



Environmental and Social Management Plan (ESMP) CONSTRUCTION IMPACTS MANAGEMENT PLAN

Prepared According to the World Bank Environmental and Social Standards

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ABBREVIATIONS

AYGM	General Directorate of Infrastructure Investments
E&S	Environmental and Social
IA	Impact Area
ESMP	Environmental and Social Management Plans
ESIA	Environmental and Social Impact Assessment
ESMS	Environmental and Social Management System
SEHS	Social and Environmental Health Safety

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1. INTRODUCTION

The management of impacts on environment and social components during construction will include the following two groups of mitigation measures defined in relation to the potential impacts of the project during land preparation and construction phase of the project.

The mitigation measures can be grouped in:

- Standard mitigation measures that are applicable throughout the project Impact Area (IA);
- Specific mitigation measures to be applied at specific locations or a specific component of the environment and affected community in the project IA.

2. SCOPE

This management plan includes both types of mitigation measures to eliminate if possible or minimise the residual impacts of the project to acceptable levels if elimination of the impact is not possible.

AYGM will designate a Contractor, and this Contractor and AYGM will be jointly and individually responsible for the fulfillment of the ESIA commitments. AYGM will clearly describe the responsibilities for the compliance with the ESIA commitments in the contract with the Contractor and will be responsible for monitoring the Contractor's compliance with the contract requirements.

In terms of developing the management plans specific to AYGM and the contractor's own project activities. The requirements of management of environmental and social impacts as a guide are described in this management plan.

AYGM may change the content of this management plan through the project change management procedure in case of

- Changes in the regulatory requirements;
- Requirements and conditions imposed by relevant authorities during the approval on the ESIA;
- Availability of new information on the baseline conditions of the project area;
- Changes adapted to the project system as a result of detailed engineering findings.

3. OBJECTIVES

This management plan aims to define mitigation measures that can be used to eliminate the residual impacts of the project, if possible, or to reduce them to acceptable levels.

4. ROLES AND RESPONSIBILITIES

As stated in the ESIA Report, Contractors¹ are expected to comply with National Laws and shall also conform to international standards and, including relevant Environmental and Social Standards of the World Bank. Such requirements are detailed in Chapter 2 of the ESIA report and Contractors are required to ensure that their activities comply with all relevant Turkish legislation and international requirements listed in Chapter 2 of the ESIA.

The contractor is required to act according to the social, environmental, health and safety (SEHS) policy to be established for the Filyos Project. Contractor's SEHS obligations and responsibilities will be clearly defined.

The contractor will be responsible for the implementation and compliance of all relevant mitigation measures and conditions outlined in Filyos ESIA and ESMP. The contractor will need to demonstrate that the mitigation measures defined in the ESIA and ESMP are taken, implemented and monitored at the desired level by the AYGM.

The Contractors will establish their own Environmental and Social Management System (ESMS) in compliance with the requirements of ISO 14001:2004 Environmental Management System and shall ensure that ESIA and ESMP requirements are addressed and met.

The ESMS will comprise ESMPs and Procedures which will be submitted to AYGM for review and approval and will:

- Include the "Outline of the ESIA Requirements and Commitments";
- Describe how applicable ESIA requirements, commitments and contractual requirements will be met;
- Describe the procedures according to which the project changes (e.g. design changes, additional land areas) will be managed in terms of environmental and social aspects;
- Describe how Contractor will ensure the commitments and contractual/legal requirements are complied with in line with project standards (monitoring, auditing and inspection programme);
- Describe the procedures to ensure that the project related concerns and grievances will be managed in terms of Stakeholder Engagement Plan;
- Provide a set of E&S Key Performance Indicators (KPIs) to cover at least (but not be limited to) the following areas based on the outline of the applicable commitments and contractual requirements:

1. Compliance with the ESMS
2. E&S accidents
3. Environmental emissions
4. Waste management
5. Water and Wastewater Management

¹ Contractors awarded for performing activities during the Land Preparation and Construction Phase of the Project.

6. Occupational health and safety (OHS)
7. Labor management
8. Local procurement
9. Local supply
10. Complaints about the Project

- Describe how Contractor will record and report their compliance;
- Describe how appropriately experienced and qualified personnel will be employed in the role of Contractor's E&S representative(s) and on-site inspectors subject to the approval of AYGM;
- Describe the responsibilities of the dedicated E&S team clearly.
- Describe workforce training to ensure that all personnel are aware of their E&S responsibilities with reference to Contractor E&S Management Plan(s);
- Describe how the performance of all contractors and subcontractors with respect to the E&S requirements will be met;
- Describe E&S and OHS records including based on the outline of the applicable commitments and contractual requirements. These records include but are not limited to
 1. Record of events related to E&S issues and OHS
 2. E&S and OHS non-compliance record
 3. E&S and OHS activities track record
 4. E&S and OHS training records
 5. Air and water monitoring records
 6. Waste registration
 7. E&S and OHS monthly reports
 8. Registration of complaints related to the project and complaint closing forms signed by the complainants
 9. Project consultation / public participation meetings and records of stakeholder relations
 10. Land entry and exit protocols signed by landowners / users
 11. Records and documents related to compensation payments
 12. Employment records (See Employment and Training Plan)

Contractor will be required to ensure that:

- Reports on E&S and OHS incidents are provided to AYGM immediately;
- A programme of regular environmental and social self-inspection and audits is developed and implemented and the results are reported to AYGM on a monthly basis as part of E&S monthly reports;

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- An Action Tracking System is implemented to provide a mechanism to record and track E&S related actions derived from incidents, non-compliances, complaints, E&S meetings, sub-contractor activities, etc.

The following sections and the relevant Management Plans set out relevant details from the ESIA (refer to ESIA relevant section) and ESMPs which the Contractor shall comply with and address through their ESMS. This Statement of E&S Requirements provides Contractor with a concise overview of requirements, however Contractor is responsible for ensuring that all relevant principles and mitigation measures set out in ESIA (refer to ESIA relevant section) are met while undertaking the project activities and the ESIA should be referred to in this regard.

a. Organizational and Capacity Requirements

Construction contractors and sub-contractors shall have the primary responsibility to fulfil all project requirements with adequate and qualified personnel working under an appropriate organizational structure and further to ensure that their sub-contractors also comply with the project requirements. Adequate and qualified personnel will be employed by the Contractor to allow the proper management of environmental and social issues, community relations and natural resources within the scope of its operations. Within this context, the organizational structure shall include units which manage environmental and social matters, and promote the implementation of its operations to support the project in harmony with its scope and national and international standards.

In order to provide a solid application of E&S requirements on site, Contractor will be responsible for ensuring that all of its personnel (including contractor and sub-contractor personnel) are aware of their E&S responsibilities. To this aim, the Contractor will develop and implement an E&S training programme to ensure that all site personnel fully understand all the aspects of E&S requirements of the project particularly in terms of potential impacts of activities, mitigation measures, sensitivities in study area, plans/procedures other project documents to be followed, action required in case of unforeseen incidents and roles and responsibilities of Contractor staff and AYGM representatives with respect to E&S issues.

The E&S training programme should be submitted to AYGM for review and approval within periods defined in related tender documents. Records of the trainings will be kept by the Contractor and will be submitted to AYGM when required for auditing purposes.

The Contractor will ensure that all Contractor personnel participate in all training programme including regular site-specific training sessions on E&S issues throughout the course of their contract.

The contractors will ensure that the following competencies are included in their teams as relevant to their scope of work:

1. Cultural heritage,
2. Ecology,
3. Geological / hydrogeological
4. Social / Public Relations
5. Environmental Experts,
6. E&S Instructors

7. OHS Specialists
8. Environmental Auditors

5. LEGAL FRAMEWORK

5.1. National Legislation

Turkish Environmental Law, No. 2872, published in the Official Gazette No. 18132, dated August 11, 1983 explains basic principles that are necessary to protect the environment in line with sustainable environment and sustainable development goals. The Environmental Law provides a legal framework for the development of environmental regulations in accordance with national and international standards. Following its first publication date of 1983, various amendments have been made.

Environmental regulations, by-laws and communiques that are valid within the above mentioned laws are listed below.

Environmental Permits and Licenses

- Regulation on Environmental Impact Assessment
- Regulation on Environmental Permits and Licenses
- Regulation on Environmental Audit
- Regulation Concerning Environmental Management Services

Land Use and Soils

- Regulation on Protection, Use and Planning of Agricultural Lands
- Implementation Regulation of 17/3rd and 18th Articles of the Forestry Law
- Implementation Regulation of Land Consolidation and On-Farm Development Services
- Regulation Concerning the rehabilitation of the Lands Disturbed by Mining Activities
- Regulation on Pastures
- Regulation on the Control of Soil Pollution and Lands Polluted by Point Sources

Water

- Regulation on Surface Water Quality
- Regulation on Water Pollution Control
- Regulation Concerned Water Intended for Human Consumption
- Regulation on Urban Wastewater Treatment
- Regulation Concerning Protection of Groundwater against Pollution and Deterioration
- Regulation on Control of Pollution Caused by Hazardous Substances in and around the Water Bodies.

- Communique on Sampling of Surface Water, Ground Water and Sediment and Biological Sampling
- Regulation on Protection of Drinking-Potable Water Basins

Waste

- Regulation on Control of Packaging Wastes
- Regulation on Waste Management
- Regulation on the Control of Excavation Soil, Construction and Demolition Wastes
- Regulation on the Control of Medical Wastes
- Regulation on the Control of Waste Oils
- Regulation on the Control of Waste Vegetable Oils
- Regulation on the Control of Waste Batteries and Accumulators
- Regulation on the Control of End-of-Life Tires
- Regulation on Mining Wastes
- Regulation on the Landfill of Wastes
- Regulation on the Control of Waste Electrical and Electronic Equipment
- Regulation on the Control of End-of-Life Vehicles
- Regulation on Zero Waste
- Regulation on the Control of Collecting Wastes from the Vessels
- Regulation on Recovery of Some Non-Hazardous Wastes

Air

- Regulation on the Control of Industrial Air Pollution
- Regulation on the Assessment and management of Air Quality
- Regulation on the Control of Exhaust Gas Emissions

Noise

- Regulation on Assessment and Management of Environmental Noise
- Regulation on Environmental Noise Emission Caused by Equipment Used Outdoors

Social Environment

- Regulation on Implementation of Resettlement Law
- Regulation on the Implementation of Law Concerning Private Security Services

Health, Safety and Labor

- The Labor Law (Law No. 4857)
- Communique on Hazard Classes List related to Occupational Health and Safety

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- Regulation Concerning the Protection of workers from Risks Associated with Noise
- Regulation Concerning the Protection of workers from Risks Associated with Vibration
- Regulation on Health and Safety Conditions in the Use of Work Equipments
- Regulation on Occupational Health and Safety
- Regulation on Occupational Health and Safety on Construction Works
- Regulation on Health and Safety Regarding Temporary and Time Limited Works
- Regulation on Health and Safety Precautions Regarding Working with Chemicals
- Regulation on Health and Safety Signs
- Regulation on Dust Management
- Regulation on Safety Information Forms Regarding Hazardous Materials and Mixtures
- Regulation on Health and Safety Risk Assessment
- Regulation on Personal Protection Equipment
- Regulation on Vocational Training of the Employees Working in Dangerous and Highly Dangerous Workplaces
- Regulation on the Control of Polychlorinated Biphenyl Terphenyls

5.2. International Standards

5.2.1. World Bank Environmental and Social Standards

ESS1: Assessment and Management of Environmental and Social Risks and Impacts:

This Standard sets out Borrower's responsibilities for assessing, managing and monitoring Environmental and social risks and impacts related with each phase of the project supported by the World Bank through Investment Project Financing (IPF), so as to accomplish environmental and social results consistent with the Environmental and Social Standards (ESSs).

ESS1, paragraph 26 states that all relevant environmental and social risks and impacts as the result of the project should be covered in the assessment, including:

1. Environmental Risks and Impacts covering the following issues:
 - The ones defined by Environmental Health and Safety Guidelines (EHGS)
 - Community safety
 - Climate change and other transboundary or global risks and impacts
 - Materials threat to the protection, conservation, maintenance and restoration of natural habitats and biodiversity
 - Ecosystem services and the use of living natural resources (fisheries, forests etc.)
2. Social Risks and Impacts covering the following issues
 - Threats to human security
 - Risks that project impacts fall disproportionately on individuals or groups who, because of their particular circumstances, may be disadvantaged or vulnerable

ESS2: Labor and Working Conditions

- This standard describes the importance of creating employment and income for comprehensive financial development and poverty reduction. Borrowers can promote sound worker-management relationships and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working conditions.

ESS3: Resource Efficiency and Pollution Prevention and Management

- This standard points out to the requirements to highlight resource efficiency and pollution prevention and management with a holistic approach to project implementation. The aim is to minimize pollution arising from the project with sustainable use of resources.

ESS4: Community Health and Safety

- This standard addresses the health, safety and security risks and impacts on project-affected communities and the corresponding responsibility of Borrowers to avoid and minimize such risks and impacts with particular attention to people who, because of their particular circumstances, may be vulnerable.

ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

- This standard requires avoiding compulsory resettlements, if not avoided, taking necessary measures to reduce negative impacts on displaced people (and on host communities receiving displaced persons).

ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

- This standard recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development and it recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support. ESS6 also addresses sustainable management of primary production and harvesting of living natural resources, and recognizes the need to consider the livelihood of project-affected parties.

6. CONDITIONS

6.1. Pre-Construction Surveys and Detailed Studies

A complete list of the works to be carried out in order to ensure the effective implementation of the mitigation measures specified in this management plan and other management plans developed for the project and to be developed by the consultant/contractor and as a complement to the ESIA are given in Table 6-1 and detailed explanations are given below.

Table 6-1: Activities to be carried out before the Land Preparation and Construction Phase of the Project

No	Surveys / studies committed under the ESIA	Responsibility	Period	Deliverable
1	Site-specific management plans and procedures will be developed to be implemented throughout the land preparation and construction phase of the Project.	AYGM / Contractor Company	Pre-Construction	Management plans and procedures on E&S issues prepared by the Contractor and approved by AYGM
1	Surveys will be undertaken to determine exact locations for the camp site, waste storage areas, borrow pits and quarries.	AYGM / Contractor Company	Pre-Construction	Survey reports and outcome on identified locations for Project facilities
3	The Logistics Studies to be prepared by the Contractor will be used to estimate the extent of the increase in railway and road traffic, and thus will provide the opportunity to expand the mitigation measures defined for the management of the traffic increase related to the transport of excess excavation soil and other construction material.	AYGM / Contractor Company	Pre-Construction	Traffic Management Plan including mitigation measures to prevent traffic impact
4	All intersections between the Project Route and existing roads and other infrastructure elements will be determined and the infrastructure will be kept in continuous operation, and the most appropriate construction techniques will be used to reduce the impact in this process as much as possible.	AYGM / Contractor Company	Pre-Construction	Road Crossing and Infrastructure Construction Methods with mitigation measures to reduce disturbances
5	An investigation will be carried out to evaluate the current status of the roads to be used during construction, and additional examinations will be carried out to determine whether the transport roads used require improvement work and to ensure that they are restored or improved after construction.	AYGM / Contractor Company	Pre-Construction / Access Road Usage	Transportation Routes Evaluation Reports Access Road Records Traffic Management Plan with mitigation measures and requirements to improve existing roads and restore temporary roads Community Health and Safety Plan
6	During the pre-construction period, the Contractor will conduct <i>site-specific studies</i> for residential areas to identify distant settlements, settlements with poor road conditions and settlements with limited access to basic services (street markets, health centers, schools, etc.).	AYGM / Contractor Company	Pre-Construction	Site-specific Social Status Report

No	Surveys / studies committed under the ESIA	Responsibility	Period	Deliverable
	According to the results of these studies, in order to minimize the effects on transportation, the contractor will contact the local authorities and special solutions will be agreed on in terms of design and logistics.			
7	The contractor will prepare the Professional Code of Conduct , which defines the rules to be followed during the working hours and on the camp sites, and the behavior on leisure time, and will convey these rules to the employees together with the employment contract and then explain them to the employees during the training.	AYGM / Contractor Company	Pre-Construction	Professional Code of Conduct for Employees
8	During the construction phase, Project components and existing superstructure / infrastructure will be identified in order to provide appropriate technical solutions to reduce interruptions in infrastructure and transportation systems. Additional mitigation measures will be developed.	AYGM / Contractor Company	Pre-Construction	Infrastructure Transition Construction Methods, including reduction of disturbances as much as possible
9	AYGM / Contractor will provide land acquisitions in accordance with the Expropriation Law, and will bring solutions to the issues (such as development activities that may affect the transportation of trees or other productions) to reduce impacts.	AYGM / Contractor Company	Pre-Construction	Expropriation Management
10	Special studies on waste management facilities will be carried out during construction activities to provide the capacity to reduce the additional burden from the project on existing waste storage and disposal facilities.	AYGM / Contractor Company	Before camp sites and other construction infrastructure are put into operation	Waste Management Assessment and Inspection Reports Contractor Waste Management Plan including site-specific waste management measures and requirements
11	A Water Supply Plan will be prepared to identify possible resources for the supply of water required for the project. The plan will identify resources for water supply, taking into account the permits required for use and discharge and the minimum impact on communities using the same water resource.	AYGM / Contractor Company	Pre-Construction	Water supply, water sustainability Assessment Reports Water Supply Plan with specific environmental and social requirements and mitigation measures

7. MITIGATION MEASURES AND MANAGEMENT CONTROLS

Mitigation measures are defined in conjunction with standard engineering and specific measures and ESIA study findings and are described below. The mitigation measures, monitoring requirements and responsibilities are detailed in the ESMP.

7.1. Management of Impacts on Soil

The findings of the assessment of impacts on soil for the construction phase above presented can be summarized as follow:

During the construction period of the Filyos Project landscape and environmental protection studies will be implemented as well as the site arrangements for the purpose of conforming the alterations (occurrence of new areas, patches and corridors etc.) which may occur during construction period and afterwards in the function and structure of natural landscape to the existing structure, and minimizing the impacts. During these studies priority will be given to minimizing the disturbance of the existing structure and then the necessary measures will be taken to rehabilitate. Potential impacts of Project activities on soils, which might arise from use of fuel, oil, hazardous substance storage, and maintenance and transport sites will be managed through implementation of the Pollution Prevention Plan presented in Annex-8 of the ESMP.

Definition of Work Area Boundaries

First step is to provide environmental training to all employees, to put up the visual communication aids such as posters, bills at various points of site, and to prevent the activities of the employees outside the work area in both constructional (building roads without permission, extra use of area etc.) and social (all types of hunting, setting fire etc.) aspects by defining boundaries of the work site and construction site in order to prevent the further disturbance of natural structure.

Stripping the Topsoil and Storage

In the areas outside the agricultural lands topsoil will be stripped down up to a depth of 15 cm minimum and 30 cm maximum. In agricultural lands soil depth may reach to 45 cm and in these areas topsoil should be stripped up to 45 cm deep maximum.

In the regions where the character of topsoil is rocky and stony, first of all the rock and stone blocks among the topsoil layers will be removed and stored in a separate place, then the topsoil stripping works will be performed.

Topsoil will be stored in places where it is not compacted by vehicles and construction equipment or not exposed to contamination, in conditions that its loss and/or degradation is minimized.

Topsoil will not be mixed with subsoil, they will be stored in separate areas and potential mixing will be prevented by some physical means such as stone supports, geotextile sheeting, silt fences etc.

Additionally, topsoil piles will be identified with warning and caution signs/ plates to protect them against potential damage.

Topsoil will be stored in a manner that it is drained freely and the drainage of the run-off water channels/ditches around the piles will be provided. Drainage channels will be connected to the natural drainages and to the surface water flow points. Possible scours/erosions will be prevented through building wasteway structures, outlet points in these junction points.

In order to permit reasonable accesses (animal passages, vehicle passages etc.) and in the low areas where the surface water may be collected beside the stockpiles gaps will be left between topsoil stacks.

In storage areas, topsoil will be stored in stockpiles of not more than 2m high with side slopes less than 45.

Under no circumstances will topsoil be used as padding and filling material. Thus, for the revegetation process after completion of construction, soil (fertile/topsoil layer) which is the most important factor for plant growth will be protected, its loss will be prevented and the suitable medium will be provided for replanting.

Subsoil Transport and Storage

Subsoil extracted from the the excavation works will be transported as excavation material to the excavated material storage area designated by district municipalities.

Taking Temporary Measures against Erosion

During construction works after stripping the topsoil, primarily, subsoil will be removed in a manner that it is not affected by, or is the cause of erosion. The following temporary measures for erosion control will be performed within the scope of activities during the land preparation, construction and installation stages:

- Material deposits will be left to retard the surface flow and prevent the ground scour.
- When it is required to break the slopes mini weirs will be built, so these provide the flow discharge down along the slope.
- Continuous monitoring will be provided to prevent the cases such as slumping, loss of soil.

These measures to be taken are the essential applications to prevent both confrontation with the dangerous situations (wreckage, landslide, demolition etc.) and occurrence of further damages in land topography.

Soil Pollution

Discharge of materials that will cause contamination to the soil will be prohibited.

Accidental spills and leaks will be managed by implementing the Emergency Preparedness and Response Plan.

Solid waste, hazardous waste and wastewater that will be generated as a result of land preparation and construction activities along the project route will also be managed through the implementation of the relevant management plans (Waste Management Plan, etc.).

While determining the locations of temporary fuel or oil storage areas, the locations of water resources will be taken into consideration and dangerous material spills / leaks such as fuel, oil, oil, cement etc. will be taken under control immediately.

7.2. Management of Impacts on Air Quality

Filling and emptying in emission source without watering or spinning, improvement of the roads, covering the vehicles with canvas during transportation of the materials and keeping top of the material in 10% moisture shall be taken in order to minimize the dusting which could occur in the land.

Furthermore, in order to minimize the dusting which could occur in the land, the provisions meeting the air quality standards relating to the dusty accumulation materials stored in the open yard stated in Appendix-1 of the RCIAP "Emission Limits for the Permit-Required Facilities" shall be complied with. At the land preparation and construction stage of the planned project fuel shall not be used in any process except for fuel usage of the different heavy construction machinery such as graders, excavators, dozers, trucks, compressors and mobile cranes. Diesel fuel shall be generally used in heavy construction machinery and vehicles and since gasoline-powered vehicles shall be rarely used, it is anticipated that gasoline consumption shall be much less than diesel consumption. The fuels to be used shall be supplied from the stations which have a permit to operate or from tanks of which the bottom is leak-proof and where measures have been taken against fire and spillage.

In order to minimize the emissions arising from the vehicles which will work within this scope; pursuant to the Regulation on the Control of Exhaust Emission and Quality of Gasoline and Diesel Fuel which came into force after being published in Official Gazette dated November 30, 2013 and numbered 28837, routine controls of all the vehicles and equipment to be used shall be carried out and the vehicles which need maintenance shall be taken to service and other vehicles shall be used in the works until the maintenance is over. Furthermore, they shall be warned to work pursuant to the Traffic Act and it is crucial to load pursuant to the loading standards. Implementation of the Pollution Prevention Plan will also be effective in terms of management of potential impacts on air quality.

7.3. Management of Noise Impacts

Necessary measures will be taken during the works within the scope of the project in order to minimize noise generation. In addition, regarding the noise that will occur in the project site during the construction phase, the issues specified in the 23rd item of the "noise criteria for construction sites" specified in the 4th section of the "Regulation on Assessment and Management of Environmental Noise" will be followed and the vehicles whose inspections, exhaust gas measurements and maintenance have been performed will be used. Potential noise impacts will be managed through implementing control measures within the scope of the Pollution Prevention Plan.

7.4. Wastewater Management

Since there is no wastewater (sewerage) system in the field, preparation and construction of the project, domestic wastewater to be produced will be deposited in the septic tank pit that will be leak-proof at the construction site in accordance with the "Regulation on Pits to be Built in Slopes where the Construction of Sewers is Not Possible", which was published in the Official Gazette dated 19.03.1971 and numbered 13783. When the pits are filled, wastewater will be removed by sewage trucks, and disposal will be provided within the scope of the protocol to be made with the municipality that has a wastewater infrastructure system. Impacts to incur from wastewater generation due to Project construction activities will be managed within the scope of the Pollution Prevention Plan.

7.5. Traffic and Transportation Impacts Management

See the Traffic (Transportation) Management Plan.

7.6. Management of Impacts Related to Construction Wastes

See Pollution Prevention Plan and Waste Management Plan.

7.7. Management of Impacts on Biodiversity

Impacts of the Project on biodiversity values will be managed through implementation of the Biodiversity Management Plan, which will be updated based on additional data to be acquired during pre-construction surveys.

Habitat loss / fragmentation

Table 7-1: Measures to be taken for Habitat Loss

Receptor	Mitigation Measure
Critical habitat: Grey dunes (B1.4)	Indirect impacts on the grey dune habitat and its <i>Centaurea kilaea</i> and <i>Panratiun maritimum</i> populations, and also the mesotrophic lake habitat will be avoided in line with the related environmental management plans (waste management, pollution prevention).
Natural habitats: Lakes (C1.2)	The Project personnel will be informed on the sensitivity of the habitats.
Natural habitats: Streams (C2.2), riparian woodland (G1.1)	Land preparation and construction activities will be limited to designated work areas. Impacts on natural habitats outside the Project route will be prevented. Vegetation clearance at riparian habitats will be minimized.
Natural habitats: Reedbed (D5.1), mesotrophic grassland (E3.4), pseudomaquis (F5.3), deciduous woodland (G1.A), hazelnut orchards (G1.D)	There will be no tree cutting/vegetation clearance other than in areas required for the Project. Project-related impacts on water quality and water flow will be avoided. Mitigation measures related to land use and soil quality will be taken in line with the related management plans ensuring conservation of natural habitats. Statuses of habitats and associated species populations will be monitored throughout land preparation and construction Where necessary, habitat and species specific measures will be developed and implemented with an adaptable management approach. The Project personnel will be informed on the sensitivity of natural habitats and species, conservation priorities, and also nesting areas that will be identified through pre-construction surveys. Any direct impact on plant and animal species will be prevented.
Fauna species of high conservation concern	Nesting areas for fauna species will be identified through pre-construction surveys, and experts will be consulted if nests are to be displaced. In setting up a schedule for land preparation activities, breeding seasons of animals will be considered to prevent direct mortality and also conserve the next generation of their populations in the area. Project-related impacts on air, soil and water in natural habitats will be avoided. Pre-construction surveys will be conducted on both sides of the route prior to finalization of the detailed design in an appropriate season, from April through June, to gather additional information on species (especially on those that are of high conservation concern) and habitat composition of the Biodiversity Study Area. Species-specific strategies will be developed and implemented within the scope of the Biodiversity Management Plan (BMP). In line with the characteristics of the target species, it will be decided in consultation with experts whether passages planned within the scope of the Project would be sufficient for wildlife. Where necessary, in order to ensure no net loss in populations of fauna species new structures will also be considered in areas that are identified to be significant for animal passages. Passages that will also enable human and cattle passage and provide access to grazelands will be identified through consultations within the scope of the Stakeholder Engagement Plan

Receptor	Mitigation Measure
	(SEP). In order to minimize animal mortality, locations along the route where animal passage will be prevented and methods that will be used to prevent passage of target species (fencing, sound signals, chemical repellents, lights and reflectors, etc.) will also be identified.

Use of machinery and equipment

Trainings will be organized for the Project personnel to inform them about the on-site speed limits and also importance of animal passages.

Machinery and equipment that arrive in work areas will be checked for presence of invasive alien species.

All machinery and equipment will be subject to regular maintenance and will not be used out of purpose.

Use of machinery and equipment will be limited to designated work areas. Impacts related to noise and vibration will be controlled in line with the Project standards.

Indirect impacts (dust, air emissions, noise, waste, and impacts on water and soil quality)

In order to control dust emissions, vegetation clearance will only be undertaken in pre-determined activity areas, and habitats will be rehabilitated upon completion of construction activities. All related dust suppression measures will be taken to ensure prevention of indirect impacts on biodiversity features.

On-site speed limits will be enforced to avoid direct mortality of animals.

There will be no direct discharge into water resources.

Project-related wastes will be collected at designated waste storage areas, and periodically removed from work areas.

Hunting of fauna species will be prohibited. In case of illegal hunting activities, authorities will be notified.

Solid wastes and wastewater that will result from land preparation and construction activities of the Project will be managed through implementation of the related management plans (Waste Management Plan, Water and Wastewater Management Plan, etc.).

Invasive alien species

Natural vegetation will be conserved to the best possible extent during land preparation, and native species will be used in restoration after completion of the construction phase.

Vehicles and equipment entering the site will be checked for invasive alien species. If identified, necessary measures will be taken in line with the Project standards to eradicate the species.

Instead of using herbicides, which would destroy the natural vegetation and enable introduction of invasive alien species, different vegetation management methods will be considered as appropriate spatially and temporally.

During the land preparation and construction phase biodiversity monitoring studies, potential for presence of invasive alien species in the area will also be monitored.

8. TRAINING, REPORTING AND MONITORING

8.1. Training

All employees of the contractor will be provided with basic training on social, environmental, occupational health and safety, labor and security issues. In addition, specialist training will be provided for key personnel involved in different activities such as the separation, storage, transportation and treatment of waste.

8.2. Reporting

Daily inspections will be carried out under the coordination of the environmental and social team formed by the Contractor.

Any incident detected during these inspections will be recorded and reported monthly. The World Bank and AYGM will be promptly notified of any incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers including but not limited to; incidents and accidents encountered during construction works, environmental spills, etc.

Sufficient detail will be provided regarding the incident or accident, findings of the Root Cause Analysis (RCA), indicating immediate measures or corrective actions taken or that are planned to be taken to address it, compensation paid, and any information provided by any contractor and supervision consultant, as appropriate. It will be ensured that the incident report is in line with the World Bank's Environment and Social Incidence Response Toolkit (ESIRT). Subsequently, as per the Bank's request, a report on the incident or accident and propose any measures to prevent its recurrence will be prepared.

All events and nonconformities will be reported according to the project standards as described in the ESMP.

