



POSEIDON
Çevre Sosyal Dusmanlık Mühendislik
Ticaret Ltd. Şti

Environmental and Social Management Plan

*Kayseri Wastewater Treatment Plant Phase-2
Construction and Collector Line Project*

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Abbreviations

AQAMR	Air Quality Assessment and Management Regulation
AQMS	Air Quality Monitoring Stations
AoI	Area of Influence
°C :	Celsius Degree
CBD	Convention on Biological Diversity
CHSS	Community Health, Safety, And Security
CLS	Community Level Surveys
DSİ	State Hydraulic Works
EHS	Environment Health and Safety
ERP	Emergency Response Plan
ESIA	Environmental and Impact Assessment
E&S	environmental and social
ESMF	Environmental and Social Management Framework
SEP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
ESN	Environmental and Social Norm
ESSP	Environmental and Social Safeguard Policy
EIA	Environmental Impact Assessment
ESHS	environmental, social and health and safety
GIIP	Good International Industry Practice
GHG	Greenhouse Gas
IAPCR	Industrial Air Pollution Control Regulation
IFC	International Finance Corporation
ILO	International Labour Organization
IUCN	International Union for Conservation of Nature
İLBANK	İller Bankası A.Ş
IsDB	Islamic Development Bank
KBA	Key Biodiversity Areas
KII	Key Informant Interviews

Kayseri WWTP the Project	Kayseri Wastewater Treatment Plant Phase-2 Construction and Collector Line Project
KASKİ	Kayseri Water and Sewerage Administration General Directorate
LMO	living modified organisms
LMP	Labor Management Procedures
MP	Management Plans
MoEUCC	Ministry of Environment, Urbanization and Climate Change
NBSAP	National Biodiversity Strategy and Action Plan
NT	Nearly Threatened
NGO	Non-governmental organisations
OG	Official Gazette
PS	Performance Standards
PPE	Personal Protective Equipment
PAP	Project Affected People
RENC	Regulation on Environmental Noise Control
RSPC	Regulation on Soil Pollution Control and Contaminated Sites by Point Source
SME	Small and Medium-Sized Enterprises
SAS	Social Affairs Staff
SAİS	Continuous Wastewater Monitoring System
SGK	Social Security Institution
TUBIVES	TÜBİTAK's Turkish Plants Database
TurkStat	Turkish Statistical Institute
TWCEIP	Türkiye: Water Circularity and Efficiency Improvement Project
UV	Ultraviolet
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UWTR	Urban Wastewater Treatment Regulation
VU	Vulnerable
WWTP	Wastewater Treatment Plant
WPCR	Water Pollution Control Regulation

1 Introduction

The Environmental and Social Management Plan (ESMP) has been developed as part of the Environmental and Social Impact Assessment (ESIA) study of the Project. It aims to identify mitigation measures for significant adverse environmental and social impacts and outlines the necessary monitoring and institutional frameworks for effective implementation.

Key purposes and objectives of the ESMP are as follows:

- To ensure the Project's environmental and social standards are maintained throughout its construction and operational phases.
- To anticipate, avoid, reduce, mitigate, or compensate for any adverse environmental, social, and health impacts.
- To address and compensate for any losses incurred by affected individuals.
- To ensure compliance with national legislation and the İLBANK's ESMS and IsDB's Environmental and Social Safeguard Policy (ESSP)
- To prevent environmental degradation and enhance positive outcomes.
- To maintain the feasibility and cost-efficiency of the Project.
- To act as a comprehensive Action Plan for the proper implementation and monitoring of mitigation measures.
- To address potential stakeholder concerns comprehensively.

This ESMP complies with the İLBANK's Environmental and Social Management Framework (ESMF), drawing upon the insights from impact assessment studies.

Mitigation and monitoring activities are tailored for the Project's construction and operation phases, aiming to secure environmental and social outcomes in line with the Islamic Development Bank's Environmental and Social Norms (ESNs). This includes the identification of potential impacts, defining mitigation requirements, and detailing methods for achieving these standards.

Recognizing the evolving nature of the Project, the ESMP is designed to be a living document, subject to ongoing review and updates based on:

- Monitoring and test results.
- Legislative and standards changes.
- Modifications in Project parameters.

For further information of the site/location description and activities to be conducted for the proposed Project, please refer to the main ESIA Report.

2 ESMP Matrix: Risk and Impacts, Mitigation, Monitoring

The focal point of this chapter is to outline mitigation strategies to minimize the Project's negative impacts, define the roles of all parties involved, and establish framework for the procedures to ensure these measures are effectively applied throughout the Project lifecycle.

The mitigation measures defined for the Project are provided in Table 1. Following that, the monitoring plan is provided in Table 2.

Table 1 ESMP Matrix

No.	Impact Description	Subproject Phase	Sensitive Receptor(s)	Management/ Mitigation Measure	Impact Significance After Mitigation	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
1	Land take/site establishment (vegetation clearance, temporary laydown, access control)	Pre-Construction	Flora–Fauna, adjacent land users, community	<ul style="list-style-type: none"> Limit clearance to staked, design-approved footprints; fence and sign the work boundary; prepare Site Clearance Procedure; reinstate any temporarily used areas; avoid works in sensitive seasons; implement access control. 	Minor	<ul style="list-style-type: none"> Contractor; KASKİ; Supervision Consultant 	<ul style="list-style-type: none"> Biodiversity Management Procedure; Site Clearance Procedure; CHSS Plan
2	Baseline soil quality uncertainty	Pre-Construction	Soil, groundwater	<ul style="list-style-type: none"> Undertake baseline soil sampling at representative points (min. 3) to characterize pH, nutrients, metals, PAHs; store topsoil separately; integrate results into Soil/Spill plans. 	Minor	<ul style="list-style-type: none"> Contractor (sampling); KASKİ oversight 	<ul style="list-style-type: none"> Soil, Excavated Material & Spoils Plan; Spill Response Procedure
3	Chance finds/cultural heritage risk ahead of ground-break	Pre-Construction	Archaeological and cultural heritage	<ul style="list-style-type: none"> Approve and disclose Chance Finds Procedure; toolbox training for all crews; notify Regional Council immediately upon find; stop-work/secure area until clearance. 	Negligible	<ul style="list-style-type: none"> Contractor; KASKİ; Supervision Consultant 	<ul style="list-style-type: none"> Chance Finds Procedure; Cultural Heritage Management Plan
4	Mobilization dust	Pre-Construction	Air environment, nearby residents/agri land	<ul style="list-style-type: none"> Prepare AQMP; wet suppression for haul roads/stockpiles; cover loads; enforce speed limits; schedule works to avoid high winds. 	Minor	<ul style="list-style-type: none"> Contractor 	<ul style="list-style-type: none"> Air Quality Management Plan (AQMP)
5	Early noise from mobilization	Pre-Construction	Residents, fauna	<ul style="list-style-type: none"> Limit noisy activities to daytime (07:00–19:00); advance notification to community; use mufflers/quiet equipment; set up complaint hotline. 	Minor	<ul style="list-style-type: none"> Contractor 	<ul style="list-style-type: none"> Noise & Vibration Management Plan (NVMP)
6	Traffic & access safety	Pre-Construction	Road users, pedestrians, vulnerable groups	<ul style="list-style-type: none"> Prepare Traffic Management Plan; designate haul routes/turning/parking; install advance warning/signage/barriers; coordinate with municipality. 	Minor	<ul style="list-style-type: none"> Contractor; Municipality; KASKİ 	<ul style="list-style-type: none"> Traffic Management Plan (TMP); SEP/GRM
7	Labor influx & working conditions setup	Pre-Construction	Workers, nearby communities	<ul style="list-style-type: none"> Finalize LMP (contracts, CoC, induction, worker GRM); screen subcontractors; plan worker accommodation only if needed and per IFC/EBRD guidance. 	Minor	<ul style="list-style-type: none"> Contractor; KASKİ oversight 	<ul style="list-style-type: none"> LMP; Workers' Accommodation Procedure; CoC
8	Community health & safety readiness	Pre-Construction	Local communities, vulnerable groups	<ul style="list-style-type: none"> Establish CHSS Plan; fence and light site; emergency preparedness/communications; disclose program and GRM contacts. Prior to commencement of works, provide mandatory training to all workers and contractors on: <ul style="list-style-type: none"> Sexual Exploitation and Abuse / Sexual Harassment (SEA/SH), Grievance Mechanism (GM), Code of Conduct (CoC). Ensure that these trainings are refreshed at regular intervals during construction and are included in worker induction programs. Maintain training records and attendance lists. 	Minor	<ul style="list-style-type: none"> Contractor; KASKİ 	<ul style="list-style-type: none"> CHSS Plan; SEP/GRM; Code of Conduct; SEA/SH Action Plan; ERP
9	Land acquisition / land requirements and ownership status	Pre-Construction	Land owners (if any), adjacent land users, local communities	<ul style="list-style-type: none"> Confirm and document that the Project does not require new land acquisition, physical displacement, or economic displacement. Verify ownership status of the main WWTP site (Block 168, Parcel 1, Boğazköprü Neighborhood) and confirm that the land is fully owned by KASKİ. Confirm that the sludge storage/disposal site in Molu Neighborhood is identified as a non-cadastral stony area and that institutional transfer documentation between Kayseri Metropolitan Municipality and KASKİ is in place. Ensure that all land-related documents (title deed records, zoning plans, cadastral information, transfer protocols, approved maps) are finalized and disclosed prior to construction. In case of any unforeseen land-related claims or access restrictions, apply the Project Grievance Mechanism. 	Negligible	<ul style="list-style-type: none"> Contractor; KASKİ 	<ul style="list-style-type: none"> ESIA; SEP; Grievance Mechanism; Land Use and Ownership Documentation (Annex-H)
9	Possible soil contamination due to accidental leaks, spills, uncontrolled waste disposal, improper hazardous material management	Construction	Soil	<ul style="list-style-type: none"> A Soil, Excavated Material and Spoils Management Plan that is in line with the ESN1, ESN3, and Islamic Development Bank (IsDB) Environmental and Social Safeguard Policy will be prepared prior to construction. A Spill Response Procedure that is in line with the ESN1, ESN3, and Islamic Development Bank (IsDB) Environmental and Social Safeguard Policy will be prepared prior to the construction. To minimize the impacts on soil environment, the amount of soil that could be subject to compaction and contamination/pollution will be minimized by ensuring the use of only the designated work sites and routes for the construction machinery and equipment and field personnel. 	Minor	<ul style="list-style-type: none"> Contractor to prepare and implement the management system documentation, Consultant and KASKİ to approve both plans and implementation 	<ul style="list-style-type: none"> Soil, Excavated Material and Spoils Management Plan Spill Response Procedure

