construction Quarterly	<ul style="list-style-type: none"> RAP LRP Grievance Records SEP 	REC and PIU
38.	<ul style="list-style-type: none"> Overall spending on land acquisition 	PAPs who experience expropriation within the borders of Social AoI	During construction Quarterly	<ul style="list-style-type: none"> Cash compensation, Costs of providing assistance, by type of assistance Consultation and engagement cost Costs of evaluators and surveyor Costs of legal fees Costs of taxes and registration fees Costs of consultancy input Costs of vehicles, computers, and so on 	REC and PIU

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
				<ul style="list-style-type: none"> Other costs (and type). 	
39.	<ul style="list-style-type: none"> Number of employees and consultants involved to the land acquisition and resettlement process 	PAPs who experience expropriation within the borders of Social AoI	During construction Quarterly	<ul style="list-style-type: none"> Members of the land acquisition team Members of other departments and Sections Social workers Skill trainers Land acquisition consultants. 	REC and PIU
40.	<ul style="list-style-type: none"> Number of landowners and land users 	PAPs who experience expropriation within the borders of Social AoI	During construction Quarterly	<ul style="list-style-type: none"> Initial data will be received through the cadastral records, Updates will be made continuously as the implementation team Identifies all owners/users of all land plots (for example, through the management of grievances). 	REC and PIU
41.	<ul style="list-style-type: none"> Number of private and governmental lands 	PAPs who experience expropriation within the borders of Social AoI	During construction Quarterly	<ul style="list-style-type: none"> Data will be received through cadastral records 	REC and PIU
42.	<ul style="list-style-type: none"> Number of land plots for compensation agreements signed 	PAPs who experience expropriation within the borders of Social AoI	During construction Quarterly	<ul style="list-style-type: none"> The percentage should be calculated from the total number of affected land plots/houses/businesses, as identified by the census/survey. 	REC and PIU
43.	<ul style="list-style-type: none"> Number (and percentage) of land plots / businesses for which compensation agreements were refused/are still pending 	Agricultural lands neighbouring the trainway route within the Social AoI	During construction Quarterly	<ul style="list-style-type: none"> If possible, a breakdown of reasons why compensation agreements have been declined (or have still not been accepted) should be provided (land/businesses). 	REC and PIU

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
44.	<ul style="list-style-type: none"> Number (and percentage) of owners/users who refused to sign compensation agreements/ are still deliberating 	PAPs who experience expropriation within the borders of Social Aol	During construction Quarterly	<ul style="list-style-type: none"> If possible, a breakdown of reasons why compensation agreements have been declined (or have still not been accepted) should be provided (land/businesses). 	REC and PIU
45.	<ul style="list-style-type: none"> Number (and percentage) of compensation agreements executed (compensation paid) 	PAPs who experience expropriation within the borders of Social Aol	During construction Monthly	<ul style="list-style-type: none"> The percentage should be calculated from the number of compensation agreements signed. 	REC and PIU
46.	<ul style="list-style-type: none"> Number of users or owners whom displaced physically 	PAPs who experience expropriation within the borders of Social Aol	During construction Quarterly	<ul style="list-style-type: none"> Number of replacement properties given and houses provided; Number of PAPs affected by exercising its right of ownership on buildings and land; Number of PAPs received compensation in time and full amount; Changes in the household conditions (i.e. the size of the house) Records of transitional allowances and rental allowances 	REC and PIU
47.	<ul style="list-style-type: none"> Number and type of grievances, including legal actions arising from expropriation 	PAPs who experience expropriation within the borders of Social Aol	During construction Quarterly	<ul style="list-style-type: none"> Number of submitted cases Number of resolved cases Time needed for their resolution. 	REC and PIU
48.	<ul style="list-style-type: none"> Number of vulnerable persons/households assisted by the implementation team by type of assistance and by category (owners/users) 	PAPs who experience expropriation within the	During construction Quarterly	<ul style="list-style-type: none"> Assistance to prepare ownership documents (monetary assistance, provision of information, legal aid, and so on) 	REC and PIU