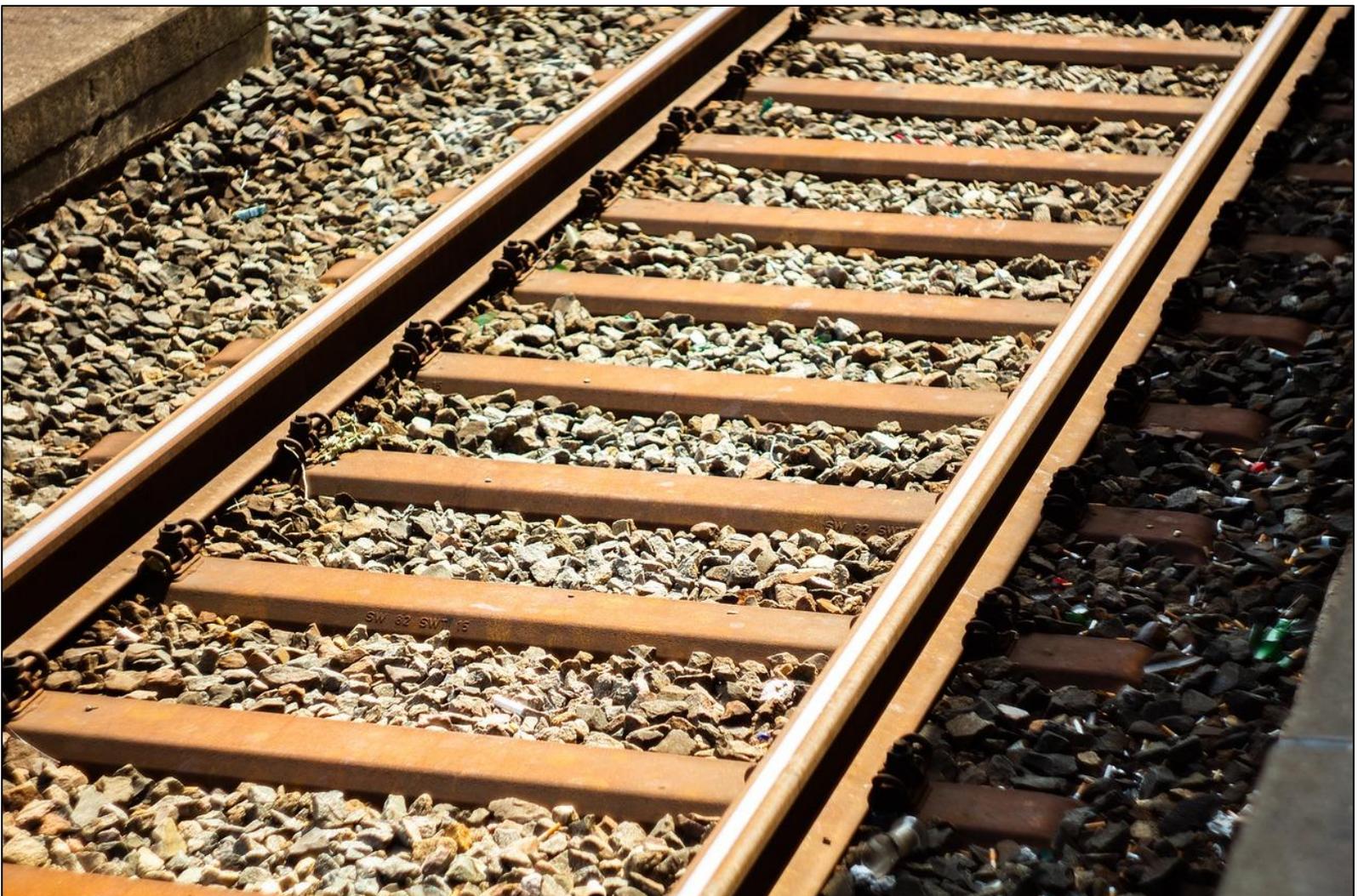
8.3. Monitoring

The main monitoring activities as set forth in Chapter 7: Monitoring Plan of the ESMP will focus on ensuring compliance with the mitigation measures and management controls described within the scope of this Construction Impacts Management Plan.

Monitoring activities for each E&S issue will be detailed in management/implementation plans and procedures to be prepared by the Contractor prior to the onset of the land preparation and construction phase of the Project. Monitoring activities will be designed to target specific topics to meet site-specific requirements in line with the Monitoring Plan framework provided in the ESMP.

9. REFERENCES

- ESIA Report
- Resettlement Action Plan (RAP)
- Waste Management Plan (WMP)
- Community Health and Safety Management Plan (CHSMP)
- Traffic (Transportation) Management Plan (TTMP)
- Pollution Prevention Plan (PPP)



FILYOS PORT/INDUSTRIAL ZONE CONNECTIONS PROJECT COMMUNITY HEALTH AND SAFETY PLAN

Prepared According to the World Bank Environmental and Social
Standards

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ABBREVIATIONS AND DEFINITIONS

AYGM	General Directorate of Infrastructure Investments
WMP	Waste Management Plan
ESIA	Environmental and Social Impact Assessment
CRP	Community Relations Plan
ETP	Employment and Training Plan
PPP	Pollution Prevention Plan
TTMP	Traffic Transportation Management Plan
CHSMP:	Community Health and Safety Management Plan
CONTRACTOR	Expert Firms responsible for the construction of the Project on behalf of AYGM

1. INTRODUCTION

This plan will aim to reduce any project impacts on the safety of local communities due to the land preparation and construction activities of the project. The requirements given below will be guiding the preparation of community health and safety management plan for the land preparation and construction phase of the project.

Increased safety awareness along the construction affected settlements should reduce risk of accidents.

The mitigation of impacts on human health and safety are addressed in a number of Management Plans, which include Emergency Response Plan, Employment and Training Plan, Traffic (Transportation) Management Plan, Pollution Prevention Plan and Waste Management Plan. The following main standard mitigation measures will be applied with a special focus on the land preparation and construction phase.

Community Health and Safety Management Plan (CHSMP) is developed in order to:

- a) avoid any impact on the safety of the local people due to the project activities during the all phases of the project,
- b) increase safety awareness of local community and avoid increase in the diseases or morbidity caused by the project activities (especially for the construction phase of the project).

2. SCOPE

CHSMP covers the planned land preparation and construction activities of the Project. It is prepared for implementation by AYGM employees, contractors and sub-contractors. Contractors are also required to adopt CHSMP requirements within their management plans. Roles and Responsibilities for the implementation of CHSMP are presented in Chapter 4.

3. PERFORMANCE INDICATORS

Performance indicators for the implementation of CHSMP are given below and related indicators will also be included in the Project's Environment, Health and Safety (EHS) procedures and plans:

Key Performance Indicator	Timeframe	Record	Responsibility
Community safety activities / trainings	12 times a year	Training Records	Contractor
Traffic trainings provided to workers	Twice a year	Training Records	Contractor
Number of traffic accidents,	0 times a year	HS Reports	Contractor
Number of work accidents,	0 times a year	HS Reports	Contractor
Number of complaints received,	0 times a year	Complaint Records	Contractor

Key Performance Indicator	Timeframe	Record	Responsibility
Field reports on RAP implementation and	Monthly	Monitoring Records	Contractor
Consultation with local people and local health officials	Monthly	Consultation records	Contractor

4. ROLES AND RESPONSIBILITIES

Contractors will fulfill the requirements defined in this CHSMP by adapting them to its own activities. Contractor must develop its own site-specific CHSMP and procedures aligned with AYGM policy which explain the way to implement the requirements of this plan. CHSMP of the Contractor will be submitted to AYGM for approval. The activities will not be started before the approval of AYGM is obtained for the management plans and procedures. The Contractor will regularly update their CHSMP as the project needs changed or requirements are identified in detail.

Specific roles and responsibilities in Community Health and Safety Management Plan are given below:

- AYGM will develop and maintain the project community health and safety requirements and communicate such requirements to the contractors in an effective manner;
- AYGM will control/supervise (i.e. by auditing and such) the implementation of the CHSMP and health and safety procedures by the contractors;
- AYGM will comply with the Voluntary Principles on Security and Human Rights;
- The Contractor will be responsible for developing, implementing and maintaining a detailed, project-specific CHSMP which will fulfil the minimum requirements and precautions defined in this CHSMP;
- The Contractor will be responsible for informing its employees on the requirements of the CHSMP and health and safety procedures (i.e. training);
- The Contractor will be controlling the performance of all subcontractors in regard to this CHSMP, the project-specific CHSMP and procedures;
- The Contractor will be responsible for producing reports with performance indicators for the successful implementation of CHSMP and communicate to AYGM;
- The Contractor will communicate with the local authority for specific project activities such as crossings, blasting and similar;
- The Contractor will perform medical surveillance among its workers and ensure medical examinations are done for workers performing health critical activities (i.e. canteen workers and such).
- Contractor will implement GBV prevention measures including awareness sessions to local communities on prevention of GBV, Code of Conduct for workers, training of workers on GBV/SEA/SH prohibition and GRM to report on GBV complaints.

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5. LEGAL FRAMEWORK

5.1. National Legislation

The main national legislation that the project is subject to on community health and safety is as follows:

- Communiqué on Major Accident Prevention Policy Document (Official Gazette 29435, 4 August 2015).
- Implementing Regulation on the Prevention and Mitigation of the Major Industrial Accidents (Official Gazette 28867, 30 December 2013).

5.2. International Standards

5.2.1. World Bank Environmental and Social Standards

ESS4: Community Health and Safety

ESS 4 emphasizes issues of health, safety, and security risks and impacts on communities due to project activities. Borrower specifically consider people who may be vulnerable due to impacts and risks of the project.

6. MITIGATION MEASURES AND MANAGEMENT CONTROLS

6.1. General Requirements

The following mitigation measures are described as the minimum requirements to be followed during the project land preparation and construction phase of the project.

- Contractors will identify training needs and create training plans for the Project staff and, if needed, local people (See Employment and Training Plan).
- Security personnel will be employed to ensure the security of the work areas. In addition, a Project-specific Security Management Plan will be created and implemented by the Contractor.
- Workers will be subjected to a health screening after the employment contracts are signed and health checks will be carried out periodically.
- Workers will be given random drug and alcohol tests, they will be recorded and monitored.
- Workers will be trained on health awareness on a regular basis throughout their employment and during their employment.
- There will be facilities in the camp sites where emergency interventions and routine health procedures can be performed.
- All wastes will be segregated and those that can be recycled will be given to licensed recycling companies, and wastes that cannot be recycled will be transported and disposed of from temporary waste storage sites within the framework of the legislation.
- Medical wastes will be disposed in accordance with the Regulation on Control of Medical Wastes.

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- Food companies will store, prepare and serve food in accordance with national legislation and international standards; food services will be regularly inspected and non-conformities will be reported as soon as possible.
- Measures will be taken to prevent diseases that can be transmitted from animals to humans.
- Passages on slopes and ditches will be made safe and recognizable, fenced and illuminated.
- In order to raise awareness about the risks (traffic increase, construction areas etc.) that may arise from the project activities, trainings will be given to the local people.
- Within the scope of the Traffic (Transportation) Management Plan, trainings will be organized to raise traffic awareness for adults and children in the surrounding settlements.
- Night transportation activities will be limited as much as possible within the public roads to reduce traffic accidents.
- All drivers will comply with the Project driving rules and the necessary trainings will be provided.
- The relevant highway legal speed limits will be complied with, Project Staff will be warned to behave more sensitively while driving near settlements.
- All pollutant emissions will be reduced to national legislation and international standards.
- Especially unpaved roads will be irrigated and dust emission will be reduced as much as possible.
- In the pre-construction meetings and stakeholder engagement activities, local authorities and local people will be informed about the impacts related to the project activities on human health and safety, and the planned mitigation measures and opinions of the parties will be obtained.
- A “Grievance Mechanism” will be established in order to convey the concerns, problems and complaints to the Administration officially for the local people and to facilitate the resolution of the disputes between the parties.
- Compensation of damages caused by accidents caused by the project activities will be determined in accordance with the Complaint Management Policy prepared by the Contractor and prepared by the Contractor.
- GBV/SEA/SH prevention measures will include awareness sessions for local communities on prevention of GBV, workers will sign and abide to Code of Conduct, local communities will be informed about the existing Code of Conduct, GRM to report on GBV complaints, and existing GBV service providers.

6.2. Site Specific Requirements

The following issues will need to be addressed at site specifically after the finalization of further studies as also mentioned below:

6.2.1. Access to health facilities

During the Construction phase; the Contractor will identify settlements where healthcare services are more critical, due to absence of healthcare facilities, distance to reach facilities or presence of elderly population. In these cases; the Contractor will liaise with local health authorities to ensure that access to healthcare services is not limited, implementing additional solutions such as organized transportation or increase of visiting doctors in certain periods.

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6.2.2. Road accident risks

It is expected that there will be heavy traffic critical areas around the entire work area, especially around certain project components such as camp sites, excavation and filling areas, and material stockpiles.

Additional mitigation measures such as traffic lights, deceleration systems and warning signals will be provided for roads and junctions that will be exposed to heavy construction traffic. The contractors will also meet with local authorities and provide information on solutions available for these regions. In addition, drivers will be informed about these critical areas during initial training and subsequent routine training.

6.2.3. Trespassing accidents

In order to avoid risks of accidents due to the presence of construction site and construction activities, the Contractor will identify all residential areas in the close vicinity of the Project area. Additional fencing and warning signs will be used in those areas to avoid trespassing and general accidental events. In addition local population will be informed about construction activities taking place through stakeholder engagement.

6.2.4. Infectious Disease

Based on the epidemiological information available, the Contractor will prepare studies on incidence of communicable diseases in affected Provinces, to ensure that all precautions are taken to prevent the transmission of such diseases due to the presence of workers. The Contractor will liaise with local health authorities to agree on appropriate strategies and plans to mitigate the transmission of communicable diseases

6.2.5. Safety and disturbance to schools in surroundings of construction activities

During the construction phase; the Contractor will identify school facilities within the project area. The Contractor will then liaise with local authorities to agree on strategies to reduce disturbance to schooling activities and to reduce safety hazards for students.

6.2.6. Explosive and Detonation Use

Extension cables to be added to the capsule cables will be carefully connected and well insulated.

The cartridges of the feeder dynamite will be connected in a bundle by cable and this bundle will be lowered by means of a cable.

Care should be taken not to damage the electrical cables during tightening.

The circuit will be checked for resistance before connecting the ignition circuit cables to the magneto.

Before firing, the siren will be alarmed and the streamers watchers will be planted at important points.

The ignition cable will be extended to the ignition pocket at a suitable distance and the ignition will be carried out immediately.

In rainy weather, ignition will be abandoned if necessary considering the static electricity danger.

Nobody other than the authorities will enter the firing field.

Blasting operations will be done by experts.

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Explosives will be brought to the firing place in a special vehicle, dynamite and capsules will be transported in separate vehicles.

Necessary safety measures will be taken for non-explosive holes and will be rendered harmless according to the procedure.

After the firing is done, the firing zone will be checked by the responsible people and the necessary measures will be taken if the blocks that will endanger the construction machinery are suspended in the step slope.

For the explosive materials to be purchased within the scope of the project, the delivery, transportation, distribution, retrieval and storage of the explosive materials will be carried out by persons trained for this purpose and appointed by the science supervisor according to the relevant legislation provisions. Filling, tightening, cleaning, binding and firing of capsule wires will be done by saCRP fireman on the proficiency certificate.

Delayed ignition system will be used to reduce the jolts that will occur during blasting. The necessary security measures will be taken before the blasting and will be done under the control of Gendarmerie. After the firing is done by the responsible person, the firing area will be checked again by the responsible people and the situations that will endanger the safety of the work machines and life will be prevented.

The Provisions of “Regulation on Occupational Health and Safety Measures to be Taken in the Mine and Quarry Enterprises and Tunnel Construction” published in the Official Gazette dated 22.10.1984 and numbered 18553, and “Decree on the Implementation of the Regulation on the Measures to be Taken in the Workplaces and Jobs Working with Dangerous and Harmful Substances” entered into force by being published in the Official Gazette dated 24.12.1973 and numbered 14752 will be complied with.

Bags of explosive materials used in blasting will be returned to firms supplying explosives. Production, Import, Transport, Storage, Storage, Sale, Use, Destruction, Inspection Procedures and the "Monopoly Explosive Substances and Hunting Materials and Similar Products" that came into force by being published in the Official Gazette dated 29.09.1987 and put into force during the operation in the field of activity. The Regulation on the Principles (Amended: RG-12.11.2004-25641) will be complied with.

In addition, in line with the relevant articles of the Occupational Health and Safety Regulations, all employees will be provided with protective materials in accordance with the standards determined according to the environmental risks and they will be ensured to comply with the conditions of use.

6.2.7. General railway operational security

This management plan was prepared for the construction phase. Nevertheless, to establish a framework for the site specific Community Health and Safety Management Plan to be constructed by TCDD, general requirements for railway security were given within this plan.

Implement railway operational safety procedures, such as a positive train control (PTC) system, aimed at reducing the likelihood of train collisions.

Unless the full PTC system is considered practical, automatic rail trusses are available, where manual trusses are located, reporting is made when the train passes from the main line to the side road in the absence of signaling, and that this information is returned to all employees and train officers on the train.

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Regular inspection and maintenance of railway lines and facilities to operate in accordance with national and international railway line safety and standards.

Implement a general safety management program equivalent to internationally recognized railway safety programs.

6.2.8. Level crossing security

Regular inspection / maintenance to ensure automatic doors installation and smooth operation in all level crossings.

6.2.9. Pedestrian safety

Put clear and distinctive warning signs at entry points (e.g. stations and level crossings).

Installation of fences or other barriers at the end of the station and other areas and preventing unauthorized access to the rails.

Providing trainings about not entering the area without permission, especially for local youth.

To ensure that the specified route is safe, clearly determined and easy to use.

Establishment of closed-circuit security cameras and monitoring systems (CCTV) to monitor railway stations, and an emergency announcement system to prevent violations in other areas where intruders are frequent.

7. TRAINING, REPORTING AND MONITORING

7.1. Training

All employees of the contractor will be provided with basic training on social, environmental, occupational health and safety, labor and security issues. The status of the project area will be checked daily by the Environmental and Social Teams, and in case a potential training need is determined, a new training program will be created and training will be provided to the staff.

7.2. Reporting

Daily inspections will be carried out under the coordination of the environmental and social team created by the Contractor.

Any incident detected during these inspections will be recorded and reported monthly. The World Bank and AYGM will be promptly notified of any incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers including but not limited to; incidents and accidents encountered during construction works, environmental spills, etc.

Sufficient detail will be provided regarding the incident or accident, findings of the Root Cause Analysis (RCA), indicating immediate measures or corrective actions taken or that are planned to be taken to address it, compensation paid, and any information provided by any contractor and supervision consultant, as appropriate. It will be ensured that the incident report is in line with the World Bank's Environment and Social Incidence Response Toolkit (ESIRT). Subsequently, as per the Bank's request, a report on the incident or accident and propose any measures to prevent its recurrence will be prepared. All events

and nonconformities will be reported according to the project standards as described in the ESMP.

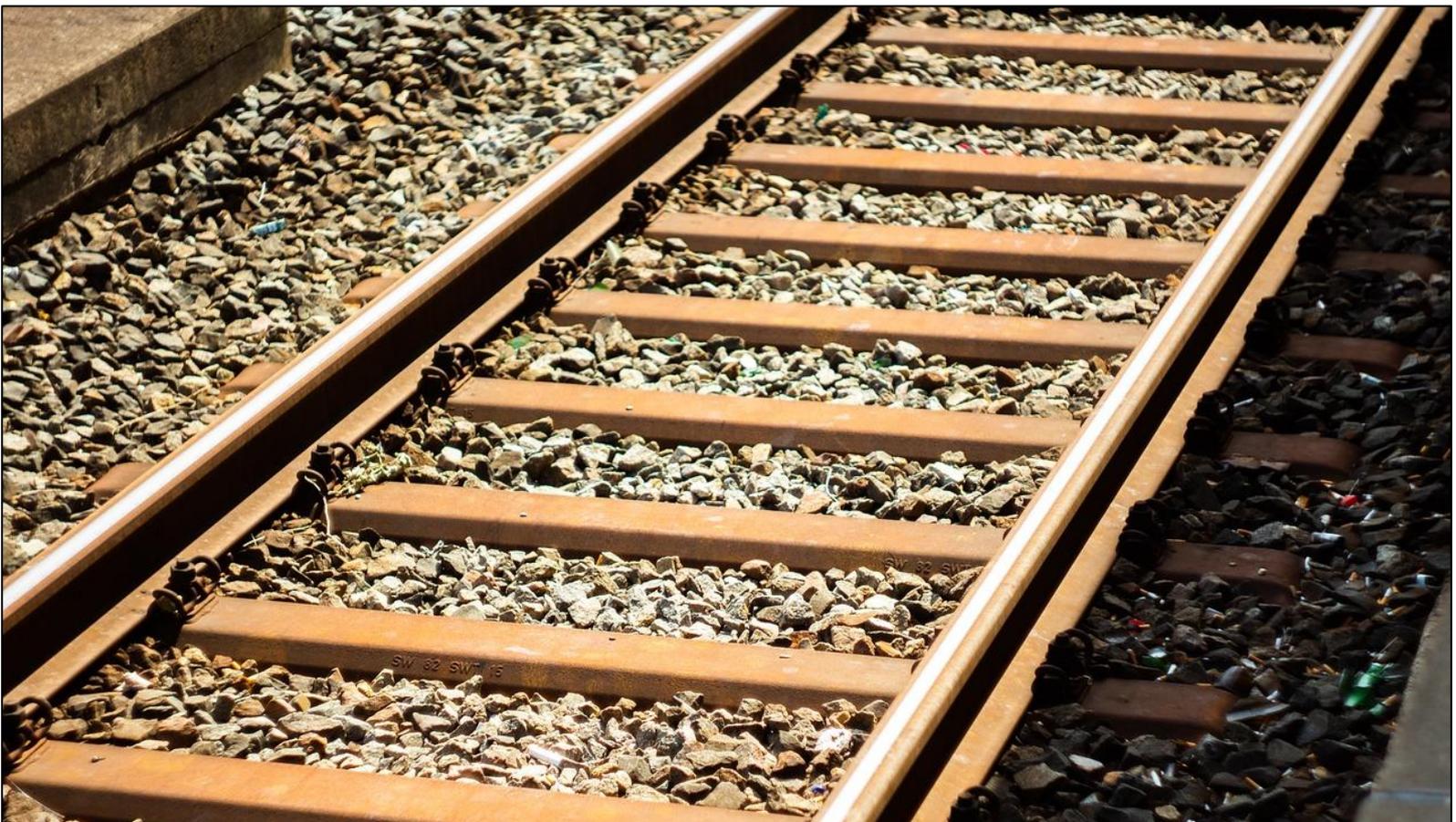
7.3. Monitoring

The main monitoring activities as set forth in Chapter 7: Monitoring Plan of the ESMP will focus on ensuring compliance with the mitigation measures and management controls described within the scope of this CHSMP using the main performance indicators determined in Chapter 3.

Monitoring activities for each Community Health and Safety issue will be detailed in management/implementation plans and procedures to be prepared by the Contractor prior to the onset of the land preparation and construction phase of the Project. Monitoring activities will be designed to target specific topics to meet site-specific requirements in line with the Monitoring Plan framework provided in the ESMP and considering the key performance indicators.

8. REFERENCES

- Community Relations Plan (CRP)
- Employment and Training Plan (ETP)
- Traffic (Transportation) Management Plan (TTMP)
- Pollution Prevention Plan (PPP)
- Waste Management Plan (WMP)
- Emergency Preparedness and Response Plan (EPRP)
- Legal and Institutional Framework (ESIA, Chapter 2)



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Project Location	Zonguldak Province, Çaycuma District
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ABBREVIATIONS AND DEFINITIONS

AYGM	General Directorate of Infrastructure Investments
CHSMP	Community Health and Safety Management Plan
CONTRACTOR	Expert Firms responsible for the construction of the Filyos Project on behalf of AYGM
CRMP	Community Relations Management Plan
ESIA	Environmental and Social Impact Assessment
ETP	Employment and Training Plan
TTMP	Traffic Transportation Management Plan

1. INTRODUCTION

The Community Relations Management Plan (CRMP) aims to involve the local project affected people and institutions, and groups and local stakeholders who may affect the Project during the construction and operating phases of the Project. The CRMP developed as part of the ESIA will be a framework document that outlines the community relations policy to be implemented by contractors and will be developed further in conjunction with the stakeholder engagement plan.

All contractors will prepare their own specific CRMP to implement the requirements defined in this CRMP. They will also develop necessary procedures to implement that their contractors will regularly update their CRMP as required.

2. SCOPE

CRMP covers the planned land preparation and construction and operation activities of the Project. It is prepared for implementation by AYGM employees, contractors and sub-contractors. Contractors are also required to adopt CRMP requirements within their management plans. Roles and Responsibilities for the implementation of CRMP are presented in Chapter 4.

3. OBJECTIVES

Community Relations Management Plan (CRMP) is developed:

- to involve and interact with the members of the local community and other institutions and others that may be affected by the Project or that may affect the Project during the construction and operating phases;
- to ensure continuous and good relations with the members of the local community and affected parties.

CRMP is the guide document that reveals the minimum requirements of AYGM for public relations activities to be carried out during the land preparation and construction period.

Key performance indicators determined for the project are as follows

Key Performance Indicators	Timeframe	Records	Responsibility
Complaint records	Zero complaints in a year	Complaint records	Contractor
Consultation with local people	Once in every month	Consultation records	Contractor
Trainings on community relations	Twice a year	Training Records	Contractor

4. ROLES AND RESPONSIBILITIES

AYGM will make sure all relevant employees receive the required training on the requirements of the CRMP.

Contractors will be responsible for developing their own detailed and project specific CRMP. This CRMP will meet the minimum requirements defined by AYGM.

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The Contractor will fulfil all the requirements defined in their CRMP and ensure subcontractors are performing in line with the requirements of the CRMP.

Contractors will develop a Community Relation Team composed of competent personnel and provide the training and other resources to the members of this team.

Contractors will organize meetings with the community before the initiation of construction works and afterwards on routine basis in order enquire the opinions of the public in relation to impacts of construction works.

5. LEGAL FRAMEWORK

5.1. National Legislation

Within the scope of the project, the national legislation to be applied in public relations management is as follows:

- Agricultural Reform Law on Land Arrangement in Irrigation Areas (Law No: 3083)
- Expropriation Law (Law No: 2942)
- Pasture Law (Law No: 4342)
- Settlement Law (Law No: 5543)
 - Regulation on Protection, Use and Planning of Agricultural Lands
 - Land Consolidation and Field Development Services Implementing Regulation
 - Settlement Code Implementing Regulation
 - Regulation on the Implementation of the Law on Private Security Services

5.2. International Standards

5.2.1. World Bank Environmental and Social Standards

ESS1: Assessment and Management of Environmental and Social Risks and Impacts:

This Standard sets out Borrower's responsibilities for assessing, managing and monitoring Environmental and social risks and impacts related with each phase of the project supported by the World Bank through Investment Project Financing (IPF), so as to accomplish environmental and social results consistent with the Environmental and Social Standards (ESSs).

ESS4: Community Health and Safety

ESS 4 emphasizes issues of health, safety, and security risks and impacts on communities due to project activities. Borrower specifically consider people who may be vulnerable due to impacts and risks of the project

ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

This standard emphasizes that involuntary resettlement should be avoided. If it is unavoidable, necessary measures to mitigate adverse impacts on displaced people should be taken.

ESS10: Stakeholder Engagement and Information Disclosure

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Importance of open and transparent engagement between Borrower and stakeholders are emphasized as it is a necessary element of good international practice. Effective stakeholder engagement contributes to the projects in terms of improvement of environmental and social sustainability, enhancement of project acceptance and successful project design

6. MITIGATION MEASURES AND MANAGEMENT CONTROLS

The following points are described as the minimum requirements to be followed during the Project land preparation and construction phase of the Project.

6.1. General Requirements

The CRMPs of the contractors will at a minimum have the following:

- A communication policy that is easily accessible for the all parties expected to be affected by the Project;
- A Community Relations team with defined competencies and responsibilities and allocated resources established to enable easy communication between the Project and local people;
- Definition of means to inform the effected parties on the changes related to the Project;
- Reference to and interfacing with the Stakeholder Engagement Plan for the definition of a grievance mechanism and other requirements;
- Necessary compensation will be provided for accidental damages caused by the project activities by Contractor.

Other requirements for the community relations will be:

- The Contractor Company will liaise with local education facilities to ensure that the Project activities do not interfere with transport of students to schools; if limitations are unavoidable, The Contractor Company will agree with local authorities on alternative solutions;
- The Contractor Company will liaise with local health authorities to ensure that any critical issues are communicated promptly and that agreed solutions are found;
- The Contractor Company will liaise with local Authorities to identify if the Project activities can interfere with traditional celebrations or festivities; alternative solutions will be agreed with local authorities;
- The Contractor Company will prepare of Code of Conduct, in line with AYGM's Labor Management Procedures containing rules that workers are to follow both during working hours and in camp sites; recommendations on behavior during free-time will also be provided; the Code of Conduct will be provided together with the contract and will be further explained during induction training;
- A Grievance Mechanism will be set up for communities and individuals to formally communicate their concerns, complaints and grievances to The Contractor Company and facilitate resolutions that are mutually acceptable by the parties; the grievance mechanism set up by the contractor will align with AYGM's grievance

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mechanism specified in the ESIA. The grievance mechanism will be made known and available to all PAPs including vulnerable groups;

- Local communities will be informed on planned road closures or disruption with at least 72 hours' notice in advance through official communication and signs;
- Any planned disruption of utility distribution services will be communicated to local authorities and local communities with at least 72 hours' notice in advance; where planned disruptions are expected to last more than 12 hours, a specific risk analysis will be performed to assess impacts expected on local communities and to identify additional mitigation measures;
- Local authorities and local communities will be informed and consulted on impacts on livelihood from farming activities and planned mitigation measures during the pre-construction and construction meetings and its Stakeholder Engagement Activities;
- Local authorities and local communities will be informed and consulted on impacts on education services and facilities due to the Project activities and planned mitigation measures during the pre-construction and construction meetings and related Stakeholder Engagement Activities;
- Training on community relations will be provided to workers during induction and regularly throughout their employment; workers will be informed on the code of conduct to keep according to local customs and on approach to be used when interacting with local communities and individuals;
- Entertainment and recreation activities will be organized for workers in campsites to encourage workers to stay within the camp and to avoid loitering and inappropriate behaviors in surrounding settlements;
- The Contractor Company will provide information on procurement, tendering, and contracting processes with a transparent and clear approach, to ensure that equal access to opportunities is guaranteed. Information on procurement opportunities will be given to local businesses through communication with Chambers of Commerce, Industry Associations, Local authorities and other appropriate parties;
- The Contractor Company will provide information on procurement, tendering, and contracting processes with a transparent and clear approach, to ensure that equal access to opportunities is guaranteed;
- Information on procurement opportunities will be given to local businesses, through communication with Chambers of Commerce, Industry Associations, Local authorities and other appropriate parties;
- The Contractor Company will provide clear information on the recruitment process, with particular emphasis on informing local communities of employment opportunities through different channels such as settlement heads, and local associations. Communication material such as posters, and brochures will be distributed locally;
- Workers will be subject to legal health screening before employment contracts are signed and if necessary will be provided with required immunization treatments; all health information will be dealt with confidentially;

- Night-time activities will be kept to a minimum to reduce disturbance to local communities due to noise and vibration emissions; if night-time construction activities are necessary, local authorities and local communities will be informed with 48 hours' notice in advance;
- Local authorities and local communities will be informed and consulted on impacts on beekeeping and tourism activities due to the Project activities and planned mitigation measures during the pre-construction meetings and Stakeholder Engagement Activities; agreed solutions will be found and compensation measures will be eventually identified.