No.	Impact Description	Subproject Phase	Sensitive Receptor(s)	Management/ Mitigation Measure	Impact Significance After Mitigation	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure	
				<ul style="list-style-type: none"> The fuel required for the construction equipment and vehicles to be used within the site during construction phase will be supplied primarily from the nearest station; if deemed necessary, fuels that may possibly be stored at site will be stored in the areas where necessary impermeability precautions are taken. The provisions of the Regulation on the Control of Excavation Soil, Construction and Demolition Wastes shall be complied with during land preparation and construction phase of the Project. Provisions of the Regulation on the Control of Soil Pollution and Sites Contaminated by Point Sources shall be complied with within the scope of the Project. Wastes and wastewater to be generated during the construction phase of the Project will be stored and disposed in a controlled manner in accordance with the relevant regulations, ESN3, IsDB Environmental and Social Safeguard Policy and in line with the GIIP. Contractor will conduct a detailed soil sampling campaign prior to any construction activity on site, to determine general characterization of the soil, and to identify possible historical pollution, if any. 				
10	Fugitive dust emissions	Construction	Air environment,	<ul style="list-style-type: none"> An Air Quality Management Plan will be prepared in line with ESN1, ESN3, and IsDB Environmental and Social Safeguard Policy before the commencement of construction phase. Dust will be minimized from open area sources, including temporary storage piles, by using control measures such as installing enclosures and covers, and increasing the moisture content. Speed limitations will be defined for construction vehicles. The drop height of potentially dust generating materials will be kept as low as possible. Dust suppression methods will be applied at construction sites to mitigate Project-related dust emissions. In this respect, upper layers of the work sites/materials will be kept at a humidity level of about 10%. Watering will be applied at any time necessary including night time, weekends or off-days by using pressurized distribution or spraying systems that would ensure even distribution of water. If there is traffic flow on the existing roads near the work sites, dust suppression measures will be continuously applied to ensure traffic safety. If there is no traffic existing in the local roads, dust suppression measures will be applied only at local residential and business areas. Loading and unloading operations will be performed without throwing/scattering. During transportation, excavated materials will be covered with nylon canvas or materials with grain size larger than 10 mm. Wind shields/barriers will be placed at work sites such as material storage areas to prevent dust dispersion where necessary. Driving through settlements will be avoided wherever alternative roads are present. During particularly dusty activities, wind conditions will be monitored and these activities will be avoided as much as possible in case of high winds to agricultural areas. Solid screens or barriers that are at least as high as any stockpiles on site will be erected at the site boundary adjacent to the orchard and agricultural site. For the owner of orchard and agricultural site, special attention will be given for their grievances and related measures will be taken immediately. Any damage caused by insufficient or lack of dust suppression (transportation of dust to a residential area, wind borne dust deposits etc.) measures will be compensated by the contractor. Farmers should be informed about the irrigation period and the plants to be grown in order to prevent the weakening of livelihoods due to decrease in agricultural yield. 	Minor	<ul style="list-style-type: none"> Contractor to prepare and implement the management system documentation, Consultant and KASKI to approve both plans and implementation 	<ul style="list-style-type: none"> Air Quality Management Plan 	

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11	Exhaust emissions	Construction	Air environment	<p>To keep the negative impacts in "Negligible" level:</p> <ul style="list-style-type: none"> Well and adequately maintained vehicles will be used. Regular maintenance of machinery and equipment will be ensured. Construction vehicles will not be permitted to keep engines running while waiting to enter the site or waiting on-site. Relevant provisions of the Regulation on Air Pollution Control Sourced from Industry and Regulation on the Assessment and Management of Air Quality will be complied with to minimize air emissions sourced from construction machinery and trucks. 	Negligible	<ul style="list-style-type: none"> Contractor to keep vehicles/machinery well maintained. 	<ul style="list-style-type: none"> Air Quality Management Plan
12	GHG emissions	Construction	Air environment	<ul style="list-style-type: none"> GHG inventory to be developed before the commencement of construction. Scope-1 and Scope-2 emissions will be reported annually to ILBANK. Scope-3 emission reporting is not mandatory but encouraged. 	Minor	<ul style="list-style-type: none"> Contractor 	<ul style="list-style-type: none"> Air Quality Management Plan
13	Increase in noise levels	Construction	Employees, residents, businesses around the site	<ul style="list-style-type: none"> A Noise Management Plan will be prepared in line with ESN1, ESN3, and Islamic Development Bank (IsDB) Environmental and Social Safeguard Policy and Islamic Development Bank guidelines(both general and sector specific) before the construction and operation phases. Trees will be planted to the Construction site. It will be ensured that machinery and equipment will not be operated all together in the close section of the WWTP Area to nearest building so that the noise level at the nearest buildings does not exceed the regulatory and Islamic Development Bank (IsDB) Environmental and Social Safeguard Policy limit values as it is calculated so. Attention will be given to the selection of equipment with low noise level. The maintenance of the construction machinery and equipment will be carried out regularly and regulatory speed limitations will be followed for construction vehicles and this should be included in the construction site transport and traffic management plan to be prepared by the contractor. The works will be performed day-time; no night work unless it is absolutely necessary. A grievance mechanism will be established to manage noise related grievances as well. 	Minor	<ul style="list-style-type: none"> Contractor to prepare and implement the management system documentation, Consultant and KASKI to approve both plans and implementation. Contractor to review and update, if necessary, the management system documentation three months prior to the operation commences. 	<ul style="list-style-type: none"> Noise Management Plan
14	Change in the water and groundwater quality	Construction	Water resources	<ul style="list-style-type: none"> A Water Resources and Wastewater Management Plan that is in line with the ESN1, ESN3, and Islamic Development Bank (IsDB) Environmental and Social Safeguard Policy will be prepared prior to the construction phase. Surface runoff or wastewater generation due to dust suppression activities will be prevented. The limited amount of domestic wastewater generated at the KWWTP construction site will be sent to the existing KWWTP. The units of the Project that are in touch with water, wastewater and chemicals will be constructed using concrete with appropriate cement ratio and durability in order to provide basement impermeability. All chemical storage containers, including diesel fuel, and hazardous liquid waste drums/containers should be placed to minimize the risk of soil, surface water and groundwater contamination during construction. All unit shutdown requirements due to construction activities will be scheduled at least one week beforehand by the construction contractor, Consultant and KASKI will be informed to make necessary adjustments. 	Minor	<ul style="list-style-type: none"> Contractor to prepare and implement the management system documentation, Consultant and KASKI to approve both plans and implementation. Contractor to notify KASKI about unit shutdown requirements of the existing KWWTP one week ahead of the planned activity. KASKI will approve in written. 	<ul style="list-style-type: none"> Water Resources and Effluent Management Plan Waste Management Plan
15	Discharge of treated effluent	Construction	Receiving body and its downstream	<ul style="list-style-type: none"> The limited amount of domestic wastewater generated at the KWWTP will be sent to the KWWTP itself. KASKI will aim to have no direct bypasses of the treatment system. 	Negligible	<ul style="list-style-type: none"> Contractor to review and update, if necessary, the plan three months before the operation commences, Consultant and KASKI to approve plans and to implement. 	<ul style="list-style-type: none"> Water Resources and Effluent Management Plan