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
		borders of Social Aol		<ul style="list-style-type: none"> Other assistance (and type) 	
49.	<ul style="list-style-type: none"> Number of people whom were able to restore their livelihoods 	PAPs who experience expropriation within the borders of Social Aol	During construction Quarterly	<ul style="list-style-type: none"> Number and % of person with improved household income; Number and % of persons with improved housing conditions; Number and % of persons with increased monthly expenditure level; Number and % of persons with improved asset ownership; Number and % of persons still living below poverty line (applying the same criteria as was used to determine vulnerability). 	REC and PIU
Access to Ecosystem Services					
50.	Grievance Mechanism, visual inspections, traffic management plan, dust noise and air measurements, will be used to monitor, <ul style="list-style-type: none"> Access to Forest Lands Impact on Apiculture 	All PAPs who are accessing to ecosystem services	During construction Quarterly	<ul style="list-style-type: none"> Visual inspections and records of information tools and records of consultations, Grievances related with the access to the ecosystem services, Grievances related with dust, air and vibration, Environmental measurement records, Visual inspections of the vegetation clearing Number of beekeepers (enterprises or individuals) Number of beehives, Dust and noise measurement records, Annual honey production level, 	REC and PIU

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
				<ul style="list-style-type: none"> Grievance records related with beekeeping activities. Grievances related with restrictions on the designated hunting areas. 	
Labour and Working Conditions					
51.	<p>HR policy, workers Grievance Mechanism will be used to minimize the labour risks and impacts and to monitor:</p> <ul style="list-style-type: none"> women employment and non-discrimination and equal opportunity labour risks and impacts related to subcontractor and supply chain management (including child and forced) working conditions and terms of employment for expat and national workers. employment of the local workforce 	All Project workers, Sub-contractors and supply chain	During construction Quarterly	<ul style="list-style-type: none"> Percentage of workforce who are women or from other vulnerable groups Number of workers (direct employees and subcontractors) trained on the worker grievance mechanism Number of grievances from workers or job seekers related to discrimination, abuse of labour rights, sexual harassment. Grievance Records Average number of hours worked per week Average number of days worked without a rest day Average number of overtime hours worked per week 100% of contracts including clauses on labour and working conditions in line with Turkey Law and the IFC PS2. Labor Audit Report(s) verifying worker/contractor accommodation conditions provided in line with the requirements described in the "IFC Guidance Note on Workers' Accommodation: Processes and Standards" Records of trainings 	REC and PIU

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
				<ul style="list-style-type: none"> Percentage of workforce who receive training/ induction on HR policies, plans and procedures Number of workers (direct employees and subcontractors) trained on the worker grievance mechanism Grievance Records 	
Occupational Health and Safety					
53	<p>Health, Safety and Security Plan (including occupational health and safety (OHS) will be implemented to monitor and reduce risk exposure of the workforce.</p> <p>The Health, Safety and Security Plan (including occupational health and safety (OHS) will include a variety of plans and procedures depending on the activities being undertaken and associated risks, such as:</p> <ul style="list-style-type: none"> Physical and chemical hazards Emergencies Construction traffic Accommodation Subcontractor and Supply Chain Management (including child and forced labour risks) <p>Staff will also receive training on this and incidents and accidents recorded and investigated. Implementation of Health, Safety and Security Plan (including occupational health and safety (OHS) will be monitored to ensure that it is being implemented appropriately and that risks are being managed. This will include regular (daily) site walkovers to observe behaviors and more detailed weekly checks of performance. Accident and incident data will be reviewed monthly to spot trends where further health and safety measures or training may need to be implemented.</p>	All Project workers, Sub-contractors and supply chain	During construction Quarterly	<ul style="list-style-type: none"> Percentage of workers (direct employees, subcontractors and suppliers) that have received OHS induction prior to working on site Number of workers (direct employees, subcontractors and suppliers) that have received task specific training Percentage of workers attending toolbox talks. Number of stop work notices issued by activity Number and type of non-compliances observed during daily and weekly site inspections Number of Lost Time Injuries (LTI) involving workers on site Number of minor incidents and injuries Number of incidents investigated, corrective actions identified and closed out/ not closed out within the required timeframe Percentage of suppliers and subcontractors hired where 	REC and PIU