6.2. Site Specific Requirements

The following issues will need to be addressed at site specifically after the finalization of further studies as also mentioned below:

6.2.1. Agricultural Areas

Before the construction, the agricultural areas that will be affected by the project will be determined by the Contractor. Due to the techniques used in growing crops (covering the fields with water), appropriate technical solutions will be required to minimize impacts. After determining the agricultural areas that will be affected by construction activities, it will be necessary to agree on solutions to reduce impacts with land owners, users and local cooperatives.

6.2.2. Beekeeping

Additional studies will be carried out by the contractor to determine where the beekeeping activities are carried out and to evaluate the economic importance of these activities. Afterwards, the Contractor will need to provide (especially for mobile beekeeping) communication with producers and beekeeping associations to find additional solutions (such as finding areas where beehives can be transported during construction, planning construction activities according to the winter sleep period of bees, reducing dust emissions in certain areas and determining improvement measures). According to the baseline study data, beekeeping is generally carried out near forest areas or in homeside gardens. Therefore, it was observed that there was no effect that would directly affect beekeeping and carry the beehives. It is learned that gathering activities from the forest are carried out in a very wide area and not gathered in a certain region.

6.2.3. Areas Used for Livestock

Studies will be carried out by the contractor to identify the areas used by the communities that provide livelihoods, especially in livestock grazing. After the areas are identified, the Contractor will consult with the local community to develop common solutions to reduce impacts (such as finding alternative grazing areas or planning construction activities to avoid grazing (usually beginning and end of summer)).

6.2.4. Presence of workers

Additional stakeholder engagement activities will be carried out in the settlements around the camp sites so that the presence of workers does not cause any tensions and disagreements. In the settlements around the camp sites, the current situation will be regularly checked and a critical situation will be reported as soon as possible.

6.2.5. Festivities and celebrations

The contractor will perform a study along the corridor to identify the presence of traditional festivities and celebrations in settlements in the area of influence. If present, the Contractor will liaise with local community heads to find agreed solutions to reduce disruptions to the extent possible. Additional mitigation measures may include stopping construction activities during the celebrations or finding alternative accesses. The study will have to be performed along the entire pipeline corridor.

6.2.6. Access to traditional culture sites

The contractor will map elements of traditional cultural heritage near project area. Where their presence is assessed, the Contractor will liaise with local authorities and communities to ensure that activities do not restrict access to these sites, or that agreed alternative solutions are found.

6.2.7. Blasting Works

Blasting is a possibility that contractor might consider during construction. If blasting is decided to be conducted and location of the blasting, amount and type of the explosives and timeframe of the blasting is determined, necessary disclosure will be done with the communities once construction plans are known.

7. TRAINING, REPORTING AND MONITORING

7.1. Training

All employees of their contractors will be provided with basic training on health, safety and security, including basic environmental training.

In addition, “Code of Conduct” will be explained to all staff as part of the training.

Public Relations training will be provided to workers on a regular basis during their employment and throughout their working hours; information will be given on local customs and traditions and the rules of conduct to be followed within the context of the dialogue with the local people.

7.2. Reporting

Daily inspections will be carried out under the coordination of the environmental and social team created by the Contractor.

Any incident detected during these inspections will be recorded and reported monthly.

All events and non-conformities will be reported according to project standards as described in the ESMP.

7.3. Monitoring

The main monitoring activities will focus on ensuring compliance with the mitigation measures described in Chapter 7 and Key Performance Indicators described in Chapter 3.

8. REFERENCES

- Community Health and Safety Management Plan (CHSMP)
- Employment and Training Plan (ETP)
- Traffic (Transportation) Management Plan (TTMP)

- ESIA, Chapter5.9
- Stakeholder Engagement Plan



Environmental and Social Management Plan (ESMP) CONSTRUCTION IMPACTS MANAGEMENT PLAN

Project Owner	T. C. Ministry of Transport and Infrastructure General Directorate of Infrastructure Investments
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Project Location	Zonguldak Province, Çaycuma District
Consultant	Çınar Engineering & Consultancy Inc.
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ABBREVIATIONS AND DEFINITIONS

AYGM	General Directorate of Infrastructure Investments
CHSMP	Community Health and Safety Management Plan
CIMP	Construction Impacts Management Plan
CONTRACTOR	Expert Firms responsible for the construction of the Project on behalf of AYGM
ESIA	Environmental and Social Impact Assessment
ETP	Employment and Training Plan
HR	Human Resources
PPP	Pollution Prevention Plan
TTMP	Traffic Transportation Management Plan

1. INTRODUCTION

This plan will assure that local employment is maximized during the construction and operational phases of the Project by setting local employment targets. This plan provides at this stage of the Project a special focus on the land preparation and construction phase.

The recruitment processes of the Project will be transparent, public and non-discriminatory, providing equal opportunities with respect to ethnicity, religion, language, gender and sexuality.

2. SCOPE

Accordingly, Employment and Training Plans will include the social commitments of the Project. Employment and Training Plans will be prepared according to Human Resource Policy and the Labor Management Procedures of AYGM prepared in line with the ESS 2. All contractors and subcontractors will be required to comply with the management plans of AYGM.

All contractors will fulfil the requirements defined in this ETP by adapting them to their own operations. ETP of the Contractor will be submitted to AYGM for approval. The activities will not be launched before the approval of AYGM is obtained for the management plans and procedures. The Contractor will regularly update their ETP as the Project needs change or requirements are identified in detail.

Employment and Training Plan (ETP) will be developed by the contractors:

- to identify the employment needs;
- to identify the trainings needs of the personnel;
- to define the means for providing trainings to the personnel;
- to satisfy the training needs at maximum effective way;
- to maximize the local employment for the unskilled and semi-skilled workforce requirements during construction and operation phases of the Project.

3. OBJECTIVES

The objective of the ETP is to establish a methodology for determining special training needs and to establish a framework in terms of employment and education policies envisaged under other management plans.

Key performance indicators determined within the scope of the project are as follows:

Key Performance Indicator	Timeframe	Records	Responsibility
Number of staff trained	Complete during year	staff Training records	Contractor
Percentage of local people, women etc. groups among employees:	Minimum percent of employees	fifty of the Employment records	Contractor

Key Performance Indicator	Timeframe	Records	Responsibility
Occupational safety, Health and Environment trainings	Twice a year	Training records	Contractor

4. ROLES AND RESPONSIBILITIES

AYGM will audit and inspect the implementation performance of the ETP by the contractors.

AYGM will maximize the local employment for unskilled and semiskilled workforce and also make sure that there is non-discriminatory, transparent, open to all and fair recruitment process.

AYGM will make sure all the contractors understand the requirements of the ETP and ensure the effective implementation of the ETP by contractors by auditing continuously the contractors for the compliance with the requirements of the ETP.

Contractors will develop specific training programs for each phase of the Project containing a competency and training matrix and minimum requirements for the trainers.

AYGM will ensure that Construction Contractors provide clear information on the recruitment process, with particular emphasis on informing local communities of employment opportunities through different channels such as settlement heads, and local associations. Communication material such as posters and brochures will be distributed locally.

Contractors will make sure all the subcontractors are aware of the requirements of the ETP and audit their performance for compliance with requirements set by the ETP.

Contractors will maximize the local employment for unskilled and semiskilled workforce and also make sure that there is non-discriminatory, transparent, open to all and fair recruitment process.

Contractors will make sure all personnel receive the legally required trainings.

Contractors will make sure all personnel received the task specific trainings defined by the Project.

Contractors will develop a training and competency matrix and maintain this matrix continuously.

Contractors will make sure that the trainings will be delivered by competent and where necessary certified trainers.

5. LEGAL FRAMEWORK

5.1. National Legislation

The Labor Law (Law No. 4857) regulates the employment relationship between the employer and the employee. This law covers employment contracts for both blue and white collar employees, but civil service workers are excluded from this law.

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Health and Safety Standards of the Turkish labor force in dealing with various hazardous industries, including the following directly or indirectly in Turkey in order to protect certain health and safety standards are applied:

In addition, the provisions determined within the scope of the "Regulation on the Procedures and Principles of the Occupational Health and Safety Training of Employees" will also be determinative for the project.

5.2. International Standards

5.2.1. World Bank Environmental and Social Standards

ESS2: Labor and Working Conditions

Environmental and Social Standard 2 perceives the importance of employment creation and income generation for the aim of comprehensive financial development and poverty reduction. Borrowers should create healthy working conditions by treating the workers fairly.

It should be noted that AYGM has also prepared a Labor Management Procedures to cover all project workers as per ESS 2.

6. MITIGATION MEASURES AND MANAGEMENT CONTROLS

The recruitment process will be monitored by third party organization or institutions to ensure that it is done according to AYGM HR Policies and Labor Management Procedures.

Contractors will be clearly communicate the job descriptions in advance and will contain information on working conditions: duration, salary, working hours, conditions, skills required, etc.

Two copies of contracts will be prepared in compliance with the existing legal requirements, will be signed mutually and a copy will be provided to the future employee.

The temporary nature of work opportunities will be highlighted during all recruitment phases to ensure that people manage salary wisely and understand consequences of leaving a previous job or farming activities to work on the Project.

Job vacancies created during the construction phase will be communicated locally by Contractors through systems like those used during the recruitment process.

Training needs for the employees will be identified and workers will receive the compulsory trainings and will not start working before completing induction training.

Workers will receive work-place and work-task specific training; a training program will be planned and implemented throughout the entire phases.

Training will be provided by professional trainers or experienced employees.

All employment records will be kept and provided to AYGM as requested.

The Employment and Training Plan of the Contractors will include but not be limited to the following:

- The employment needs with defined competencies and skill requirements.
- Social induction trainings specifically including how to interact with community members, adults, children and women

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- A training and competency matrix will be developed to detail the training requirements specific to each position. Skill-based training will be defined and include work-place and work-task specific training.
- Compulsory trainings, legally required and relevant to the management plans of the Project, will be identified. The employees will not start work before completing compulsory training (Code of Conduct, social induction or other toolbox trainings related with OHS after incidents).
- A code of conduct which includes necessary requirements regarding OHS, gender equity, human right will be prepared and staff will sign the code of conducts after necessary trainings are given,
- Code of conduct trainings will be given to all employees
- The content of the induction training for the new employees will be defined and approved by AYGM.
- Training program will be updated regularly and include the schedule for refresher training.
- The local people will be trained to increase safety awareness of the local community in the near vicinity of the construction activities. Meetings will also be held prior to the start of construction with the local people about the Project Health and Safety issues. A site specific Community Health and Safety Plan and Occupational Health and Safety Plan will be prepared by contractor.
- Training needs will be analysed within the scope of site specific Community Health and Safety Plan and Occupational Health and Safety Plan.
- Training will be provided to the adults and children in the settlement areas around the Project construction area in order to increase traffic awareness within the scope of the Traffic Management Plan.
- Training records will be kept.

7. TRAINING, REPORTING AND MONITORING

7.1. Training

The contractor will ensure that all employees take necessary training before the work begins, thereby ensuring that they are familiar with Company Policies and Procedures, relevant national laws and international regulations. This will include training for cultural sensitivity to ensure that employees and contractors are in a respectful relationship with local communities.

The contractor will allow access to a professional training aimed at meeting the skill requirements to increase local capacity. In addition to professional training, on-the-job training will be provided to employees in order to develop the capacities required by their job fields.

7.2. Reporting and Monitoring

The planned and realized trainings will be followed regularly and all records will be kept. The current status of the project area will be checked daily by the Environment and Social

Teams, and in case a potential training need is determined, a new training program will be created and the staff will be trained and these trainings will be reported monthly.

Records of training topics, duration and participants: (trainings completed for the month in which the report is presented, trainings planned for the next month). The monthly report to be prepared by the contractor will include these records.

8. REFERENCES

- Construction Impacts Management Plan (CIMP)
- Community Health and Safety Management Plan (CHSMP)
- Occupational Health and Safety Management Plan (OHSMP)
- Traffic (Transportation) Management Plan (TTMP)
- Pollution Prevention Plan (PPP)
- Legal and Institutional Framework (ESIA, Chapter 2)





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Project Location	Zonguldak Province, Çaycuma District
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ABBREVIATIONS AND DEFINITIONS

AGMP	Aggregate Management Plan
AYGM	General Directorate of Infrastructure Investments
CONTRACTOR	Expert Firms responsible for the construction of the Project on behalf of AYGM
ESIA	Environmental and Social Impact Assessment
PPP	Pollution Prevention Plan
TTMP	Traffic Transportation Management Plan
WMP	Waste Management Plan

9. INTRODUCTION

A considerable amount of aggregate material will be needed along the project route. At this stage of the project, the estimated aggregate quantity and resources are defined in the ESIA Report.

In the event of a need for aggregate material or a change in the procurement plan, AGMP will be revised to include the changes.

10. SCOPE

All Contractor and sub-contractors will fulfil the requirements defined in this AGMP by adapting them to their own operations. The Construction Contractor and sub-contractors must develop its own AGMP following the start of the Construction Phase and then develop the Project specific Plans and Procedures which explain the way to implement the requirements of this plan. The Contractor will use this AGMP as a basis for preparing a detailed AGMP. Contractors will regularly update their AGMP as the construction method is developed and detailed.

11. PERFORMANCE INDICATORS

Performance indicators regarding the implementation of AGMP are given below:

Key Performance Indicator	Timeframe	Record	Responsibility
Number of complaints about dust, noise and traffic caused by activities in stone / material quarries or transport of aggregate,	Zero times in a month	Complaint Records	Contractor
Number of blasting operations with work accident	Zero times in a year	HS Records	Contractor

12. ROLES AND RESPONSIBILITIES

AYGM will implement an environmental inspection, monitoring and reporting program ensuring that the commitments given in ESIA Report and this AGMP are accomplished;

AYGM will monitor the permitting process for the aggregate supply that will be undertaken by the Contractor;

AYGM will ensure that the Contractor identifies and manage the environmental and social impacts of the aggregate supply. AYGM will coordinate with the Contractor the preparation of an environmental and social impact assessment study in case of new quarries to be opened for aggregate supply;

Contractor will develop a detailed AGMP and submit to the approval of AYGM including the estimated amounts and potential resources for aggregates. The construction works will not start without approval of the AGMP.

Contractor will define all related permission procedures for operating a Borrow Pit and/or opening a new Quarry in the AGMP submitted to AYGM for approval; AYGM will identify a provisional list of available Quarries and Borrow Pits for possible consumption during the

Project through official correspondences. The Contractor will review this list of available Quarries and Borrow Pits. The Contractor will consult the public institutions and organizations to identify the utility of the existing aggregate sources within the scope of the Project (Licensed Quarries, Borrow Pits and Debris). If the existing Borrow Pits under operation do not meet the requirements and if an additional Borrow Pit is needed to be opened, the Contractor will consult with the public institutions and organizations to identify the necessary procedures to open a new Quarry. The Contractor will conduct the activities pursuant to the relevant legislation and obtain all necessary permits and licenses in accordance with the Turkish Mining Law and Regulations, and Turkish Environmental Law and Regulations by considering the environmental constraints specified in the ESIA;

The contractor will evaluate the environmental and social impacts of operating the selected existing or new Borrow Pits and Quarries, and identify the mitigation measures to minimize those impacts. The following section provides guidance on performing such an assessment.

13. LEGAL FRAMEWORK

13.1. National Legislation

The Environmental Law (No. 2872) provides a legal framework for the development of environmental regulations in accordance with national and international standards. The Mining Law (No. 3213) is also binding in terms of the implementation of the Aggregate Management Plan. Fundamental regulations that the Plan will comply with are as the following:

- Regulation on Environmental Impact Assessment
- Regulation on Environmental Permits and Licenses
- Regulation on Environmental Audit
- Regulation Concerning Environmental Management Services
- Regulation on Recycling Land Degraded by Mining Activities
- Mining Waste Regulation

In addition, the provisions of the Waste Management Regulation will be decisive for AGMP within the scope of aggregate management.

13.2. International Standards

13.2.1. World Bank Environmental and Social Standards

ESS1: Assessment and Management of Environmental and Social Risks and Impacts:

This Standard sets out Borrower's responsibilities for assessing, managing and monitoring Environmental and social risks and impacts related with each phase of the project supported by the World Bank through Investment Project Financing (IPF), so as to accomplish environmental and social results consistent with the Environmental and Social Standards (ESSs).

ESS2: Labor and Working Conditions

This standard describes the importance of creating employment and income for comprehensive financial development and poverty reduction. Borrowers can promote sound worker-management relationships and enhance the development benefits of a

project by treating workers in the project fairly and provide safe and healthy working conditions.

ESS3: Resource Efficiency and Pollution Prevention and Management

This standard points out to the requirements to highlight resource efficiency and pollution prevention and management with a holistic approach to project implementation. The aim is to minimize pollution arises from the project with sustainable use of resources.

ESS4: Community Health and Safety

This standard addresses the health, safety and security risks and impacts on project-affected communities and the corresponding responsibility of Borrowers to avoid and minimize such risks and impacts with particular attention to people who, because of their particular circumstances, may be vulnerable.

ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

This standard requires avoiding compulsory resettlements, if not avoided, taking necessary measures to reduce negative impacts on displaced people (and on host communities receiving displaced persons).

ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

This standard recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development and it recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support. ESS6 also addresses sustainable management of primary production and harvesting of living natural resources, and recognizes the need to consider the livelihood of project-affected parties.

14. MITIGATION MEASURES AND MANAGEMENT CONTROLS

In case that the Borrow Pits and Quarries are to be used by the Contractor, the Contractor will identify the potential environmental and social impacts and required mitigation measures and include them in the Aggregate Management Plan. Contractor will consider the followings, but not limited to:

- It will be ensured that the areas and quarries have “EIA Positive” or “EIA Not Required” Decisions.
- Contractor will prepare and aggregate management plan
- Contactor will identify potential borrow areas and quarries with indication of capacities, while providing measures for site reinstatement.
- Borrow pits and quarries will be one group of associated² facilities for the Project and the environmental and social impacts of operating a Borrow Pit or a Quarry (and opening a new Quarry) will need to defined and managed in line with all the requirements of the Project defined in the ESIA.
- The transportation to and from the borrow pit/quarry will subject to the requirements of the Project-specific Traffic Management Plan.

² ESS-1: Associated facilities, which are facilities that are not funded as part of the project and that would not have been constructed or expanded if the project did not exist and without which the project would not be viable. The area of influence encompasses the associated facilities.

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- Applicable mitigation measures set by the Pollution Prevention Plan for management of noise, vehicle exhaust and dust emissions will be implemented by the Contractor.
- Erosion and Sediment Control Measures will be implemented and maintained.
- Minimization of disturbance on the neighboring habitats is required.
- Measures to minimize the surface runoff from the Borrow Pits/Quarries will be implemented.
- Contractor will implement the requirements of the Waste Management Plan for the control of wastes generated from the quarry operation.

In case a new quarry is required, location of the quarry will be selected considering the followings:

- Accessibility;
- Traffic Control Requirements and road conditions;
- Storm Water run-off and Erosion Potential at site;
- Floristic and Faunistic characteristics of site;
- Cultural Heritage;
- Provincial Environmental Planning Policies;
- Existence of Potential Contaminated Land;
- Proximity to Residential Areas;
- Minimizing the Visual Impacts;
- Accessibility;
- Security;
- Sustainability of the source.

The Contractor will prepare a Landscaping Plan in order to minimize the visual impacts of operating the quarry.

There will be controlled blasting to minimize dust emissions. There will be dust collection on the drill rigs and other equipment. Drop heights of the dusty material will be minimized. Water or chemicals will be applied for dust suppression.

There will be limited night works and subject to AYGM approval. Design and Engineering Measures will be in place where applicable at Sensitive Locations such as noise barriers. Specific procedures will be prepared and submitted to AYGM approval for blasting.

Contractor will take the increased traffic impact of operating a quarry into consideration. Contractor will communicate with the local community on the management of the increased traffic load and inform the relevant parties in order not to pose a safety risk and alter the livelihood practices of the local community (i.e. beekeeping, animal grazing, etc.).

Contractor will consider the ecological aspects during the selection of the new quarry location and make sure the impacts on the ecology and biological environment are at minimum for the selected site.

Contractor will develop the Project specific AGMP and procedures which explain the way to implement the requirements of this AGMP. Requirements defined in this report will guide Contractor to develop these plan and procedures.

Contractor will identify the roads to be used to transport the aggregate and identify the estimated transport time considering the traffic load and vehicle speed.

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Contractor will comply with the Pollution Prevention Plan (PPP) to minimize the impacts on soil and water resources (dust emission, noise, spills etc.).

Community notification will be undertaken when works are likely to cause dust or noise to impact on the public and nearby residents.

Community notification will be undertaken before works are scheduled to commence outside normal working hours.

When a quarry is to be decommissioned, Reinstatement Plans will be prepared by the Contractor. This plan will be presented to AYGM for approval and will consider the followings, but not limited to:

- The area will be cleaned of quarry operation equipment;
- All of the Sediment and Erosion Control Structures will be removed from site.

15. TRAINING, REPORTING AND MONITORING

15.1. Training

All employees of the contractor will be provided with basic training on environmental, social, occupational health and safety, labor and security issues.

15.2. Reporting

Daily inspections will be carried out under the coordination of the environmental and social team formed by the Contractor.

Any incident detected during these inspections will be recorded and reported monthly. The World Bank and AYGM will be promptly notified of any incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers including but not limited to; incidents and accidents encountered during construction works, environmental spills, etc.

Sufficient detail will be provided regarding the incident or accident, findings of the Root Cause Analysis (RCA), indicating immediate measures or corrective actions taken or that are planned to be taken to address it, compensation paid, and any information provided by any contractor and supervision consultant, as appropriate. It will be ensured that the incident report is in line with the World Bank's Environment and Social Incidence Response Toolkit (ESIRT). Subsequently, as per the Bank's request, a report on the incident or accident and propose any measures to prevent its recurrence will be prepared. All events and nonconformities will be reported according to the project standards as described in the ESMP.

15.3. Monitoring

The main monitoring activities as set forth in Chapter 7: Monitoring Plan of the ESMP will focus on ensuring compliance with the mitigation measures and management controls described within the scope of this Aggregate Management Plan, using the main performance indicators determined in Chapter 3.

Monitoring activities for each E&S issue will be detailed in management/implementation plans and procedures to be prepared by the Contractor prior to the onset of the land preparation and construction phase of the Project., following the additional surveys to

be conducted with respected to the quarry Monitoring activities will be designed to target specific topics to meet site-specific requirements in line with the Monitoring Plan framework provided in the ESMP and considering the key performance indicators.

16. REFERENCES

- Pollution Prevention Plan (PPP)
- Waste Management Plan (WMP)
- Traffic (Transportation) Management Plan (TTMP)
- Institutional and Legal Framework (ESIA, Chapter 2)



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ABBREVIATIONS AND DEFINITIONS

AYGM	General Directorate of Infrastructure Investments
CONTRACTOR	Expert Firms responsible for the construction of the Project on behalf of AYGM
CRP	Community Relations Plan
ESIA	Environmental and Social Impact Assessment
ETP	Employment and Training Plan
PPP	Pollution Prevention Plan
TTMP	Traffic (Transportation) Management Plan

17. INTRODUCTION

There will be extensive transportation activities during the land preparation and construction phase of the Project.

The traffic load due to the Project trucks movements during the land preparation and construction works will contribute to an increase in the traffic.

The other contributing factors to the increased road traffic during the land preparation and construction activities would be:

1. Entry and exit of the personnel working at different points of the Project area, and
2. Transportation of equipment, construction materials and waste.

18. SCOPE

TTMP covers the planned land preparation and construction activities of the Project. It is prepared for implementation by AYGM employees, contractors and sub-contractors. Contractors are also required to adopt TTMP requirements within their management plans. Roles and Responsibilities for the implementation of TTMP are presented in Chapter 4.

19. OBJECTIVES AND PERFORMANCE INDICATORS

The main objective of this TTMP is to provide a safe working environment for all Project staff and protect the affected communities and biodiversity values from potential traffic hazards that might arise from increased traffic load due to the Project's land preparation and construction activities. This plan will focus on critical points on the Filyos construction route and especially around project elements such as camp sites and auxiliary facilities (temporary construction material storage areas, etc.). TTMP will be in place to ensure all traffic-related management controls are implemented and also necessary trainings are provided to both Project staff and affected communities.

Within the scope of TTMP, it is planned to keep the number of possible traffic incidents to a minimum. Key performance indicators for the TTMP are as follows:

Key Performance Indicator	Timeframe	Record	Responsibility
No of reported on-site traffic accidents,	Zero in a year	HS Records	Contractor
Monitoring reports on vehicle maintenance,	Monthly	HS Records	Contractor
Speed limits in place and enforced,	Zero traffic penalty in a year	HS Records	Contractor
Project staff and community training on traffic safety, signs and rules to follow	Twice a year	training records	Contractor

Key Performance Indicator	Timeframe	Record	Responsibility
Traffic signs and warnings are placed at appropriate locations,	After logistics study and weekly controls	HS Records	Contractor
Complaints on project vehicles and drivers,	Zero in a year	Complaint records	Contractor
Number of road repair works	Once a year (after rainy seasons that may impact the roads adversely)	Monitoring Records	Contractor
Communication records with authorities and communities in terms of early warnings, incidents, potential hazards and emergencies, and	If required	HS Records	Contractor
Project road damage/repair records .	Once a year	HS Records	Contractor

20. ROLES AND RESPONSIBILITIES

AYGM will monitor the implementation of the TTMP through auditing and inspections. The Contractor will make sure that the subcontractors are working in compliance with the requirements of the TTMP. The Contractor will avoid the sensitive residential areas and historical and cultural road infrastructure during defining the traffic routes. Contractor will ensure to minimize the damages on the road infrastructure, communicate with the local authorities in case of road damages and repair such damages. The Contractor will develop, implement and maintain a Project-specific TTMP and procedures. The TTMPs of the Contractors will include, but not limited to;

- The identification of the transportation routes for the goods and material to and from working area,
- The interface with the Logistics Study that will be prepared by Contractor,
- The deficiencies in the existing local infrastructure in coordination with AYGM and develop upgrading plans,
- Identification of access roads,
- Definition of the speed limit,
- Details of the training program for drivers,
- Transportation of workforce,
- Development of access road register,
- Assessment of existing and new access roads before use,
- Signage of the roads,
- Training programs for the community.

Traffic (Transport) Management Plan will be prepared by the Contractor in order to maintain traffic safety of the road and to prevent the risks which may outcome due to

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the fact that the traffic load available will increase during the land preparation and construction phases of the Project and this plan will be form the basis for operation and decommissioning phases. The additional vehicle load, vehicle type and count that may be observed in the highway to be used during the land preparation-construction and operation phases of the Project will be determined, will be calculated as percentage and will be declared. Traffic (Transport) Management Plan to be prepared will be submitted to AYGM and activities will be conducted in coordination with them.

21. LEGAL FRAMEWORK

21.1. National Legislation

The current Turkish national standards regarding traffic and road safety include:

- Highway Traffic Law No. 2918
- Regulation on Highway Traffic (Official Gazette No. 23053 dated 18.07.1997)
- Regulation on the Transport of Dangerous Goods by Road (Official Gazette No. 28801 dated 24.10.2013)

5.2. International Standards

5.2.1. World Bank Environmental and Social Standards

ESS4: Community Health and Safety

ESS4 emphasizes issues of health, safety, and security risks and impacts on communities due to project activities. Borrower specifically consider people who may be vulnerable due to impacts and risks of the project

22. MITIGATION MEASURES AND MANAGEMENT CONTROLS

Contractors will communicate with the local authorities in coordination with AYGM for the road crossing works and ensure all of the requirements defined by the authorities are in place.

Contractors will consult with the local community on locations where the Project traffic routes are passing to minimize the safety risks and impacts on the livelihood and transportation patterns (i.e. animal grazing, shuttle services and similar).

A survey will be conducted by the Contractor to assess conditions of roads affected by the construction phase to identify if they require upgrading activities and to ensure that they are returned to previous or better conditions once construction activities are concluded.

Existing roads will often be used to access the construction corridor. Access roads will be used temporarily to transport personnel, equipment, vehicles, heavy trucks and materials to their business. Roads that cannot support heavy construction equipment will only be used for light truck traffic (e.g. pickup trucks).

Roads to be used for construction activities will often be asphalt or stabilized roads that will not need improvement unless the road floor is degraded and makes driving difficult or unsafe for both public and construction traffic.

Access to settlements will always be guaranteed either through diversions or by allowing the passage of vehicles and livestock at certain hours through the use of proper materials

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(e.g. steel plates) over the trenches; when restrictions to access are unavoidable, appropriate alternative solutions will be agreed with local authorities.

Access to the properties will be guaranteed or appropriate alternative access solution to be agreed with owners or users will be implemented.

Local communities will be informed by the Contractor on planned road closures or disruption with at least 72 hours' notice through official communication and signs.

Easy-to-read signs will be used to indicate any type of diversion or of traffic changes related to the Project activities.

Temporary traffic control and appropriate signs will be used to highlight warnings and to improve safety.

Temporary traffic control will be used in intersections and junctions where a higher road accident risk is identified.

Intersections between temporary roads and access roads will be designed as to be traffic-safe, especially for heavy-loaded vehicles.

Authorities will be notified when the oversize heavy vehicles will be required and vehicles will be escorted.

Frequently used roads will be inspected on a regular basis to ensure that they are not damaged, or to implement repairing activities when necessary.

To work at night times, all necessary permissions will be taken from the authorities.

Related Turkish legislation on speed limits depending on the type of vehicles and roads shall be obeyed.

