T.C. ULAŞTIRMA VE ALTYAPI BAKANLIĞI

EPC Contractor

REC ULUSLARARASI

Project

NORTHERN MARMARA MOTORWAY SECTION 8 PPP PROJECT

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Noise and Vibration Management Plan

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Abbreviations and Acronyms

dB	Decibel (Unit)
CESMP	Construction Environmental and Social Management Plan
CLO	Community Liaison Officer
EHS	Environmental, Health, and Safety
EPA	Environmental Protection Agency
EPRP	Emergency Preparedness and Response Plan
EBRD	European Bank for Reconstruction and Development
EPC	Engineering, Procurement and Construction
ESIA	Environmental and Social Impact Assessment
ESHS	Environmental, Social, Health and Safety
ESMMP	Environmental and Social Management and Monitoring Plan
ESMS	Environmental and Social Management System
GBVH	Gender-Based Violence and Harassment
GIIP	Good International Industry Practice
HSE	Health, Safety and Environment
H&S	Health and Safety
Hz	Hertz (Unit)
IFC	International Finance Corporation
ISO	International Organization for Standardization
KPIs	Key Performance Indicators
Lden	Noise Level Day, Evening, Night
Leq	Equivalent Sound Level
Leve	Noise Level Evening
NMM	Northern Marmara Motorway
NVMP	Noise and Vibration Management Plan
OHS	Occupational Health and Safety
PPE	Personal Protective Equipment
PS	Performance Standards
REC	REC International
RoW	Right of Way
SDSs	Safety Data Sheets
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
WHO	World Health Organization

1. PURPOSE

This Noise and Vibration Management Plan was prepared by the EPC Contractor "REC International" (hereafter called "REC") and is applicable to the construction phase of the Project.

The ultimate responsibility for its implementation resides with REC, and REC's sub-contractors & suppliers will be required to demonstrate compliance of their activities against this plan. This plan is intended to be 'living document' that can be refined and modified as situations change.

The purpose of this Noise and Vibration Management Plan is to define the management actions and mitigation measures necessary for the management of noise and vibration impacts that could result from the construction phase of the Project. The Plan aims to:

- Outline applicable national legislation and standards as relevant to this Plan;
- Identify the sections of applicable international standards to which the Project must comply that are relevant to this Plan (i.e. IFC Performance Standards, EBRD Performance Requirements);
- Define roles and responsibilities of the personnel;
- Define impact sources and mitigation measures;
- Define noise and vibration monitoring and reporting requirements; and,
- Define training requirements with regard to pollution prevention during the construction phase.

2. SCOPE

This plan applies to all activities related to construction of the Northern Marmara Motorway Section 8 PPP Project (NMM - Northern Marmara Motorway) and all Contractors' involved in that construction (including sub-contractors and third-party consultants). This Plan identifies potential sources of noise and vibration during Project construction activities and lists the measures envisaged to minimize noise and vibration impacts at adjacent sensitive receptors. A list of noise sensitive receptors and their proximity to the Project have been included in Table 1.

Table 1. Noise Sensitive Receptors

KM Chainage	Receptors	Proximity of the Closest Receptor to the RoW border
59+300	■ High Density Residential Development ■ School ■ Mosque ■ Playground	40 m

59+200	■ High Density Residential Development ■ Wedding Centre ■ Recreational Area (Sular Vadisi) ■ Public Park	30 m
58+600	■ High Density Residential Development	30 m
57+400	■ High Density Residential Development ■ School ■ Playground	40 m
57+000	■ City Hospital	200 m
55+600	■ High Density Residential Development ■ Public Park (Kayaşehir Millet Bahçesi)	50 m
54+500	■ High Density Residential Development	130 m
53+800	■ Residential Buildings ■ School	120 m
51+800	■ İSKİ Sazlıdere Facilities	60 m
Bahçeşehir Connecting Road 2+700	■ High Density Residential Development	60 m
Bahçeşehir Connecting Road 3+800	■ Schools ■ High Density Residential Development	90 m
Bahçeşehir Connecting Road 4+400	■ School ■ High Density Residential Development ■ Mosque	40 m
Bahçeşehir Connecting Road 3+400	■ High Density Residential Development	40 m
47+700	■ Commercial Facilities	180 m
40+800	■ Commercial Facilities	20 m
39+500	■ Commercial Facilities	50 m