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
	Health, Safety and Security Plan (including occupational health and safety (OHS) will include community health and safety risks and will monitor: <ul style="list-style-type: none"> Level crossings safety Noise during operation Flood risk during operation Transport of dangerous goods 			<ul style="list-style-type: none"> Assessment has identified issues associated with forced labour, child labour or significant safety violations Number of grievances Worker Contracts Performance Indicators for community health and safety: <ul style="list-style-type: none"> Grievance Records Accident Records Training records on the safety management program Consultation records Grievance related with the noise measurement Grievance Records Incident Records Relevant certificates 	
Community Health and Safety					
52.	<ul style="list-style-type: none"> Disturbance to community health and safety during the construction phase (e.g. air, noise, environmental health, quality of life and wellbeing) will be monitored through the Grievance Mechanism. 	All Project workers, Sub-contractors and supply chain	During construction Quarterly	<ul style="list-style-type: none"> Grievance records about the environmental issues, Consultation records, Records of Air quality measurements, Records of Noise measurements, Grievance records on air and noise, 	REC and PIU
53.	<ul style="list-style-type: none"> SEP, health screening of workers and community health and safety trainings topics will be used to monitor increased risk of communicable diseases and burden on local health services. 	All Project workers, Sub-contractors and supply chain	During construction Quarterly	<ul style="list-style-type: none"> SEP Register, Health screening summary records Training materials and records on health induction and refresher training, 	REC and PIU

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
				including public health partnership information	
54.	<ul style="list-style-type: none"> Traffic Management Plan, Grievance Mechanism, and the results of the awareness trainings will be used to monitor increased traffic and rise in accidents. 	All Project workers, Sub-contractors and supply chain	During construction Quarterly	<ul style="list-style-type: none"> Grievance Records, Traffic Accident Records Training Records for drivers Protocols signed with the local authorities if any Visual inspections of the traffic signs Records of the road safety awareness trainings to the nearby schools Visual inspections of the warning signs during road and railway crossings 	REC and PIU
55.	<ul style="list-style-type: none"> Health, Safety and Security Plan (including occupational health and safety (OHS) will include monitoring of the private security services around the Project sites and the local community hot spots. 	All Project workers, Sub-contractors and supply chain	During construction Quarterly	<ul style="list-style-type: none"> Records of the consultations Records of the trainings given the security personnel Records of the security incidents 	REC and PIU

5.1.2.2 Operation Phase

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
Water					
1.	Flooding Management <ul style="list-style-type: none"> Weather monitoring and follow up of Turkish State Meteorological Service flood warnings Flood level 	Sensitive areas for flooding (detailed in Flood Risk Assessment Report)	During operation after flood incidences	<ul style="list-style-type: none"> Incident records Grievance records 	TCDD Transport
2.	Spill to water <ul style="list-style-type: none"> Measuring nearby water quality after the spill incidents 	Surface water bodies below and near the Project	During operation after spill incidents	<ul style="list-style-type: none"> Water quality analyses, oil and grease, TPH and spilled chemical analyses results Visual inspection Incident reports 	TCDD Transport
3.	Water quality <ul style="list-style-type: none"> Measuring nearby water quality twice a year for surface and groundwater 	Sensitive water bodies, nearby locations where groundwater table is close to the surface and the locations where baseline measurements were conducted	Twice a year	<ul style="list-style-type: none"> Water quality analysis to check the nearby waters' status against national and international standards 	TCDD Transport
4.	Wastewater Collection <ul style="list-style-type: none"> Checking the Integrity of Wastewater Collection 	Wastewater collection systems related to the Project	Regularly and in case of a grievance arise	<ul style="list-style-type: none"> Visual inspection Compliant records 	TCDD Transport
GHG Emissions					
5.	<ul style="list-style-type: none"> GHG emissions during the operation phase would surpass the IFC PS3 threshold of 25,000 tCO₂e per year. Given this exceedance the Project will quantify and monitor direct GHG emissions from the Project in accordance with internationally recognized methodologies and in 	Not Applicable	During construction. Annual report	<ul style="list-style-type: none"> Quantification of Project GHG emissions during the construction phase. Monitoring results which can be used to evaluate project performance. 	TCDD Transport