Transport of staff will be organized so the reduce the number of vehicles needed (i.e. use of busses and collective means of transport) to the extent possible.

Trainings will be provided to the adults and children in the settlement areas around the Project area in order to increase traffic awareness within the scope of the Traffic (Transport) Management Plan.

Local authorities and local communities will be informed and consulted on impacts on traffic due to the Project activities and planned mitigation measures during the pre-construction and construction meetings and related Stakeholder Engagement Activities.

A Grievance Mechanism will be set up for communities and individuals to formally communicate their concerns, complaints and grievances to the Contractor and facilitate resolutions that are mutually acceptable by the parties.

Compensations to accidental damages caused by the Project activities will be determined according to the Community Relations Plan.

According to the TTMP that will be prepared by the Contractor, roads and intersections subject to the intense construction traffic will be provided with additional mitigation measures such as traffic control, speed reduction systems and warning signals. The Contractor will also liaise with local authorities to inform them on solutions found for these areas. In addition drivers will be made aware of the presence of these hotspots during induction and routine training sessions.

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Use existing corridors for main access roads and the construction area. The personnel would be transported to the work areas by buses. Minimize the development of new access roads.

Use only existing roads, designated access roads and previously disturbed/cleared sites for the Project facilities.

New access roads will be designed with adequate slope and cross-fall drainage to channel storm water safely to off-road soak away thereby preventing erosion or siltation. When new access roads are required, the contractor will receive approval from AYGM and carry out necessary permitting procedures together with required Environmental and Social Impact Assessment studies.

Maintain roads on a regular basis to prevent dust generation. Frequently used roads will be inspected on a regular basis to ensure that they are not damaged, or to implement repairing activities when necessary.

After the completion of the logistics study and determining the access roads to be used during the construction phase a construction site traffic risk assessment study will be conducted by Contractor.

Planning and managing vehicle operations on construction site will be the responsibility of the Contractor. HS Expert of Contractor will check the operability of the vehicles daily and an adequate vehicle maintenance programs will be established. Safe workplaces at construction site will be provided by the Contractor, and all the project personnel will have defensive driving training.

Weekly checks will be conducted in the construction site by the HS expert of Contractor and staff will be informed about possible traffic risks.

Steps to be taken after an accident occurs in construction site is explained in the Emergency Preparedness and Response Plan.

23. TRAINING, REPORTING AND MONITORING

23.1. Training

All employees of the contractor will be provided with basic training on environmental, social, health and safety, labor and security issues.

Before the project construction phase, the status of all access roads will be checked and all project personnel will be subjected to necessary training within the scope of possible risks. In addition, the status of the project area will be monitored daily by OHS teams, additional training requirements will be determined and trainings will be organized quickly.

23.2. Reporting and Monitoring

The main monitoring activities as set forth in Chapter 7: Monitoring Plan of the ESMP will focus on ensuring compliance with the mitigation measures and management controls described and key performance indicators identified within the scope of this TTMP.

On-site TTMP monitoring requirements will be detailed in management/implementation plans and procedures to be prepared by the Contractor prior to the onset of the land preparation and construction phase of the Project. Monitoring activities will be designed to target specific topics to meet site-specific requirements in line with the Monitoring Plan framework provided in the ESMP and considering the key performance indicators.

An internal reporting system will be designed to ensure a timely feedback procedure incorporating results of monitoring into management practices. Monitoring Reports will be shared to AYGM and WB including status of Key Performance Indicators

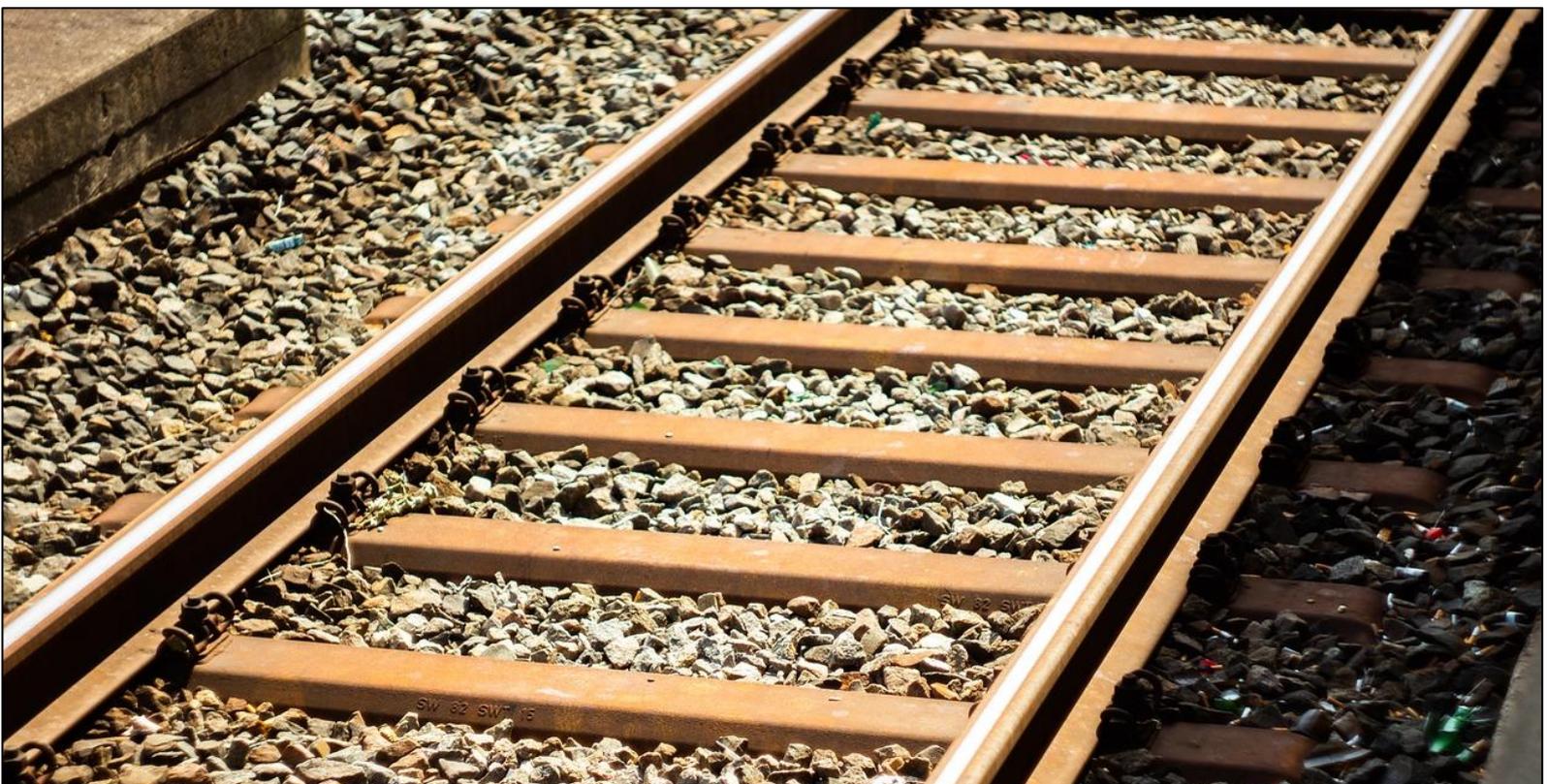
The planned and realized trainings will be followed regularly and all records will be kept. The status of the project area will be checked daily by OHS Teams and in case a possible training need is determined, a new training program will be created and training will be provided to the staff and these trainings will be reported monthly.

The World Bank and AYGM will be promptly notified of any incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers including but not limited to; incidents and accidents encountered during construction works, environmental spills, etc.

Sufficient detail will be provided regarding the incident or accident, findings of the Root Cause Analysis (RCA), indicating immediate measures or corrective actions taken or that are planned to be taken to address it, compensation paid, and any information provided by any contractor and supervision consultant, as appropriate. It will be ensured that the incident report is in line with the World Bank's Environment and Social Incidence Response Toolkit (ESIRT). Subsequently, as per the Bank's request, a report on the incident or accident and propose any measures to prevent its recurrence will be prepared.

24. REFERENCES

- Pollution Prevention Plan (PPP)
- Community Relations Plan (CRP)
- Employment and Training Plan (ETP)
- Emergency Preparedness and Response Plan (EPRP)



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ABBREVIATIONS AND DEFINITIONS

AYGM General Directorate of Infrastructure Investments

CHMP Cultural Heritage Management Plan

CFP Chance Find Procedure

ICOMOS International Council of Monuments and Sites

IFA Institute of Field Archaeologists

No Number

UNESCO United Nations Educational, Scientific and Cultural Organization

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INTRODUCTION

An impact assessment study for the Filyos Port/Industrial Zone Connections Project has been carried out regarding cultural heritage within the project area in line with local legislation and the World Bank ESS-8 (Cultural Heritage). The purpose of this Cultural Heritage Management Plan (CHMP) is to preserve the archaeological and cultural heritage within the scope of the Railway Project and to minimize possible project impacts.

The impact mitigation on the potential and existing archaeological and cultural heritage sites within the project impact area is possible by developing and implementing a management plan.

During the ESIA studies, it is discovered that four registered archaeological areas are located within the project impact area of the Filyos Port/Industrial Zone Connections Project. The details of the areas and the proposed mitigation measures regarding the sites/immovable cultural heritage assets are given in Annex 1. The construction activities within the scope of the project should be conducted in compliance with this management plan.

All contractors will prepare their own specific CHMP to implement the requirements defined in this CHMP. They will also develop necessary procedures to implement that their contractors will regularly update their CHMP as required.

SCOPE

This Cultural Heritage Management Plan applies to all project activities that have the potential to cause an impact on the cultural heritage. This includes especially all construction activities of the project and cultural protection measures, such as the Chance Find procedures applicable for the Project.

Sources of Impact

General project construction activities (soil stripping, excavation, trenching, cutting, blasting, drilling etc.)

Construction of railway, access roads, culverts, tunnels, viaducts and another infrastructure works of the project;

Site preparation and infrastructure installation;

Quarries, soil storage, waste storage and similar storage areas construction or their preparation,

Construction of main or fly camps;

Site rehabilitation and restatement.

OBJECTIVES

The general objectives of this Management Plan are to:

Outline the applicable standards with regards to the protection of cultural heritage;

Identify the actual and potential sources of impact on Cultural Heritage;

Establish effective plans and procedures for managing and mitigating impacts to cultural heritage sites.

Define roles and responsibilities;

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Define monitoring and reporting procedures;

Define training requirements.

ROLES AND RESPONSIBILITIES

AYGM will be responsible for the preparation and implementation of the environmental and social impact assessment-based management plans, which are project specific. These plans shall be practical, detailed procedures for use in the field. AYGM will ensure the implementation of the commitments stated in the ESIA, project specific plans and also shall comply with all relevant project standards, statutory requirements, permit and licence conditions and secure all applicable permits and licences.

Contractors will be responsible for developing their own detailed and project specific CHMP. This CHMP will meet the minimum requirements defined by AYGM.

The Contractor will fulfil all the requirements defined in their CHMP and ensure subcontractors are performing in line with the requirements of the CHMP.

Contractors will establish an Archaeological Monitoring Team which will be composed of a qualified and adequate number of experts (such as archaeologists/art historian/ anthropologist). The archaeological monitoring team will be the responsible body for “regular cultural heritage preservation trainings (including trainings about CHMP and CFP) to all construction-related staff”, “daily monitoring of the construction activities” and “ establishment of good communications between the project and relevant official authorities such as Museums and the regional preservation boards.

Management of Cultural Heritage

The basic definitions regarding the management of cultural heritage are given in the following bullets:

Ministry of Culture and Tourism is the responsible authority.

Karadeniz Ereğli Museum Directorate is responsible to provide experts for the sites as soon as possible after being informed and to officially identify the Chance Find (described in Annex 2). Museum directorate is responsible for the excavation of chance find areas. Museum Directorate will follow the directions and decisions of the relevant Regional Preservation Board of Cultural Assets (Table 1).

Table 2: Filyos Port/Industrial Zone Connections” Project and Responsible Regional Preservation Boards of Cultural Assets and Museums

Km	Province	District	Regional Preservation Boards	Museums
0+000-6+400 (Branch Line) 0+000-1+848 (Jetty Line) 0+000-1+087	Zonguldak	Çaycuma	Karabük Cultural Heritage Preservation Regional Board	Karadeniz Ereğli Museum

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Km	Province	District	Regional Preservation Boards	Museums
(Ferry Line) 0+000-2+763				
(Port Line, Alternative-1) 0+000-2+763				
(Port Line Alternative-2)				

The Preservation Board of Cultural Assets is the only decision maker on any intervention, which would be made on the site after the chance find.

AYGM is 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.

AYGM should mobilize cultural heritage/archaeological monitoring expert/s for the monitoring of ground disturbance activities within project including impact areas. They are also responsible for the monitoring of the implementation of the Cultural Heritage Management Plan (CHMP) and the Chance Find Procedure.

AYGM will ensure that Chance Find Procedure is adequately enforced during all ground disturbance activities.

In case of any further actions is required to identify the Chance Find (test pit or salvage excavation, other needed services), AYGM will mobilize an archaeology team (including necessary expertise and other work-power) and provide the necessary equipment.

AYGM is responsible for giving necessary training to the field staff about the implementation of the chance find procedure.

AYGM 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 Annex 2.

Management Structure and Responsibilities

AYGM is responsible for the management of the plan and implementation of the procedures about cultural heritage and archaeological aspects of the “Filyos Port/Industrial Zone Connections” Project. AYGM and the contractor will establish their own archaeological monitoring teams separately. The monitoring archaeologist/s of AYGM will train the employees about cultural heritage and the chance find procedure. Monitoring of the construction works will also be the responsibility of the monitoring archaeologist/s of AYGM and the Contractor.

The Project Manager of AYGM will be in charge of the all work team.

The Environmental Manager of AYGM will be in charge of the cultural heritage/archaeological monitoring expert/s and their daily, weekly and monthly activities. Cultural heritage and archaeological monitoring reports (daily, weekly and monthly) will be submitted to Environmental Manager by AYGM monitoring expert/s.

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Cultural heritage and archaeological monitoring reports (daily, weekly and monthly) will be submitted to AYGM cultural heritage/archaeological monitoring expert/s by the contractor cultural heritage/archaeological monitoring expert/s.

The cultural heritage/archaeological monitoring expert/s of AYGM and the Contractor will work with the equipment operators and have authority to stop the work.

Both AYGM's and the contractor's cultural heritage/archaeological monitoring expert/s will accompany all ground disturbance activities of the project. The cultural heritage/archaeological monitoring expert/s will instruct the operator to stop the work in case of a chance find. Continuation of the ground disturbance activities after a chance find will also be under the authority of the cultural heritage/archaeological monitoring expert/s. The cultural heritage/archaeological monitoring expert/s will submit scheduled progress reports and special reports of chance finds to the Environmental Manager.

LEGAL FRAMEWORK

In this section, the legislation framework related to the management of cultural heritage is summarized.

Local Laws and Legislation

In Turkey, the movable and immovable cultural and natural assets are under protection as dictated by the "Law on Preservation of Cultural and Natural Assets", 2863, which was published in the Official Gazette numbered 18113 and dated 23 July 1983. The cultural and natural heritage, which is protected by the aforementioned Law, are identified as:

Natural properties which require protection and immovable assets which were built before the end of the 19th century;

Any immovable cultural asset constructed after the end of the 19th century but categorized as "a significant asset which requires preservation" by the Ministry of Culture and Tourism;

Immovable cultural assets located within the boundaries of Protection Sites; Structures, buildings or places that have witnessed significant historical events during the Turkish Independence War or the foundation of the Turkish Republic, regardless of their period and registration status; and all dwellings and buildings that have been used by Mustafa Kemal ATATURK without considering their period of construction or registration status.

In addition to Law no: 2863 on Preservation of Cultural and Natural Assets, there are some regulations and principle decisions governing the management of cultural and natural assets. According to the Principle Decision no: 658 taken on November 5th 1999, on "Archaeological Sites, Conditions of Protection and Usage", the archaeological sites are classified into three main categories:

1st Degree Archaeological Sites: Areas requiring highest level of protection, with the exception of scientific excavations aiming their protection. Neither construction nor development are allowed in these sites. All kinds of construction, excavation, and modification activities are prohibited within the boundaries of these sites. However, for exceptional cases such as the necessity for

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infrastructure construction, Regional Preservation Boards may permit such activities based on the approval of the relevant museum directorate and the head of the scientific excavation team

2nd Degree Archaeological Sites: Sites which require medium level of protection. They should be preserved based on the conditions of protection and utilization set by the Regional Preservation Boards. Additional construction is prohibited. Similar to the 1st Degree Sites, for exceptional cases such as necessity for infrastructure construction among others, Regional Preservation Boards may permit such activities based on the approval of the relevant museum directorate and the head of the scientific excavation team.

3rd Degree Archaeological Sites: Lowest level of protection area. Construction is permitted based on the decisions of Regional Preservation Boards. Before applying for a construction permit, test pit excavations should be conducted and the outcomes of these excavations should be reviewed by the relevant museum and, if present, the head of the scientific excavation team. Reviews should be submitted to Regional Preservation Boards. The Boards may ask for extension of the scope of test pits before taking any decision.

Furthermore, Implementation Guidelines for Field Surveys, Test Pits and Excavation Works on Cultural and Natural Assets (Ministry approval number 94949537-160.99-51264, dated 13.03.2013) define the procedures for salvage excavations, archaeological test pits and other studies.

International Standards

World Bank's policy on tangible and intangible cultural heritage is set out in ESS 8. This standard points out that cultural heritage provides continuity between tangible and intangible forms between past, present and future. In the implementation of project, necessary measures should be taken in order to protect cultural heritage.

MITIGATION MEASURES AND MANAGEMENT CONTROLS

The procedure given in Annex 2 that must be followed in case of encountering a chance find is based on national legislation and provisions of international standards and best practices. Description of the significance levels of the findings is given below. The significance of the archaeological/cultural heritage finding may vary upon the assessment of the Karadeniz Ereğli Museum Directorate. Regardless of the level of significance, in case of a finding the construction activities shall be ceased in the field where the finding is discovered and the findings shall be reported to the relevant museum expert. Following the completion of investigation of the relevant Museum Directorate, the necessary arrangements, such as the identification of the boundaries of the archaeological/cultural heritage asset/site (finding), its protection by taking necessary measures, notification of workers in order to prevent any physical intervention, will be implemented.

Minor Significance

This type of findings is comprised of a finding isolated from its environment or findings in notably small sizes which may be found by chance. In this case, chance find procedure (Annex 2) will be followed.

Moderate Significance

This type of findings is small scale findings in groups or single findings with medium size architectural elements such as tombs. In this case, chance find procedure (Annex 2) will be followed. In order to prevent a possible damage, necessary arrangements must be made to

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determine the boundaries of the archaeological remains to keep the construction equipment out of access.

Major Significance

This type of findings is comprised of findings with great importance such as a settlement area, a tumulus, a mound or a big necropolis (wide graveyard areas with archaeological characteristics) and the construction activities must be immediately stopped and chance find procedure (Annex 2) will be followed. This type of chance find may cover the entire construction site and the relevant project areas such as camp sites, quarries, soil stock area etc. that the entrance and exit of the construction equipment and vehicles cannot be managed without giving any damage to the archaeological remains.

TRAINING, REPORTING AND MONITORING

Training

The cultural heritage/archaeological monitoring expert/s will provide cultural heritage training to all project staff including the implementation of the chance find procedure as part of their Environmental Training.

The expert/s will receive Environmental Training as well as specialized training for the procedures to follow for all ground disturbed activities. These trainings will be repeated periodically. The expert/s and the site management will periodically meet once a month or when deemed necessary. The records of the training such as attendee list, the presentation made during the training, etc. will be kept by the experts as hard copy and electronical copy.

Reporting

The cultural heritage/archaeological monitoring expert/s will record all chance finds on the Chance Find Report Form and the Chance Find Register as per the Chance Find Procedure given in Annex 4. The register will be kept up to date by the experts. The Chance Find Report Form will be kept in hard copy and as electronical copy (scanned version) at the project camps. A summary of the status of chance finds will be reported by the experts to Environmental Manager on a weekly basis.

Monitoring

The function of the archaeological monitoring process will be as follows:

Provide advice to define the areas where the construction activities may continue or shall be stopped due to archaeological/movable/immovable cultural heritage findings.

To record archaeological/cultural heritage features observed on, and close to the existing project related areas.

To record archaeological/cultural heritage features discovered during project construction activities.

To provide advice in the form of a 'preliminary assessment' to the relevant department on the significance and implications of new archaeological discoveries on the project construction areas.

All ground disturbance activities will be monitored by cultural heritage/archaeological monitoring expert/s during the construction activities. In case of encountering any archaeological/cultural heritage findings, the Chance Find Procedure described in Annex 4 will be initiated.

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The schedule for monitoring will be developed in coordination with the construction schedule. Monitoring activities will be implemented daily. The monitoring schedule will be dictated by the construction schedule as determined by the construction/operation management. There is no sampling based work associated with the Cultural Heritage Management Plan.

REFERENCES

General Directorate of Preservation of Cultural and Historical Heritage, “Law on Protection of Cultural and Natural Assets (1) Law No. 2863”, 1983.

ICOMOS (International Council of Monuments and Sites) “Guidance on Impact Assessment for Cultural World Heritage”, January 2011.

IFA (Institute of Field Archaeologists) Standard and Guidance for the Collection, “Documentation, Conservation and Research of Archaeological Materials”, 2001.

IFA (Institute of Field Archaeologists) 1994, “Standard and Guidance for an Archaeological Desk Based Assessment” (revised 1999)

IFA (Institute of Field Archaeologists) 1994, “Standard and Guidance for an Archaeological Watching Brief” (revised 1999)

IFA (Institute of Field Archaeologists) 1994, “Standard and Guidance for an Archaeological Field Evaluation” (revised 1999)

UNESCO, “Convention Concerning the Protection of the World Cultural and Natural Heritage”, November

ANNEX 1 CULTURAL HERITAGE ELEMENTS IN THE PROJECT CONSTRUCTION AND IMPACT AREA

LOCATION OF SITES				DATA RESOURCES		LOCATION OF SITES IN WITHIN THE PROJECT and IMPACT AREAS				PROPOSED MITIGATION MEASURES								TYPE OF THE ARCHAEOLOGICAL TRACES/SURFACE FINDINGS			EXPLANATIONS
										IN CASE RE-ROUTING IS NOT POSSIBLE											
No	Site Name	Province	District/Village	Ministry of Culture and Tourism	Field Survey	Within Expropriation Border	Within Impact Corridor (100m.)	Approximate Distance to Expropriation Border (m)	KM	Physical Intervention Should be Avoided	Archaeological Excavation	Geophysical Testical Survey	Archaeological Salvage Excavation	Technical Documentation	Restoration	Removal to Another Place	Archaeological Monitoring	Ceramic Sherds	Architectural Remains	Other (Bone, Stone Tool, etc.)	
1	Sazköy 3. Degree Archaeological Site	Zonguldak	Çaycuma/Sazköy	x		x		0	Jetty (0+150 - 0+390) and Ferry Connection Line (0+500 - 0+940)	x	x	x	x	x			x	x	x	x	Sazköy 3rd Degree Archeological Site is located on the planned Railway Dock Connection (0 + 150- 0 + 390 km) and the planned Railway Ferry Connection (between 0 + 500- 0 + 940 km). As a result of the studies, it has been identified that the cultural asset, which we think is a necropolis area, will be adversely affected by the construction activities. For this reason, it is recommended that the Filyos Railway Dock and Ferry Connection route should be revised in a way that it does not destroy the registered area. If such a revision is not possible, it may be necessary to plan test pit and salvage excavations in the areas where the railway route cuts the site, and to implement them before the construction period. For all kinds of projects, revisions and similar applications to be done in Sazköy 3rd Degree Archeological Site and its surroundings, it is necessary to consult the Karabük Cultural Heritage Preservation Regional Board as dictated by the law numbered 2863, and the decisions of the preservation committee should be followed at all phases of the project. Further



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ANNEX 2 CHANCE FIND PROCEDURE

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I. Introduction

AYGM is responsible for the management and protection of archaeological and heritage sites/resources within Filyos Port/Industrial Zone Connections Project construction and project impact area. Some archaeological and cultural heritage assets have been encountered within the project construction and impact area during the ESIA studies. Suggestions to protect cultural heritage assets and sites encountered within the project impact area were described in the ESIA and CHMP. However, there is still a possibility of encountering some unknown archaeological sites and cultural heritage assets as a Chance Find during project activities.

Purpose

The purpose of this document is to outline the procedure and respective responsibilities in relation to the management of Chance Finds during project construction works.

The procedure applies to all project activities within the project impact areas (main route of railway, access roads, culverts, tunnel, viaduct, quarries, soil storage areas, waste storages, camp sites etc.) and other project related areas.

Definitions

CHANCE FIND	Potential cultural heritage objects, features or sites that are identified outside of a formal site reconnaissance, normally as a result of construction monitoring.
MUSEUM DIRECTORATES	Karadeniz Ereğli Museum
REGIONAL PRESERVATION BOARDS	Karabük Cultural Heritage Preservation Regional Board
PROJECT	Filyos Port/Industrial Zone Connections Project
SHALL AND MUST	Indicates mandatory requirements.
SHOULD	Indicates that a provision is not mandatory, but recommended as good practice.

Abbreviations

AYGM	General Directorate of Infrastructure Investments
CHMP	Cultural Heritage Management Plan
E&S	Environmental and Social
ESIA	Environmental and Social Impact Assessment

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References

STANDARDS, LEGISLATIONS and LAWS

Ministry of Culture and Tourism, Law No:2863, Preservation of Cultural and Natural Assets

Ministry of Culture and Tourism, Principle Decision No: 658, Archaeological Sites, Conditions of Protection and Usage

II. Roles and Responsibilities

AYGM is responsible to comply with the procedure with all its units during the project construction activities. All employees involved in construction works will be trained for the implementation of the procedure.

Contractors will be responsible for developing their own detailed and project specific CHMP. This CHMP will meet the minimum requirements defined by AYGM.

The Contractor will fulfil all the requirements defined in their CHMP and ensure subcontractors are performing in line with the requirements of the CHMP.

Contractors will establish an Archaeological Monitoring Team which will be composed of a qualified and adequate number of experts (such as archaeologists/art historian/ anthropologist). The archaeological monitoring team will be the responsible body for “regular cultural heritage preservation trainings (including trainings about CHMP and CFP) to all construction-related staff”, “daily monitoring of the construction activities” and “ establishment of good communications between the project and relevant official authorities such as Museums and the regional preservation boards.

Project Role	Responsibilities
AYGM Site Manager	<p>Ensure E&S issues are being adequately addressed on site by all related departments.</p> <p>Support E&S site, provides adequate resources on site to implement E&S monitoring and inspection activities.</p>
AYGM E&S Impact Assessment Specialist	<p>Preparation or revision of E&S documentation, plans and procedures as required.</p> <p>Participation in the identification process of significant impacts for the project, and assisting to develop relevant preventive and corrective actions.</p> <p>Coordination of environmental and social information flow.</p>

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Project Role	Responsibilities
	<p>Ensuring that E&S mitigation measures are implemented and controlled during the project construction activities.</p> <p>Developing and implementation of an environmental and social audit program and sharing lessons learned between all related departments and staff.</p> <p>Manages site based environmental inspectors, community liaison officers and cultural heritage/archaeological monitoring expert/s.</p> <p>Maintain effective communication with the construction and project management team.</p> <p>Ensure the ESIA mitigation measures, through on-site daily inspection, advice and assistance to site construction and project management and personnel on all environmental, social and cultural heritage matters.</p> <p>Day-to-day monitoring of construction activities as they related to E&S performance.</p> <p>Raise NCR or Corrective Actions as required, and track closure.</p> <p>Participate in audits relating to E&S matters.</p> <p>Plan and Manage the environmental and social trainings for all project staff for Cultural Heritage Preservation and related procedures.</p> <p>Daily reporting of E&S issues in construction activities to Site Management.</p> <p>Weekly reporting of E&S issues in construction activities to Site Management.</p> <p>Participate to meetings related to Cultural Heritage issues.</p>
AYGM Cultural Heritage/Archaeological Monitoring Expert/s	<p>Provides advice in the form of a ‘preliminary assessment’ to the site and E&S managers on the significance and implications of new archaeological discoveries in the project activity areas.</p> <p>Ensures Chance Find Procedure is followed,</p> <p>Conducts and documents pre-construction surveys Records archaeological features discovered during pre-construction and ground disturbance activities.</p> <p>Determines the needs for cultural heritage resources protection and implement mitigation measures.</p> <p>Has the authority to stop ground disturbance activities to investigate potential chance finds.</p>

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Project Role	Responsibilities
	<p>Ensures that the relevant cultural heritage signs are displayed where and when required.</p> <p>Implements chance find procedure and provides expertise during a chance find.</p> <p>Delivers cultural heritage preservation trainings to all project staff.</p> <p>Issues non-compliances when required and ensures all corrective actions are completed in a timely manner</p> <p>Provides daily field and monitoring reports to the E&S manager</p> <p>Conforms to all requirements of the archaeological/cultural heritage assets recommendations in the ESIA</p>
Contractor's Cultural Heritage/Archaeological Monitoring Expert/s	<p>Conducts the daily archaeological monitoring activities on site.</p> <p>Records archaeological features discovered during pre-construction and ground disturbance activities.</p> <p>Provides daily, weekly and monthly monitoring reports to AYGM Cultural Heritage/Archaeological Monitoring Expert/s</p> <p>Has the authority to stop ground disturbance activities to investigate potential chance finds.</p> <p>Ensures that the relevant signs for protection of cultural heritage are displayed where and when required.</p> <p>Implements chance find procedure and provides expertise during a chance find.</p> <p>Delivers cultural heritage preservation trainings to all contractor's employees.</p> <p>Conforms to all requirements of the archaeological/cultural heritage assets recommendations in the ESIA.</p>

III. Chance find process

The following table outlines the step by step process to be followed upon a chance find discovery.

STEP 1 - After the discovery of a chance find:

All work must cease at the location where discovery is made

A temporary buffer zone around the chance find will be put in place

Cultural Heritage/Archaeological Monitoring Expert/s will be on site during all construction or ground disturbance activities

The Cultural Heritage/Archaeological Monitoring Expert/s contacts site management and museum archaeologist immediately

The Cultural Heritage/Archaeological Monitoring Expert/s properly secures chance find site: flagging, no-entry signs etc.