Noise and vibration levels will be monitored to assess impacts on identified receptors. Noise levels arising from construction activities will be evaluated according to national and international standards and background noise levels. If noise and/or vibration levels are found to exceed national legal or Project requirements, corrective and preventive actions will be undertaken by REC International with the aim of bringing back into compliance with the agreed standards..

Excessive noise levels during construction activities may arise principally from the following activities:

- Construction of the motorway itself;
- Construction of the other engineering structures such as the Sazlidere bridge, viaducts, service stations, etc;
- Excavation and preparation of construction materials in quarries or stockyards;
- Transportation of excavated and construction materials and workforce;
- Earthworks & Crusher;
- Roadworks.

Increased vibration levels may arise from the following project construction phase activities:

- Piling;
- Operation of vibratory equipment (e.g. compaction);
- Blasting.

3. REFERENCES

- Applicable Turkish Laws and national standards
- IFC General Environmental, Health and Safety Guidelines – Noise
- IFC Performance Standard 2: Labour and Working Conditions – Occupational H&S
- IFC Performance Standard 3: Resource Efficiency and Pollution Prevention
- IFC Performance Standard 4: Community Health, Safety, and Security
- "EBRD Performance Standard 3: Resource Efficiency and Pollution Prevention and Control

3.1. National Requirements

National legislative and regulatory requirements for the management of noise and vibration levels are specified in:

- Environmental Law No. 2872
- Regulation on the Assessment and Management of Environmental Noise

Environmental Noise

The Turkish Regulation on Assessment and Management of Environmental Noise provides ambient noise standards for Construction Sites. The corresponding noise level limits are provided in the following **Table 2**:

Table 2. Construction Site Noise Limit

Activity Type (construction, demolition, repair)	L_{day} (dBA)
Structures	70
Roads	75
Other Sources	70

The provides national noise level limits in the following **Table 3**:

Table 3. National Regulation Noise Limit

Receptor	LA eq (dBA) day-time 07.00-23.00	LA eq (dBA) night-time 23.00-07.00
Residential Areas	65	55

Commercial Areas		65	55
Industrial Areas		70	60
Sensitive Areas	Schools, libraries and conference rooms Hospital and health centers	60	50

Environmental Vibration

The Turkish Regulation on Assessment and Management of Environmental Noise provides vibration limits for construction works and machinery. The corresponding vibration limits (between 1Hz - 80Hz frequency bands) are provided in the following Table 4:

Table 4. Construction Site Vibration Limit

Receptor	Maximum Vibration Limit (mm/s)	
	Continuous Vibration	Intermittent Vibration
Residential areas	5	10
Industrial and commercial areas	15	30

National Standards on Vibration Limits for Blasting are listed in **Table 5**.

Table 5. Standards on Vibration Limits for Blasting

Vibration Frequency (Hz)	Peak Allowed Vibration Speed (mm/sec)
1	5
4-10	19
30-100	50

3.2. International Standards

IFC General EHS Guidelines for Environmental Noise Management defined noise levels are presented in Table 6. Noise levels related to construction activities should not exceed the levels presented in the below table.