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
	accordance with the requirements included in Annex A of the IFC PS3.				
Visual Landscape					
6.	Change of landscape due to changes in land use <ul style="list-style-type: none"> Monitoring the visibility of landscape changes 	Settlements nearby MAG High Standard Train Route	Annual monitoring studies throughout operation	<ul style="list-style-type: none"> Visual quality in immediate settlements not affected. Grievance arising from visual managed through the grievance procedure 	TCDD Transport
Waste					
7.	Waste generation <ul style="list-style-type: none"> Waste Management Plan's implementation Waste generation and disposal record 	Nearby water bodies to stations and areas where wastes will be generated during operation phase	Monthly	<ul style="list-style-type: none"> Visual inspection for checking whether the Waste Management Plan's procedures are in place for operation Waste audits to check disposal records 	TCDD Transport
Population					
8.	<ul style="list-style-type: none"> Monitoring training records of Including Orientation, Code of Conduct and Cultural Awareness Trainings, Grievance Mechanism for all workers. Monitoring the local employment numbers. Monitoring of grievances records. 	Residents in the Social Aol Facility workers	During operation Quarterly	<ul style="list-style-type: none"> Grievance Mechanism Number of local workers. Training records 	TCDD Transport
Economy					
9.	<ul style="list-style-type: none"> Monitoring number of local employees (including woman and vulnerable people), grievance mechanism records and employment tools. 	Residents in the Social Aol Facility workers	During operation Quarterly	<ul style="list-style-type: none"> Number of the local employees. 	TCDD Transport

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
				<ul style="list-style-type: none"> Announcement of employment opportunities. CV pool. Employment tools. Grievance Mechanism 	
Infrastructure					
10.	<ul style="list-style-type: none"> Monitoring records of grievances about the infrastructure. Monitoring the facility's suitability for use by the elderly, the disabled and those with reduced mobility (both men and women) and pregnant women. 	Facility users Facility workers	During operation Quarterly	<ul style="list-style-type: none"> Grievance Mechanism Visual Check 	TCDD Transport
Biodiversity					
11.	Accidental loss of fauna <ul style="list-style-type: none"> Monitoring of fences along the railway for breaches by wildlife, holes, tunneling beneath, breakages or any other malfunctions to maintain the fence in an animal proof-state. Monitoring of fauna kills along railway during operations. Parameters measured include date, species, location, gender, approximate age and freshness of the carcass. 	Fauna species	As and when collisions are encountered from the start of operations and maintained for the life of the railway	<ul style="list-style-type: none"> No encounters with fauna deaths. 	TCDD Transport
12.	Barrier effect in fauna <ul style="list-style-type: none"> Monitoring of culverts along the railway for blocking by materials or any other malfunctions to maintain the culvert in an animal proof-state. 	Fauna species	Annually throughout the Operation	<ul style="list-style-type: none"> The crossing success of the fauna species. No encounters with fauna deaths. 	TCDD Transport
Ecosystem Services					

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
13.	<ul style="list-style-type: none"> Access to Ecosystem Services due to lack of under and overpasses will be monitored through the GRM 	All PAPs in the AoI	Bi-Annually during the operation	<ul style="list-style-type: none"> Grievance Mechanism 	TCDD Transport
Labour and Working Condition					
14.	<p>HR policy, workers Grievance Mechanism will be used to minimize the labour risks and impacts and to monitor:</p> <ul style="list-style-type: none"> women employment and non-discrimination and equal opportunity labour risks and impacts related to subcontractor and supply chain management (including child and forced) working conditions and terms of employment for expat and national workers. employment of the local workforce 	All workers within the scope of operation phase of MAG High Standard Railway Project,	During operation Quarterly	<ul style="list-style-type: none"> Percentage of workforce who are women or from other vulnerable groups Number of workers (direct employees and subcontractors) trained on the worker grievance mechanism Number of grievances from workers or job seekers related to discrimination, abuse of labour rights, sexual harassment. Grievance Records Average number of hours worked per week Average number of days worked without a rest day Average number of overtime hours worked per week 100% of contracts including clauses on labour and working conditions in line with Turkey Law and the IFC PS2. Labor Audit Report(s) verifying worker/contractor accommodation conditions provided in line with the requirements described in the 'IFC Guidance Note on Workers' 	TCDD Transport AYGM