Protection of site: chance find should not be moved, removed or further disturbed

STEP 2 - Recording

The Cultural Heritage/Archaeological Monitoring Expert/s fills out Chance Find Form Part A and sends a copy to E&S manager within 24 hours

The Cultural Heritage/Archaeological Monitoring Expert/s retains a copy of Chance Find form for his/her record

STEP 3 - Contact with local authority

The Cultural Heritage/Archaeological Monitoring Expert/s notifies the relevant Museum Directorate for the chance find

STEP 4 - Authority's decision

The relevant Museum archaeologist decides that the following actions for chance find area.

STEP 4 A - No significance to site

The museum archaeologist declares that the site is considered to be of no significance

The Cultural Heritage/Archaeological Monitoring Expert/s informs relevant managers

The Cultural Heritage/Archaeological Monitoring Expert/s records the decision on Part B of Chance Find form and sends a copy to E&S manager within 24 hours

The Cultural Heritage/Archaeological Monitoring Expert/s retains a copy of Chance Find form for his/her record

No further actions required

This step closes out the chance find procedure

Construction activities may resume

STEP 4 B - Significance to site

The museum archaeologist declares that the site is considered to be of significance

Museum directorate archaeologist decides on further actions and informs the Cultural Heritage/Archaeological Monitoring Expert/s. The Cultural Heritage/Archaeological Monitoring Expert/s informs relevant managers.

Cultural Heritage/Archaeological Monitoring Expert/s records the decision on Part B of Chance Find form

Proceed to Step 5

STEP 5 - Site investigation

Project personnel follows the relevant Archaeology Museum directorate archaeologist's instructions

After field investigation, Museum archaeologist	After field investigation, Museum archaeologist	After field investigation, Museum archaeologist declares the site has major significance
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declares the site has minor significance

The Cultural Heritage/Archaeological Monitoring Expert/s inform their managers

The Cultural Heritage/Archaeological Monitoring Expert/s records the decision on Chance Find Form Part C and sends a copy to E&S manager within 24 hours

The Cultural Heritage/Archaeological Monitoring Expert/s retains a copy of Chance Find form for his/her records

No further actions required

This step closes out the chance find procedure

Construction activities may resume

declares the site has moderate significance

Further studies such as test pit / salvage excavations or remote sensing investigation are to be completed

Museum directorate archaeologist provides instructions, and/or supervision for the studies

The Cultural Heritage/Archaeological Monitoring Expert/s informs their managers

Under the supervision of the museum archaeologist, project management provides a study team. The team will be composed of qualified archaeologists other experts and workers.

Once the excavation is completed, the study team provides a report to the museum directorate,

The museum directorate reports the study outcomes to the relevant Regional Preservation Board of Cultural Assets.

The relevant Regional Preservation Board of Cultural Assets officially confirms completion of recovery and informs the project management.

The Cultural Heritage/Archaeological Monitoring Expert/s records the decision on Chance Find Form Part C and sends a copy to E&S manager within 24 hours

Salvage excavation is to be completed

Site is to be treated according to Turkish archaeological regulations "Law on the Conservation of Cultural and Natural Property (2863) 21.07.1983

Museum directorate archaeologist provides instructions, and/or supervision for test pit/salvage archaeological excavation

The Cultural Heritage/Archaeological Monitoring Expert/s inform their managers

Under the supervision of the museum archaeologist, project management provides a salvage excavation team. The team will be composed of qualified archaeologist and workers.

Once the excavation is completed, salvage excavation team provides a report to museum directorate

The relevant Regional Preservation Board of Cultural Assets officially confirms completion of recovery and informs the project management.

Site will be officially recorded and protected according to Turkish regulations

The Cultural Heritage/Archaeological Monitoring Expert/s inform to the related managers.

The Cultural Heritage/Archaeological Monitoring Expert/s records the decision on Chance Find Form

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The Cultural Heritage/Archaeological Monitoring Expert/s retains a copy of Chance Find form for his/her record	Part C and sends a copy to E&S manager within 24 hours
No further actions required	The Cultural Heritage/Archaeological Monitoring Expert/s retains a copy of Chance Find form for his/her record
This step closes out the chance find procedure	No further actions required
Construction activities may resume	This step closes out the chance find procedure
	Construction activities may resume or preventive further actions are need to be taken

It is important to note that in case human remains are found, all project team and the local authorities will be immediately notified.

IV. Monitoring and Reporting

The Cultural Heritage/Archaeological Monitoring Expert/s will visually monitor all construction or other ground disturbance activities for evidence of presence of cultural heritage items.

Chance Finds will be recorded on the Chance Find Report form (see Appendix 1). All Chance Find Report forms will be kept in hard copy at the camp and will also be scanned and saved electronically after completion of each section of the form.

Chance Finds will be recorded in the Chance Find Register (see Appendix 2) which will be kept up to date by Cultural Heritage/Archaeological Monitoring Expert/s. It will be reviewed in regular E&S meetings (weekly or monthly).



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ANNEX 2-1 Chance Find Report Form

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CHANCE FIND REPORT FORM

RASLANTISAL BULUNTU RAPOR FORMU

PART A BÖLÜM A			
Project Location: Proje Sahası	District (İlçe): Village (Köy):	Date: Tarih	Form No:
Name of person reporting chance find: Rastlantısal buluntuyu rapor eden kişinin ismi			
Was work stopped in the immediate vicinity of the chance find? Rastlantısal buluntunun tam çevresinde iş durduruldu mu?		<input type="checkbox"/> Yes Evet	<input type="checkbox"/> No Hayır
Was a buffer zone created to protect the chance find? Rastlantısal buluntuyu korumak için tampon bölge oluşturuldu mu?		<input type="checkbox"/> Yes Evet	<input type="checkbox"/> No Hayır
NOTIFICATION BİLDİRİM			
Site manager and E&S manager contacted Saha Müdürü ve Çevre müdürü ile irtibata geçildi		<input type="checkbox"/> Yes Evet	<input type="checkbox"/> No Hayır
CHANCE FIND DETAILS RASLANTISAL BULUNTU AYRINTILARI			
GPS coordinates GPS koordinatları	Photo record <input type="checkbox"/> Yes <input type="checkbox"/> No (HD quality - no cell phone photos) Fotoğraf kaydı Evet Hayır (HD kalitesinde - cep telefonu fotoğrafı değil)		
If not, explain why: Yok ise nedenini açıklayınız			
		<input type="checkbox"/> Yes	<input type="checkbox"/> No



	Specify (drawings, HD quality videos, etc.): Diğer kayıtlar Evet Hayır Belirtin (çizimler, HD kalite videolar, vb.)
Description of chance find: Rastlantısal buluntunun tanımı	
Description of site and vegetation: (e.g. surface sediment type, ground surface visibility, distance to closest watercourse, etc.) Sahanın ve bitki örtüsünün tanımı: (örn. Yüzey sediman türü, yüzey zemin görünürlüğü, en yakın su yoluna olan mesafe, vb.)	
PART B BÖLÜM B	
NOTIFICATION OF MUSEUM DIRECTORATE ARCHAEOLOGIST MÜZE MÜDÜRLÜĞÜ ARKEOLOĞUNA BİLDİRİ	

Monitoring archaeologist contacted museum directorate archaeologist Yes No
Arkeolog müze müdürlüğü arkeoloğu ile irtibata geçti. Evet Hayır

Date of notification:

Bildirim tarihi

Name of museum directorate and Name of museum archaeologist:

Müze müdürlüğü ve Müze müdürlüğü arkeoloğunun ismi

Contact number of museum directorate archaeologist:

Müze müdürlüğü arkeoloğunun iletişim numarası

DECISION OF MUSEUM DIRECTORATE ARCHAEOLOGIST

MÜZE MÜDÜRLÜĞÜ KARARI

Date of site visit:

İlk saha ziyaret tarihi:

Site of no significance - Construction to proceed with no further action - End of chance find procedure

Önemsiz saha - İnşaat daha fazla araştırma yapılmadan devam edilebilir - rastlantısal buluntu prosedürün sonu.

Date of notice to resume work:

İşe başlama tarihi bildirisi

Site of significance - Further actions required

Önemli saha - Ek araştırma gerekmektedir

Please Fill out Part C

Lütfen Bölüm C'yi doldurun.

Name of museum directorate archaeologist:

Müze müdürlüğü arkeoloğunun ismi

Contact information:

İletişim numarası

Site manager and E&S manager contacted

Yes

No

Saha Müdürü ve Çevre müdürü ile irtibata geçildi

Evet

Hayır

PART C
BÖLÜM C

FURTHER FIELD INVESTIGATION
EK SAHA ARAŞTIRMASI

Site of minor significance
Önemsiz saha

Site of moderate
significance
Az önemli saha

Site of major significance
Çok önemli saha

Describe additional work to be conducted:
Yapılması gereken ek işlerin tanımları

Date started:
Başlangıç tarihi

Date completed:
Bitiriş tarihi

Date of notice to resume work:
İşe başlama tarihi bildirisi

Name of museum directorate archaeologist:
Müze müdürlüğü arkeoloğunun ismi:
Contact information:
İletişim numarası

Construction manager contacted

Yes

No



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İnşaat müdürü ile irtibata geçildi

Evet

Hayır



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ANNEX 2-2 Chance Find REGISTER

ANNEX 2-3 Contact Information

Museum Directorate	Address	Phone	Fax	E-Mail
Karadeniz Ereğli Museum	Orhanlar Mah. Yalı Cad. No:96 Kdz.Ereğli/ZONGULDAK	0372 323 45 57	0372 312 03 62	ereglimuzesi@kultur.gov.tr

PRESERVATION BOARD	RESPONSIBILITY AREAS	ADDRESS	PHONE	FAX	E-MAIL
Karabük Cultural Heritage Preservation Regional Board	Bartın, Karabük, Zonguldak	Eski Çarşı Musalla Mahallesi Guburoğlu Sk. No:50 SAFRANBOLU/ KARABÜK	0370 712 78 06	0370 712 38 38	karabukkurul@kultur.gov.tr



Project Owner	T. C. Ministry of Transport and Infrastructure General Directorate of Infrastructure Investments
Address	Hakkı Turaylıç Cad. No: 5 06338 Emek/Çankaya/ANKARA
Telephone and Fax Numbers	+90 (312) 203 10 00
Project Title	Filyos Port and Industrial Zone Railway Connection Project
Project Location	Zonguldak Province, Çaycuma District
Consultant	Çınar Engineering & Consultancy Inc.
Address	Bağlıca Mah. Çambayırı Cad. Çınar Plaza No: 66/5 06790 Etimesgut / ANKARA
Telephone and Fax Numbers	Phone: +90 (312) 472 38 39 Fax: +90 (312) 472 39 33
Report Submission Date	4/2/2020

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ABBREVIATIONS AND DEFINITIONS

AYGM	General Directorate of Infrastructure Investments
CONTRACTOR	Expert Firms responsible for the construction of the Project on behalf of AYGM
ESIA	Environmental and Social Impact Assessment
ETP	Employment and Training Plan
PPP	Pollution Prevention Plan
WMP	Waste Management Plan
WPCR	Water Pollution Control Regulation

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25. INTRODUCTION

The Pollution Prevention Plan (PPP) outlines the actions to avoid or, when cannot be avoided, minimize the release of pollutants or spills to air, water and land during implementation of the Project.

The standards and requirements defined in this plan are mainly for the Construction Phase of the Project but they can be used as a guideline for Plans and Procedures which will be implemented during other phases of the Project. Plans for the Operation Phase will be prepared in relevance to operational procedures of the Project which will be developed based on this PPP. Those operational plans will be revised in parallel to the development of the operational procedures during the Construction Phase.

26. SCOPE

The Pollution Prevention Plan (PPP) aims to define the required actions in terms of organization, responsibilities, measures, planning and system implementation to prevent the environmental impact of the Project on the environmental components i.e. soil, air and water during the implementation of the Project.

The construction of the Filyos Region and Iskenderun Bay Railway Connection Project will include various activities to be carried out by the Construction Contractor and sub-contractor(s). The main construction activities of the project are given below:

- Construction of railway routes,
 - Gökçeler - Sanayi Line
 - Dock Connection
 - Ferry Connection
 - Port Connection
- Gökçeler and Sanayi Station
- Highway Bridge Passage
- Filyos Highway Bridge
- Filyos Railway Bridge
- Highway Bridge Crossing
- Electrification & Signaling System
- Construction Sites
- Access Roads
- Excavation Storage Areas

These facilities will be used temporarily or permanently during railway construction and operation.

Contractor will fulfil the requirements defined in this PPP by adapting them to its own activities. Contractor should develop its own site-specific PPP and procedures before construction.

27. OBJECTIVES

With PPP, it is aimed to increase resource efficiency and define pollution prevention and pollution management needs.

Key performance indicators for the implementation of PPP are given below:

Key Performance Indicator	Timeframe	Records	Responsibility
Noise measurement results	To be conducted twice a year Will not exceed baseline levels during a year	Analysis Results	Contractor
Dust sampling results	To be conducted twice a year Will not exceed baseline levels during a year	Analysis Results	Contractor
Surface water sampling and analysis results	To be conducted twice a year Will not exceed baseline levels during a year		Contractor
Groundwater monitoring results	To be conducted twice a year	Analysis Results	Contractor
Records on wastewater removal	Necessary permits will be obtained during a year (for sewage removal)	Sewage truck records	Contractor
Records of complaints about noise and dust,	Zero in a year	Complaint records	Contractor
Monitoring records regarding noise and dust,	Monthly	Monitoring reports	Contractor
Vehicle exhaust emission control records	Monthly	Monitoring reports	Contractor

28. ROLES AND RESPONSIBILITIES

AYGM will implement an environmental inspection, monitoring and reporting program ensuring that the commitments given in ESIA Report and this PPP are accomplished for all the aspects of the Project.

Contractor will develop a site-specific PPP and Procedures for pollution prevention measures which will cover all Project aspects related to;

- Air emissions
- Noise
- Water sources and
- Wastewater management

Contractor will fulfil all the requirements and precautions which are defined in this PPP and the site-specific PPP and procedures. Contractor will control the performance of all its subcontractors with regard to this PPP, the site-specific PPP and procedures.

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As a part of the Employment and Training Plan, Contractor will provide trainings to the all personnel who will be involved in the Project operations and make them understand the requirements of this Project specific PPP and procedures.

29. LEGAL FRAMEWORK

29.1. National Legislation

Turkish Environmental Law, No. 2872, published in the Official Gazette No. 18132, dated August 11, 1983 explains basic principles that are necessary to protect the environment in line with sustainable environment and sustainable development goals. The Environmental Law provides a legal framework for the development of environmental regulations in accordance with national and international standards. Following its first publication date of 1983, various amendments have been made.

Environmental regulations, by-laws and communiques that are valid within the above mentioned laws are listed below.

Environmental Permits and Licenses

- Regulation on Environmental Impact Assessment
- Regulation on Environmental permits and Licenses
- Regulation on Environmental Audit
- Regulation Concerning Environmental Management Services

Land Use and Soils

- Regulation on Protection, Use and Planning of Agricultural Lands
- Implementation Regulation of 17/3rd and 18th Articles of the Forestry Law
- Implementation Regulation of Land Consolidation and On-Farm Development Services
- Regulation Concerning the rehabilitation of the Lands Disturbed by Mining Activities
- Regulation on Pastures
- Regulation on the Control of Soil Pollution and Lands Polluted by Point Sources

Water

- Regulation on Surface Water Quality
- Regulation on Water Pollution Control
- Regulation Concerned Water Intended for Human Consumption
- Regulation on Urban Wastewater Treatment
- Regulation Concerning Protection of Groundwater against Pollution and Deterioration
- Regulation on Control of Pollution Caused by Hazardous Substances in and around the Water Bodies.
- Communiqué on Sampling of Surface Water, Ground Water and Sediment and Biological Sampling
- Regulation on Protection of Drinking-Potable Water Basins

Waste

- Regulation on Control of Packaging Wastes

- Regulation on Waste Management
- Regulation on the Control of Excavation Soil, Construction and Demolition Wastes
- Regulation on the Control of Medical Wastes
- Regulation on the Control of Waste Oils
- Regulation on the Control of Waste Vegetable Oils
- Regulation on the Control of Waste Batteries and Accumulators
- Regulation on the Control of End-of-Life Tires
- Regulation on Mining Wastes
- Regulation on the Landfill of Wastes
- Regulation on the Control of Waste Electrical and Electronic Equipment
- Regulation on the Control of End-of-Life Vehicles
- Regulation on Zero Waste
- Regulation on the Control of Collecting Wastes from the Vessels
- Regulation on Recovery of Some Non-Hazardous Wastes

Air

- Regulation on the Control of Industrial Air Pollution
- Regulation on the Assessment and management of Air Quality
- Regulation on the Control of Exhaust Gas Emissions

Noise

- Regulation on Assessment and Management of Environmental Noise
- Regulation on Environmental Noise Emission Caused by Equipment Used Outdoors

29.2. International Standards

29.2.1. World Bank Environmental and Social Standards

ESS1: Assessment and Management of Environmental and Social Risks and Impacts:

This Standard sets out Borrower's responsibilities for assessing, managing and monitoring Environmental and social risks and impacts related with each phase of the project supported by the World Bank through Investment Project Financing (IPF), so as to accomplish environmental and social results consistent with the Environmental and Social Standards (ESSs).

ESS1, paragraph 26 states that all relevant environmental and social risks and impacts as the result of the project should be covered in the assessment, including:

3. Environmental Risks and Impacts covering the following issues:
 - The ones defined by Environmental Health and Safety Guidelines (EHGS)
 - Community safety
 - Climate change and other transboundary or global risks and impacts
 - Materials threat to the protection, conservation, maintenance and restoration of natural habitats and biodiversity
 - Ecosystem services and the use of living natural resources (fisheries, forests etc.)
4. Social Risks and Impacts covering the following issues
 - Threats to human security

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- Risks that project impacts fall disproportionately on individuals or groups who, because of their particular circumstances, may be disadvantaged or vulnerable

ESS3: Resource Efficiency and Pollution Prevention and Management

- This standard points out to the requirements to highlight resource efficiency and pollution prevention and management with a holistic approach to project implementation. The aim is to minimize pollution arises from the project with sustainable use of resources.

30. MITIGATION MEASURES AND MANAGEMENT CONTROLS

30.1. Soil and groundwater pollution prevention and control

The Contractor will implement measures for safe storage and transport of all the fuels and greases/oil on the site in order to prevent pollution of the soil and groundwater in the vicinity of fuel, oil, hazardous substance storage, maintenance and transport sites. Those measures will particularly include but not limited to the following;

- Fuel, oil and chemicals will be stored in tightly sealed containers that are clearly labeled.
- There will containment bunds or spill trays for the storage of the hazardous material.
- All of the fuel, oil and chemical storages will be placed onto an impermeable floor inside and stored in an area which has impermeable leakage control reservoir.
- All vehicles, equipment and installations will be checked for any fuel and oil leakage before use and will be regularly monitored for leaks.
- Maintenance procedures in line with available manufacturing requirements will be in place for all machinery and equipment.
- Maintenance activities (including fueling and re-fueling) will be conducted at designated areas selected to be away from environmentally sensitive areas (i.e. water courses, high groundwater table and such).
- Adequate amount of appropriate absorbents be in place in “Designated Maintenance Area” in order to handle with minor leakages.
- Vehicles will be never left unattended in case of a jammed valve during maintenance or fueling activities.
- Taps and valves will be checked regularly for signs of wearing; and be securely closed and locked when they are not in use.
- All of the equipment and storage areas will be secured properly with safety fences; and gateways will be locked in order to prevent pollution which may arise from violent acts and theft.
- Site personnel will be trained related to spill response and use of the spill response equipment and also carry absorbents in their vehicles.
- The good housekeeping at camps, construction areas and at locations where construction related activities take place will be in in place.
- All containers of fuel, lubricant oil and chemicals will be sited on containment bund. The bund will be of sufficient capacity to contain at least the 110% of the volume of the largest tank.
- If the containment bund is not practical than dip trays will be used for stored chemicals and fuels.

- Any soil contamination identified during the construction activities will be addressed in compliance with Regulation on Control of Soil Contamination and Contaminated Lands by Point Sources (Official Gazette: 08.06.2010-27605)

30.2. Surface water and groundwater pollution prevention and control

The measures will include but not limited to the following:

- Direct access of the vehicles and mechanical equipment to waterway will be kept at minimum. If it is required, all vehicles and mechanical equipment will be checked for any fuel and oil leakage before they enter the waterway.
- Spill response equipment will be in place at the river crossing areas in case of a spill to the rivers from construction and transportation equipment specifically diesel tankers.
- In the excavations carried out in areas with high water table, water discharge will be in accordance with the relevant national legislation standards.
- In the case of the use of groundwater resources, the necessary permits will be obtained under the "Law on Groundwater No. 167".

30.3. Water supply and Waste water management

Pollution Prevention Plan will be prepared and implemented by Contractor for water use and wastewater generation for the construction phase, considering environmental sensitivities.

Drinking water, which will be needed during the land preparation and construction phase, will be purchased by demijohns from the closest settlements to the project area, and utility water will be supplied by tankers.

Relevant provisions of "Water Pollution Control Regulation" (SKKY) numbered 25687 and 31.12.2004, which determines the legal and technical principles required to achieve the prevention of water pollution in accordance with sustainable development targets, will be fulfilled for the wastewater generated during the construction phase.

Since there is no wastewater (sewerage) system in the field, domestic wastewater to be generated during land preparation and construction phase will be deposited in the leak-proof septic tanks/pits at the construction site in accordance with the "Regulation on Pits to be Built in Slopes where the Construction of Sewers is Not Possible ", which was published in the Official Gazette dated 19.03.1971 and numbered 13783. When the pits are filled, wastewater will be removed by sewage trucks, and disposal will be provided within the scope of the protocol to be made with the municipality that has a wastewater infrastructure system.

30.4. Noise & Vibration

All necessary measures will be taken in order to control noise. Those measures will include but not limited to the following;

- Measures will be taken in order to ensure that the impact of noise under all construction activities is avoided in the vicinity of noise sensitive receptors such as settlements, schools, hospitals and vulnerable ecology.
- Noise and vibration monitoring will be performed for residential areas close to the construction activities.
- Night works will be avoided and will be subject to the approval of AYGM. If not avoided, night-time activities will be kept as minimum to reduce disturbance to

local communities due to noise and vibration; if night-time construction activities are necessary, local authorities and local communities will be informed with 48 hours' notice.

- Third party vehicle access to the Project related activities will be restricted.
- Regular maintenance programs for Project vehicles and equipment will be implemented.
- Engine cover will be kept closed when the equipment is in operation in order to minimize the noise emission. Quieter methods and equipment will be used when possible. Premises will be located as far as possible from the residential buildings, and noise barriers will be used to mitigate the noise level on sensitive receivers on whom significant noise impacts are expected.
- Relevant Turkish and IFC standards will be followed in order to minimize the noise during the construction stage.
- Project traffic routing through community areas will be reduced wherever possible.
- Project access roads will be maintained to reduce noise associated with vibration and vehicle noise.
- High efficiency mufflers will be used on all construction equipment.
- Parts generating excessive noise will be replaced or repaired.
- Noise barriers will be deployed near sensitive areas.
- Blasting is a possibility that contractor might consider during construction. If blasting is decided to be conducted and location of the blasting, amount and type of the explosives and timeframe of the blasting is determined assessment on noise and vibration will be done.
- Contractor will develop detailed mitigation measures for the route sections where sensitive off - route receptors are located.
- During operation, optimizing the average speed of trains by 50 km/h, having an appropriate grievance mechanism for vibration related complaints and quarterly vibration monitoring studies will be done for vibration management.

30.5. Air Quality

All necessary measures will be taken in order to control dust and other air emissions. Those measures will include but not limited to the following;

- Dust emitting material stocks and the trucks transporting such materials will be covered with appropriate material to prevent dispersion by the wind.
- Construction sites, open storage piles and transportation routes will be moisturized as much as feasible. Roads will be maintained on a regular basis to prevent dust generation
- Exhaust emissions from construction and transportation vehicles will be monitored in certain periods.
- Low emission vehicles will be used when possible.
- Third party vehicle access to the Project related activities will be restricted.
- Regular maintenance programs for Project vehicles and equipment will be implemented.
- All of the Project vehicles will respect road speed limits reduced by 10 km/h to the extent practicable.
- Related Turkish legislation on speed limits depending on the type of vehicles and roads will be obeyed.

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- Excessive idling of the Project related equipment and vehicles will be restricted.
- Equipment and tools related to the project will not be operated at idle as much as possible.
- Blasting works will be subject to the approval of AYGM. Suitable blasting methods will be selected in blasting operations.
- Regarding the use of explosives; the provisions of the "Production, Import, Transport, Storage, Storage, Sale, Use, Destruction, Inspection Procedures and Principles" of the Explosive Materials Excluded from Monopoly dated 29.09.1987 and numbered 12028 will be complied with.
- Creation, filling and detonation of the holes and related activities afterwards, will be conducted in accordance with the Mining Law No. 3213, as amended by the Labor Health and Occupational Safety Regulation enacted by the Ministry of Labor and Social Security.
- The "Explosive License" required for blasting in the blasting areas will be taken by the Contractor. Blasting will be done by qualified people and after taking necessary safety measures.

31. TRAINING, REPORTING AND MONITORING

31.1. Training

All employees of the contractor will be provided with basic training on environmental, social, occupational health and safety, labor and security issues. In addition, specialist training will be provided for key personnel based on their project-specific tasks.

Those training programs will give an opportunity to the all personnel to understand the following topics:

- Requirements of PPP and how to implement them on the site, and
- Procedures to follow and mitigation measures to implement in case of any spill or other pollution incident.

In addition to the above mentioned general training topics, Contractor and AYGM will also provide specific trainings to the personnel based on their Project specific tasks. Those trainings will include but not limited to the following topics:

- Environmental investigation,
- Control of hazardous materials (collection, reuse, recovery, storage and disposal of hazardous materials),
- Waste management (collection, reuse, recovery, storage and disposal of hazardous and non-hazardous wastes),
- Pollution prevention management,
- Spill response (especially spill response management for soil and water),
- Usage of spill response equipment,
- Prohibited materials,
- Vehicle maintenance requirements,
- Dust control,
- Noise control.

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31.2. Reporting

Daily inspections will be carried out under the coordination of the environmental and social team formed by the Contractor.

Any incident detected during these inspections will be recorded and reported monthly. The World Bank and AYGM will promptly be notified of any incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers including but not limited to; incidents and accidents encountered during construction works, environmental spills, etc.

Sufficient detail will be provided regarding the incident or accident, findings of the Root Cause Analysis (RCA), indicating immediate measures or corrective actions taken or that are planned to be taken to address it, compensation paid, and any information provided by any contractor and supervision consultant, as appropriate. It will be ensured that the incident report is in line with the World Bank's Environment and Social Incidence Response Toolkit (ESIRT). Subsequently, as per the Bank's request, a report on the incident or accident and propose any measures to prevent its recurrence will be prepared.

All events and nonconformities will be reported according to project standards as described in the ESMP.

31.3. Monitoring

The main monitoring activities as set forth in Chapter 7: Monitoring Plan of the ESMP will focus on ensuring compliance with the mitigation measures and management controls described and key performance indicators identified within the scope of this Pollution Prevention Plan.

Monitoring activities for each waste stream will be detailed in management/implementation plans and procedures to be prepared by the Contractor prior to the onset of the land preparation and construction phase of the Project. Monitoring activities will be designed to target specific topics to meet site-specific requirements in line with the Monitoring Plan framework provided in the ESMP and considering the key performance indicators.

32. REFERENCES

- Emergency Preparedness and Response Plan
- Waste Management Plan (WMP)
- Employment and Training Plan (ETP)
- ESIA, Chapter 5 (Environmental and Social Impact and Mitigation Measures)
- Environmental and Social Management Plan (ESMP)
- ESIA, Chapter 2 (Institutional and Legal Framework)



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Address	Hakkı Turaylıç Cad. No: 5 06338 Emek/Çankaya/ANKARA
Telephone and Fax Numbers	+90 (312) 203 10 00
Project Title	Filyos Port and Industrial Zone Railway Connection Project
Project Location	Zonguldak Province, Çaycuma District
Consultant	Çınar Engineering & Consultancy Inc.
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ABBREVIATIONS AND DEFINITIONS

AYGM :	General Directorate of Infrastructure Investments
CONTRACTOR:	Expert Firms responsible for the construction of the Project on behalf of AYGM
ESIA :	Environmental and Social Impact Assessment
ETP :	Employment and Training Plan
PPP :	Pollution Prevention Plan
WMP :	Waste Management Plan

33. INTRODUCTION

Waste Management Plan (WMP) includes the identification of waste streams and management actions including minimization, recycling, collection, storage, treatment and disposal of wastes which will be generated during site preparation, construction and operation phases of the Project.

34. SCOPE

The requirements defined in this plan are for the Construction Phase of the Project but they can be used as a guideline for Plans and Procedures which will be implemented in the other phases of the Project.

Contractor will fulfil the requirements defined in this WMP by adapting them to its own operations. Contractor should develop its own site-specific WMP and procedures with identified waste streams, disposal methods, identification of permit requirement and management actions before the start of the construction works.

- Contractor will ensure that the waste disposal strategy developed for the Project through its plan and procedures will follow the following handling hierarchy:
 1. Avoid generation of waste
 2. Minimize the generation of waste
 3. Reuse, recovery and recycle waste (in a manner that is safe for human health and the environment)
 4. Treat, destroy or dispose of waste in an environmentally sound and safe manner
- Contractors will follow the Basic Principles for Waste Management;
 - Follow-up of wastes with cradle to grave approach
 - Segregation of wastes at source and waste categorization
 - Reuse, recovery and recycling have the priority
 - All wastes should be managed appropriately depending on the type of the waste, throughout the route and will not be left at site
 - Dumping and open burning of wastes on-site are strictly forbidden
 - Waste transportation and disposal should be done via licensed facilities
 - Mixing different waste types is strictly forbidden
 - Waste transportation to the nearest licensed facility to a possible extent

35. OBJECTIVES

WMP has been prepared to define mitigation measures to be taken to minimize the impacts of wastes generated from the project activities.

The key performance indicators for monitoring the implementation of the Waste Management Plan will be as follows. Reference will also be made to Project Occupational Safety and Health Procedures and plans in performance indicators.