No.	Impact Description	Subproject Phase	Sensitive Receptor(s)	Management/ Mitigation Measure	Impact Significance After Mitigation	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
16	Improper handling of waste	Construction	Soil, surface water, ground water, residents	<ul style="list-style-type: none"> A Waste Management Plan that is in line with the ESN1, ESN3, and Islamic Development Bank (IsDB) Environmental and Social Safeguard Policy will be prepared prior to the construction phase to ensure that: Waste to be generated within the scope of the Project will be managed in accordance with the waste management hierarchy. All kinds of implementations that may threaten personnel or public health will be avoided in all activities involving collection, temporary storage, transport and disposal of wastes throughout the Project. Waste recycling, transport and disposal will be carried out by means of licensed companies and/or KMM. Incineration or burying of waste by any means at site and/or dumping of waste to nearby roads or water resources will be forbidden. Waste to be temporarily stored on site will be delivered to licensed transport vehicles appropriate to the type of waste for disposal. Information related to the operations in this context will be recorded and the records will be kept in the administrative building. Removal of the excavated material from the site will be performed at regular intervals without waiting. These materials will be transferred to KMM disposal site(s) by licensed transportation companies. Hazardous or non-hazardous inscription, waste code, stored waste amount and storage date will be indicated/labelled on wastes temporarily stored by classifying according to their properties. The reaction of wastes with each other will be prevented by the measures taken in the Temporary Storage Area, which will have impermeable ground, proper drainage for accidental leaks/spills, top cover and designated rooms for different types of wastes, etc. The permit for the temporary waste storage area will be taken by the contractor from the Provincial Directorate of Environment, Urbanization and Climate Change. The Waste Management Plan will be updated by contractor to reflect operation phase conditions three months before the commencement of the operation phase. Relevant measures defined for the construction phase apply also to operation phase. The updated plan will provide procedures for the management of waste other than sludge. 	Minor	<ul style="list-style-type: none"> Contractor to prepare and implement the management system documentation, Consultant and KASKI to approve both plans and implementation during the construction phase Contractor to review and update, if necessary, the plan three months before the operation commences, Consultant and KASKI to approve plans and to implement. 	<ul style="list-style-type: none"> Waste Management Plan
17	Disturbance to biological environment	Construction	Habitat, Flora and Fauna Species, KBA	<ul style="list-style-type: none"> Prior to the site preparation works, definite working areas will be set up where activities (e.g. vegetation clearing, vegetation removal, levelling and construction) and permanent structures (units and roads) will be established. Project construction sites and access roads will be separated from other areas with appropriate signboards, signs and fences. Therefore, staff and vehicle access to the area will be limited to the construction site. Avoid and/or minimize dust emissions by lightly watering the immediate surroundings of construction sites and wetting the stored material. Construction waste generated due to project activities will first be stored at designated storage areas and then disposed of. Construction work will be done gradually so that it will have enough time to escape for possible fauna species to be found. If there is a nest of bird species, the nest will be marked with a safety strip about 3 meters in diameter and an expert ornithologist will be informed. Project workers will not be allowed to bring any live animals or plants into the site to avoid the risk of pest/invasive species establishing in the Project Area. 	Minor	<ul style="list-style-type: none"> Contractor 	<ul style="list-style-type: none"> OHS Management Plan
18	Demographic structure and social cohesion	Construction	Sub-Project workers	<ul style="list-style-type: none"> Employees will be trained on behavior and ethical rules. Employee complaints will be recorded through Grievance Forms. 	Minor	<ul style="list-style-type: none"> Contractor 	<ul style="list-style-type: none"> LMP
19	Working conditions	Construction	Sub-Project workers	<ul style="list-style-type: none"> Contractor will implement the Code of Conduct which they submit during the bidding process. The contractor will adopt LMP of Project and prepare and implement their own labor management plan to cover the subjects; fair treatment; non-discrimination and equal opportunities of workers; establishing, maintaining and improving a sound worker-management relationship; compliance with national labor and employment laws; code of conduct; protecting and promoting the safety and health of workers, 	Minor	<ul style="list-style-type: none"> Contractor during the construction phase, Consultant and KASKI to inspect and approve contractor's compliance 	<ul style="list-style-type: none"> LMP

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				<p>especially by promoting safe and healthy working conditions; preventing the use of forced labor and child labor (as defined by the IsDB ESN2 and Turkish legislation); induction training for employees on IsDB ESNs, Code of Conduct, OHS, and GM for workers.</p> <ul style="list-style-type: none"> Workers will be provided with documented information that is clear and understandable, regarding their rights under national labor law; including collective agreements, their rights related to hours of work, wages, overtime, compensation, and benefits as of startup of working relationship and when any material changes occur. Workers will not be discouraged from electing worker representatives, forming or joining workers' organizations of their choosing, or from bargaining collectively, and will not discriminate or retaliate against workers who participate, or seek to participate, in such organizations and collective bargaining. Concern will be paid to the principles of non-discrimination and equal opportunity. In this respect, employment decisions (i.e. recruitment and hiring, compensation, wages and benefits, working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices) will not be made on the basis of personal characteristics unrelated to job requirements. Wages, work hours and other benefits will be per the Turkish Labor Law. Unregistered employment will be avoided. A workers' grievance mechanism as defined in the LMP will be implemented to raise workplace concerns. The workers will be informed about the grievance mechanism at the time of recruitment and make it easily accessible to them. 			
20	Protecting the workforce	Construction	Sub-project workers	<ul style="list-style-type: none"> Employment of child labor and forced labor will be prevented. Turkish Labor Law and relevant regulations cover the basic principles of international labor standards and ESN2 on equal treatment of employees, restrictions on working age and employment of children, prevention of forced labor and ensuring occupational health and safety in workplaces. It is essential to monitor the implementation to ensure full compliance of the activities with the relevant legislation. Contractor is required to have an age verification system, ensuring no one under 18 years old are involved in hazardous works as indicated in the LMP. OHS Management Plan that is in line with ESN1, ESN2, Islamic Development Bank (IsDB) Environmental and Social Safeguard Policy, and national legislation will be prepared by the contractor before the construction activities commence. Contractor will review and update the OHS Management Plan to reflect operation conditions three months before the commencement of operation, submit the revised version for Consultant and KASKI's initial approval. For the SEA/SH and GBV risks: <ul style="list-style-type: none"> Code of Conduct training will be performed for all employees. Appropriate and proportional security measures will be applied for women workers (e.g., lighting, alarms, separate toilets), A confidential grievance process will be available for GBV/SEA/SH grievances regular outreach to workers, but also to the local community, to address GBV/SEA/SH risks in the context of the worksite and labor influx. 	Negligible	<ul style="list-style-type: none"> Contractor during the construction phase, Consultant and KASKI to inspect and approve contractor's compliance. 	<ul style="list-style-type: none"> LMP OHS Management Plan SEP
21	Occupational health and safety risks	Construction	Sub-project workers	<ul style="list-style-type: none"> In order to minimize the risks and hazards that may arise (e.g. natural disasters, accidents, equipment malfunctions etc.) on human health and safety, safe working environments in the working sites will be established and physical hazards and risks will be prevented. The relevant plans and procedures required by Turkish legislation will be prepared and the Contractor will comply fully with the OHS measures and practices. Employees will be informed about the hazards that may cause from their work and thus a safer work environment will be created. 	Minor	<ul style="list-style-type: none"> Contractor 	<ul style="list-style-type: none"> LMP EPR Plan OHS Management Plan Confined Space Entry Procedure Security Plan

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				<ul style="list-style-type: none"> Workers who will be involved in works requiring hazardous chemicals will receive special training. Comprehensive OHS training (i.e. not limited to the mandatory training defined by legislation) will be given to employees. In this context, a training program will be prepared, training records will be kept, and evaluation activities will be carried out after the trainings. Health screening before and after the employment period will be made to monitor and record any possible occupational diseases. Personal protective equipment will be provided to all employees free of charge and necessary training will be given for their use. Work areas will be equipped with warning signs in accordance with the quality and potential risks of the work to be performed in that area. Smoking in areas where there is a risk of fire will be prohibited. All employees must have knowledge of what to do in the event of a fire. Regular drills will be made with different scenarios, records will be kept Project staff will include first aid trained personnel. In case of emergency where an intervention is required, personnel will be sent to the nearest health center by appropriate means. Minimum number required by Turkish legislation must be met. KASKİ will approve the sufficiency of the technical requirement of the Contractor's machinery, equipment, and tools to be used in the activities. Compressed vessels will be regularly checked by an authorized authority defined by Turkish Law. Moving parts of machinery and equipment will be equipped with appropriate protective systems (e.g. metal shields etc.), minimizing the risk of injury or damage to the person using the machine or equipment. Personal factors that may create and control risks during activities (e.g. long hair, jewelry and accessory use, clothing etc.) will be removed from the site by the regulations brought by the plant management. Project staff will be informed about the relevant regulations within the scope of the training program. Drivers and operators will be trained to comply with traffic rules and to control the vehicles and equipment they use against risks and hazards originating from vehicle traffic. Required traffic signs will be placed in the Project Site and its surroundings. Machine operators and other employees will be informed and alerted about the relevant signs. Areas where excavation work is to be carried out will not be accessible other than the authorized personnel. Any movement of bulk material, heavy machinery or any lifting / rigging operation shall be carried out together with the Flagmen / Signalmen Before construction activities begin, any holes on the fences of the KWWTP area will be fixed and the access of the visitors, local people, and animals to the area will be controlled. Public access to the site shall be restricted by any means. If a trench needs to be left open for night, sufficient illumination of the area shall be ensured by the Contractor and necessary signs shall be placed and the area shall be enclosed with barriers. Competency of the OHS personnel and OHS monitoring capacity of the contractor must be ensured before works commence WWTPs are classified as "highly hazardous" workplaces according to Communiqué on Occupational Health and Safety Hazard Classes List and therefore, at least 67 hours/month supervision is mandatory for 100 workers. The contractor will assign at least one A-Class OHS Expert to the Project and the expert(s) will be supervised by KASKİ's OHS Experts. A comprehensive risk assessment will be done for each type of activity to be performed and employees will be trained regarding the risks. Contractor, Supervisor, KASKİ OHS Personnel will daily inspect the site and nonconformities will be reported to Consultant and KASKİ for immediate correction. 			