Table 6. IFC Noise Standards

Receptor	One Hour L_{Aeq} (dBA)	
	Daytime 07:00 - 22:00	Night-time 22:00 - 07:00
Residential, institutional, educational	55	45
Industrial, commercial	70	70

3.3 Project Adopted Standards

According to the international standards, when national regulations differ from the levels and measures given by the international ESHS standards, projects are expected to achieve whichever is more stringent. Neither the EU Directive nor the IFC Guidelines define noise limits for the construction phase of the motorway. However, Turkish noise regulation clearly defines the noise standards applicable to the construction of new roads; forming the legal framework

of this plan. As such, the noise and vibration limit levels that REC and its subcontractors will adopt during the construction phase are set out depending on the activity as described below:

Table 7. Turkish Standards for Construction Noise

Type of Construction	Lday in dBA 07:00 – 19:00	Leve in dBA 19:00 – 22:00	Lnight in dBA 22:00 – 07:00
Roads	75	70	65

Table 8. Turkish Limits for Vibration from Construction Machines (per CGDDY)

Land Use Type (Receptor)	Maximum ground floor vibration values allowed for driven pile and construction machines (PPV in mm/s)*	
	Continuous	**Discontinuous**
Administrative and downtown areas	5	10
Industrial and commercial areas	15	30

***** *Frequency: 1 Hz to 80 Hz*

Table 9. Turkish Standards for Blasting Vibration

Frequency	Peak Particle Velocity (mm/s)
1	5
4 – 10	19
30 – 100	50

4. LINKS TO OTHER PLANS/PROCEDURES

This Plan is supported by other plans/procedures of the Project-specific ESMS. Those of particular relevance to this Plan are as follows:

- Construction E&S Management Plan (CESMP)
- H&S Plan REC-İSG-ÇYS-KMO-PL-01
- Community Health, Safety, and Security Plan REC-İSG-ÇYS-KMO-PL-13
- Traffic Management Plan REC-İSG-KMO-PL-07
- Camp Management Plan REC-İSG-ÇYS-KMO-PL-16
- Biodiversity Action Plan REC-ÇYS-KMO-PL-06
- Quarry Management Plan REC-İSG-ÇYS-KMO-PL-11

5. ROLES AND RESPONSIBILITIES

REC Project Manager

The REC Project Manager has the overall responsibility for the implementation of the Project activities stated in this plan. They will be suitably competent and have a strong understanding of construction best practice aligned with national law and applicable Lender requirements.

The REC Project Manager is accountable for overall ESHS performance and making the human and financial resources available to ensure compliance with Project ESHS requirements.

The REC Project Manager's responsibilities also include:

- The development, review, approval and coordination of the various activities required to initiate, execute and complete construction activities in accordance with this Plan, and overall responsibility for compliance with Turkish Regulations in relation to noise and vibration levels during the construction phase.
- Ensuring that this Plan is prepared and updated as necessary on the basis of activities and operations undertaken by REC International as part of the project.
- Ensuring that adequate resources are available to implement the procedures and guidelines outlined in this Plan.

REC Construction Manager

The Construction Manager is responsible for implementation of the ESHS mitigation measures of this Plan through method statements and site working practices.
The Construction Manager will ensure that:

- Construction activities (undertaken by REC itself or by the subcontractors), are in compliance with the requirements of this Plan and Project ESHS requirements;
- All site staff, including sub-contractors, and activities comply with the requirements of this plan;
- All construction staff receives appropriate safety and environmental training, prior to commencement of work.

REC E&S and H&S Managers

E&S and H&S Managers are responsible for the following:

- Monitoring and assurance of the EPC Contractor's subcontractors ESHS system performance.
- Developing CESMP and other ESHS plans and procedures and assures that Project requirements are considered.
- Reviewing subcontractors and suppliers ESHS documentation and ensure that they are aligned with Project ESHS requirements.

- Monitoring performance through Key Performance Indicators (KPIs), reports, audits, and meetings.
- Reporting on ESHS performance to REC Project management, Nakkaş Otoyol A.Ş ESHS Management, and other related parties.
- Ensuring that all ESHS training needs are identified, provided and recorded.
- Disclosing relevant ESHS information to Project staff and public and coordinate activities for raising awareness.
- Development, implementation and regular revision of this Plan during construction,
- Ensuring that adequate training has been given to all site personnel in relation to the requirements of this Plan,
- Employing, training and supervising the Environmental Engineer and supporting them in fulfilling their responsibilities as necessary,
- Developing the necessary monitoring and reporting forms in relation to this Plan, and establishing appropriate document control procedures,
- Ensuring the execution and recording of noise and vibration monitoring programs,
- Reviewing noise and vibration monitoring results in accordance with national regulations and international standard requirements,
- Ensuring appropriate corrective actions are taken by the Environmental Engineer and Site Manager if noise or vibration levels exceed threshold limits,
- Repeated audits to verify compliance once the corrective action is in place.
- Ensuring the prompt handling of noise complaints received through grievance mechanisms