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
				<ul style="list-style-type: none"> Accommodation: Processes and Standards" Records of trainings Percentage of workforce who receive training/ induction on HR policies, plans and procedures Number of workers (direct employees and subcontractors) trained on the worker grievance mechanism Grievance Records 	
Occupational Health and Safety					
15.	<p>Health, Safety and Security Plan (including occupational health and safety (OHS)) will be implemented to monitor and reduce risk exposure of the workforce.</p> <p>Health, Safety and Security Plan (including occupational health and safety (OHS)) will include a variety of plans and procedures depending on the activities being undertaken and associated risks, such as:</p> <ul style="list-style-type: none"> Physical and chemical hazards Emergencies Construction traffic Accommodation Subcontractor and Supply Chain Management (Including Child and Forced Labour Risks) <p>Staff will receive training on incidents and accidents recorded and investigated.</p>	All Project workers, Sub-contractors and supply chain	Quarterly during the operation	<ul style="list-style-type: none"> Percentage of workers (direct employees, subcontractors and suppliers) that have received OH&S induction prior to working on site Number of workers (direct employees, subcontractors and suppliers) that have received task specific training Percentage of workers attending toolbox talks. Number of stop work notices issued by activity Number and type of non-compliances observed during daily and weekly site inspections Number of Lost Time Injuries (LTI) involving workers on site 	TCDD Transport

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
	<p>Implementation of the Health, Safety and Security Plan (including occupational health and safety (OHS)) will be monitored to ensure that it is being implemented appropriately and that risks are being managed. This will include regular (daily) site walkovers to observe behaviors and more detailed weekly checks of performance.</p> <p>Accident and incident data will be reviewed monthly to spot trends where further health and safety measures or training may need to be implemented.</p>			<ul style="list-style-type: none"> Number of minor incidents and injuries Number of incidents investigated, corrective actions identified and closed out/ not closed out within the required timeframe Percentage of suppliers and subcontractors hired where Assessment has identified issues associated with forced labour, child labour or significant safety violations 	
16.	<p>Health, Safety and Security Plan (including occupational health and safety (OHS)) will include community health and safety risks and will monitor:</p> <ul style="list-style-type: none"> Level crossings safety Noise during operation Flood Risk Management Transport of dangerous goods 	PAPs	Quarterly during the operation	<ul style="list-style-type: none"> Grievance Records Accident Records Training records on the safety management program Consultation records Grievance related with the noise measurement Grievance Records Incident Records Relevant certificates 	TCDD Transport
Community Health and Safety					
17.	<ul style="list-style-type: none"> Disturbance to community health and safety during the operation phase (eg. air, noise, environmental health, quality of life and wellbeing) will be monitored through the Grievance Mechanism. 	All Project workers, Sub-contractors	During operation Quarterly	<ul style="list-style-type: none"> Grievance records about the environmental issues, Consultation records, Records of Air quality measurements, Records of Noise measurements, 	TCDD Transport AYGM