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				<ul style="list-style-type: none"> Existing Kayseri WWTP has an EPR Plan in effect. However, it should be reviewed and updated such that it will cover both the current operation and upcoming construction works. The EPR Plan to be prepared for construction works will cover the issues about the contagious diseases. Upon completion of the proposed Project, Contractor will prepare a new EPR Plan for operation phase and KASKİ approved this plan. In case of any significant environmental or social incident (e.g. lost time incidents, fatalities, environmental spills etc.), the Contractor will notify KASKİ about the incident in 24 hours and KASKİ will immediately inform İLBANK. A detailed incident investigation report, including the root-cause analysis, precautions and compensation measures taken will be submitted by KASKİ to İLBANK in 10 business days after the incident. The definition of the "significant environmental and social incident" will be clearly made in the contract. 			
22	Labor and working conditions impact on supplier contractor	Construction	Employees of supplier contractor	<ul style="list-style-type: none"> Contractor will prepare a Subcontractor and Supply Chain Management Plan before involvement of sub-contractors, Consultant and KASKİ ensure its implementation. 	Negligible	• Contractor	<ul style="list-style-type: none"> Subcontractor and Supply Chain Management Plan LMP
23	Labor and working conditions impact on subcontractor	Construction	Employees of subcontractors	<ul style="list-style-type: none"> The performance of subcontractors will be monitored such that human rights policy and labor rights of all workers are exercised properly and non-compliance measures will be included in their contracts. Subcontractors will be reputable and legitimate businesses and will operate in a manner consistent with the requirements of ESN2. The workers of subcontractors will have access to the overall grievance mechanism to be established for the Project. 	Negligible	• Contractor	• LMP
24	General construction related impacts on community	Construction	Community	<ul style="list-style-type: none"> A Community Health, Safety, and Security Management Plan that is in line with ESN1, ESN4 and Islamic Development Bank (IsDB) Environmental and Social Safeguard Policy will be developed by the construction contractor. 	Minor	• Contractor	<ul style="list-style-type: none"> Community Health, Safety, and Security Management Plan
25	Workers' Accommodation	Construction	Sub-project workers	<ul style="list-style-type: none"> An accommodation area in accordance with Workers' Accommodation: Processes and Standards will be provided. Code of Conduct will be established and employees will be informed. 	Minor	• Contractor	<ul style="list-style-type: none"> Community Health, Safety, and Security Management Plan
26	Increased traffic	Construction	Road users	<ul style="list-style-type: none"> Disruptions to traffic and road transport will be minimized. Prior to construction activities, the Contractor will install all signs, barriers and control devices needed to ensure the safe use of roads connecting to the plant site by traffic and pedestrians Disposal sites and haul routes will be identified and coordinated with local officials Grievance mechanism will be implemented to collect traffic-related grievances. Project drivers will be trained on traffic safety 	Negligible	• Contractor	<ul style="list-style-type: none"> Community Health, Safety, and Security Management Plan
27	Unauthorized access	Construction	Community, Sub-project workers	<ul style="list-style-type: none"> The construction area will be surrounded by wire fences and recorded with cameras. The construction area will also be protected by private security guards. Work in the parts where the business continues will be subject to special time periods and plans. 	Minor	• Contractor	• Security Management Plan
28	Communication between the contractor and the residents	Construction	Community and Sub-project workers	<ul style="list-style-type: none"> Staff will be trained in direct communication with local people. 	Minor	• Contractor	<ul style="list-style-type: none"> Security Management Plan Contractor Management Plan
29	Harassment and incidents that may constitute a crime	Construction	Community and Sub-project workers	<ul style="list-style-type: none"> The necessary storage and recording systems will be implemented to eliminate the factors that may cause crime. The reasons will be tried to be eliminated by regularly taking the suggestions of the construction site, residents and Sub-project employees. 	Minor	• Contractor	<ul style="list-style-type: none"> Community Health, Safety, and Security Management Plan
30	Community Safety	Construction	Community and Sub-project workers	<ul style="list-style-type: none"> Security Management Plan that is in line with ESN1, ESN4, and Islamic Development Bank (IsDB) Environmental and Social Safeguard Policy will be developed by consultant before the construction phase. 	Negligible	• Contractor	• Security Management Plan

No.	Impact Description	Subproject Phase	Sensitive Receptor(s)	Management/ Mitigation Measure	Impact Significance After Mitigation	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure	
				<ul style="list-style-type: none"> Consultant and KASKİ will ensure that the contractor(s) follow the plan. The Security Management Plan should reveal the process for security personnel's interaction with the community, and their relationship particularly in addressing encroachment (envisioned by the project). The level of force needs to be reviewed carefully and the signing of the Code of Conduct by all project workers (including security personnel) would be important. Security forces also need to be trained on conflict resolution, restraining security practices, working with communities etc. People and/or organizations with the necessary permits will be assigned to ensure the security of the Sub-project Area. The private security applications shall comply with the provisions of the Regulation on the Implementation of the Law on Private Security Services and the Law on Private Security Services. In addition to security personnel, monitoring of the Sub-project Site will be made by a closed-circuit camera system which will be installed at appropriate distances on the site boundary (e.g. 30- 40 meters) to provide daytime and night-time monitoring of the whole area. Sufficient lighting of the WWTP will be ensured. 				
31	Plant/Unit Failure and/or Shutdown	Construction	Community and project workers	<ul style="list-style-type: none"> All unit shutdown requirements due to construction activities will be scheduled at least one week beforehand by the contractor and should be approved by Consultant and KASKİ. In major shutdowns of the plant or biological treatment units that require longer times, nutrition levels will be maintained at the biological treatment units, aeration will be stopped after one day for aerobic processes. Recirculation will be turned down for anaerobic processes, and pH regulation and nutrient dosing will be conducted only when the gas production is less than 10% of the original gas production. During the longer shutdowns or failures, KASKİ will inform Provincial Directorate of Environment, Urbanization and Climate Change regarding the situation. During excessive loads that the Kayseri WWTP cannot handle, the bypass line of the existing plant will be used to bypass the load. In case of direct discharge of untreated wastewater to receiving body due to the failures and/or shutdowns, KASKİ will immediately inform mukhtar(s) of the settlements downstream to request farmers to stop withdrawing water from the receiving body. 	Minor	<ul style="list-style-type: none"> Contractor 	<ul style="list-style-type: none"> ERP 	
32	Damage to any chance find	Construction	Archaeological and cultural heritage	<ul style="list-style-type: none"> Chance Finds Procedure will be implemented during land preparation and construction works. This procedure will be implemented in an appropriate manner with Article 4 of Law on the Conservation of Cultural and Natural Properties (Law No. 2863). In this content: <ul style="list-style-type: none"> Construction works will be stopped immediately in case of a chance find. Related Conservation Boards or Museum Directorate will be informed immediately. Works will not proceed until official notification is received. 	Negligible	<ul style="list-style-type: none"> Contractor Consultant and KASKİ 	<ul style="list-style-type: none"> Chance Finds Procedure 	
33	Possible soil contamination due to accidental leaks, spills, uncontrolled waste disposal, improper hazardous material management	Operation	Soil	<ul style="list-style-type: none"> A Sludge Management Plan will be prepared in line with ESN1, ESN3, and Islamic Development Bank (IsDB) Environmental and Social Safeguard Policy before three months of the commencement of operation phase. 	Minor	<ul style="list-style-type: none"> Contractor to prepare and implement the management system documentation, Consultant and KASKİ to approve both plans and implementation 	<ul style="list-style-type: none"> Sludge Management Plan 	
34	Exhaust emissions	Operation	Air environment	<p>To keep the negative impacts in "Negligible" level:</p> <ul style="list-style-type: none"> Well and adequately maintained vehicles will be used. Regular maintenance of machinery and equipment will be ensured. 	Negligible	<ul style="list-style-type: none"> KASKİ to keep vehicles/machinery well maintained. 	<ul style="list-style-type: none"> Air Quality Management Plan 	
35	Odorous gas emissions and nuisance in the close vicinity of the KWWTP	Operation	Air environment and businesses	<p>The first level measures:</p> <ul style="list-style-type: none"> Prevention of wastewater influent which exceed treatment plant capacity. Reduction of solid waste and activated sludge amounts. 	Minor	<ul style="list-style-type: none"> KASKİ 	<ul style="list-style-type: none"> Air Quality Management Plan 	