REC Environmental Engineer and H&S Inspector

The Environmental Engineer is responsible for immediately notifying the H&S Manager of any non-compliances with noise or vibration level thresholds or failures to implement the required management and mitigation measures outlined in this Plan.

REC Environmental Engineer and H&S Inspector will also:

- Conduct daily ESHS inspections.
- Ensure that all construction personnel (including subcontractors) working or visiting the site understand the ESHS requirements of the Project and comply fully with them.
- Make sure that the ESHS risk assessments are performed prior to the activities.
- Monitor subcontractors' ESHS performance, their compliance to ESIA and ESHS plans.

- Report and record the ESHS accidents, incidents to H&S Supervisor.
- Monitor that all personnel (including contractors) has undergone all necessary training.
- Assist subcontractors and suppliers to develop and implement their site specific plans and procedures.
- Track the impacts of the Project against the Project Objectives and Key Performance Indicators as defined in the Management and Monitoring Plans and work with the subcontractors where amendments to the mitigation measures are required.
- Identify breaches of management plans, recommend corrective actions.
- Stop work activities in the event of serious breaches of rules that may cause serious impacts on health and safety, environment and community or on the reputation of the Project. (All workers have the obligation to intervene in case of a dangerous situation and have to report to the supervisor).

Subcontractors and Employees

- Understanding the noise and vibration control conditions relevant to their job and complying with the requirements of this Plan during their duties.
- Following the instructions or recommendations of supervisors in accordance with noise and vibration control and monitoring conditions.

Subcontractors are responsible for allocating individual responsibility within their organization for the control of construction noise and vibration at the construction site, however REC has overall responsibility for the actions and operations of its subcontractors.

6. GENERAL RULES AND IMPLEMENTATION

The following measures shall be implemented to keep the noise levels below the applicable national standards, at the closest sensitive receptors to the source:

Construction Noise derived from Construction Equipment

- Where practicable noisy equipment will be sited as far away as possible from receptors.
- Where practicable noisy equipment will be orientated to face away from the receptors.
- Alternatives to diesel and petrol engines and pneumatic units, such as hydraulic or electric-controlled units, will be used, where practicable.
- Where practicable, stationary equipment will be located in an acoustically treated enclosure.

- Throttle settings will be reduced and equipment and plant turned off, when not being used.
- Onsite chutes and bins will be lined with damping material.
- Equipment will be regularly inspected and maintained to ensure it is in good working order. The condition of mufflers will also be checked. Equipment will not be operated until it is maintained or repaired, where maintenance or repair would address the annoying character of noise identified.
- Use of compressors, generators and pumps fitted with properly lined and sealed acoustic covers or enclosures, which will be kept closed whenever the machines are in use, and positioning of all ancillary plant (e.g. generators, compressors) so as to cause minimum noise disturbance.
- Fitting of mufflers or silencers of the type recommended by manufacturers.
- For machines with fitted enclosures, doors and door seals will be checked to ensure they are in good working order; also that the doors close properly against the seals.
- Shutting down of machines in intermittent use in the intervening periods between works.

Construction Noise derived from Construction Materials

- Storage of excavated material between the construction site and the sensitive receptor to form a natural noise barrier (with cover to avoid dust erosion) or installation of other (temporary) noise barriers.
- Minimizing drop height of materials.
- Taking advantage of the natural topography for noise shielding.

Construction Noise derived from Construction Traffic

- Implementation of speed limits (50 km/h) for trucks while travelling to and from construction sites (within buildings and on village roads of poor condition: 30 km/h).
- Slow driving rules in villages (e.g. 30km/h), particularly near sensitive use areas which will be identified (at least one month) prior to start of construction related activities;
- Reducing Project traffic routing through community areas wherever possible.
- Use of the motorway alignment for transportation whenever possible.
- Use of dedicated site access roads that avoid routing through villages.