Key Performance Indicators	Timeframe	Records	Responsibility
Waste Records	Weekly Control	Waste disposal records (amount, date, disposal authority, disposing party)	Contractor

Key Performance Indicators	Timeframe	Records	Responsibility
Waste disposal records (amount, date, disposal authority, disposal facility)	Weekly Control	Waste receipts	Contractor
Recycled waste records (type, amount)	Weekly Control	Waste Records	Contractor
Site inspection /	Weekly Control	Audit records	Contractor
Licenses of Disposal Facilities	Present for all agreed facilities / Monthly control	Waste Records	Contractor
Protocols with Disposal Facilities	Present for all types of wastes / Monthly control	Waste Protocols	Contractor

36. ROLES AND RESPONSIBILITIES

Contractor will fulfil the requirements defined in this WMP by adapting them to its own activities. Contractor should develop its own site-specific WMP and Procedures aligned with AYGM Policy which explains the way to implement the requirements of this plan. WMP of the Contractor will be submitted to AYGM for approval and approved before the start of the construction works. Contractor will make sure that subcontractors are also working in compliance with the requirements of the site-specific WMP.

Contractor will regularly update its site-specific WMP as the Project's needs change or requirements are identified in detail.

Contractor will ensure that all Contractor personnel participate in all training program including regular site-specific training sessions on Environmental and Social issues including Waste Management throughout the course of their Contract.

Specific roles and responsibilities in WMP are given below:

- AYGM will develop and maintain the Project health and safety requirements and communicate such requirements to Contractor in an effective manner;
- AYGM will monitor (i.e. by auditing and such) the implementation of the WMP and health and safety procedures by Contractors;
- Contractor will be responsible for developing, implementing and maintaining a detailed, Project/site specific WMP which will fulfil the minimum requirements and precautions defined in this WMP;
- Contractor will be responsible for informing its employees on the requirements of the WMP and health and safety procedures (i.e. training);
- Contractor will be controlling the performance of all subcontractors with regard to Project specific WMP and procedures;
- Contractor will be responsible for preparing reports with performance indicators for the successful implantation of site-specific WMP and communicate to AYGM.

37. LEGAL FRAMEWORK

37.1. National Legislation

The national legislation that is decisive in the context of the WMP is Environment Law No. 2872, which was published in the Official Gazette dated 18 August and numbered 11 August 1983. In addition, the following regulations were taken into account when preparing the Waste Management Plan:

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- Waste Management Regulation
- Packaging Waste Control Regulation
- Regulation on Excavation Soil, Construction and Wreck Waste Control
- Medical Waste Control Regulation
- Waste Oil Management Regulation
- Regulation on Control of Vegetable Waste Oils
- Regulation on Control of Waste Batteries and Accumulators
- Regulation on Control of End of Life Tires
- Mining Waste Regulation
- Regulation on Regular Storage of Waste
- Regulation on Control of Waste Electrical and Electronic Items
- Regulation on Control of Completed Vehicles
- Zero Waste Regulation
- Regulation on Receiving Waste from Ships and Control of Wastes
- Communiqué on Recovery of Some Non-Hazardous Wastes

37.2. International Standards

37.2.1. World Bank Environmental and Social Standards

ESS1: Assessment and Management of Environmental and Social Risks and Impacts:

This Standard sets out Borrower's responsibilities for assessing, managing and monitoring Environmental and social risks and impacts related with each phase of the project supported by the World Bank through Investment Project Financing (IPF), so as to accomplish environmental and social results consistent with the Environmental and Social Standards (ESSs).

ESS3: Resource Efficiency and Pollution Prevention and Management

This standard points out to the requirements to highlight resource efficiency and pollution prevention and management with a holistic approach to project implementation. The aim is to minimize pollution arises from the project with sustainable use of resources.

38. MITIGATION MEASURES AND MANAGEMENT CONTROLS

Contractor will carry out the following activities:

- Contractor will ensure that all waste is separated on site and recycling procedures are implemented.
- Contractor will establish a domestic solid waste disposal plan by contacting local official institutions (Relevant Municipalities).
- Contractor will identify licensed hazardous waste disposal facilities.
- Contractor will ensure the identification of temporary waste storage areas in accordance with the legislation and make the necessary arrangements.
- Contractor will ensure the establishment of temporary storage areas at the construction sites for recyclable wastes.
- Contractor will define waste production flows specific to its activities and will determine the disposal methods for these wastes in accordance with the project requirements.
- Contractor will create a recording and reporting process for waste generated at the sites.

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- Contractor will set up a strategy to minimize waste generation.
- Contractor will define the training conditions in the Waste Management Plan regarding the minimization of waste generation, waste recycling and disposal and include them in the Training Program.
- Good maintenance and housekeeping procedures will be implemented to minimize waste generation.
- Contractor will prepare a list of licensed waste disposal facilities located in the immediate vicinity of the construction site. Special studies will be carried out to ensure that the waste disposal facilities and waste storage areas included in this list and used during construction activities can tolerate additional pressure from the Project without disrupting the current waste management services.

38.1. Waste Streams and Disposal Requirements

In the following sections, waste streams and disposal conditions are given for land preparation and construction phases, and these conditions will also provide guidance for operation and commissioning phases.

AYGM will ensure that its contractor (including all subcontractors) are managed without damaging the environment and human health, from the formation of wastes to their disposal, creating necessary standards in management and determining the programs for this. The contractor will define and implement waste streams and disposal processes for waste generated on site. Ensuring that waste storage areas meet the standards set by the relevant legislation and the below mentioned issues are considered for these areas:

- Identification of adequate and standardized storage areas, and container types, labels, classifications, etc. in these areas ensuring that the waste storage conditions are appropriate
- Providing impermeability on the grounds of storage areas against possible contamination of soil and groundwater,
- Adequate ventilation of the area appropriately when volatile wastes are to be stored,
- Establishing a suitable drainage system against leaks,
- Restriction of physical access to waste storage areas (through gates, fences, etc.); ensuring that only authorized persons can enter the storage areas,
- Placing warning signs and panels with the name and contact number of authorized personnel in storage areas,
- Absorbents, fire extinguishing equipment, etc. will be placed near the waste storage areas in order to be prepared for emergencies such as spillage, fire. be ready,
- Determining any possible spillages / leaks quickly by performing visual checks periodically in hazardous waste storage areas,

Ensuring that wastes are not spilled out areas other than reserved for this purpose and providing all necessary waste management trainings and repeating these trainings periodically.

38.1.1. Excavation Waste

In all areas within the construction route (wetlands, steeply sloping areas, agricultural areas, etc.), the top soil, which will be used during the bio-restoration, will be stripped and stored in accordance with the points to be determined with relevant municipalities for future reuse. During the excavation works, sufficient amount of suitable, reusable

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excavation soil that will be needed during the filling will be separated and stored at the construction site.

The topsoil will be stored separately from excavation materials and will be used again in land cleaning and rehabilitation after the construction works are completed.

During these processes, the provisions of Excavation Soil, Construction and Demolition Waste Control Regulation published in the Official Gazette dated 18.03.2004 and number 25406 regarding the storage of topsoil will be complied with.

- Topsoil will be stored in a suitable area and necessary protection measures will be taken to prevent dispersion by wind or water flow or other factors, mixing with foreign substances and deterioration of its original properties.
- The area where the topsoil will be stored will not have a slope of more than 5%.
- Possible losses will be prevented and soil quality will be maintained during storage of topsoil.
- If the topsoil is to be stored for a long time, the surface will be covered with fast growing plants.

Excavation waste will be stored temporarily in the waste storage areas to be designed and be built within the scope of the project. Wastes will be transferred by the relevant Municipalities' trucks and disposed Municipalities' Excavation Waste Disposal Areas.

Waste material generated from excavation works carried out during land preparation and construction phases will not be disposed into streams with or without flow in accordance with the Prime Ministry 2006/27 "Stream Beds and Floods Circular".

In all excavation works within the scope of the project, the provisions of the "Excavation Soil, Construction and Wreck Waste Control" Regulation, as well as the provisions of "Soil Pollution Control and Point Source Contaminated Sites" Regulation will be complied with.

38.1.2. Domestic Solid Wastes

During the construction phase that will begin with the land preparation works, one of the first construction activities will be the installation of the camps where the Project workers will live. The camps that will provide accommodation and other basic facility needs for the workers throughout the construction, and will be installed at the most appropriate locations along the route in terms of logistics and local conditions.

Domestic solid waste from the personnel would be collected in closed containers located at various points of the camp areas. These solid waste would be collected in containers and at certain intervals would be transported to the solid waste collection system belonging to the nearest municipality and be disposed of.

The collection, storage, recovery and disposal of solid waste will be complied with in accordance with the issues specified in the "Waste Management Regulation" published in the Official Gazette dated 02.04.2015 and numbered 29314.

Also during the operational phase of the Project:

- Visual inspection of waste and rubbish spilled along the railway route; periodic collection of these wastes, separation of these wastes according to their recyclability, disposal of separated wastes according to the Waste Management Regulation,
- Using lead-free paints for maintenance work,

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will be provided.

38.1.3. Packaging Wastes

There would be packaging waste from the packaging materials used in the transport of equipment, from the packaging of the materials used and from the personnel in land preparation and construction phase of the Project.

The packing paper, plastic and glass bottles i.e. packaging wastes will be collected separately from other wastes without considering material used and the source of the material and should be sent to licensed recycling facilities according to Article 23 of the Regulation on Control of Packaging Waste. The collection of these packaging materials within the camp sites and their disposal would be done in compliance with the provisions of the "Regulation on Control of Packaging Waste" which was published in Official Gazette No: 28035 on 24.08.2011.

38.1.4. Waste Batteries and Accumulators

The maintenance process of the vehicles to be used in land preparation and construction period of the Project would be done in authorized services. However, when it is not possible, the maintenance procedure will be carried within the facility. In cases where the maintenance process of the vehicles used in the Project are carried out within the facility, possible waste batteries that come out would be stored in a closed containers with a leak-proof floor according to the Regulation on Control of Waste Batteries and Accumulators published in Official Gazette No: 25569 on 31.08.2004 and batteries will be delivered to the collection points established by the municipalities or by the companies distributing or selling batteries and waste accumulators (vehicle batteries) will be delivered to the temporary storage areas established by the companies distributing or selling accumulator products and maintenance companies.

38.1.5. Medical Wastes

All medical wastes generated in the infirmary unit of the camps sites during land preparation and construction period of the Project will be disposed of according to the provisions of Regulation on Control of Medical Wastes published in Official Gazette No: 25883 on 22.07.2005. The medical wastes should be placed inside red plastic bags which are resistant to tearing, piercing, bursting and carrying; originally from moderate density polyethylene material, with double bottom seam and without pleats, with double ply thickness of 100 microns, with at least 10 kg holding capacity, carrying on both sides the warning symbol of "International Biohazard" and "ATTENTION! MEDICAL WASTE" with at an easily readable size. The bags would be filled to a maximum of 3/4 capacity and would be tightly closed and when necessary double bagging would be done having the same specifications in order to ensure absolute leak-proofing.

Medical wastes that have cutting and piercing properties would be collected separately from the other waste in a plastic or laminated cardboard having the same specification as piercing, tearing, breaking and bursting resistant, waterproof and leak-proof, could not be opened or tampered with, having the warning symbol of "International Biohazard" and warning of "ATTENTION! CUTTING AND PIERCING MEDICAL WASTE". These collection containers would be filled a maximum of 3/4, would be tightly closed and put into red plastic bags and once the waste boxes are filled, they would absolutely not be compressed, opened, emptied or recycled.

Medical wastes collected in the camp sites according to the points indicated in the regulations, would be disposed of by delivering to the nearest health institution or

municipal medical waste collection system. Medical waste that are produced under the Project will be regularly recorded according to the Regulation on Control of Medical Waste, will be sent to the Zonguldak Provincial Directorate of Environment and Urbanization, this information will be kept for at least three years and be kept open to examination of the Ministry upon request.

Within the scope of the Project, provisions of the Regulation for Medical Waste Control and amendments that were published in Official Gazette No: 27537 on 30.03.2010, in Official Gazette No: 28131 on 03.12.2011, in Official Gazette No: 28812 on 05.11.2013 and in Official Gazette No: 28948 on 21.03.2014 will be complied with.

38.1.6. Waste Oils

The maintenance process of the vehicles to be used in land preparation and construction period of the Project would be done in authorized services. However, when it is not possible, the maintenance procedure will be carried within the facility. If any waste oil is produced, the waste oil will be collected in a closed temporary waste storage area with leak-proof floor and covered with a shelter. The oil collected would be given to a licensed waste oil recovery company according to the Regulation on Control of Waste Oil published in Official Gazette No: 26952 on 30.07.2008.

After the delivering of the waste oils to the licensed companies, Waste Oil Declaration Form in Appendix-2 of the Regulation should be filled and sent to the Zonguldak Provincial Directorate of Environment and Urbanization until the end of February of the following year. Besides, provisions of the following would be complied with;

- "Regulation on Control of Waste Oil" published in Official Gazette No: 26952 on 30.07.2008 and the amendments made in the regulation and published in Official Gazette No: 27305 on 31.07.2009, in Official Gazette No: 27537 on 30.03.2011 and in Official Gazette No: 28812 on 05.11.2013,
- "Regulation on Control of Waste Vegetative Oils" published in Official Gazette No: 25791 on 19.04.2005 and the amendments made in the regulation and published in Official Gazette No: 27305 on 31.07.2009, in Official Gazette No: 27537 on 30.03.2011 and in Official Gazette No: 28812 on 05.11.2013,
- "Regulation on Control of Polychlorinated Biphenyls and Polychlorinated Terphenyls" published in Official Gazette No: 26739 on 27.12.2007 and the amendment published in Official Gazette No: 27537 on 30.03.2010,
- "Regulation on Soil Pollution Control and Point Sourced Polluted Areas" published in Official Gazette No: 27605 on 08.06.2010 and the amendments made in the regulation and published in Official Gazette No: 28323 on 14.06.2012 and in Official Gazette No: 28704 on 11.07.2013.

38.2. End of Life Tires

During the Land Preparation and Construction Phase of the Project, the maintenance activities of the vehicles and construction machines will be done in the closest authorized services. If there is a need to change the tires of those vehicles and machines in site, end of life tires would be sent to tire distribution companies or to the licensed transporters according to the Regulation on the Control of End of Life Tires (Official Gazette 25.11.2006-) will be complied.

38.3. Waste Electrical and Electronic Equipment

Works and processes will be carried out in accordance with the provisions of the "Regulation on Control of Waste Electrical and Electronic Equipment" for electrical and electronic goods that may arise within the scope of the project.

38.4. Vegetable Waste Oils

Vegetable waste oils that will be generated from the kitchens of camp sites to be constructed within the scope of the project will be collected in clean and covered containers apart from other wastes.

Vegetable waste oils will not be discharged into sewers, soil, sea and similar receiving environments in order to protect the environment. In this context, the provisions of the "Regulation on Control of Vegetable Waste Oil", which came into force after being published in the Official Gazette dated 06.06.2015 and numbered 29378, will be fulfilled for the disposal of vegetable waste oils.

38.5. Hazardous Wastes

The hazardous wastes to be possibly generated during land preparation and construction phase of the Project are fluorescent tubes, cartridges, print toners, filter materials, transformers, paints/varnishes, waste lubricants. These wastes are generated as a result of machine and equipment usage and hazardous waste produced by domestic usage and other wastes contaminated with these kinds of wastes.

The waste codes for the Hazardous Wastes which are potentially be generated by the project are given below in accordance with Annex-4 of Waste Management Regulation (Official Gazette: 05.07.2008-26927).

07 WASTES RESULTING FROM ORGANIC CHEMICAL PROCESSES

07 02 Wastes Resulting From Manufacturing, Formulation, Supply and Usage of Plastics, Synthetic Rubber and Synthetic Fiber

07 02 16	Wastes containing harmful silicon	(M)*
----------	-----------------------------------	------

* (M) Whether waste is hazardous or not is determined by looking threshold concentration that is given in Waste Management Regulation (Appendix 6)

- Waste originated from materials used for insulation

07 04 Wastes Resulting From Manufacturing, Formulation, Supply and Usage of Organic Plant Protection Products (excluding 02 01 08 and 02 01 09), Materials (Agents) used for Wood Preservative (excluding 03 02) and Other Biocides

07 04 13	Wastes containing hazardous material	(M)
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- These wastes will be generated as a result of shaping, scission, maintenance of lubricated and preservative-treated materials such as wood, 5/10 lumber, plywood etc.

08 WASTES RESULTING FROM MANUFACTURING, FORMULATION, SUPPLY AND USAGE OF LINING (DYES, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, PUTTY AND PRINTING INKS)

08 01 Wastes Resulting From Manufacturing, Formulation, Supply and Usage and Detachment of Dye and Varnish

08 01 11	Waste dyes and varnish containing organic solvent or other hazardous materials	(M)
08 01 13	Sludge with dye and varnish, containing organic solvents and other hazardous materials	(M)
08 01 21	Wastes of dye and varnish remover	(A)*

* (A) Certainly hazardous waste regardless of properties

- These wastes will be generated as a result of usage of dye, varnish, hardening agents etc.

08 03 Wastes Resulting From Manufacturing, Formulation, Supply and Usage of Printing Inks

08 03 17	Waste printing toners containing hazardous materials	(M)
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- These wastes include cartridges and toners used in offices.

08 04 Wastes Resulting From Manufacturing, Formulation, Supply and Usage of Adhesives and Insulators

08 04 09	Adhesive and filling compound waste containing organic solvents or other hazardous materials	(M)
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- These wastes will be generated as a result of processes like agglutination, puttying etc.

13 WASTE OIL AND FUEL OIL (EDIBLE OILS, EXCLUDING 05 AND 12)

13 01 Waste Hydraulic Fluid

13 01 10	Mineral based hydraulic fluid	
13 01 11	Synthetic hydraulic fluid	
13 01 12	Biodegradable hydraulic fluid	

13 02 Waste Engine, Transmission and Lubrication Oils

13 02 06	Synthetic oils related to engine, transmission and lubrication	
13 02 07	Easily biodegradable engine, transmission and lubrication oils	

- These wastes classified in groups 13 01 and 13 02 include oils originated from instantaneous and periodic maintenance of vehicles and heavy machinery

13 03 Waste Insulating and Heat Transfer Oils

13 03 08	Synthetic insulating and heat transfer oils	
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- These wastes include waste oils originated from energy equipment such as transformers, capacitors, generators

13 05 Oil/Water Separator Contents

13 05 02	Sludge generated from oil/water separator	(A)
13 05 06	Oil generated from oil/water separator	(A)

- These wastes include kitchen waste, wastes from storage areas, oils from upper part of Oil/Water separators, bottom sediments (settling oily matters) etc.

13 07 Waste Liquid Fuels

13 07 01	Fuel oil and diesel fuel	(A)
13 07 02	Gasoline	(A)

- These wastes consist of residual fuel from pouring tray accumulating during fuel delivery and residual fuel during cleaning of fuel tank

14 06 Waste Organic Solvents, Refrigerators and Foam/Aerosol Propellant Gases

14 06 01	Chlorofluorocarbons, HCFC, HFC	(A)
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- These wastes contain packaged waste gas to be generated during repair and maintenance of cooling elements

15 WASTE PACKAGES; UNSPECIFIED ABSORBERS, MOPS, FILTER MATERIALS AND PROTECTIVE SUITS

15 01 Package (including waste packages collected separately by municipality)

15 01 10	Packages including residuals of hazardous materials or contaminated with of hazardous materials	(M)
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- These wastes contain contaminated packages, packaging waste, container having hazardous materials.

15 02 Absorbers, Filter Material, Swabs and Protective Suits

15 02 02	Absorbers contaminated with hazardous materials, filter materials(oil filter provided that not defined differently),swabs, protective suits	(M)
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- These wastes contain spill kit contaminated with hazardous materials, clothing and textile wastes such as workers' suit, shoe, glove etc. and also wastes coming from air and oil filters

16 WASTES NOT PREDEFINED IN THE LIST

16 01 Scrap Vehicles (including heavy machinery) and Wastes Resulting From Detachment of Pieces and Vehicle Maintenance (excluding 13,14, 16 06 and 16 08)

16 01 07	Oil filters	(A)
16 01 14	Antifreeze liquid containing hazardous materials	(M)

- These wastes contain oils resulting from periodic and instant maintenance of vehicles and heavy machinery.

16 02 Waste Electrical and Electronic Equipment

16 02 11	Waste equipment containing chlorofluorocarbons, HCFC, HFC	(M)
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- These wastes are originated from periodic and instant maintenance and change of electrical and electronic equipment. Capacitors and transformers are so important to be collected very dangerous PCB (polychlorinated biphenyl) and PCT (polychlorinated terphenyls)

16 06 Batteries and Accumulators

16 06 01	Lead batteries	
16 06 02	Ni-Cd batteries	(A)
16 06 03	Mercury cell	
16 06 06	Electrolytes collected separately from batteries and accumulators	(A)

- These wastes include all kinds of electrolytes from batteries and accumulators in camps and stations.

17 CONSTRUCTION AND DESTRUCTION WASTES (INCLUDING EXCAVATION FROM POLLUTED AREAS)

17 01 Concrete, Brick, Roof Tile and Ceramic

17 01 06	Concrete, brick, roof tile and ceramic mixture or separate groups containing hazardous materials	(M)
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17 02 Wood, Glass and Plastics

17 02 04	Wood, glass or plastic including or contaminated with hazardous materials	(M)
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17 03 Bituminous Mixtures, Coal Tar and Tarred Products

17 03 01	Bituminous mixtures including coal tar	(M)
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17 04 Metals (Including alloys)

17 04 09	Scrap metal contaminated with hazardous materials	(M)
17 04 10	Cables containing oil, tar and other hazardous materials	(M)

17 05 Soil (Including Excavation From Polluted Areas), Rocks and Dredging Sludge

17 05 03	Soil and rocks containing hazardous materials	(M)
17 05 04	Soil and rocks except from 17 05 03	

17 08 Gypsum-Based Construction Materials

17 08 01	Gypsum-based construction materials contaminated with hazardous materials	(M)
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17 09 Other Construction and Demolition Wastes

17 09 03	Other construction and demolition wastes containing hazardous wastes(including mixed waste)	(M)
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- All wastes in this section cover all excavation soil, ruins, and construction wastes contaminated with hazardous materials that are not included in the “Regulation on Control of Excavation Soil, Construction and Demolition Wastes”.

18 WASTES RESULTING FROM STUDIES ON HUMAN AND ANIMAL HEALTH AND/OR SIMILAR (EXCLUDING KITCHEN AND RESTAURANT WASTES THAT ARE NOT DIRECTLY RELATED TO HEALTH)

18 01 Wastes Resulting From Birth, Diagnosis, Cure or Disease Prevention Studies For Humans

18 01 03	Wastes which are collected and disposed according to specific procedures in order to prevent infections	(A)
18 01 08	Cytotoxic and cytostatic medicine	(A)

- These wastes contain contaminated medical wastes formed after medical attention and cutting, drilling and infectious wastes from infirmary, health cabinet and first aid center. They are disposed according to Regulation on Control of Medical Wastes. These medical wastes could be removed by municipalities that are licensed for medical waste collection.

20 MUNICIPAL WASTES INCLUDING FRACTIONS COLLECTED SEPARATELY (DOMESTIC WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES)

20 01 Fractions Collected Separately (Excluding 15 01)

20 01 21	Fluorescent lamps and other wastes containing mercury	(A)
20 01 29	Detergents containing hazardous substances	(M)

- These wastes contain exhausted fluorescent lamps used in camps for lightening, cleaning agents including hazardous materials, pesticides (in bag or container), battery, cell, accumulator and other hazardous wastes.

The quantity of the hazardous wastes would be dependent of the activities in the camp sites and it is not possible to give exact information on the amount of the waste at this stage.

Hazardous wastes will be disposed according to the provisions in the Regulation on Control of Hazardous Wastes published in Official Gazette No: 25755 on 14.03.2005, the hazardous wastes would be stored temporarily within the camp site separate from other wastes in a closed environment preventing any chemical reaction. After that, these wastes will be sent via licensed transportation vehicles to hazardous waste disposal companies licensed by the Ministry of Environment and Urbanization.

During the storage of Hazardous Wastes in Land Preparation and Construction Phase of the Project following provisions indicated in Regulation on Control of Hazardous Wastes will be respected:

- A record will be kept on the amount of the waste and packaging and labelling of the waste will be according to the internationally accepted standards required by the environmentally licensed recycling or disposal facility which will receive the waste.
- The Waste Declaration Form indicated in the regulation will be filled and approved every year by the end of March with the previous year's information using the web based program prepared by the Ministry of Environment and Urbanization and a copy will be stored for five years.
- The waste would be temporarily stored in durable, leak-proof, safe containers at international standards placed on a concrete area away from the buildings of the camp. There will be hazardous waste labels on the containers, the quantity and the stored date would be indicated on the container, if the containers are damaged, the waste would be transferred to other containers having the same specifications, containers would always be kept closed, and they would be stored so that the waste does not chemically react.
- All the measures will be taken for the health and safety of the employees responsible for the collection, transportation and temporary storage of the waste within the facility.
- In order to prevent pollution that happens as a result of accidental spill or by deliberate actions, depending on the type of the waste, location of the incident would be brought to its original condition by latest within a month from the time of the incident and all the expenses for this will be borne.
- Also, when waste are spilled by accident or deliberately and in other similar cases, office of the governor will be informed and a report detailing the accident date, accident location, type and quantity of the waste, cause of the accident, the waste disposal action and rehabilitation of the accident location will be submitted to the office of the governor.

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39. TRAINING, REPORTING AND MONITORING

39.1. Training

All employees of their contractors will be provided with basic training on environment, social, occupational health and safety, labor and security issues. In addition, specialist training will be provided for key personnel involved in activities that involve the separation, storage, transportation and treatment of waste.

39.2. Reporting

Daily inspections will be carried out under the coordination of the environmental and social team formed by the Contractor.

Any incident detected during these inspections will be recorded and reported monthly. The World Bank and AYGM will be notified of any incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers including but not limited to; incidents and accidents encountered during construction works, environmental spills, etc.

Sufficient detail will be provided regarding the incident or accident, findings of the Root Cause Analysis (RCA), indicating immediate measures or corrective actions taken or that are planned to be taken to address it, compensation paid, and any information provided by any contractor and supervision consultant, as appropriate. It will be ensured that the incident report is in line with the World Bank's Environment and Social Incidence Response Toolkit (ESIRT). Subsequently, as per the Bank's request, a report on the incident or accident and propose any measures to prevent its recurrence will be prepared.

All events and nonconformities will be reported according to project standards as described in the ESMP.

39.3. Monitoring

The main monitoring activities as set forth in Chapter 7: Monitoring Plan of the ESMP will focus on ensuring compliance with the mitigation measures and management controls described and key performance indicators identified within the scope of this Waste Management Plan.

Monitoring activities for each waste stream will be detailed in management/implementation plans and procedures to be prepared by the Contractor prior to the onset of the land preparation and construction phase of the Project. Monitoring activities will be designed to target specific topics to meet site-specific requirements in line with the Monitoring Plan framework provided in the ESMP and considering the key performance indicators.

40. REFERENCES

- Pollution Prevention Plan
- Employment and Training Plan
- Legal and Institutional Framework (ESIA, Chapter 2)
- Environmental and Social Management Plan (ESMP)



Environmental and Social Management Plan (ESMP)
CONSTRUCTION IMPACTS MANAGEMENT PLAN

Prepared According to the World Bank Environmental and Social Standards

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ABBREVIATIONS AND DEFINITIONS

AYGM	General Directorate of Infrastructure Investments
CHSP	Community Health and Safety Plan
CONTRACTOR	Expert Firms responsible for the construction of the Project on behalf of AYGM
CRP	Community Relations Plan
EPRP	Emergency Preparedness and Response Plan
ERT	Emergency Response Team
ESIA	Environmental and Social Impact Assessment
PPP	Pollution Prevention Plan
WMP	Waste Management Plan

41. INTRODUCTION

Potential emergencies that may occur during the land preparation and construction phase of the project include the related emergencies arising from natural disasters, fires that may occur in the work area and forests, traffic accidents, emergencies related to dangerous goods, sabotage etc. The Emergency Preparedness and Response Plan sets out the requirements, roles and responsibilities, and precautions to respond to possible emergencies in a timely and appropriate manner.

42. SCOPE

Emergency Preparedness and Response Plan has been prepared to define the activities and procedures to be implemented in a planned intervention in order to prevent emergencies during the construction and operation phases of the project or to minimize potential damages that may arise due to emergencies. The Plan is a supporting document for the Emergency Preparedness and Response Plan to be prepared for the project.

TCDD will take the necessary actions to prepare, review and implement the Emergency Response Plan during the operation phase of the Project.

43. OBJECTIVES

The main objective of the EPRP is to develop appropriate and timely responses to potential emergency situations that might be encountered during the land preparation and construction phase of the Project. The key performance indicators determined in this context are as follows.

Key Performance Indicators	Timeframe	Records	Responsibility
Number of emergency drills	Twice a year	Emergency Response Audit Reports	Contractor / TCDD
Having appropriate spill response equipment at site	Present every weekly check in a year	Weekly Monitoring Report	Contractor
Emergency announcement system established,	In an operable status every monthly check in a year	Monthly Monitoring Report	Contractor / TCDD
Training records on emergency response	Once a year	Monthly Monitoring Report	Contractor / TCDD
Records on communications with related authorities on potential/actual emergencies	Present every monthly check in a year	Monthly Monitoring Report	Contractor / TCDD

44. ROLES AND RESPONSIBILITIES

Contractor will fulfil the requirements defined in this plan by adapting them to its own activities. Contractor should develop their own EPRP and procedures aligned with AYGM policy which explains the way to implement the requirements of this plan. Site-specific EPRP of the Contractor will be submitted to AYGM for approval and should be approved before the start of construction works.

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The Contractor will regularly update its site-specific EPRP as the project needs change or requirements are identified in detail.

The Contractor will make sure that the sub-contractors are working in compliance with the requirements of the site-specific EPRP of the Contractor. The Contractor will ensure that Contractor personnel participate in all training programme including regular site-specific training sessions on E&S issues including Emergency Response throughout the course of their contract. (Refer to Employment and Training Plan).

AYGM is fully committed to maintain a high level of emergency preparedness, the objectives of which are;

- Establish and maintain a trained and exercised emergency response organisation
- Ensure that emergency response team members understand their role and responsibilities
- Review the Emergency Response Procedures regularly to ensure their effectiveness in the containment of an emergency
- Provide suitable resources and expertise to respond to an emergency situation.

The Contractor and sub-contractors personnel and those personnel under the control of the Contractors shall be familiarised with the Emergency Response Procedures.

For the work activities involving AYGM, sub-contractors and other parties, Manager of these activities will ensure that interface documents for AYGM's Overall Emergency Response Plan are produced to define the actions in case of any emergency.