No.	Impact Description	Subproject Phase	Sensitive Receptor(s)	Management/ Mitigation Measure	Impact Significance After Mitigation	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
			located around the site	<ul style="list-style-type: none"> Increasing disposal frequency of screenings. Proper and timely disposal of sludge in order to prevent flies and odor. Increasing aeration rate in biological treatment process. Addition of lime to activated sludge. Keeping water level under control in order to prevent turbulence as a result of instant decrease of water. Within the scope of the project a biological odor removal unit will be installed in the plant. 			
36	GHG emissions	Operation	Air environment	<ul style="list-style-type: none"> GHG inventory to be developed before the commencement of operation phases. Scope-1 and Scope-2 emissions will be reported annually to ILBANK. Scope-3 emission reporting is not mandatory but encouraged. 	Minor	<ul style="list-style-type: none"> KASKİ 	<ul style="list-style-type: none"> Air Quality Management Plan
37	Increase in noise levels	Operation	Employees, businesses around the site	<ul style="list-style-type: none"> The Noise Management Plan prepared by the Contractor will be reviewed and updated, if necessary, before the acceptance of the works. During the procurement of equipment and machinery, sound levels given in the technical specifications/data sheet will be taken into consideration. Relevant provisions and limit values of national legislations and Islamic Development Bank (IsDB) Environmental and Social Safeguard Policy will be complied with during the operation phase. After the plant is put into operation, gas engine-related noise measurements will be renewed. 	Negligible	<ul style="list-style-type: none"> Contractor to prepare and implement the management system documentation, Consultant and KASKİ to approve both plans and implementation. Contractor to review and update, if necessary, the management system documentation three months prior to the operation commences. 	<ul style="list-style-type: none"> Noise Management Plan
38	Change in the water and groundwater quality	Operation	Water resources	<ul style="list-style-type: none"> No leakages to soil and groundwater will occur during the operation phase of the Project. 	Minor	<ul style="list-style-type: none"> Contractor to prepare and implement the management system documentation, Consultant and KASKİ to approve both plans and implementation. Contractor to notify KASKİ about unit shutdown requirements of the existing Kayseri WWTP one week ahead of the planned activity. KASKİ will approve in written. 	<ul style="list-style-type: none"> Water Resources and Effluent Management Plan
39	Discharge of treated effluent	Operation	Receiving body and its downstream	<ul style="list-style-type: none"> The Water Resources and Effluent Management Plan will be updated to reflect operation phase conditions three months before the commencement of operation. The effluent water quality of the Kayseri WWTP will comply with applicable national requirements or internationally accepted standards. System overflows will be prevented as much as possible by using level-meters. The effluent water quality of the Kayseri WWTP will be consistent with the limit values stipulated in the Urban Wastewater Treatment Regulation and irrigation water quality criteria presented in Water Pollution Control Regulation Technical Aspects Bulletin. The water quality of the receiving body will be monitored regularly, and if deemed, necessary measures should be developed. KASKİ will search options to increase the effluent water quality based on the assimilative capacity of the receiving body. 	Minor	<ul style="list-style-type: none"> Contractor to review and update, if necessary, the plan three months before the operation commences, Consultant and KASKİ to approve plans and to implement. KASKİ to submit monthly reports. KASKİ to perform assimilative capacity determination study 	<ul style="list-style-type: none"> Water Resources and Effluent Management Plan

No.	Impact Description	Subproject Phase	Sensitive Receptor(s)	Management/ Mitigation Measure	Impact Significance After Mitigation	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
				<ul style="list-style-type: none"> KASKİ will submit monthly records of effluent quality, quantity, treatment performance for legislation-defined parameters, and amount of bypassed influent volume with reason to İLBANK. 			
40	Improper handling of waste	Operation	Soil, water, air, community	<ul style="list-style-type: none"> Waste to be generated within the scope of the Project will be managed in accordance with the waste management hierarchy. Waste recycling, transport, and disposal will be carried out by means of licensed companies and/or KMM. Incineration or burying of waste by any means at site and/or dumping of waste to nearby roads or water resources will be forbidden. All kinds of implementations that may threaten personnel or public health will be avoided in all activities involving collection, temporary storage, transport and disposal of wastes throughout the Project. Waste to be temporarily stored on site will be delivered to licensed transport vehicles appropriate to the type of waste for disposal. Information related to the operations in this context will be recorded and the records will be kept in the administrative building. Hazardous or non-hazardous inscription, waste code, stored waste amount and storage date will be indicated/labelled on wastes temporarily stored by classifying according to their properties. The reaction of wastes with each other will be prevented by the measures taken in the Temporary Storage Area. 	Minor	<ul style="list-style-type: none"> Contractor to prepare and implement the management system documentation, Consultant and KASKİ to approve both plans and implementation during the construction phase Contractor to review and update, if necessary, the plan three months before the operation commences and KASKİ to approve plans and to implement. 	<ul style="list-style-type: none"> Waste Management Plan
41	Improper handling of excess sludge	Operation	Soil, water, air, community	<ul style="list-style-type: none"> A Sludge Management Plan in line with ESN1, ESN3 and Islamic Development Bank (IsDB) Environmental and Social Safeguard Policy) will be constituted and implemented. The excess sludge, if any, will be managed in line with the Sludge Management Plan. The excess sludge will be stored in special containers designated for this purpose only and sent to Treatment Sludge Storage Area with licensed trucks. 	Minor	<ul style="list-style-type: none"> Contractor to prepare the Sludge Management Plan, and KASKİ to approve and implementation during the operation phase 	<ul style="list-style-type: none"> Sludge Management Plan
42	Disturbance to biological environment	Operation	Biological environment, KBA	<ul style="list-style-type: none"> Construction and operation sites will be fenced to prevent fauna species' entrance into these areas. 	Minor	<ul style="list-style-type: none"> Contractor and KASKİ 	<ul style="list-style-type: none"> OHS Management Plan
43	Demographic structure and Social cohesion	Operation	Sub-Project workers	<ul style="list-style-type: none"> Employees will be trained on behavior and ethical rules. 	Minor	<ul style="list-style-type: none"> KASKİ 	<ul style="list-style-type: none"> LMP
44	Working conditions	Operation	Sub-Project workers	<ul style="list-style-type: none"> Workers will be provided with documented information that is clear and understandable, regarding their rights under national labor law; including collective agreements, their rights related to hours of work, wages, overtime, compensation, and benefits as of startup of working relationship and when any material changes occur. Unregistered employment will be avoided. 	Minor	<ul style="list-style-type: none"> Contractor during the construction phase, and KASKİ to inspect and approve contractor's compliance KASKİ during the operation phase 	<ul style="list-style-type: none"> LMP
45	Occupational health and safety risks	Operation	Sub-project workers	<ul style="list-style-type: none"> The whole area will be fenced; the access of local people and wildlife will be controlled, and encroachment will be prevented. The entry of personnel and third parties into the facility will be carried out in a controlled manner. The workers will be trained in accordance with Regulations on the Procedures and Principles of Occupational Health and Safety Trainings of Employees. Personal Protective Equipment will be provided to the workers free of charge according to the nature of the work to be performed. The necessary training will be carried out for their use. Smoking will be prohibited where the risk of fire is high. All the workers will be informed about the action plan in case of fire. All equipment will be operated in proper working order. In the maintenance and repair activities, procedures approved by the KASKİ and the requirements of the technical specifications of the supplier companies will be complied with. The necessary health and safety signs and traffic signs will be placed around the project site. Employees will be informed and alerted about the subject matter markings. 	Minor	<ul style="list-style-type: none"> KASKİ 	<ul style="list-style-type: none"> LMP EPR Plan OHS Management Plan Confined Space Entry Procedure Security Plan

No.	Impact Description	Subproject Phase	Sensitive Receptor(s)	Management/ Mitigation Measure	Impact Significance After Mitigation	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
				<ul style="list-style-type: none"> Trainings will be given to employees and operational and maintenance personnel within the scope of the Regulation on Procedures and Principles of Occupational Health and Safety Trainings and measurement and evaluation activities will be carried out after the trainings. Entrance of operation and maintenance personnel and third parties will be carried out in a controlled manner from the gates. Automatic cleaning screens will be used instead of manually cleaning screens to prevent entrance of cleaning workers into the channels. Appropriate ventilation systems will be installed where methane accumulation is expected. Railings will be installed around all tanks and pits. KASKİ will prepare a Confined Space Entry Procedure that is consistent with applicable national requirements and internationally accepted standards. KASKİ will conduct training for operators who work with chemicals such as flocculants, disinfectants, etc. regarding safe handling practices and emergency response procedures. KASKİ will distribute sufficient number of personal gas detection equipment to its employees. KASKİ will advise individuals with asthma, diabetes, or suppressed immune systems not to work at the treatment plant and its auxiliary facilities due to greater risk of infection. KASKİ will ensure the compliance of all the activities within the treatment plant and pumping stations with national standards and Islamic Development Bank (IsDB) Environmental and Social Safeguard Policy In case of any significant environmental or social incident (e.g. lost time incidents, fatalities, environmental spills etc.), KASKİ will notify İLBANK about the incident in 24 hours. A detailed incident investigation report, including the root-cause analysis, precautions and compensation measures taken will be submitted by KASKİ to İLBANK in 10 business days after the incident. The definition of the "significant environmental and social incident" will be clearly made. 			
46	Plant/Unit Failure and/or Shutdown	Operation	Community and project workers	<p>During the longer shutdowns or failures, KASKİ will inform Provincial Directorate of Environment, Urbanization and Climate Change regarding the situation.</p> <ul style="list-style-type: none"> During excessive loads that the Kayseri WWTP cannot handle, the bypass line of the existing plant will be used to bypass the load. In case of direct discharge of untreated wastewater to receiving body due to the failures and/or shutdowns, KASKİ will immediately inform mukhtar(s) of the settlements downstream to request farmers to stop withdrawing water from the receiving body. 	Minor	<ul style="list-style-type: none"> KASKİ 	<ul style="list-style-type: none"> ERP
47	Stakeholder engagement and grievance management during operation	Operation	Local communities, vulnerable groups	<ul style="list-style-type: none"> Maintain an operational grievance mechanism accessible to local communities, workers, and other stakeholders throughout the operation phase. Continue stakeholder engagement activities, including periodic information sharing and consultations with Boğazköprü and Molu Neighborhoods, as needed. Ensure that grievances related to operational impacts (e.g. odor, noise, traffic, sludge transport) are recorded, assessed, and resolved in a timely manner. Keep grievance records and report grievances and responses as part of environmental and social monitoring and reporting. 	Minor	<ul style="list-style-type: none"> KASKİ 	<ul style="list-style-type: none"> SEP GRM Mechanism

Table 2 Environmental and Social Monitoring Table

No.	Subproject Phase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold Level (if applicable)	Monitoring / Key Performance Indicators – KPI's	Responsibility for Monitoring*	Cost (If not included in the Subproject Budget)
1	Pre-Construction	Land use & site preparation readiness	Delineation of work footprint; fencing/signage completion Confirmation of absence of informal or unauthorized land users	Entire Project boundary Review of land records and institutional documents; site inspections; consultation with local authorities	Site walk-through; photo logs; checklist	Once, before mobilization (and during construction if any change is observed)	IsDB ESSP	Approved site layout; boundary fenced; of unauthorized access points closed No informal land users identified; no grievances related to land access	Consultant and KASKİ	To be included in construction budget
2	Pre-Construction	Baseline soil quality	Soil quality (pH, metals, nutrients, PAHs, EC)	At least three locations within the site	Sampling & analysis by accredited lab	Once, before construction	National soil quality guidance; ESIA Section (Baseline)	Completed baseline report; samples meeting data quality objectives (DQOs)	Consultant and KASKİ	To be included in construction budget
3	Pre-Construction	Topsoil management readiness	Identified stripping areas; stockpile locations/labels; moisture & pile height criteria	Entire Project and stockpile areas	Visual inspection; records	Once before stripping; then weekly during stripping	Soil/erosion GIIP; ESIA commitments	Topsoil stockpile ID signage; moisture within target; pile height within spec	Consultant and KASKİ	To be included in construction budget
4	Pre-Construction	Cultural heritage preparedness	Chance Find Procedure availability; worker toolbox trainings completed	Entire Project	Document review; training attendance sheets	Once before ground-breaking	Law No. 2863; ESN8; SEP	Procedure approved; workforce trained; notification flow tested	Consultant and KASKİ	To be included in construction budget
5	Pre-Construction	Air (mobilization dust)	Dust control set-up (water supply, covers); haul route cleaning plan	Laydown/haul routes, stockpiles	Visual check; records	Weekly until steady-state construction starts	ESIA Air section; EHSG	Availability of water trucks/covers; dust complaints	Consultant and KASKİ	To be included in construction budget
6	Pre-Construction	Noise (baseline & communication)	Baseline noise at nearest receptor(s); community notification records	Nearest industrial/commercial building(s)	Short-term baseline measurements; records review	Once baseline; notices ≥72h before noisy works	National noise regs; ESIA Noise section	Baseline completed; timely notifications issued	Consultant and KASKİ	To be included in construction budget
7	Pre-Construction	Traffic & access	Approved Traffic Management Plan; signage/barriers in place; detour plans	Access roads & site gates	Field verification; photo logs	Once before mobilization; then monthly	TMA, EHSG Traffic	TYP approved; signs/barriers installed; driver induction completed	Consultant and KASKİ	To be included in construction budget
8	Pre-Construction	Labor & working conditions	LMP adoption; worker GRM established & disclosed; Code of Conduct signed	Site offices / induction area	Document review; interviews	Once before hiring; then monthly check	ESN2; Turkish labor law	GRM operational; workforce inducted; CoC signed	Consultant and KASKİ	To be included in construction budget
9	Pre-Construction	Community health & safety	CHSS Plan approved; site fencing/lighting; emergency contacts posted	Site perimeter & community boards	Field check; photos	Once before mobilization	ESN4; EHSG	CHSS Plan approval; H&S signages posted; emergency list visible	Consultant and KASKİ	To be included in construction budget
10	Pre-Construction	Stakeholder engagement	Early meetings held; GRM channels communicated; disclosure records	Affected neighborhoods / mukhtars	Engagement records review	Upon each engagement (pre-works)	SEP / ESIA SEP section	Engagements; attendance; issues logged/closed	Consultant and KASKİ	To be included in construction budget

No.	Subproject Phase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold Level (if applicable)	Monitoring / Key Performance Indicators – KPI's	Responsibility for Monitoring*	Cost (If not included in the Subproject Budget)
11	Pre-Construction	Permits & compliance	Availability/validity of required permits & approvals	Project office	Document review checklist	Once before construction	Applicable national regulations	100% permits on file valid	Consultant and KASKİ	To be included in construction budget
12	Construction	Surface Water Quality	pH, DO, BOD ₅ , COD, TSS, TN, TP, NH ₄ -N, EC, metals	Upstream & downstream of Karasu Creek (minimum 2 samples per event)	In-situ measurements + laboratory analysis	Quarterly	WPCR	Compliance with regulatory limits; trend analysis	Contractor (implementation), KASKİ & Consultant (supervision)	Included in construction budget
13	Construction	Groundwater Quality	pH, EC, nitrates, ammonia, heavy metals	Monitoring wells GW-1 & GW-2 (minimum 2 wells sampled each event)	Sampling + laboratory analysis	Quarterly	WPCR groundwater criteria	Deviation from baseline; contamination indicators	Contractor; KASKİ & Consultant	Included in construction budget
14	Construction	Soil Quality (Contamination)	TPH, PAHs, heavy metals	Sensitive construction zones & storage areas (minimum 3 soil sampling points)	Soil sampling + laboratory analysis	Quarterly	Regulation on Soil Pollution	Compliance with threshold values	Contractor; KASKİ supervision	Included in construction budget
15	Construction	Noise Monitoring	24-hr noise levels (Leq)	Nearest industrial/commercial receptor (minimum 1 monitoring point)	24-hr noise measurement	Quarterly	National Noise Regulation + Islamic Development Bank (IsDB) Environmental and Social Safeguard Policy	Noise levels within acceptable limits	Contractor; KASKİ supervision	Included in construction budget
16	Construction	Air Quality (PM Monitoring)	PM10, PM2.5	Nearest receptor (industrial/commercial) – minimum 1 point (preferably 2)	Air sampling + visual inspections	Quarterly	National Air Quality Regulation	PM exceedances; trend analysis	Contractor; KASKİ supervision	Included in construction budget
17	Construction	Soil pollution	Amount of contaminated soil	Entire Project	Environmental incident register	After each incident	Regulation on Control of Soil Pollution and Sites Polluted by Point Sources	Soil analysis results	Consultant and KASKİ	To be included in construction budget
18	Construction	Soil pollution	Number of oil/fuel and chemical leakages/spills	Entire Project	Environmental incident register	Monthly	-	Contaminated soil amount Environmental spill/leak incident records	Consultant and KASKİ	To be included in construction budget
19	Construction	Historical soil pollution status	Soil quality, including, pH, heavy metals, phosphorus, nitrogen, Na, Ca, salts, PAHs	At least three locations within the site	Sampling, analysis	Before construction phase	See relevant section of ESIA Report	Soil analysis results	Consultant and KASKİ	To be included in construction budget
20	Construction	Excavation waste	Amount of refilled, stored, and disposed excavation materials Amount of stripped and reused topsoil by indicating reuse locations	Entire Project and storage areas	Visual observation Records	Weekly	-	Excavation volume Reused excavation volume Volume of excavated material sent to final disposal	Consultant and KASKİ	To be included in construction budget

No.	Subproject Phase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold Level (if applicable)	Monitoring / Key Performance Indicators – KPI's	Responsibility for Monitoring*	Cost (If not included in the Subproject Budget)
			Storage conditions of topsoil (humidity and pile height)							
21	Construction	Chemicals and hazardous materials	Conditions of the storage area Number of leaks, spills, etc.	Entire Project and storage areas	Visual observation Site inspections Environmental incident register	Weekly	GIIP, EHSG	Contaminated soil treatment / disposal methodology Monitoring report findings	Consultant and KASKİ	To be included in construction budget
22	Construction	Air quality	Settled dust, PM10 and PM2.5	Nearest industrial/commercial building	Sampling, analysis	Quarterly	See relevant section of ESIA Report	Visual observations Air quality grievance records Air quality (PM10/PM2.5) measurement results	Consultant and KASKİ	To be included in construction budget
23	Construction	Air quality	Maintenance and exhaust decal records of all machinery and equipment	Entire Project	Records	Annual	See relevant section of ESIA Report	Exhaust emission decal follow-up	Consultant and KASKİ	To be included in construction budget
24	Construction	GHG emissions	Scope-1 and Scope-2 emissions	Entire Project	Reporting	Annually	GIIP	GHG Inventory Annual GHG Emission Reporting	Consultant and KASKİ	To be included in construction budget
25	Construction	Noise	Noise levels	Nearest industrial/commercial building	At least 24-hr measurements	Quarterly	See relevant section of ESIA Report	Noise level measurement results Machinery and equipment maintenance log Noise grievance records	Consultant and KASKİ	To be included in construction budget
26	Construction	Water Resources	Surface water / groundwater (DO, pH, BOD ₅ , COD, TSS, TN, TP, NH ₄ -N, metals)	At related water resource (wells, surface water bodies, etc.)	Sampling and in situ / laboratory measurements Spill notices / correspondences to authorities in case of major spills	Quarterly	WPCR	Compliance to limits	Consultant and KASKİ	To be included in construction budget
27	Construction	Effluent water quality	pH, BOD ₅ , COD, TSS, TDS, TP, TKN, NO ₃ -N, NO ₂ -N, TN, Salinity, Cl, SAR, Cl, SO ₄ , Electrical Conductivity, B, Cd, Cr, Fe, Pb, Ni, Zn, Fecal Coliforms	Discharge location	CWMS + Lab analysis	Continuous (CWMS) + Monthly lab	See the relevant section of the ESIA Report	Compliance to all limits	Consultant and KASKİ	To be included in construction budget
28	Construction	Wastes	Amount of waste generated per types	Entire Project	Visual observation	Weekly	-	Waste segregation practices	Consultant and KASKİ	To be included in construction budget

No.	Subproject Phase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold Level (if applicable)	Monitoring / Key Performance Indicators – KPI's	Responsibility for Monitoring*	Cost (If not included in the Subproject Budget)
				Waste records Disposal truck register			(amount of waste per type) Temporary waste storage records Waste Disposal Agreements and Records Waste Grievance Records Monitoring Report Findings			
29	Construction	Biological Environment	Number of incidents with fauna mortality	Entire Project	Incident records	Monthly	-	Fauna mortality records	Consultant and KASKİ	To be included in construction budget
30	Construction	Job Creation	Number of employed persons from the local community	Entire Project	Employment records	Quarterly	-	Workers' Grievance Records Presence of union or workers' representative Labor/social security records	Consultant and KASKİ	To be included in construction budget
31	Construction	Working Conditions	Workers' grievances	Entire Project	Records	Weekly	-	Workers' Grievance Records Presence of union or workers' representative Labor/social security records	Consultant and KASKİ	To be included in construction budget
32	Construction	Child labor	Age of candidate employee	Entire Project	National ID	Before each recruitment	-	No child and forced labor Code of Conduct trainings Code of Conduct violations Grievance Records	Consultant and KASKİ	To be included in construction budget
33	Construction	Occupational health and safety	Number of incidents Incident investigation	Entire Project	Incident records	Daily	-	Incident Records	Consultant and KASKİ	To be included in construction budget
34	Construction	Occupational health and safety	Period of disease occurrence Number of employees with infectious disease	Entire Project	Disease follow-up register	Daily	-	Number of nonconformities opened Number of nonconformities resolved Average nonconformity resolution duration	Consultant and KASKİ	To be included in construction budget

No.	Subproject Phase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold Level (if applicable)	Monitoring / Key Performance Indicators – KPI's	Responsibility for Monitoring*	Cost (If not included in the Subproject Budget)
35	Construction	Occupational health and safety	Training requirements	Entire Project	Training records Training plan	Monthly	-	Training records Work Permits OHS Reports Minutes of OHS Meetings	Consultant and KASKİ	To be included in construction budget
36	Construction	Drills	Number and subject of emergency drills	Entire Project	Drill reports	Quarterly	-	Emergency drills	Consultant and KASKİ	To be included in construction budget
37	Construction	Workers Engaged by Third Parties and the Supply Chain	Contractor and subcontractor agreements	Entire Project	Contract reviews by E&S expert(s)	Before each agreement made	-	Sub-contractor agreements Grievance Records	Consultant and KASKİ	To be included in construction budget
38	Construction	Community health	General construction related impacts	Entire Project	Grievance records	Monthly	-	Incident records Grievance records	Consultant and KASKİ	To be included in construction budget
39	Construction	Traffic	Number of traffic related grievances	Entire Project	Grievance records	Monthly	-	Grievance records Vehicle maintenance log Condition of traffic signs	Consultant and KASKİ	To be included in construction budget
40	Construction	Traffic	Number of road traffic accidents	Entire Project	Accident records/reports	Monthly	-	No of reported traffic accidents	Consultant and KASKİ	To be included in construction budget
41	Construction	Traffic	Number of drivers trained	Entire Project	Training records	Monthly	-	Training records	Consultant and KASKİ	To be included in construction budget
42	Construction	Community and project workers	Number of community cases	Entire Project	Security reports Visitor logs	Weekly	-	Security reports Visitor logs	Consultant and KASKİ	To be included in construction budget
43	Construction	Community and project workers	Condition of CCTV system	Entire Project	System checks	Daily	-	Active CCTV system	Consultant and KASKİ	To be included in construction budget
44	Construction	Community health	Number and duration of unit/plant shutdowns (planned and unplanned)	Entire Project	Shutdown/failure reports	Weekly	-	Number and duration of unit shutdowns Number and duration of plant shutdowns	Consultant and KASKİ	To be included in construction budget
45	Construction	Community health	Amount of discharge during shutdown / failure	Entire Project	Measurements	During each shutdown / failure	-	Amount of discharge during shutdown/failure	Consultant and KASKİ	To be included in construction budget

No.	Subproject Phase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold Level (if applicable)	Monitoring / Key Performance Indicators – KPI's	Responsibility for Monitoring*	Cost (If not included in the Subproject Budget)
46	Construction	Community health	Engagement records with mukhtar(s) on direct discharge due to shutdown/failure	Entire Project	Engagement records	Before each planned shutdown/failure, during each unplanned failure	-	Engagement records Correspondences	Consultant and KASKİ	To be included in construction budget
47	Construction	Chance finds	Number of chance finds	Entire Project	Visual observation Official notification to authorities	Daily	-	Visual observation Official notification to authorities Number of chance finds	Consultant and KASKİ	To be included in construction budget
48	Construction	External and internal grievances (Grievances from public and workers will be recorded separately)	Number of received grievances Number of open and closed grievances Average grievance response and closure time Identification of grievance channels	Entire Project	Grievance records (grievance log, received grievance forms, etc.)	Upon grievance	-	Grievance records	Consultant and KASKİ	To be included in construction budget
49	Construction	Stakeholder engagement	Stakeholder engagement activities as defined in SEP	Entire Project	Engagement records	Upon each engagement	-	Engagement records	Consultant and KASKİ	To be included in construction budget
50	Construction	Land access and use control	Confirmation of continued absence of informal or unauthorized land users Compliance of construction activities with approved land boundaries Any land-related complaints or grievances during construction	Entire Project	Site inspections Review of land records and updated cadastral information Grievance records review Consultation with local authorities and KASKİ	Periodic during construction Upon receipt of any land-related grievance	Isdb ESSP	No informal or unauthorized land users identified No land access restrictions outside approved project boundaries No unresolved land-related grievances	Consultant and KASKİ	To be included in construction budget
50	Operation	Soil contamination	Number of spills leaks	Entire Project	Incident reports	Monthly	-	Soil analysis results	Consultant and KASKİ	To be included in operation budget
51	Operation	Soil contamination	Amount of contaminated soil	Entire Project	Incident reports	After each incident	-	Contaminated soil amount Environmental spill/leak incident records	Consultant and KASKİ	To be included in operation budget
52	Operation	Air quality	Maintenance and exhaust decal records of all machinery and equipment	Entire Project	Records	Annual	See relevant section of ESIA Report	Exhaust emission decal follow-up	Consultant and KASKİ	To be included in operation budget

No.	Subproject Phase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold Level (if applicable)	Monitoring / Key Performance Indicators – KPI's	Responsibility for Monitoring*	Cost (If not included in the Subproject Budget)
53	Operation	Odour	Odour level	Location of grievance	Measurement	Upon grievance	-	Grievance records Odor measurement results	Consultant and KASKİ	To be included in operation budget
54	Operation	GHG emissions	Scope-1 and Scope-3 emissions	Entire Project	Reporting	Annually	-	Annual GHG Emission Reporting	Consultant and KASKİ	To be included in operation budget
55	Operation	Noise	Noise level	Nearest industrial / commercial building	At least 24-hr noise measurement	Twice a year for the first two years of operation, then upon grievance	See the relevant section of the ESIA Report	Noise level measurement results Machinery and equipment maintenance log Noise grievance records	Consultant and KASKİ	To be included in operation budget
56	Operation	Water Resources	Surface water / groundwater quality analysis and measurements that include spill-related pollutants	At related water resource (wells, surface water bodies, etc.)	Sampling and in situ / laboratory measurements Spill notices / correspondences to authorities in case of major spills	In case of a leak/spill reaches to water bodies Monthly	WPCR	Incident records	Consultant and KASKİ	To be included in operation budget
57	Operation	Effluent water quality	pH, BOD5, COD, TSS, TDS, TP, TKN, NO3-N, NO2-N, TN, Salinity, Cl, SAR, Cl, SO4, Electrical Conductivity, B, Cd, Cr, Fe, Pb, Ni, Zn, Fecal Coliforms	Discharge location	Automatic measurement for relevant parameters, laboratory analysis for others	Continuous monitoring for the detectable parameters by automatic measurement devices Twice a month for the others (at minimum 24 samplings in a year)	See the relevant section of the ESIA Report	Monthly Report Results of Future Studies (assimilative capacity of the receiving body)	Consultant and KASKİ	To be included in operation budget
58	Operation	Wastes	Type and amount of wastes generated	Entire Project	Visual observation Waste Records	Monthly	-	Waste segregation practices (amount of waste per type) Temporary waste storage records Waste Disposal Agreements and Records Waste Grievance Records Monitoring Report Findings	Consultant and KASKİ	To be included in operation budget

No.	Subproject Phase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold Level (if applicable)	Monitoring / Key Performance Indicators – KPI's	Responsibility for Monitoring*	Cost (If not included in the Subproject Budget)
59	Operation	Wastes	Excess sludge	Entire Project	Visual observation Waste Records	Monthly	-	Waste Disposal Agreements and Records Waste Grievance Records Monitoring Report Findings	Consultant and KASKİ	To be included in operation budget
60	Operation	Biological Environment	Number of incidents with fauna mortality	Entire Project	Incident records	Monthly	-	Fauna mortality records	Consultant and KASKİ	To be included in operation budget
61	Operation	Working conditions	Workers' grievances	Entire Project	Grievance records	Weekly	-	Workers' Grievance Records Presence of union or workers' representative Labor/social security records	Consultant and KASKİ	To be included in operation budget
62	Operation	Occupational health and safety	Number of incidents Incident investigation	Entire Project	Incident records	Daily	-	Incident Records	Consultant and KASKİ	To be included in operation budget
63	Operation	Occupational health and safety	Period of disease occurrence Number of employees with infectious disease	Entire Project	Disease follow-up register	Daily	-	Number of nonconformities opened Number of nonconformities resolved Average nonconformity resolution duration	Consultant and KASKİ	To be included in operation budget
64	Operation	Occupational health and safety	Training requirements	Entire Project	Training records Training plan	Monthly	-	Training records Work Permits OHS Reports Minutes of OHS Meetings	Consultant and KASKİ	To be included in operation budget
65	Operation	Drills	Number and subject of emergency drills	Entire Project	Drill reports	Annual	-	Emergency drills	Consultant and KASKİ	To be included in operation budget
66	Operation	Workers Engaged by Third Parties and the Supply Chain	Contractor and subcontractor agreements	Entire Project	Contract reviews by E&S expert(s)	Before each agreement made	-	Sub-contractor agreements Grievance Records	Consultant and KASKİ	To be included in operation budget
67	Operation	Community health	Number and duration of unit/plant shutdowns (planned and unplanned)	Entire Project	Shutdown/failure reports	Weekly	-	Number and duration of unit shutdowns	Consultant and KASKİ	To be included in operation budget

No.	Subproject Phase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold Level (if applicable)	Monitoring / Key Performance Indicators – KPI's	Responsibility for Monitoring*	Cost (If not included in the Subproject Budget)
								Number and duration of plant shutdowns		
68	Operation	Community health	Amount of discharge during shutdown/failure	Entire Project	Measurements	During each shutdown / failure	-	Amount of discharge during shutdown/failure	Consultant and KASKİ	To be included in operation budget
69	Operation	Community health	Engagement records with mukhtar(s) on direct discharge due to shutdown/failure	Entire Project	Engagement records	Before each planned shutdown/failure, during each unplanned failure	-	Engagement records Correspondences	Consultant and KASKİ	To be included in operation budget
70	Operation	External and internal grievances (Grievances from public and workers will be recorded separately)	Number of received grievances Number of open and closed grievances Average grievance response and closure time Identification of grievance channels	Entire Project	Grievance records (grievance log, received grievance forms, etc.)	Monthly	-	Grievance records	Consultant and KASKİ	To be included in operation budget
71	Operation	Stakeholder engagement	Stakeholder engagement activities as defined in SEP	Entire Project	Engagement records	Every six months	-	Engagement records	Consultant and KASKİ	To be included in operation budget

*: The values that naturally show/understand the high or low performance in the situations such as increase, decrease, stability etc. of the data to be obtained from sources such as reports/records/logs/minutes/application results etc. in the "Monitoring / Key Performance Indicators – KPI's" column will be used as KPIs

3 Capacity Development and Training Requirements

In order to raise awareness and develop responsible capacities, provision of a number of trainings is required for KASKİ PIU and Contractor's management and employees.

In that respect, Supervision Consultant will be responsible for the environmental and social trainings. Environmental and Social Unit of Supervision Consultant will give necessary trainings to all personnel of KASKİ PIU and Contractor's management and employees before start of construction works. At the time of each employment for KASKİ PIU, Supervision Consultant will train the new member of the unit.

Supervision Consultant will repeat its training to KASKİ PIU and contractor representatives semi-annually and whenever it is deemed necessary.

Main subjects of the trainings for KASKİ PIU are listed as;

- Responsibilities on environmental and social precaution procedures and monitoring of implementation of measures
- Soil pollution control
- Waste management
- Water pollution control
- Air quality
- Noise control
- Protection of biological environment
- Community health and safety
- SEA/SH and Code of Conduct▪ Grievance mechanism
- Chance Finds Procedure
- Land acquisition procedures and process
- OHS measures
- Environmental and Social Mitigation Plan and Monitoring Plan

Supervision Consultant will ensure that the Contractor will perform the same trainings for their personnel. The Supervision Consultant is responsible for the monitoring of the Contractor's actions on training. At the time of each employment for Contractor, the Contractor will train the new personnel.

Contractor will repeat its training to its personnel semi-annually and whenever it is deemed necessary by contractor itself or Supervision Consultant.

Main subjects of the trainings for Contractor's are listed as;

- Responsibilities on environmental and social precaution procedures
- Soil pollution control
- Waste management
- Water pollution control
- Air quality
- Noise control
- Protection of biological environment
- Community health and safety

- SEA/SH and Code of Conduct
- Grievance mechanism (stakeholders and workers)
- Chance Finds Procedure
- Land acquisition procedures and process
- Toolbox talks
- OHS measures
- Work-specific talks
- Environmental and Social Mitigation Plan and Monitoring Plan

Furthermore, the contractor, KASKİ and the Supervision Consultant should receive obligatory trainings as per national legislation. The provision of trainings intends complying with the national legislation and achieving compliance with ESHS requirements of the Project.

During the operation phase of the Project, environmental and social trainings on above mentioned topics specific to the operation of WWTP will be delivered to the operation team by the trained KASKİ PIU team

4 Implementation Schedule and Cost Estimates

Implementation schedule of the ESMP is presented in Table 1, and Table 2 for the construction and operation phases. Please refer to the above tables for details.

The costs associated with the defined measures and monitoring requirements are considered to be covered by the construction and operation budget of the Project..



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