- If necessary to avoid narrow areas near receptors, consideration of construction of a new access road.
- Limiting hours of operation for specific equipment or operations (e.g. trucks or machines operating in or passing through community areas).
- Keep internal haul routes well maintained and avoiding steep gradients.
- Restricting the noise at nearby buildings from construction to 70 dB Leq during the evening and 65 dB Leq at night as far as practicable for short term activities lasting not more than 10 days.
- Noise levels from longer term construction activities (longer than 10 days) will be restricted to 55 dB LAeq during the evening, and 50 dB LAeq at night as far as is practicable, or to other standards that have been agreed with the local authority.

Noise Impacts from Operation of Quarries

REC will undertake optimization of the noise barriers (height and length), to refine their dimensions and locations.

The following measures for operation of quarries will be followed to mitigate adverse noise impacts:

- EPC Contractor will consider social issues in designing the transport routes to minimize the need to pass through populated areas.
- Development of a Quarry Operations Management Procedure which will include plans to retain rock structures as noise barriers between the quarrying area and any potentially affected village.
- Night-time operation and transportation will be minimized where villages are located close by and/or a transportation route passes through.
- At quarry or borrow pit sites, where Nakkaş Otoyol A.Ş. does not have the direct operational responsibility, supervision of the subcontractors who run the site will be performed to ensure that legislative requirements are complied with.
- For quarry sites, measures will be taken to ascertain compliance with the Mining Activities Implementation Regulation (Madencilik Faaliyetleri Uygulama Yönetmeliği; Official Gazette Date/Number: 6.11.2010/27751) according to which a minimum (horizontal) distance of 300 m is required between a quarry and areas with approved zoning plan. The distance of 300 m also applies for cultural assets (1st degree archaeological sites) (Article 24).

- When hauling routes pass through villages or alongside residential areas the following will apply:
    - Speed limits of 30 km/h will be mandatory for trucks;
    - Empty trucks will have no loose chains or other noise-generating parts on the loading platform.

Vibration

The following Project-specific measures will be considered to avoid/mitigate vibration impacts related to Project construction.

- Identification of buildings located within 50 m of significant sources of vibration ahead of construction works. Evaluation of the sensitivity of the identified buildings and building occupants to vibration.
- A documentation will be prepared for each of the identified buildings which will include photographs of buildings sensitive to vibration and results of the sensitivity evaluation.
- Monitoring of vibration on commencement of relevant construction activities to ensure that the Turkish requirements are met. If the standards are exceeded additional measures will be taken such as altering the methods of working to use equipment that creates lower levels of vibration. It is assumed that the standards won't be exceeded considering that the bored piling method will be preferred instead of driven piling method which would create disturbance and vibration on the ground. The produced piles will work as friction piles, and only drilling will be done on weak, loose ground without entering the solid rock which will avoid vibration.
- General construction of the Project is likely to result in short term disturbance from vibration impacts at buildings along the motorway (at distances of 50 m to 100 m from the alignment) which is expected to be not significant and rated minor.
- Impacts of exceeding Turkish Regulatory limits may be possible for buildings located within very short distances (below 50 m) to the road alignment. A number of buildings along the motorway are located within this distance and thus may be affected.
- No building damage is likely as a result of the works, but in line with international best practise the existing conditions of all structures within 50 m of the alignment will be documented before and after the construction works to determine if any impacts have occurred.

7. TRAINING

- All employees are to undergo H&S induction training include noise and vibration issues.
- Training will be provided to construction staff on how to prevent noise and vibration pollution.

Refer to the Training Matrix in Section 9.5 of the CESMP which identifies training needs for various levels of staff.

8. COMPLIANCE MONITORING AND REVIEW

8.1. Monitoring

REC will be responsible for the implementation of the noise and vibration monitoring program as presented in **Table 10**. In addition, any monitoring requirements specified by regulatory authorities will be fully complied with by REC and its subcontractors and suppliers.

Monitoring results will be reviewed and compared against relevant standards, permit requirements/conditions, thresholds of concern, complaints and audit findings and recommendations.

The ESHS Management team of REC will need to define appropriate action to follow in the instance that any exceedances in monitoring limits are confirmed or adverse impacts identified, including:

- Internal review process of recently performed maintenance and inspection;
- Review of previous monitoring data (e.g. ESIA baseline conditions) to identify any potential associated variations or trends in results;
- Recommendations for quarantine of equipment or change in work practices; and
- Review of monitoring frequency to ensure the issue does not re-occur.

Noise and vibration related grievances will also be recorded by REC CLO using Project Grievance Mechanism and root causes will be identified by ESHS Management team of REC and appropriate measures will be taken to reduce or mitigate noise and vibration impacts in a timely manner.

Table 10. Noise and Vibration Monitoring Programme

Parameter/ Aspect	Location	Frequency/Timing	Treshold Level	Trigger for Monitoring
Noise Monitoring	At sensitive receptors as listed in Table 1.	During construction works (risk-based pending on works performed)	75 dBA (Day - 07:00 – 19:00) 70 dBA(Evening – 19:00 – 22:00)	High-risk activities or out-of-hours activities with potential to cause impact/nuisance to

		During planned out of hours works	65 dBA (Night - 22:00 – 07:00)	identified sensitive receptors
Vibration Monitoring (Piling or compaction)	Inside representative occupied properties that are within 100 m of major vibration-generating activities (e.g. driven piling or vibro-compaction)	During piling and compaction (risk-based pending on works performed)	10 mm/s	High-risk activities or out-of-hours works with potential to cause impact/nuisance to identified sensitive receptors
Vibration Monitoring (Blasting)	At blasting areas	During blasting	5 mm/s (1) 19 mm/s (4 – 10) 50 mm/s (30 – 100)	Blasting activities

8.2. Inspection and Audit

REC will be responsible for the implementation of an appropriate inspection and audit program to the satisfaction of Nakkaş Otoyol A.Ş. during construction phase. This will enable both parties to ensure the works are being carried out in accordance with Project requirements.

Routine inspections will be carried out on a daily and weekly basis by REC's Environmental Engineer to ensure all controls to prevent noise and vibration related impacts are in place, relevant to the construction activities taking place at the time.

Site inspections and more formal audits by the Nakkaş Otoyol A.Ş.'s ESHS team will be undertaken using pre-prepared audit protocols that reflect the requirements of the ESMMP and the ESIA.

Where issues of non-compliance are identified by either the Nakkaş Otoyol A.Ş. or REC's representative, they will be immediately reported to Nakkaş Otoyol A.Ş. E&S Manager and corrective action will be identified by the Nakkaş Otoyol A.Ş. and representative in conjunction with the REC representative.

Following an audit conducted by Nakkaş Otoyol A.Ş., an Action Plan will be prepared in accordance with the findings of the audit and the corrective actions and recommendations will be implemented by REC accordingly. This could take the form of, for example, further direct mitigation, or changes to procedures or additional training.

An activity can be stopped if a perceived unsafe condition or behavior may result in an unwanted event. Activity may continue once the corrective and preventive actions are implemented and confirmed by ESHS Inspectors.

8.3. Corrective Actions

All non-conformances identified during audits, inspections and monitoring activities will be recorded and followed up as non-conformity. Clear processes for actions are stated in the Nakkaş Otoyol A.Ş. ESMS Implementation Manual and will be followed.

Non-conformances are instances where Project compliance obligations (such as a legal requirement, or ESMS requirement) are not being fulfilled, or cannot be evidenced. Examples of non-conformity include, but are not limited to:

- Breach of noise and vibration legal standards;
- Commencement of works without an approved noise and vibration risk assessment;

Each non-conformance and near miss will be recorded utilizing a developed reporting process. All non-conformances and near misses shall include the following information:

- Location and description of the non-conformance and the criteria/requirement that has been breached;
- The proposed corrective action including who holds responsibility for undertaking this action;
- The proposed preventative action to ensure against reoccurrence of the non-compliance;
- Any required monitoring and follow up; and
- Key performance indicators and a deadline for the successful completion of the corrective and preventive action.

8.4. Reporting Requirements

The following reporting requirements apply for the EPC Contractor:

- Incident reporting (as necessary, addressed in terms of the Accident and Incident Management Procedure);
- Emergency response reporting;
- Records of annual emergency response training exercises;
- Biannual reports on KPIs and performance trends;
- Monthly reports of relevant training activities completed and attendance registers to be maintained;
- Daily/Weekly/Monthly reports of site inspection activities;
- Audit reports;
- Inspection logs and status of non-compliances; and

In addition, the following external reporting will be done:

- Monthly and biannual ESHS reports on KPIs and performance trends will be submitted to Nakkaş Otoyol A.Ş.;
- All environmental and social incidents will be appropriately documented, notified and reported in accordance with established procedures to
- Incident notification and reporting to relevant Turkish regulatory bodies will be performed in line with applicable legislation in force and as stipulated in permits and licenses.
- The Lenders will be notified of incidents pursuant to the terms and conditions agreed upon in the Finance Agreements.
- Monthly reports of relevant training activities completed and attendance registers to be maintained;
- Daily/Weekly/Monthly reports of site inspection activities;
- Audit reports;
- Inspection logs and status of non-compliances; and
- Wastewater quality analysis reports based on lab results (weekly/monthly basis).

In addition, the following external reporting will be done:

- Monthly and biannual ESHS reports on KPIs and performance trends will be submitted to Nakkaş Otoyol A.Ş.;
- All environmental and social incidents will be appropriately documented, notified and reported in accordance with established procedures to
- Incident notification and reporting to relevant Turkish regulatory bodies will be performed in line with applicable legislation in force and as stipulated in permits and licenses.
- The Lenders will be notified of incidents pursuant to the terms and conditions agreed upon in the Finance Agreements.

8.5. Records

A record-keeping system will be used to control all records and documents so that they are:

- Easy to retrieve and identify and are maintained in an orderly fashion;

- Current, accurate, legible, and dated, and that the dates should include revision dates when appropriate;
- Relevant/applicable and satisfy regulatory and/or legislative requirements; and
- Retained for a specified time period – Retention of records may be regulated by legislative or regulatory policies

Records are to be kept of all required activities and incidents, which must be readily available for inspection at any time and which are to include the following:

- All permits and licenses;
- Register of relevant environmental legislation;
- Register of relevant environmental consents;
- List of all stakeholders that are required to be consulted during construction;
- Risk register;
- All incidents reported;
- Grievance Register;
- Internal and external audit reports and corrective action plans;
- Site inspection reports;
- Equipment register and certifications, inspections and maintenance reports;
- Monitoring reports;
- Records of successful and unsuccessful implementation of mitigation measures;
- Site inductions;
- Training records
- Tool box meetings and other training records of attendance;

9. Key Performance Indicators

Key success indicators (KPIs) of this Plan will be monitored, verified and evaluated by the relevant parties in accordance with their responsibilities set forth in the scope of the REC-İSG-ÇYS-KMO-PR-09HSE Monitoring, Verification and Evaluation.

Key Performance Indicators (KPIs) and associated targets that will be used to assess the progress and effectiveness of proposed mitigation strategies during construction phase are provided in the table below.

Table 11.KPI's for Noise and Vibration

KPI	Taget	Period
Noise monitoring results compliant to Project standards	%100	Monthly
■ Number of penalties issued by authorities .	0	Monthly
■ Number of complaints pertaining to excessive noise.	0	Monthly
■ Vibration monitoring results compliant to Project standards	%100	Monthly
■ Inspection reports are in place for the buildings located within 50 m of significant sources of vibration	%100	Monthly
■ Number of complaints pertaining to vibration	0	Monthly