45. LEGAL FRAMEWORK

45.1. National Legislation

The decisive national legislation under the EPRP is the Labor Law (Law No: 4857) and the Occupational Health and Safety Law (Law No: 6331). In addition, the following regulations and communiqués have been taken into account within the scope of EPRP.

- Communiqué on Workplace Hazard Classes Regarding Occupational Health and Safety
- Regulation on the Protection of Employees from Noise-Related Risks
- Regulation on the Protection of Employees from Vibration Related Risks
- Regulation on Health and Safety Conditions in the Use of Work Equipment
- Occupational Health and Safety Regulation
- Regulation on Occupational Health and Safety in Construction Works
- Regulation on Occupational Health and Safety in Temporary or Fixed Term Jobs
- Regulation on Health and Safety Measures in Working with Chemicals
- Health and Safety Signs Regulation
- Regulation on Combating Dust
- Regulation on Safety Data Sheets on Harmful Substances and Mixtures
- Occupational Health and Safety Risk Assessment Regulation
- Personal Protective Equipment Regulation
- Regulation on the Vocational Training of Those to be Employed in Jobs in the Dangerous and Very Dangerous Class
- Regulation on Control of Polychlorinated Biphenyl and Polychlorinated Terfenyls
- Communiqué on Major Accident Prevention Policy Document (Official Gazette 29435, 4 August 2015).

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- Regulation on Prevention and Mitigation of Major Industrial Accidents (Official Gazette 28867, 30 December 2013).

45.2. International Standards

45.2.1. World Bank Environmental and Social Standards

ESS2: Labor and Working Conditions

Environmental and Social Standard 2 perceives the importance of employment creation and income generation for the aim of comprehensive financial development and poverty reduction. Borrowers should create healthy working conditions by treating the workers fairly.

ESS4: Community Health and Safety

ESS 4 emphasizes issues of health, safety, and security risks and impacts on communities due to project activities. Borrower specifically consider people who may be vulnerable due to impacts and risks of the project.

46. MITIGATION MEASURES AND MANAGEMENT CONTROLS

46.1. Emergency Preparedness

Camp sites will be provided with health facilities equipped to deal with emergency procedures and routine medical operations so as to avoid pressure on existing healthcare facilities to the extent possible.

Assessment of all healthcare facilities in the area of influence will be performed by the Contractor to determine which facilities should be used for emergencies and medical treatments that cannot be dealt by internal healthcare facilities; attention will be paid so as to avoid impacts on users of these facilities.

The Contractor will liaise with local health authorities to ensure that any critical issues are communicated promptly and that agreed solutions are found.

Access to settlements will always be guaranteed either through diversions or by allowing the passage of vehicles at certain hours through the use of steel plates over the trenches.

Local authorities and local communities will be informed and consulted on impacts on health services and facilities due to the Project activities and planned mitigation measures during the pre-construction and construction meetings and related stakeholder engagement activities.

A grievance mechanism will be set up for the communities and individuals to formally communicate their concerns, complaints and grievances to the Contractor and facilitate resolutions that are mutually acceptable by the parties.

The Contractor will provide spill response equipment appropriate for the type of the potential spills at the individual sites. Appropriate spill equipment will be at site to response spill from diesel tankers carrying diesel to camp and construction sites.

The Emergency Preparedness and Response Plan of the Contractor and sub-contractors will include, but not limited to;

- Potential emergency cases are defined for the Project
- Communication requirements in case of an emergency are defined

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- Emergency Response Team is defined with clear responsibilities and training requirements as a minimum in compliance legislative requirements
- Emergency Evacuation Routes are identified and announced
- Emergency response equipment is identified as a minimum with legislative requirements
- Location of the Emergency Response Equipment on site is clearly marked on drawings and announced to the work force
- Emergency Drill frequency is defined to be in every six months minimum
- Recording and Reporting Procedures for emergency cases are defined.
- All wastes are segregated and recycling procedures are in place
- Licensed Domestic Solid Waste Disposal Areas are identified through communication with the local authorities
- Licensed Hazardous Waste Disposal Areas are identified through communication with the local authorities
- Temporary Site Waste Storage Areas are identified and arranged in compliance with the Regulations

46.2. Geological-Geotechnical Risks (bearing capacity, liquefaction, settlement, slope stability)

- There are deep cut&fill locations in route of project. These cut&fill locations are considered as critical section in terms of geotechnical and very well examined. In these locations, after loose and botanical topsoil will be excavated, it will be backfilled with granulated crushed stone. Followingly, backfill will be compacted/preloaded properly in order to prevent settlement and bearing capacity problems
- In these critical regions, for clay with silt and silty-clay soil locations, first 20m depth of ground will be improved by jet-grout and geopier applications against low SPT value and liquefaction possibilities.
- In the critical slope stability locations, numerical analyze method will be used in geotechnical report which will be prepared with certain parameters and material specifications during operation phase of the project
- There is no rock foundation below the railway bridge abutments as per performed borings, therefore, deep friction pile foundation will be applied for footing.
- By carrying out periodic control and maintenance activities along the routes, additional durability and structural measures will be developed and implemented in cuts and fills when necessary. (cracks, breaks, slips, deformations etc. of engineering structures that could happen especially after natural disasters)

46.3. Seismicity (Seismic) Risk

- All structures like foundation, culverts etc. within the project will be designed and constructed as per high earthquake resistance parameters.
- In the structures to be constructed within the scope of the project, provisions of “Regulations for the Structures to be Built in Disaster Areas” published in the Official Gazette No. 26582 dated 14.07.2007 and “Turkey Building Code” of Disaster and Emergency Management Administration published in the Official Gazette No30364. dated 18.03.2018 that came into force in 01.01.2019 will be strictly followed

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- By carrying out periodic control and maintenance activities along the routes, additional durability and structural measures will be developed and implemented in cuts and fills when necessary (cracks, breaks, slips, deformations etc. of engineering structures that could happen especially after natural disasters).

46.4. Landslide Risk

- There is no active or passive landslide risk around the planned project route according to land surveys conducted within the scope of geological-geotechnical survey report, Turkey Landslide Inventory Map of MTA, Zonguldak Section and information gathered from "Earth Sciences Map Viewer and Drawing Editor" of MTA. However, especially in the construction phase, measures such as jetcrete, wire mesh, bolt etc should be taken in the cut process performed in clastic rocks of Yemişliçay formation and caution should be taken against landslides that may develop on a local scale.

46.5. Impacts on Surface Flow and Flood Risk

- Crossings of the project routes are with the Filyos Creek and influent streams of Filyos Creek with seasonal flow. Those surface waters will be crossed with properly designed engineering structures (bridge, culverts, box culverts) and techniques.
- In the crossings of project route with surface waters, necessary projects will be implemented in line with the principles of "Disaster Regulation on Highway Roadside Engineering Structures".
- Within the scope of the project, a series of drainage measures will be taken to the right and left side of the routes, such as heel ditch, cut ditch and head ditch for the control of surface and groundwater, as well as the stability of the cut and fills to be constructed along the routes.
- All wastes that may arise from the project activities, excavation materials to be stored periodically / temporarily and accidental spill of fuel, oil, oil, cement etc. to the streams that are crossed by the project route will be taken under control immediately and surface waters will be protected against pollution.
- In order to prevent floods that may occur in the region especially on the Filyos Creek, rehabilitation works carried out within 1st, 2nd and 3rd sections of the creek in 2014-2015 by DSI 23rd Regional Directorate. Consequently flood events along the project route are prevented.
- In order to monitor the water quality of the surface waters within the project study area, periodically at least 2 times a year (rainy and dry periods), considering location of the pollution sources during land preparation and construction phase, water samples will be collected and assessment of the water quality of the samples will be performed.

46.6. Spills

Spill kits will be made available all locations where hazardous material and hazardous waste is stored and handled, as well as mobile kits in all the heavy construction equipment at the site.

All temporary oil storage and hazardous materials tanks and containers onsite will be designed and constructed for compatibility with the materials to be stored within them and clearly labelled and will be adequate secondary containment.

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The floor of fuel/oil tanks and hazardous material containers will be covered with an impermeable layer. Tanks and containers will be controlled regularly. Corroded and damaged tanks and containers will be repaired and replaced.

To minimize the impact from emergency incidents when they occur it is essential that a number of arrangements be established prior to an event such as;

- training of site personnel and managers in emergency preparedness and response requirements,
- provision of emergency response equipment,
- communication and co-ordination with external emergency assistance providers.

Contaminated wastes will be gathered in spill area and it will be determined whether the waste is hazardous, non-hazardous or inert. Afterwards, cleaning/disposal process will be started according to the type of waste.

Storage tanks and vehicles are only being used for their intended purposes. Spill containment equipment is installed for the storage of all hazardous material and during all hazardous material handling. In case of any potential hazardous material release situations occur, the Environmental Expert will be notified. He/she will notify the Project Manager.

46.7. Railway Operation

This EPRP has been prepared for the construction phase. Nevertheless, to establish a framework for the site specific EPRP to be prepared by TCDD in operation phase, general requirements of that plan are also given within this scope.

46.7.1. Emergency Preparedness

Preparedness involves actions designed to save lives and minimize damage. It is planning and training prior to a rail disaster for appropriate response when an emergency occurs. All responders should:

Maintain a resource inventory of equipment and manpower which could be utilized.

Train personnel in the responsibilities and emergency duties required under this Plan.

Conduct periodic drills that will test the effectiveness of this emergency preparedness.

Review and update the Plan as needed based on exercises, emergency response or changes in policy.

46.7.2. Emergency Response

Emergency Response begins as soon a rail emergency is identified or reported. When it is notified of a rail emergency they will immediately make notifications per TCDD protocols.

The first responder on scene makes a preliminary assessment and notifies relevant authorities (Fire Department, police etc.) with all information available.

The first arriving Fire Officer becomes the Incident Commander and will command and direct all emergency response actions until relieved as the I.C.

The Incident Commander assesses the need for additional resources.

In conjunction with the Incident Commander, law enforcement will sets up security and establishes access and traffic control.

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The TCDD Branch Director shall appoint supervisors to EMS Divisions/Groups.

The Incident Commander will instruct emergency response personnel to not move property and debris associated with the wreckage unless there is imminent danger of items being destroyed, or unless they inhibit access to passenger rescue.

The health service officers is responsible for the identification, movement and/or removal of the dead.

In the event a body has been moved prior to the health service officers' approval, personnel moving the body shall make careful note of the location and condition of the body.

Ministry of Interior Disaster and Emergency Management (AFAD), Police Department, Fire brigade, TCDD, and other officials shall contact the Mayor. The TCDD will be in constant communication with the Command Post.

47. TRAINING, REPORTING AND MONITORING

47.1. Training

The contractor will provide all employees with basic training on environment, social, occupational health and safety, labor and security issues, including health awareness training and workplace induction training.

Training on emergency preparedness and response will consist of the following elements:

- Induction training
- Job-specific expert training (e.g. excavation operators)
- Training of emergency response teams

These trainings will be provided to provide all personnel with information about business continuity and emergency response and planning. Also during the construction phase, emergency exercises related to emergencies such as earthquake, fire, etc. will be planned and implemented. Events such as a work accident, hazardous situation, near-miss in the field will be recorded regularly and the training program will be revised in the light of this information.

47.2. Reporting and Monitoring

The main monitoring activities as set forth in Chapter 7: Monitoring Plan of the ESMP will focus on ensuring compliance with the mitigation measures and management controls described and key performance indicators identified within the scope of this Emergency Preparedness and Response Plan.

EPRP monitoring will ensure an early warning for emerging risks, which will enable early actions to be taken to mitigate the impacts of such risks. The EPRP, and the Contractor's site-specific management plans/procedures will be reviewed and revised periodically and if necessary updates will be made as the Project proceeds. Validity of indicators will also be checked on a regular basis, and as required with the availability of new information.

An internal reporting system will be designed to ensure a timely feedback procedure incorporating results of monitoring into management practices. The planned and realized trainings will be followed regularly and all records will be kept. The status of the project area will be checked daily by the Environment and Social Teams, and in case a potential

training need is determined, a new training program will be created and the staff will be trained and these training will be reported monthly.

During construction phase all drills, audits and trainings will be reported in a weekly manner to AYGM by the contractor.

The World Bank and AYGM will be promptly notified of any incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers including but not limited to; incidents and accidents encountered during construction works, environmental spills, etc.

Sufficient detail will be provided regarding the incident or accident, findings of the Root Cause Analysis (RCA), indicating immediate measures or corrective actions taken or that are planned to be taken to address it, compensation paid, and any information provided by any contractor and supervision consultant, as appropriate. It will be ensured that the incident report is in line with the World Bank's Environment and Social Incidence Response Toolkit (ESIRT). Subsequently, as per the Bank's request, a report on the incident or accident and propose any measures to prevent its recurrence will be prepared.

48. REFERENCES

- Community Health and Safety Management Plan (CHSMP)
- Occupational Health and Safety Management Plan (OHSMP)
- Community Relations Plan (CRP)
- Employment and Training Plan (ETP)
- Pollution Prevention Plan (PPP)
- Waste Management Plan (WMP)





Environmental and Social Management Plan
(ESMP)

CONSTRUCTION IMPACTS MANAGEMENT PLAN



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Project Owner	T. C. Ministry of Transport and Infrastructure General Directorate of Infrastructure Investments
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ABBREVIATIONS

AYGM	General Directorate of Infrastructure Investments
BMP	Biodiversity Management Plan
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESS	The World Bank Environmental and Social Standard
PIU	Project Implementation Unit
RoW	Right of Way
SEP	Stakeholder Engagement Plan

1. INTRODUCTION

The Biodiversity Management Plan (BMP) for the Project has been developed to provide a clear outline of actions and methods required to mitigate likely impacts of the Project on biodiversity. This BMP therefore:

- Covers identified biodiversity value and potential Project-related impacts.
- Incorporates the requirements of the ESIA findings (pre-construction surveys to close data gaps), Turkish environmental legislation and international standards.
- Assigns responsibilities for the implementation of this BMP.
- Details site-specific control measures to be adopted to manage impacts on natural habitats and species of high conservation concern along the Project route.
- Provides sufficient information to assist with the development of an Integrated Vegetation Management Plan (IVMP).

The General Directorate of Infrastructure Investments (AYGM) is committed to adopt an adaptive management approach in implementation of this BMP, meet requirements of applicable laws and Project standards, and make updates to the strategies developed in this document as necessary.

2. SCOPE

This BMP covers planned construction and operation activities of the Project and is applicable to AYGM staff, contractors and sub-contractors. Contractors are required to ensure that all BMP requirements are adopted within their own management plans. Further information on Roles and Responsibilities is provided in Chapter 4 of this BMP.

2.1. Biodiversity Values

Biodiversity values that are subject to mitigation measures and management strategies within the scope of this BMP are listed in Table 1. Additional on-site information on species composition, especially of fauna species, will be collected by undertaking pre-construction surveys to close existing data gaps. These surveys will be conducted at an appropriate season from April through June, prior to finalization of the detailed design, outcome of which will be incorporated into this BMP. The list of biodiversity values provided in Table 1 is due for an update based on the survey results, which may require additional strategies to be developed.

Table 1: Biodiversity Values of the Study Corridor

Critical Habitat	Natural Habitats	Flora Species of High Conservation Concern	Fauna Species of High Conservation Concern
Coastal stable dune grassland (grey dunes) <i>Centaurea kilaea</i> population	Permanent mesotrophic lakes Permanent non-tidal, fast, turbulent watercourses Reedbeds normally without free-standing water Moist or wet eutrophic and mesotrophic grassland Pseudomaquis	<i>Pancratium maritimum</i> <i>Cyclamen coum</i> var. <i>coum</i>	<i>Lutra lutra</i> <i>Testudo graeca</i> <i>Natrix megalcephala</i> To be identified through pre-construction surveys

	<p>Riparian and gallery woodland</p> <p>Meso- and eutrophic <i>Quercus</i>, <i>Carpinus</i>, <i>Fraxinus</i> woodland</p>		
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2.2. Potential Impacts on Biodiversity Values

Potential impacts on biodiversity due to planned Project activities include:

- Habitat loss (loss of feeding, nesting, breeding areas) and degradation
- Habitat fragmentation
- Barrier effect and restricted fauna movement
- Animal mortality (due to collision, electrocution, wire strikes and rail entrapment)
- Light, noise and vibration disturbances
- Air, soil and water pollution
- Soil erosion
- Changes to local hydrology
- Fire hazards
- Introduction of invasive alien species

3. OBJECTIVES

The main objective of the BMP is to develop strategies to manage impacts on biodiversity, minimizing losses and disturbance to habitats and species, as well as to the ability of wildlife to traverse habitat corridors. Biodiversity management objectives for the Project are detailed in Table 2.

Table 2: Biodiversity Management Objectives

Objective	Target	Performance Indicator
Protect coastal stable dune grassland (grey dunes) and <i>Centaurea kilaea</i> and <i>Pancratium maritimum</i> populations it supports	No Project activity outside the designated construction sites will be conducted.	No reported incidents of activity outside approved construction areas. Monitoring reports on the statuses of habitat and species' populations.
Minimize extent of vegetation clearance in natural habitats	No vegetation clearance will be undertaken outside the Project footprint.	No reported incidents of vegetation clearance outside the Project footprint. Monitoring reports on the integrity natural habitats.

Objective	Target	Performance Indicator
Minimize impacts of habitat fragmentation	Interaction between the newly formed railway green corridor and natural habitats will be allowed to create a habitat continuum. Significant locations for wildlife crossings will be identified, and appropriate methods to prevent animal crossings will be implemented.	Integrated Vegetation Management Plan prepared and implemented. Wildlife crossings designed and located at areas crucial to animal passage. Different methods implemented so that animals do not enter the RoW.
Minimize injury or mortality of fauna species	Additional pre-construction surveys are conducted to underpin target species and their habitat preferences. On-site speed limits will be enforced and the Project personnel will receive necessary trainings.	Reported incidents on fauna injuries or death due to Project activities. On-site traffic management in place.
Raise awareness among internal and external stakeholders on biodiversity and conservation priorities	Internal capacity will be developed to undertake biodiversity studies, external expert input will be acquired as necessary. Trainings/meetings will be organized to inform internal and external stakeholders within the scope of the Stakeholder Engagement Plan (SEP).	Reports on trainings, information disclosure meetings and attendants. SEP being implemented and updated as necessary.
Develop and implement a Biodiversity Monitoring and Evaluation Program	Resource allocation and expert input will be provided so that statuses of habitats and species will be monitored throughout all phases of the Project. Based on monitoring results, habitat and species-specific management strategies will be developed as necessary.	Program developed and implemented. Periodical monitoring reports prepared and results evaluated.

4. ROLES AND RESPONSIBILITIES

Implementation of strategies and mitigation measures set forth in this BMP is under the responsibility of AYGM. The Project Implementation Unit (PIU) of the AYGM, and the Environmental and Social Management team within, is responsible for actions related to biodiversity values and conservation measures addressed in the Environmental and Social Impact Assessment (ESIA) and BMP. Contractors and sub-contractors, who will be undertaking the Project activities during land preparation, construction and operation phases will be appointing their own qualified personnel to manage biodiversity related issues.

The main responsibilities in implementation of the BMP are as the following:

- Ensuring compliance with Project standards
- Implementing biodiversity conservation measures and management controls
- Monitoring implementation success of the BMP

- Identifying adverse impacts on habitats and species, and taking additional measures as necessary

In conducting biodiversity studies, besides the AYGM and contractor/sub-contractor staff, external experts will also be appointed. Biodiversity experts are responsible for conducting additional field surveys, evaluating results and addressing necessary measures within the scope of the BMP, developing strategies for implementation of the Biodiversity Monitoring and Evaluation Program, and reporting all of these studies to AYGM and contractors/sub-contractors.

5. LEGISLATIVE FRAMEWORK

The legislative framework for Filyos Port and Industrial Zone Railway-Highway Connections Project was developed to cover not only the Turkish Environmental and Social Legislation, but also the Labour Law and Regulations, the World Bank Environmental and Social Standards (ESSs) and Environmental Health and Safety Guidelines. The detailed “Institutional and Legislative Framework” is presented within the scope of the Environmental and Social Management Plan (ESMP). In line with the institutional and legal framework set for the Project, national legislation and international standards pertaining to biodiversity studies are presented in this section.

5.1. National Legislation

The Environmental Law No. 2872 aims at protection of the natural environment in line with the sustainable development principles. Its framework was extended with Law 5491 entering into force on April 26, 2006 amending the Environmental Law, to cover fundamental principles of biodiversity conservation. Article 6 of the Law states the importance of protecting biodiversity, and introduces penal sanctions against damage to the environment, including the destruction of biological diversity, when detected through inspection and audits. The regulations issued on the basis of the Environment Law specify rules on the prevention of pollution and on environmental impact assessment. The laws and regulations for conservation of habitats and species in Turkey and national strategy documents prepared to implement statutory biodiversity conservation principles, which have been set forth by the related law and regulations are presented in Table 3.

Table 3: National Legislation

Turkish Laws and Regulation	National Strategy Documents
<ul style="list-style-type: none"> • Law on National Parks • Forestry Law • Law for the Protection of Cultural and Natural Assets • Terrestrial Hunting Law • Law on Fisheries • Law for the Protection of Animals • Pasture Law • Regulation on Conservation of Wetlands • Regulation on Fisheries • Regulation on Protection of Wildlife and Wildlife Development Areas 	<ul style="list-style-type: none"> • National Biological Diversity Strategy and Action Plan • National Environmental Action Plan • National Plan for In-Situ Conservation of Plant Genetic Diversity • National Agenda 21 Programme • National Wetland Strategy • Turkish National Forestry Programme • National Science and Technology Policies 2003-2023 Strategy Document • Turkish National Action Programme Against Desertification • National Environmental Strategy • National Rural Development Strategy • National Biological Diversity Strategy and Action Plan

The National Biological Diversity Strategy and Action Plan, whose most recent update was completed in 2007, is a response to the obligation to prepare a national strategy for the purpose of guiding the implementation of the Convention on Biological Diversity (CBD). The aim of this Strategy is to identify and assess Turkey's biological diversity in brief, to determine a generally agreed strategy for conservation and to propose the actions required for achieving the goals of Biodiversity Conservation in Turkey. The Strategy defines the current legal responsibilities concerning biological diversity, underlines the importance of international cooperation intended for policy-making and the importance of the necessary research conditions to develop ecosystem management, and includes a definition and assessment of Turkey's biological diversity and the strategies and priority action plans towards the goals.

5.2. International Standards

11.1.1.1.1 The World Bank Environmental and Social Standard (ESS) 6

The main objective of ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources is conservation and protection of biodiversity and living natural resources in reaching sustainable development. It is important to maintain ecological functions of habitats and the biodiversity they support. Biodiversity often underpins ecosystem services as well. Therefore, impacts on biodiversity can adversely impact ecosystem services as well. The World Bank addresses requirements related to ecosystem services in ESS1: Assessment and Management of Environmental and Social Risks and Impacts. The main objectives set out in ESS6 are as the following:

- To protect and conserve biodiversity and habitats.
- To apply the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity.
- To promote the sustainable management of living natural resources.
- To support livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development priorities.

ESS6 requires that biodiversity-related risks and impacts as such; ecosystems affected, species affected, ecosystems services affected, protection status, site ownership and control, baseline threats, and potential project-related risks and impacts, are described in the environmental and social impact assessment.

6. MITIGATION MEASURES AND MANAGEMENT CONTROLS

In line with the provisions of ESS6, biodiversity impact assessment within the scope of the ESIA has been conducted following the mitigation hierarchy. The main objective of Project biodiversity studies is to develop and implement mitigation measures and actions in order to achieve no net loss in natural habitats and species of high conservation concern, and net gains in critical habitat. Potential impacts on critical habitats identified within the scope of the Project will be avoided at the first step of the mitigation hierarchy, there will not be an offset requirements for net gains in critical habitat.

6.1. Critical Habitat

There will be no direct impacts on critical habitat. The following general management controls will be implemented to ensure the

dune habitat and associated *Centaurea kilaea* and *Pancratium maritimum* populations are conserved:

- Clearly identify the extent of areas to be cleared and areas that must not be cleared or damaged.
- Use temporary fencing to retain critical habitat and exclude construction works.
- Train the Project personnel on the significance of the habitat and species' populations, appoint biodiversity experts to provide necessary information.
- If more data become available during additional surveys to be conducted prior to the finalization of the detailed design in Spring-Summer, update the Critical Habitat Assessment and take necessary actions within the scope of this BMP.
- Monitor critical habitat throughout construction and operation phases of the Project. If any Project-related impact is report, take necessary measures under the supervision of experts.

6.2. Natural Habitats & Flora and Fauna Species of High Conservation Concern

Management controls and measures to avoid and/or minimize impacts on biodiversity include:

- Conduct additional field surveys prior to finalization of the detailed design in an appropriate season, from April through June, to gather additional information on species (especially on those that are of high conservation concern) and habitat composition of the Biodiversity Study Area. Develop species and habitat specific conservation actions, where applicable, and incorporate these into the Project's ESMP and BMP.
- Confirm presence of the *Lutra lutra* and identify its habitat preferences prior to the finalization of the detailed design.
- Conduct bird surveys during migration and breeding seasons to provide further information on habitat use, breeding status and flight routes of target species prior to the finalization of the detailed design.
- Reduce construction footprint in natural habitats and limit vegetation clearance, particularly at creek crossings and within riparian habitats. Plan construction works within water systems to be conducted in drier periods to avoid further impacts.
- Where possible, locate all construction facilities such as equipment storage, offices, access tracks, etc. within already cleared areas.
- Appoint flora and fauna experts while undertaking vegetation clearance in natural habitats.
- Plan for land clearance considering breeding and nesting periods of fauna of high conservation concern.
- Restrict clearing of trees with nests.
- Restore and rehabilitate natural habitats outside the construction corridor upon completion of construction works using native plant species.

- Design the railway to minimize plant growth in the track area, providing lateral barriers to plant migration.
- Conduct daily inspections prior to commencement of works to ensure fauna are relocated or otherwise leave the site.
- Facilitate fauna passage around the construction footprint.
- Enforce on-site speed limits.
- If any pits/trenches remain open after daily site works are completed, ensure they are securely covered by barriers or, if possible, fauna ramps to provide access to animals.
- Implement relocation techniques for each fauna of high conservation concern, as applicable, under expert supervision, prior to commencement of land preparation.
- Identify areas along the route that are of higher significance to fauna. Construct culverts or other crossings in areas where the route bisects an important habitat.
- Use appropriate methods to prevent animal entrance into the RoW, including fences, chemical repellents, lights and reflectors, and physical barriers such as trees and noise barriers.
- Regularly check and maintain fauna crossings and take additional measures as necessary.
- Ban all forms of hunting and poaching. Report any illegal activities to authorities.
- Keep a registry for fauna strike and mortality during construction and operation.
- Minimize impacts on water and soil quality through implementation of the related management plans; Waste Management Plan, Pollution Prevention Plan.
- Manage emergencies including natural hazards, fire and spills through implementation of the Emergency Preparedness and Response Plan.
- Minimize noise and vibration-related nuisance to animals in line with the provisions of the Pollution Prevention Plan.
- Implement dust suppression techniques in line with the Pollution Prevention Plan.
- Use appropriate lighting in work areas and use protective guards while employing directional lighting.
- Train all Project personnel on significance of biodiversity in the area. Prepare protocols to be implemented when wild animals are encountered on the site.
- Develop and implement a Biodiversity Monitoring and Evaluation Program to assess success of mitigation measures and make management interventions, as necessary.
- Develop and implement an Invasive Alien Species (IAS) Management Procedure to define measures to be taken in case of an accidental introduction and spread:
 - Undertake an IAS survey prior to commencement of site works.
 - Inspect all vehicles and equipment entering the work areas are free of invasive alien species.

- Do not allow any animals to be brought to the construction sites.
- Return disturbed topsoil and vegetative material to the original sites.
- Use natural plant species in restoration, continue regular maintenance during operation.
- If avoidance fails, develop eradication and control methods to prevent further spread of IAS.
- Do not use pesticides or fire to control IAS. Follow Project standards while using herbicides.
- Develop and implement an Integrated Vegetation Management Plan (IVMP) during the operation phase of the Project to ensure not only integrity of habitats and species but also fire control, safety, and visibility. A tentative Table of Contents for the Plan is presented in Appendix 1, which is to be developed in line with the following main principles:
 - Limit the introduction and spread of invasive species
 - Promote and maintain a healthy native plant community
 - Implement the IVMP to benefit species associated with conservation efforts
 - Increase habitat connectivity
 - Manage the railway RoW as a movement corridor for wildlife
 - Raise awareness and knowledge on integrated vegetation management, including its benefits, activities and implementation among the Project personnel

7. TRAINING, REPORTING AND MONITORING

7.1. Training

AYGM and Project contractors are responsible to ensure all Project personnel and sub-contractors are informed about the biodiversity values and conservation priorities. Project staff is also required to complete trainings, which will cover their roles and responsibilities in terms of BMP implementation, site-specific measures to be taken, and compliance with related environmental plans, Project standards, and protocols, based on their specific jobs. A general framework for a training on biodiversity is to include:

- General information on habitats and species of high conservation concern, and related visuals
- Project standards
- Management controls, procedures and protocols to implemented at the site
- Methods to be followed in responding incidents related to biodiversity features
- Reporting requirements

7.2. Reporting

Internal reporting requirements for biodiversity conservation principles and on-site implementation of management controls that are outlined in the BMP are to be specified by AYGM, which contractors/sub-contractors will follow. The BMP is required to be updated with any additional set of data that become available throughout the course of the Project. Following the pre-construction biodiversity surveys, not only necessary updates will be made within the scope of this BMP, but also significant flora and fauna assemblages throughout the Project construction sites and their specific monitoring requirements will be identified. Accordingly, habitat and species specific procedures will be developed and followed by the contractors/sub-contractors. External experts, who will be responsible for biodiversity studies within the scope of the Project, will report their assessments on implementation of mitigation measures, management controls and monitoring strategies, as well as their site-specific findings to AYGM. Biodiversity management and monitoring results addressed in the BMP will be shared with all interested parties within the scope of the SEP.

7.3. Monitoring

A Project-specific Biodiversity Monitoring and Evaluation Program will be developed to assess effectiveness management of impacts on biodiversity. Biodiversity features to be monitored through the Program will be identified during pre-construction surveys, and biodiversity monitoring parameters will be determined to reflect on the characteristics of the habitat and species composition in the area.