Ref No.	Monitoring Measure	Sensitive Receptor	Timing and Frequency	Performance Indicator	
18.	<ul style="list-style-type: none"> SEP, health screening of workers and community health and safety trainings topics will be used to monitor increased risk of communicable diseases and burden on local health services. 	All Project workers, Sub-contractors	During operation Quarterly	<ul style="list-style-type: none"> SEP Register, Health screening summary records Training materials and records on health induction and refresher training, including public health partnership information 	TCDD Transport AYGM
19.	<ul style="list-style-type: none"> Traffic Management Plan, Grievance Mechanism, and the results of the awareness trainings will be used to monitor increased traffic and rise in accidents. 	All Project workers, Sub-contractors	During operation Quarterly	<ul style="list-style-type: none"> Grievance Records, Traffic Accident Records Training Records for workers Protocols signed with the local authorities if any Visual inspections of the traffic signs Records of the road safety awareness trainings to the nearby schools Visual inspections of the warning signs during road and railway crossings 	TCDD Transport AYGM
20.	<ul style="list-style-type: none"> Health, Safety and Security Plan (including occupational health and safety (OHS) will include monitoring of the private security services around the Project sites and the local community hot spots. 	All Project workers, Sub-contractors	During construction Quarterly	<ul style="list-style-type: none"> Records of the trainings given the security personnel Records of the security incidents 	TCDD Transport AYGM

5.2 Key Performance Indicators

Table 5-1 below summarizes the Key Performance Indicators (KPIs) and associated targets that will be used to assess the progress and effectiveness of proposed mitigation strategies during construction phase.

Table 5-1. Key Performance Indicators

KPI	Target
Air Quality	
Air Quality incidents	Minimization and continued improvement in the number of the reported air quality related incidents.
Non-Compliance with air quality standards	Zero complaints per year
Community complaints	Minimization and continued improvement in the number of air quality related community complaints.
Noise	
Noise and Vibration incidents	Minimize and continued improvement in number of reported noise and vibration related incidents.
Non-Compliance with Project standards	Zero NCRs per year
Number of noise-related community grievances	Zero grievances per year
Water	
Spill incident	Minimization and continued improvement in the number of the reported water quality related incidents.
Non-Compliance with Project standards	Zero NCRs per year
Wastewater collection system	Zero grievances per year
Groundwater levels of the community/private wells	No significant adverse impact
Water quality analyses	Meeting set national and international water quality standards for surface and groundwater impacted and/or near the Project
Flood incidents	No infrastructure damage and damage to loads/humans
Waste	
Waste Generation	Total waste generated Ratio of hazardous waste generated to total hazardous waste (by contamination + by generation)
Waste Disposal	Ratio of recovered/reused/recycled to landfilled
Soil	
Spill incident	Minimization and continued improvement in the number of the reported soil quality related incidents.
Non-Compliance with Project standards	Zero NCRs per year
Number of noise-related community grievances	Zero grievances per year
Traffic	
Number of non-compliances against the mitigation controls identified in Traffic Management Plan	Decreasing number/ continuous improvement in number of reported non-compliances
Number of drivers found to be exceeding speed limits or driving unsafely	Zero exceedance per year
Number of road traffic accidents involving: Accidental injuries and deaths, Spillages (such as cargo or fuel), Wildlife-vehicle collisions.	Zero accidents per year
Number of traffic-related grievances	Zero grievances per year

Health, Safety and Environment	
% of workforce attending STARRT	>90
% of scheduled HSE Inspection	>90
% of attendance at HSE meetings	>90
% of closing of NCRs	100
Reporting safe observations	100%
Reporting unsafe observations	100%
Reporting near misses	100%
% of Toolbox attending	>90
% of Risk Assessment compliance	>90
% of Legal Requirements compliance	>90
Results of scheduled audits	>85
HSE training carried out to training matrix > 90% of all training to matrix	>90
% of attendance at scheduled trainings	>90
Engagement in HSE program by individual managers and supervisors	>90
Engagement in HSE program by Subcontractor's	>90
Labor and Working Conditions	
Number of worker grievances not closed out within the target timeframe	Zero worker grievances not closed out on time
Community Health and Safety	
Number of communicable and non-communicable diseases and injuries.	No significant increase in communicable and non-communicable disease and injury rates per 1,000 residents per annum.
Number of community health safety & security complaints from local communities as recorded in the grievance management system.	Decreasing number/ continuous improvement in number of complaints
Number of reported community health & safety incidents	Zero incidents per year
Number of reported noise incidents	Zero incidents per year