Biodiversity monitoring strategies will be developed in line with the Project standards and conservation objectives, and will cover land preparation, construction and operation phases of the Project. Based on monitoring results on the statuses of biodiversity features at different phases of the Project, additional measures will be taken as necessary. A general framework for periodical monitoring studies to be conducted throughout the Project, and biodiversity features to be monitored are as the following:

- Status of critical habitat
- Status of natural habitats and species of high conservation concern, implementation of related management controls
- Mitigation measures on restricting impacts on natural habitats to the construction corridor
- Effectiveness of wires and crossings used to prevent animal mortality
- Management of environmental issues, significance of impacts on biodiversity
- Presence of invasive alien species in the area
- Changes in populations of target fauna species to be identified through pre-construction surveys
- Status of post-construction restoration areas

Monitoring reports presenting outcomes for each monitoring period will be prepared by external experts and submitted to AYGM. Management controls that are required to be developed based on monitoring results will be addressed within the scope of the BMP.



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Appendix 1: Tentative Table of Contents for The Integrated Vegetation Management Plan (IVMP)

INTEGRATED VEGETATION MANAGEMENT PLAN (IVMP) FOR FILYOS PORT AND INDUSTRIAL ZONE RAILWAY-HIGHWAY CONNECTIONS PROJECT

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FILYOS PORT/INDUSTRIAL ZONE CONNECTIONS PROJECT OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT PLAN

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ABBREVIATIONS AND DEFINITIONS

AYGM	General Directorate of Infrastructure Investments
ESIA	Environmental and Social Impact Assessment
ETP	Employment and Training Plan
TTMP	Traffic (Transportation) Management Plan
OHSMP	Occupational Health and Safety Management Plan
CONTRACTOR	Expert Firms responsible for the construction of the Project on behalf of AYGM

9. INTRODUCTION

This plan presents the Occupational Health and Safety Management principles for the land preparation and construction activities of the Project.

Prior to the construction, the Contractor will develop its own Occupational Health and Safety Management Plan (OHSMP) that will address OHS aspects associated with the project.

This plan outlines the framework of OHS system which will be followed by the Contractor during the land preparation and construction phase.

10. SCOPE

OHSMP covers the planned land preparation and construction activities of the Project. It is prepared for implementation by AYGM employees, contractors and sub-contractors. Contractors are also required to adopt OHSMP requirements within their management plans. Roles and Responsibilities for the implementation of OHSMP are presented in Chapter 4.

11. PERFORMANCE INDICATORS

Performance indicators for the implementation of OHSMP are given below and related indicators will also be included in the Project's Environment, Health and Safety (EHS) procedures and plans:

1. OHS Management

Key Performance Indicator	Timeframe	Record	Responsibility
H&S Audit and Review Schedule	At least once a week	H&S Records Audit Reports	HS Expert
H&S Policies communicated to all project personnel	At least once a month	Minutes of Meetings Training Records	HS Expert
Management engagement in H&S Meetings/ Reviews to demonstrate visible leadership	At least once a month	Minutes of Meetings	Project Manager
Weekly H&S Meetings	At least once a week	Minutes of Meetings	HS Expert
H&S Walkdowns	At least once a week	H&S Records Audit Reports	HS Expert
H&S Induction - All project site personnel received before commencing the work at site	Before starting the works	Training Records	HS Expert
Emergency Drills	Twice a year	H&S Records Audit Reports	Project Manager
H&S Reporting	Quarterly	Quarterly Monitoring Reports	Project Manager

2. Lagging Indicators

Key Performance Indicator	Timeframe	Record	Responsibility
No of fatalities	0 in a year	H&S Records Incident Reports	Project Manager
Lost Time Incident	0 hours in a year	H&S Records Incident Reports	Project Manager
Total Recordable Injury	0 hours in a year	H&S Records Incident Reports	HS Expert
Incidents reported and investigated	After each incident	H&S Records Incident Reports	HS Expert

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12. ROLES AND RESPONSIBILITIES

Involvement of all in implementing, maintaining and continually improving OHS processes is the key to successful completion and achievement of quality objectives set by the management. All project personnel shall therefore be required to be familiar with the content of this plan and shall participate in implementing, maintaining and improving the management system. It is the responsibility of the project manager and all key personnel to ensure that the requirements for quality are fulfilled for works under their responsibility.

All new staff and staff who are given new responsibilities are to be inducted into the requirements set out in this plan in general and into their function and responsibilities in particular

12.1. Project Manager

- Demonstrates the values through H&S Leadership outlined within this H&S plan.
- Provides suitable and sufficient resources (e.g. people, equipment and budget) to ensure H&S department can fully function.
- Reviews H&S performance to provide support and commitment and to ensure that areas of concern are recognized and effectively managed.
- Provides active participation in the implementation of the safety program (e.g., audits, safety committees, training etc.).
- Recognize personnel who continuously demonstrate commitment and proactive leadership qualities with regard to H&S.
- Ensures that H&S shall be the first specific topic, at all Project related meetings.
- Review the H&S performance on an ongoing basis, provide support and commitment to ensure that areas of H&S concern are recognized and managed.
- Establish coordination to resolve the non-compliance issues that cannot be addressed / resolved by the line organization.
- Participate actively in the implementation of the safety program (e.g., audits, safety committees, training etc.).
- Approve specific work method statements and risk assessments for work being carried out, where applicable.
- Will co-ordinate with the H&S Expert and facilitate the weekly H&S meetings.
- Will set a personal example and assist in the proactive promotion of safety as a personal objective.
- Ensure that all sub-contractors at the site are aware and trained in the H&S requirements of the Project.
- Actively participate in construction site/ camps and office inspections.

12.2. H&S Expert

- Provides office H&S support and assistance as required.
- Evaluates and monitors the safety performance on a weekly and monthly basis.
- Develops all necessary OHSAS 18001 Systems Documents
- Fully conversant with the leadership, objectives and expectations of the AYGM HSSE Policies.
- Develops core H&S Strategies, Procedures, Instructions etc.
- Effectively manages the safety personnel under his control and provide appropriate direction and training as required optimizing their effectiveness on site
- Establishes an inspection scheme and schedule that involves all levels of site supervision, office personnel and other exposed to the define stage of the project
- Implements an H&S training program
- Reviews the results of inspections at AYGM to identify safety issues and deficiencies, and to advise Supervisors on findings
- Co-ordinates the investigation of any incident (LTI, near miss, property damage etc. as necessary)

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- Identifies any trends relevant to incident investigations that become apparent and to ensure that remedial actions have been agreed and corrective action performed and recorded
- Review, compile, analyses, and interpret contractor Key Performance Indicator data to determine causes, trends, and relationships of injury/illness, major severity potential Incidents and all other unplanned events
- Inspects the place of employment, by visual observation and mechanical testing equipment, to observe and report on potential violations of any of the above H&S standards
- Gathers evidence and prepares reports on safety violation complaints and occupational accidents and fatalities
- Reviews accident, injury, and illness reports to detect problem areas related to employee / contractor safety
- Act as a team member of all Incident Investigation committees where required

12.3. Staff of Construction Contractor

- Learning, understanding and complying with all Health & Safety procedures, rules and practice which are applicable to their conduct at all times whether at or away from the workplace
- Employees are responsible for their personal safety and the safety of their co-workers, through both their acts or their omissions
- Be constantly aware of their work situation and report hazardous situations to their supervisors, stopping work and informing their immediate supervision if there is the potential for any harm
- Comply with all health and safety requirements, practices and other initiatives at all times
- Use and maintain the appropriate supplied Personal Protective Equipment, reporting all deficiencies and replacing as necessary
- Reporting substandard procedures or conditions to their immediate supervisor
- Understand that any employee who jeopardizes their safety and health and /or the safety and health of others will be subject to disciplinary action (including immediate termination of employment)
- Working in a safe manner at all times.
- Stopping their immediate or impinging work where they consider the work being performed is 'at risk' or unsafe

13. LEGAL FRAMEWORK

13.1. National Legislation

The main national legislation that the project is subject to on occupational health and safety is as follows:

- Occupational Health And Safety Law No. 6331
- Health and Safety Signs Regulation
- Implementing Regulation on the Duties, Authorities, Responsibilities and Training of Workplace Physicians and Other Health Personnel
- Regulation on Emergency Situations in Workplaces
- Implementing Regulation on the Procedures and Principles of Employee Occupational Health and Safety Training
- Communiqué on Workplace Hazard Classes Regarding Occupational Health and Safety
- Regulation on the Duties, Authorities, Responsibilities and Training of Occupational Safety Specialists
- Occupational Health and Safety Services Regulation
- Occupational Health and Safety Risk Assessment Regulation
- Regulation on Occupational Health and Safety Boards
- Regulation on Health and Safety Measures in Asbestos Work

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- National Occupational Health and Safety Council Regulation
- Regulation on Stopping Work at Workplaces
- Regulation on Health and Safety Conditions in the Use of Work Equipment
- Regulation on the Protection of Employees from the Hazards of Explosive Environments
- Implementing Regulation on the Use of Personal Protective Equipment in Workplaces
- Implementing Regulation on the Vocational Training of Those Who Will Work in Dangerous and Very Dangerous Class Jobs
- Regulation on the Protection of Employees from Risks Related to Noise
- Regulation on Health and Safety Precautions in Working with Chemicals
- Regulation on Laboratories Performing Occupational Hygiene Measurement, Testing and Analysis
- Regulation on Health and Safety Precautions in Working with Screened Vehicles
- Regulation on the Protection of Employees from Vibration Related Risks
- Regulation on Occupational Health and Safety in Temporary or Fixed Term Jobs
- Communiqué on the Qualifications and Selection Procedures and Principles of the Employee Representative on Occupational Health and Safety
- Regulation on Combating Dust
- Regulation on Support of Occupational Health and Safety Services
- Implementing Regulation on the Prevention and Mitigation of Major Industrial Accidents
- Regulation on Occupational Health and Safety in Construction Works
- Regulation on the Procedures and Principles of Employment of Children and Young Workers
- Communiqué on Supporting Occupational Health and Safety Services
- Regulation on Protection of Buildings from Fire
- Communiqué on Categorization Guide of Personal Protective Equipment
- Communiqué On Safety Report To Be Prepared About Large Industrial Accidents

13.2. International Standards

13.2.1. World Bank Environmental and Social Standards

ESS2: Labor and Working Conditions

ESS 2 emphasizes measures relating to occupational health and safety that should be applied to the projects and sets the requirements that should be fulfilled by financed projects.

13.2.2. Environmental Health and Safety Guidelines

The World Bank Group Environmental, Health and Safety Guidelines (EHS Guideline) are technical reference documents with general and industry-specific examples of GIIP. EHS Guideline is used as a technical source of information during project appraisal. The EHS Guidelines contain the performance levels and measures that are generally considered to be achievable in new facilities at reasonable costs by existing technology. Occupational Health and Safety is addressed in the General EHS Guidelines document under Section 2. Industry sector EHS guidelines are designed to be used together with the General EHS Guidelines document. Of relevance for this Project is the EHS Guideline for Railways (2007).

EHS Guidelines for Railways

The EHS Guidelines for Railways are applicable to activities typically conducted by rail infrastructure operators dedicated to passenger and freight transport. Section 1.2 contains recommendations for OHS management. This document aims to address the OHS management strategies contained in the EHS Guideline for Railways.

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14. MITIGATION MEASURES AND MANAGEMENT CONTROLS

14.1. Risk Assessment and Management

Risk assessment and the management of risks is a key process for the management of H&S and are central to meeting the expectations of the Project's H&S goals. The approach focuses on identifying, assessing and managing H&S related risks in all Project activities.

The approach is one of systematic identification of hazards, recording of hazards, performing of risk assessments, and devising risk controls to eliminate or reduce risk to at least tolerable level that is "As Low as Reasonably Practicable (ALARP)".

The main categories of activity for which risk assessments are required on a case by case basis are:

- Hazard Identification (HAZID);
- Hazard and Operability Study (HAZOP);
- Quantitative Risk Assessment (QRA);
- Layout reviews;
- Design and engineering reviews;
- Utilization of an Action Tracking Register.

The Contractor will implement a number of risk assessment and risk management activities prior to the construction.

The Contractor will organize and facilitate a HAZID study before construction followed by HAZOP exercise between AYGM and the Contractor.

The HAZOP process will look at joint risk assessment to determine risk with the purchase and installation of equipment, facilities design and how the facility will operate once completed, will be used to brainstorm, identify, discuss and agree with the various project teams the appropriate management controls for hazards arising during the execution of the work activities during this phase.

Actions will be taken to resolve potential problems prior to beginning work or mobilization to site, underlining the need to determine levels of risk for all activities to impose appropriate management controls.

The Contractor is required to continue the development of these assessments to ensure that risks are mitigated prior to execution of the work. The Contractor shall develop a comprehensive training program that will be in compliance with Turkish H&S Legislation and the requirements of AYGM.

14.2. Hazard Identification

The identification of hazards is the responsibility of all personnel who access all project areas. Contractor must ensure that hazards with potential to harm personnel are identified, risk assessed and controlled to reduce the risk.

Contractor will provide a range of tools to assist in the identification, assessment and control of hazards and risks pertaining to activities within the project area.

Risk assessment framework is in place to provide for the efficient assessment of risks, and allow for the implementation of controls commensurate with the level of risk identified.

Hazards and risks identified through other means such as:

- throughout the course of a work activity;
- during workplace inspections;
- during pre-start inspections of equipment;
- through Incident Analyses;

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- during auditing activities; and
- via a range of other methods.

14.3. Incident Management

Contractor must ensure immediate response to and timely reporting, analysis and communication of all incidents to AYGM.

All personnel have a responsibility to report all incidents regardless of severity, to their supervisor as soon as practicable.

All incidents shall be recorded in the approved incident reporting system, and be analysed to a level commensurate with the actual consequence or potential risk rating, whichever is higher.

14.4. Injury Management

Contractor is committed to return workers to meaningful and productive employment at the earliest possible time.

14.5. Fitness for Duty

Contractor employees will undergo a medical assessment to ensure they are medically fit to perform their role before commencing the works and these controls will be repeated annually.

Employees must declare their supervisor of any pre-existing injury or illness which may affect their performance, or has the potential to impact on safety and health in the workplace. A medical assessment may also be required to determine associated risks or limitations.

Contractor will ensure work activities do not aggravate a disclosed injury or illness, or impact the safety and health of the workplace.

14.5.1. Health Surveillance

Contractor must ensure that health assessments are carried out in respect of all personnel who engage in specific tasks with the potential for occupational exposure, if:

- an identifiable disease or other adverse effect on the health of the employee may be related to the exposure;
- there is a reasonable likelihood that the disease or adverse effect may occur under the particular conditions of work; and
- there are recognized techniques for detecting indications of the disease or adverse effect.

Health Surveillance is carried out to monitor for possible health effects that may arise following occupational exposures at concentrations above accepted exposure standards. Where a risk assessment determines there is a reasonable likelihood that employees may be exposed to an occupational hazard at levels exceeding accepted values, management shall conduct specific health monitoring to assess actual exposures and the effects of these exposures on personnel.

14.5.2. Fatigue Management

Fatigue is defined as an impaired physical and/or mental condition that arises from an individual's exposure to physical and mental exertion and inadequate or disturbed sleep.

Contractor recognizes that fatigue may arise from hours and patterns of work and activities, and travel/commute time. As it is also influenced by factors outside of work, such as family responsibilities, stress, lifestyle, personal health etc., the management of fatigue is a shared responsibility between management and the individual.

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14.6. General Hazard Prevention

Contractor acknowledges the risk associated with project area operations, and provides for the reporting and rectification of hazards.

14.6.1. Working Alone

Where personnel are required to work alone, the activities and conditions shall be risk assessed and a safe system of work developed.

14.6.2. Manual Handling

Where a manual handling task is required a risk assessment shall be completed to identify the Hazards. The risk of injury should be assessed for each hazard, and appropriate controls implemented, including manual handling training as appropriate.

Contractor must ensure suitable powered mechanical plant or equipment and lifting aids are provided to enable personnel to avoid heavy manual tasks.

14.6.3. Hygiene and Sanitation

Contractor must supply suitable facilities for personnel including:

- toilet facilities within a reasonable distance from each workspace;
- sanitation and hygiene facilities that are properly maintained;
- eating places that are dry, clean, well ventilated and have adequate seating, tables, hand washing and waste disposal facilities; and
- potable water supplies available to all personnel.

Personnel must not intentionally pollute work areas or misuse or damage any sanitation or hygiene facilities provided.

14.6.4. Occupational Hygiene

Contractor must ensure commitment to monitoring and reporting of occupational health hazards and hazardous occupational environments, and implement controls to reduce risk in accordance with all applicable regulations and, wherever practicable, with regard to accepted best practices.

Specific occupational hygiene assessments will be conducted with reference to approved methodologies and applicable standards. Ongoing assessments shall be conducted and, as required, controls implemented for the following occupational health hazards:

- airborne contaminants such as metal dusts, respirable silica and asbestos fibres; and
- occupational noise exposure.

Risk assessment, evaluation and control of occupational hazards may be undertaken in consideration of the following broad hazard categories:

- chemical hazards - such as fumes and vapors;
- physical hazards - those related to heat, cold, noise, vibration, ionizing radiation, ultra-violet light and workplace lighting;
- biological hazards - including mosquito borne viruses, potable water contaminants and other water borne hazards such as legionella; and
- ergonomic hazards - including manual handling hazards.

14.6.5. Hazardous Substances

Contractor must ensure the safe control of hazardous substances and reduce the level of exposure to personnel, property and the environment in accordance with the ESIA Requirements.

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A risk assessment will be undertaken to assess the health risks to personnel. Health Surveillance may be required to monitor the health of personnel who are at significant risk of exposure to hazardous substances. Material Safety Data Sheet Forms will be present near each chemical and hazardous substance

14.6.6. Personal Protective Equipment (PPE)

Contractor must ensure that all personnel and visitors wear or use personal protective equipment provided if it is necessary to protect them from harm. Personal protective equipment will be properly fitted, and users instructed in their use.

All personal protective equipment supplied must conform to an applicable be properly maintained and, if it becomes defective, replaced.

14.6.7. Safety Signs

Contractor must ensure that sufficient Safety Signs are posted in workplaces and travel ways to prevent incidents, identify hazards, indicate the location of safety and fire protection equipment, and provide guidance and instruction in emergency procedures.

14.6.8. Fall Prevention

Contractor must ensure that all personnel undertaking activities where there is a risk of a person falling from one level to another do so in a controlled manner to reduce the risk of personal injury.

14.7. Task Specific Hazard Prevention

14.7.1. High Risk Work

Contractor must identify High Risk Work, as detailed in the Danger Classes List Communique Related to Occupational Health and Safety (O.G. 25.11.2009/ 27417), and implement a procedure or risk assessment specific to that task to ensure adequate controls are in place to eliminate, prevent or control possible risks.

Contractor must ensure that personnel performing High Risk Work having relative training with respect to Regulation On The Procedures And Principles Of Employee Health And Safety Trainings (O.G. 15.03.2013 / 28648).

14.7.2. Electrical Work

An electrical log book will be kept at each operational site to record plans, work carried out and other relevant information.

Electrical equipment will be provided with full current isolating devices capable of being secured in the isolating position wherever practicable. Where such features are not practicable, a risk assessment shall be conducted to establish suitable alternative controls, and outcomes communicated to impacted personnel.

14.7.3. Scaffolding

Scaffolding may be used for the purpose of supporting access or working platforms, personnel, plant or other material.

Personnel erecting scaffold must ensure that an area where scaffold is to be erected is clear of rubbish and material or equipment not required for immediate use.

Contractor must ensure personnel are not required to use incomplete scaffold. Where incomplete scaffold is to be left unattended, danger tags, warning signs or other appropriate measures will be used to alert personnel and deter them from unauthorized access.

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14.7.4. Driving Safety

Contractor must ensure that personnel permitted to drive either a vehicle in Contractor controlled areas or a Contractor vehicle on public roads, hold a current drivers Licence and comply with the relevant road rules for that class of vehicle.

All personnel driving vehicles on Contractor land must obey all traffic directions, drive to conditions, and in accordance with relevant Traffic (Transportation) Management Plan.

14.8. Access and site security

Access to the project area will be restricted by the Contractor and necessary precautions will be taken such as fencing the area and placing relevant signs etc.

It is the Contractor's responsibility to ensure that all site security requirements identified in the Risk Assessment for this activity are fully implemented.

14.9. Site Induction and Site Safety Rules

Site inductions will be carried out by the contractor. Arrangements for site inductions for this project shall be:

- Any new worker coming to the work site will be briefed on the site safety rules including the site logistics plan, hazards, evacuation procedures, emergency and first aid procedures, and the duties and responsibilities of all persons on site.
- A Site Induction briefing and Site Safety Rules will be developed in Turkish and in English.
- All attendees of the Site Induction briefing will be recorded.
- Visitors will be given a brief site induction (based on an either oral or written) and will be accompanied at all times during their visit to the site.

14.10. Workplace inspections

Inspections of the project site should be carried out weekly. Contractor will undertake weekly inspections of the whole work site, and specifically of:

- Equipment
- Scaffolds
- Small tools
- Lifting devices
- Electrical cables
- Fire extinguishers
- First aid kits

Records of the inspections will be kept by H&S Expert

14.11. Railway Operation

It should be remembered that health and safety issues regarding railway operation are highly related to the measures taken for the Community Health and Safety and Emergency Preparedness and Response. The implementation of a safety management system, underpinned by a genuine safety culture within a railway undertaking is key to unlocking future safety improvements.

Adequacy of the safety in railways can be controlled via examining:

- Collisions of trains
- Derailments of trains
- Level-crossing accidents
- Accidents to persons

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- Fires in rolling stock
- Other accidents

To prevent these types of incident, significant occupational health and safety measures must be taken, such as;

Major railway failures that can lead accidents such as broken wheel or axle and broken rail or track buckle will be controlled via control train and OHS Personnel of TCDD Monthly.

Suitability of the signalisation system will be controlled in a daily manner.

No personnel will be working without having necessary trainings.

Level Crossings will be controlled daily.

Operation will be stopped immediate if any factor that may lead accidents is reported.

15. TRAINING, REPORTING AND MONITORING

15.1. Training

Contractor will be committed to providing employees with the necessary training to perform their work safely and effectively.

Refer to the Employment and Training Plan (ETP) for further information about the identification, coordination and management of training.

All personnel are required to complete the induction training. This induction informs participants of the minimum safety, environmental and security requirements to gain access to project area.

On completion of the Induction Training, personnel shall be suitably inducted to their work area. They shall be informed of the hazards and controls, the location of firefighting and first aid equipment, and emergency response and evacuation procedures as a minimum.

It will be the responsibility of the H&S Expert to control and determine the training needs of the personnel, prepare the training programme and have it approved by the project manager. Trainings may be renewed or additional trainings may be provided if it is seen necessary by H&S expert or Project Manager in case of a significant incident etc.

15.2. Reporting

Daily inspections will be carried out under the coordination of the H&S Expert. All serious incidents including near misses will be reported, investigated, and documented immediately to AYGM and WB. In this scope, the World Bank and AYGM will be promptly notified of any incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers including but not limited to; incidents and accidents encountered during construction works, environmental spills, etc. Sufficient detail will be provided regarding the incident or accident, findings of the Root Cause Analysis (RCA), indicating immediate measures or corrective actions taken or that are planned to be taken to address it, compensation paid, and any information provided by any contractor and supervision consultant, as appropriate. It will be ensured that the incident report is in line with the World Bank's Environment and Social Incidence Response Toolkit (ESIRT). Subsequently, as per the Bank's request, a report on the incident or accident and propose any measures to prevent its recurrence will be prepared.

All contact and reporting to government officials is to be done by the H&S Expert in consultation with Project Manager. In regards to injuries, all compensation carriers have specific legislative reporting requirements for the employer, worker, and attending physician(s).

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All incidents will be reported to the H&S Expert immediately. All incidents that require medical attention, or have the potential for medical attention require the immediate notification of the Project Manager. All serious incidents will be reported to the Project Manager immediately - the notification of any government agencies will be coordinated by Project Manager.

The H&S Expert and Project Manager will be promptly notified of equipment or property damage. The Incident Report Form will be completed for all incidents and forwarded to the district office for administrative processing.

15.3. Monitoring

The main monitoring activities as set forth in Chapter 7: Monitoring Plan of the ESMP will focus on ensuring compliance with the mitigation measures and management controls described within the scope of this OHSMP, using the main performance indicators determined in Chapter 3.

Monitoring activities for each Occupational Health and Safety issue will be detailed in management/implementation plans and procedures to be prepared by the Contractor prior to the onset of the land preparation and construction phase. Monitoring activities will be designed to target specific topics to meet site-specific requirements in line with the Monitoring Plan framework provided in the ESMP and considering the key performance indicators.

16. REFERENCES

- Employment and Training Plan (ETP)
- Traffic (Transportation) Management Plan (TTMP)
- Emergency Preparedness and Response Plan (EPRP)
- Legal and Institutional Framework (ESIA, Chapter 2)

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MANAGEMENT OF CHANGE PROCESS FORM	
Section A. This section of the form will be filled-out by the Facilitator of the Change	
Facilitator of the Proposed Change (s):	
Date:	
Location of the proposed Change(s):	
References to Relevant Design Documentation/ Drawings:	
Summary of the Proposed Change (s):	
Please specify the change content:	<input type="checkbox"/> Route/site facility change <input type="checkbox"/> Engineering/Design Development <input type="checkbox"/> Change in Legislation <input type="checkbox"/> Change in Authority Decision <input type="checkbox"/> Change in new E&S data <input type="checkbox"/> Change of Construction/Operation Execution strategy <input type="checkbox"/> Change of Management Strategy <input type="checkbox"/> Stakeholder influence
ROUTE/SITE FACILITY CHANGE	
Please provide details of the route/site facility change	
ENGINEERING/DESIGN DEVELOPMENT CHANGE	Please specify the new E&S aspects with the below given questions?
ATMOSPHERIC EMISSIONS	
Will there be any associated atmospheric emissions? If so, which contaminants will be emitted? What volumes or concentrations of these contaminants will be emitted?	
How will these contaminants be managed to reduce the environmental impact?	
How will the emission of these contaminants affect AYGM's compliance with national and/or international legislation and policy commitments?	
WASTEWATER DISCHARGES	
Will there be any associated wastewater discharges? If so, what contaminants will be discharged? What volumes or concentrations of these contaminants will be discharged?	
How will this affect AYGM's compliance with national/ international legislation and policy commitments?	
WASTE GENERATION	

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MANAGEMENT OF CHANGE PROCESS FORM	
Section A. This section of the form will be filled-out by the Facilitator of the Change	
Will any wastes be generated? If so, what types of waste will be generated? What quantities of these wastes will be generated?	
How will these wastes be managed and finally disposed?	
NOISE	
Will the proposed change be expected to create any additional noise impact? If so, what will be the level of this additional noise?	
How will the noise impact be mitigated if it is likely to exceed Project Standards?	
SOIL	
Will the proposed change be expected to create any additional impact to soil? If so, what will be the level of this additional impact?	
How will the soil impact be mitigated if it is likely to exceed Project Standards?	
ENVIRONMENTAL AND CULTURAL SENSITIVE AREAS	
Is a critical habitat (CH) or archaeological site (ARC) identified within the vicinity of the proposed change?	
If yes, has a specialist desktop (ecological or archaeological) review been completed to identify risks to the CH?	
If yes, will the proposed change create any impact on environmental sensitive areas? If so, what are those areas and what recommendations will be required?	
How will the impact on these areas be mitigated? As per national or international standards?	
USE OF NATURAL RESOURCES	
Will the proposed change create any increase in energy, water, raw material, fuel consumptions or additional land use? If so, what type and amount of increase is expected?	
Will there be any additional permit/legal requirements?	
ENVIRONMENTAL MONITORING	
Will there be any environmental monitoring/reporting requirements?	
If so, what will be these monitoring/reporting requirements and how will they be conducted?	
How often will these monitoring/reporting requirements need to be conducted?	
MAINTENANCE	
Will any air emissions, wastewater discharges or wastes be generated during maintenance activities associated with the proposed change?	
If so, what contaminants will be generated? What quantities of these contaminants will be generated?	
How will these contaminants be managed to reduce the environmental impact? Are these management strategies in line with the existing national and international requirements?	
HAZARDOUS MATERIALS	

MANAGEMENT OF CHANGE PROCESS FORM	
Section A. This section of the form will be filled-out by the Facilitator of the Change	
Will any new hazardous materials be used? If so, what types and quantities will be used? Does the MSDS of the new hazardous material fit for the legal requirements?	
How will these materials be stored and handled?	
Have Material Safety Data Sheets (MSDSs) been obtained, retained and communicated to all relevant personnel?	
How will these contaminants be managed to reduce the environmental impact?	
SENSITIVE RECEPTORS	
Will there be any additional or new sensitive receptors in the vicinity?	
POLITICS AND GOVERNANCE	
Will any additional or new authority approval or permit be required?	
SETTLEMENT PROFILE	
Are any settlements or houses nearby?	
INFRASTRUCTURE FACILITIES	
Will any additional or new infrastructure be crossed (roads, etc.)?	
TRANSPORTATION AND TRAFFIC	
Will there be any additional or new impact on existing, local traffic?	
ECONOMIC CONDITIONS	
Will economic conditions of the area be affected?	
LAND	
Will additional or new land be required?	
LAND USE	
If additional or new land is required, is it used as agricultural, pasture or forest?	
EMPLOYMENT AND LIVELIHOODS	
Will there be positive effects in terms of employment or procurement?	
CHANGE IN LEGISLATION	Please specify the change details.
CHANGE IN AUTHORITY PROVISION	Please specify the change details.
CHANGE IN NEW E&S DATA	Please specify the change details.
CHANGE OF CONSTRUCTION/OPERATION EXECUTION STRATEGY	Please specify the change details.

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MANAGEMENT OF CHANGE PROCESS FORM	
Section A. This section of the form will be filled-out by the Facilitator of the Change	
CHANGE OF MANAGEMENT STRATEGY	Please specify the change details.
STAKEHOLDER INFLUENCE	Please specify the change details.
Section B. This part will be filled by following disciplines for specific evaluation of MCP data	
COMMENTS OF SPECIALISTS	
Environmental & Social Impact Assessment Specialist	
Community Liaison Specialist	
Stakeholder Management Specialist	

Please state the final decision based on the below headings:

No action is required. Change can be implemented.

Additional permit is required.

Environmental and Social Assessment is required.

Public Consultation is required.

Project Description File is required by State Authorities.

EIA Process is required by State Authorities.

Change can be implemented provided that: