

DAMAGED ROADS CLEARING & RESTORATION

in South Lebanon ***"Nabatiyeh Caza"***

Environmental & Social
Management Plan
Checklist
(ESMP)

JULY 2026



ASSOCIATED CONSULTING ENGINEERS (ACE) S.A.L.

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LIST OF ABBREVIATIONS & ACRONYMS

Abbreviations and Acronyms	Description
ACM	Asbestos-Containing Materials
CDR	Council for Development and Reconstruction
CDW	Construction and Demolition waste
CNRS-L	National Council for Scientific Research- Lebanon
CoC	Code of Conduct
CoM	Council of Ministers
DMF	Debris Management Framework
DRR	Disaster Risk Reduction
E&S	Environmental and Social
EHS	Environmental Health and Safety
EIA	Environmental Impact Assessment
EMP	Environmental Monitoring Plan
EOD	Explosive Ordnance Disposal
EORE	Explosive Ordnance Risk Education
ERT	Emergency Response Team
ERW	Explosive Remnants of War
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
ESHS	Environmental, Social, Health, And Safety
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standard
GBV	Gender Based Violence
GIS	Geographic Information System
GRM	Grievance Redress Mechanism
H&S	Health and Safety
IDPs	Internally Displaced Persons
IFC	International Finance Cooperation
ILO	International Labour Organization
ISF	Internal Security Forces
ITS	Informal Tented Settlement
KPIs	Key Performance Indicators
LAF	Lebanese Armed Forces
LEAP	Lebanon Emergency Assistance Project
LMP	Labor Management Procedures
LMAC	Lebanon Mine Action Center
LULC	Land Use Land Cover
MoC	Ministry of Culture
MoD	Ministry of Defense
MOE	Ministry of Environment
MoIM	Ministry of Interior and Municipalities
MoL	Ministry of Labour
MoPH	Ministry of Public Health

MoPWT	Ministry of Public Works and Transportation
NGOs	Non-Governmental Organizations
NTS	Non-Technical Survey
OHS	Occupational Health and Safety
OSHA	Occupational Safety and Health Administration
PAPs	Project Affected Persons
PFA	Psychological First Aid
PIU	Project Implementation Unit
PM	Particulate Matter
POM	Project Operational Manual
PPE	Personal Protective Equipment
RoW	Right of Way
SEA	Sexual Exploitation and Abuse
SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
SOPs	Standard Operating Procedures
TMP	Traffic Management Plan
ToR	Terms of Reference
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNOPS	United Nations Office for Project Services
UXO	Unexploded Ordnance
WASH	Water, Sanitation, and Hygiene
WB	World Bank
WBG	World Bank Group

1 INTRODUCTION

1.1 Project Rationale and Objectives

In response to urgent national priorities, the proposed project—executed by the Council for Development and Reconstruction (CDR) as the implementing agency, supported by the Ministry of Public Works and Transport (MoPWT), and funded by the World Bank (WB)—aims to support the emergency restoration of conflict-damaged classified and local roads within the Cazas of Bint Jbeil, Sour, Marjeyoun, Nabatiyeh, Hasbaya, and the Southern Suburbs of Beirut. **The works fall under Component 1 (Immediate Response) and Component 2 (Rapid Recovery) of the Lebanon Emergency Assistance Project (LEAP)**, which supports immediate response to the 2023–2024 conflict and helps create conditions for recovery, including proper rubble management, restoration of vital infrastructure services, and rehabilitation of damaged roads in priority areas.

The Project covers the removal of obstacles from conflict-damaged roads and the implementation of initial temporary restoration works under **Component 1 (Immediate Response)**. Activities include debris clearance, reconstruction of base and subbase layers, and localized temporary asphalt surfacing to restore immediate access. **Component 2 (Rapid Recovery)** addresses localized repair and patching of road sections requiring lighter interventions, to improve trafficability, enhance road safety, and support socio-economic recovery. Only road sections damaged by the conflict are eligible under both components.

This Environmental and Social Management Plan (ESMP) Checklist applies exclusively to Component 1 (Immediate Response) and covers road segments in Nabatiyeh Caza identified for debris clearance and initial temporary restoration works.

1.2 Environmental and Social Category

The Project is classified as Moderate Risk under the World Bank (WB) Environmental and Social Framework (ESF)¹, because the proposed works are limited in scale, confined to existing road corridors, and associated impacts are expected to be localized and temporary when managed through appropriate mitigation measures. However, the overall operational context is considered Substantial Risk in the Project Operational Manual (POM). This reflects the complex post-conflict environment and associated contextual risks—including security constraints, the potential presence of Unexploded Ordnance / Explosive Remnants of War (UXO/ERW), structural instability, and population return dynamics—which require strict operational controls and continuous supervision.

Accordingly, an ESMP Checklist is required for each sub-project (per Caza). The ESMP Checklist ensures that Environmental, Social, Health, and Safety (ESHS) risks are systematically identified, managed, and monitored throughout implementation. It also facilitates the rapid initiation of works, which is essential in an emergency context where restoring safe access and connectivity is critical for conflict-affected communities. In WB emergency-response operations, simplified yet robust instruments such as the ESMP Checklist are specifically designed to enable rapid, field-ready implementation while ensuring full alignment with the ESF.

1.3 Key Environmental, Social, and Health Impacts

Environmental impacts primarily include: fugitive dust and noise generated by clearing, grading, and debris handling activities; temporary risks to soil and surface water quality resulting from rain-induced runoff over exposed soils or loose debris, as well as from improper handling of rubble or waste; the potential for minor damage to shallow or recently restored utilities; and disturbance to

¹ World Bank, Environmental and Social Framework (ESF), 2017
<https://thedocs.worldbank.org/en/doc/837721522762050108-0290022018/original/ESFFramework.pdf>

remaining natural vegetation along road shoulders. In post-conflict settings, improper disposal of debris—whether along road alignments, in wadis or riverbeds, on agricultural lands, or in other non-approved locations—can result in significant off-site environmental impacts. These risks are, however, preventable when debris is properly handled, transported, and disposed of at Ministry of Environment (MoE)-approved Temporary Storage Sites (TSSs).

Potential social risks include risks of sexual harassment, exploitation, or abuse (SEA/SH); risks of child labor; and poor labor conditions if the Contractor lacks robust Labor Management Procedures (LMP), Codes of Conduct (CoC), and fails to enforce labor and working-condition requirements. In the post-conflict emergency context, weak labor management can expose rapidly mobilized workers—especially vulnerable or temporary laborers—to unsafe tasks, unclear supervision, long hours, and inadequate welfare conditions. Community- and worker-level risks include exposure to ERW/UXO, unstable or partially collapsed roadside structures, and potentially hazardous rubble, including asbestos-containing materials. Accidental discovery of human remains during debris clearance may also occur and carries significant psychosocial, procedural, and public-health implications, requiring immediate work suspension and coordination with competent national authorities.

Additional community-level risks include temporary access constraints, localized traffic disturbance, and traffic-safety incidents associated with debris transport and machinery movement during road-clearing, debris hauling, and restoration activities. While most target roads are currently closed or only partially accessible, such risks may arise primarily on open or partially open road segments and adjacent connecting roads, particularly in villages where returnees have reoccupied homes or sensitive receptors are present. Social-exclusion risks may also arise if affected people are not adequately consulted or informed, potentially leading to perceptions that the selection of road segments is not aligned with community needs or priorities. These risks include challenges related to information disclosure and the effective use of the Grievance Redress Mechanism (GRM), particularly in frontline or villages where few residents have returned since the conflict.

When properly managed under the ESMP Checklist, the project is expected to deliver positive social outcomes. Beyond restoring mobility and safe access, road-clearing activities may support early recovery by generating short-term employment opportunities for local labor. In addition, the project can strengthen coordination with municipalities and local actors during implementation, indirectly contributing to social cohesion and community participation in recovery processes.

1.4 ESMP Checklist Purpose

The ESMP Checklist for Nabatiyeh **serves as practical and enforceable guidance for the Contractor, outlining mandatory mitigation and monitoring measures to address site-specific ESHS risks**. It ensures full alignment with national regulations, the WB ESF, relevant Environmental and Social Standards (ESSs), and the World Bank Group (WBG) Environmental, Health, and Safety (EHS) General Guidelines (2007)².

In line with **ESS1 (Assessment and Management of Environmental and Social Risks and Impacts)**, the Checklist applies a proportional approach to risk identification, impact assessment, and the adoption of the mitigation hierarchy, supported by robust monitoring and adaptive management mechanisms. Furthermore, in accordance with **ESS2 (Labor and Working Conditions)**, it integrates Labor Management Procedures (LMPs), the worker GRM, CoC—including SEA/SH clauses—and measures to ensure safe, fair, and non-discriminatory working conditions, as well as Occupational Health and Safety (OHS) protocols, labor safety requirements, and prevention of child labor.

²World Bank Group (WBG) Environmental, Health, and Safety (EHS) General Guidelines (2007).
<https://www.ifc.org/content/dam/ifc/doc/2000/2007-general-ehs-guidelines-en.pdf>

Under **ESS3 (Resource Efficiency and Pollution Prevention and Management)**, the Checklist addresses resource efficiency, management of debris and other waste materials, emissions and dust suppression, and the safe handling of hazardous materials. Consistent with **ESS4 (Community Health and Safety)**, it incorporates community health and safety measures, including traffic management, safe operation of machinery, and UXO/ERW risk management. It also includes provisions to prevent and respond to Gender-Based Violence (GBV), Sexual Exploitation and Abuse (SEA), and Sexual Harassment (SH).

In alignment with **ESS6 (Biodiversity Conservation and Sustainable Management of Living Natural Resources)**, the Checklist applies biodiversity protection measures where road segments run adjacent to sensitive natural habitats. Additionally, in alignment with **ESS8 (Cultural Heritage)**, the Checklist includes a Chance-Find Procedure should culturally sensitive assets be encountered. Finally, **ESS10 (Stakeholder Engagement and Information Disclosure)** requirements on stakeholder engagement, information disclosure, inclusive consultations, and a functional and responsive GRM—including SEA/SH-sensitive pathways—are fully integrated throughout the Checklist.

1.5 OHS Management Plan (to complement the ESMP Checklist)

Given the post-conflict context, several OHS risks cannot be fully eliminated and must therefore be systematically managed. To support proper implementation, detailed OHS requirements have been prepared separately to define the minimum standards and scope that the Contractor must follow when developing the site-specific OHS Management Plan (OHSMP).

The Contractor shall prepare the OHSMP in accordance with these requirements and in alignment with applicable Lebanese legislation, World Bank ESS2, ISO 45001 principles, relevant Occupational Safety and Health Administration (OSHA) standards, and the MoE/United Nations Development Programme (UNDP) (2025) Standard Operating Procedures (SOPs) for Post-Disaster Rubble Management. These SOPs form part of the United Nations (UN)–endorsed Debris Management Framework (DMF) developed by UNDP, UN-Habitat, and the United Nations Office for Project Services (UNOPS), and provide detailed guidance on safe and environmentally sound debris handling, including mine-action requirements coordinated by the Lebanese Armed Forces (LAF) and the Lebanon Mine Action Center (LMAC).

At a minimum, the OHSMP shall address hazard identification, risk assessment, mitigation measures, monitoring procedures, and emergency response protocols related to ERW/UXO, human remains (chance finds), unstable or partially collapsed roadside structures, heavy machinery operations, traffic hazards, and hazardous or contaminated materials. It shall also establish clearance procedures, STOP-WORK protocols, and security escalation measures where site conditions may deteriorate.

1.6 Methodology

This ESMP Checklist was prepared by TIVÈL Consultancy at the request of Associated Consulting Engineers (ACE) S.A.L. in accordance with the Project Terms of Reference (ToR) and World Bank ESF requirements.

Target road segments were identified through technical review, validation with the Ministry of Public Works and Transportation (MoPWT), stakeholder consultations, and geospatial analysis. Baseline environmental and social data—including sensitive receptors, land use, hydrogeology, water resources, and socio-economic context—were compiled from municipal inputs, previous assessments, high-resolution National Council for Scientific Research – Lebanon (CNRS-L) aerial imagery (2025), and general Geographic Information System (GIS) analyses at caza level. This supported the identification of vulnerable groups and sensitive receptors and the evaluation of impact significance, with high-sensitivity locations to be re-verified during implementation. This baseline is to be used by the Contractor as a basis for preparing the Construction Environmental and Social Management Plan (CESMP) once contracts are awarded.

Stakeholder engagement was carried out in accordance with the Project Stakeholder Engagement Plan (SEP) , which is disclosed on the CDR website (<https://www.cdr.gov.lb/en-US/Studies-and-reports/LEAP.aspx>), through official invitations, calls, and a public consultation held on 27 November 2025, complemented by targeted follow-ups with the Ministry of Environment (MoE) and non-governmental organizations (NGOs).

2 LEGAL AND INSTITUTIONAL FRAMEWORK

2.1 National Legal Framework

The ESMP Checklist is prepared in accordance with applicable Lebanese environmental, social, labor, and OHS legislation, including Law 444/2002 on environmental protection, Decree 8633/2012 on Environmental Impact Assessment (EIA), Law 80/2018 on integrated solid waste management, Decrees 5605/2019 and 5606/2019 governing Construction and Demolition Waste (CDW) and hazardous waste, Decree 11802/2004 on OHS, the Lebanese Labor Law, and Traffic Law 243/2012. In addition, MoE Circular 6/1 (2024) on post-conflict debris staging and disposal is fully integrated into the debris management requirements of this ESMP Checklist.

2.2 Institutional Framework

The project is implemented by CDR in coordination with MoPWT, with support from the MoE, Ministry of Labor (MoL), Internal Security Forces (ISF), Ministry of Defense (MoD) : the Lebanese Armed Forces / Lebanon Mine Action Center (LAF/LMAC), the Directorate General of Antiquities / Ministry of Culture (DGA/MoC), the Governorates, and the concerned municipalities. Their respective roles in debris management oversight, labor enforcement, traffic control, UXO/ERW safety, and cultural heritage management are essential for proper implementation.

2.3 Environmental Standards

Environmental emissions and discharges from the project must at all times comply with the relevant national standards established by MoE — in particular MoE Decision 52/1 (1996) (for noise, ambient air and water/soil quality), MoE Decision 16/1 (2022) (for air-emission ELVs relating to exhaust from backup generators or construction machinery) and — where relevant — MoE Decision 8/1 (2001) (for wastewater discharge and other effluent limits). In addition, emissions — especially noise — must also comply with the stricter limits defined by World Bank Group (WBG) / IFC General EHS Guidelines, and in case of divergence between national and international standards, the more stringent threshold shall apply.

Where domestic wastewater is generated from workers' facilities (e.g. portable portacabins or temporary sanitary installations), discharge into sewage systems (if available) must follow the MoE wastewater-discharge limits defined under Decision 8/1 (or any successor regulation). For other liquid emissions — such as accidental spills or contaminated runoff — routine sampling and quantitative testing may not be practicable (given the relatively small scale and irregular occurrence), but prevention and strict management measures must nevertheless be in place to avoid any uncontrolled release to soil, water or environment.

Thus, during all phases of works execution, the project must adopt the stricter applicable standard (national or WBG/IFC) for any emission or discharge type, to ensure compliance.

2.4 World Bank Environmental and Social Standards (ESSs)

2.4.1 World Bank ESSs

The project is implemented in accordance with the World Bank ESF. The relevant ESSs—already described in section **Error! Unknown switch argument.**—are: **ESS1, ESS2, ESS3, ESS4, ESS6, ESS8, and ESS10.**

2.4.2 Additional Guidance

Activities will follow the WBG General EHS Guidelines (2007) and the Good Practice Note on SEA/SH³ in IPF Projects Involving Civil Works (2022). Relevant guidance from MoE (2025) on sustainable rubble management and debris pre-processing is also applied to ensure alignment with international good practice.

2.4.3 Consultation, Disclosure and GRM

Transparency and information access are fundamental to WB-financed projects, supporting stakeholder engagement, trust-building, and project implementation under ESS10. A formal public consultation was conducted during ESMP Checklist preparation, with stakeholder inputs documented and addressed. The final Checklist will be disclosed on the CDR website before works begin, and the project's GRM will remain accessible throughout implementation.

The Contractor shall take note of the consultations documented in section 2.4.3.1 and shall continue engaging relevant stakeholders throughout planning, mobilization, and works implementation, ensuring effective coordination, transparent information disclosure, and timely response to community concerns in line with ESS10 and the Project GRM.

2.4.3.1 Stakeholder Engagement

Stakeholder engagement for this ESMP Checklist was carried out in accordance with project SEP and followed a transparent and inclusive process. All relevant stakeholders were invited through official letters and emails. Engagement included residents, local authorities (the Governorate of Nabatiyeh, municipalities, and Unions of Municipalities), and civil society organizations. Vulnerable groups—such as women, elderly persons, persons with disabilities, displaced households, returnees, poor families, refugees, and temporary workers—were reached through local authorities and active NGOs.

Invited international and local NGOs included UN-Habitat, Action Against Hunger, Anera, Acted, SHIELD, AVSI Lebanon, Nabaa, Abaad, KAFA, Amel Association, and the Imam Sadr Foundation.

Additional stakeholder mapping covered the DGA (invited to the meeting), LAF/LMAC, ISF, and Majles el-Janoub for coordination during implementation.

The process also included coordination meetings with the MoPWT, MoE, and CNRS-L to verify technical data, confirm debris-management requirements under MoE Circular 6/1 (2024), and access updated aerial imagery and GIS layers.

The public consultation meeting was held on 27 November 2025 in Beirut, with 24 participants (of whom three were women, among them the Governor of Nabatiyeh). MoPWT participated, MoE provided inputs through follow-up calls, and one local NGO (جمعية فكر وإنسان) attended. Participants raised concerns about debris management, UXO/ERW clearance, road eligibility, and contractor obligations. Municipalities suggested additional roads, some of which were added to the project, and confirmed they would support access, communication, and focal-point coordination.

³ World Bank Good Practice Note (GPN) – Addressing SEA/SH in IPF Involving Major Civil Works, 2022. <https://thedocs.worldbank.org/en/doc/6f3d9ddc6010c4221315dd1282958e41-0290032022/original/SEA-SH-Civil-Works-GPN-Third-Edition-Final-October-12-2022.pdf>

Targeted follow-up calls with Anera, AVSI Lebanon, and Acted provided further insights into post-conflict conditions, vulnerable groups, and effective communication approaches. NGOs emphasized that door-to-door outreach remains the most reliable method for reaching returning households in low-return villages, while coordination with the Governor, Disaster Risk Reduction (DRR) units, and municipalities constitutes their primary institutional channel for community engagement.

During the consultation meeting, the Project's GRM was presented—including telephone, email, and written channels. All feedback has been integrated into this ESMP Checklist. A summary of the consultation is provided in the Site Passport (Part 1).

2.4.3.2 Grievance Redress Mechanism (GRM)

The Project has established two complementary Grievance Redress Mechanisms (GRMs), including documenting, tracking, and resolving all complaints in line with structured resolution pathways, ensuring accessible, confidential, and survivor-centered reporting throughout implementation.

Community GRM: Available to all PAPs, including residents, businesses, road users, displaced households, returnees, vulnerable groups, and informal waste pickers who may interact with debris or TSSs. Complaints or information requests—including SEA/SH-related concerns—may be submitted confidentially via phone (01-980096), fax (01-981255), email (GRM.LEAP@cdr.gov.lb), written submissions to CDR (Tallet El-Serail, Beirut), or through municipal focal points and the supervising consultant. GRM information is disclosed through municipal boards, the CDR website, site signage, and community channels. Physical and phone submissions to CDR shall be received during operational hours (08:00–16:30), while email submissions may be made at any time. Complaints follow a structured pathway: resolution at site level (Contractor/Supervising Consultant) within 7 days; escalation to the CDR PIU Social Specialist within 14 days if unresolved; and final review by the CDR PIU Director within 14 days, without prejudice to the complainant's right to access judicial mechanisms.

Worker GRM: Available to all workers, consistent with ESS2 and the LMP. Worker grievances—including labor conditions, workplace safety, and SEA/SH complaints—are addressed at Contractor level (HSE/Site Manager) within 7 days, with escalation to the CDR PIU Director if unresolved.

2.4.3.3 Information Disclosure and Reporting

The ESMP Checklist will be disclosed on the CDR website and at the concerned municipalities. Engagement with municipalities, unions, and local stakeholders will continue throughout implementation. All grievances and stakeholder communications will be recorded, monitored, and reported. Reporting will include qualitative and quantitative indicators to assess the effectiveness of engagement and GRM performance. Regular feedback will be communicated to stakeholders to ensure transparency, continuous improvement, and full alignment with WB ESS10 on Stakeholder Engagement and Information Disclosure.

3 APPLICATION OF THE ESMP CHECKLIST

The ESMP Checklist provides pragmatic, user-friendly guidance for addressing predictable, localized ESHS impacts. It operationalizes the environmental and social commitments set out in the Environmental and Social Commitment Plan (ESCP), which is disclosed on the CDR website (<https://www.cdr.gov.lb/en-US/Studies-and-reports/LEAP.aspx>), by translating them into contractor-level actions, including mitigation measures, monitoring requirements, and capacity-building provisions.

3.1 ESMP Structure

The ESMP Checklist consists of an introductory section and three main parts:

- **Introduction, Legal context, and ESMP application and Monitoring** – Presents the project background, environmental and social risk classification, and the purpose and scope of the ESMP Checklist.
- **Part 1:** consolidating all project-specific information, including site characteristics, institutional and legislative context, scope of works, and environmental and social baseline conditions. It also summarizes consultation outcomes and capacity-building needs. This section provides the necessary inputs for the environmental and social screening (Part 2) and the monitoring plan (Part 3).
- **Part 2: Environmental and Social Screening and Mitigation Measures** – A structured Yes/No screening table linking proposed activities to potential ESHS risks, followed by the corresponding mitigation measures consistent with national regulations and WB ESSs.
- **Part 3: Monitoring Plan** – Defines monitoring indicators, frequency, responsibilities, and methods for verifying compliance with mitigation measures during implementation, in line with WB requirements.

Parts 2 and 3 of the ESMP Checklist are intended to be inserted directly into bidding documents to ensure that contractors fully understand, plan, and cost all environmental and social obligations.

3.2 Implementation Approach and Pre-Mobilization Requirements

The **Contractor shall implement all ESMP Checklist measures** under the supervision of the implementing agency, **CDR (through the Project Implementation Unit – PIU – and the Supervising Engineer)**. **CDR shall report** environmental and social performance to the World Bank in accordance with ESF and ESCP requirements.

The ESMP Checklist shall be included in the bidding package, and the Contractor shall prepare and implement a C-ESMP consistent with the ESMP Checklist and the OHS requirements prior to commencement of works. Key E&S obligations shall be incorporated as binding clauses in the contract.

Works may commence only once all Pre-Commencement / Pre-Mobilization Requirements are completed. The Contractor shall:

- Obtain LAF/LMAC authorization confirming that areas are cleared or approved for supervised work,
- Ensure all personnel are trained with STOP-WORK authority, and
- Submit a site-specific Debris Management Plan for approval by the Supervising Engineer and CDR (PIU) in coordination with MoE, as guided by this ESMP Checklist.

Additional site-specific measures—including coordination with local authorities, community notification, GRM/signage display, hazard verification, and emergency procedures—**shall be implemented in accordance with the ESMP Checklist and OHS requirements.**

A project mechanism **shall ensure coordination with MoD, LAF, and LMAL** to provide the Contractor with necessary authorizations, guidance, and operational support.

3.3 Application Across Project Phases

3.3.1 General Identification Phase

- Identify the specific road segments targeted for clearing and initial restoration.
- Prepare the draft ESMP Checklist (Parts 1–3) based on available baseline information.

- Use Part 2 to link typical activities to potential environmental and social risks and to outline initial mitigation measures.

The draft ESMP Checklist provides environmental and social inputs that guide the engineering design process from an early stage.

3.3.2 Detailed Design and Tendering Phase

- Prepare detailed technical specifications and bills of quantities for planned works.
- Update and finalize the ESMP Checklist based on the final technical design and any site-specific assessments needed.
- Disclose the ESMP Checklist prior to tendering and attach it to bidding and supervision documents.
- Require contractors to comply with all ESMP Checklist provisions and to implement mitigation and monitoring measures, together with the separately prepared OHS Management Plan.

3.3.3 Works Implementation and Supervision Phase

- Monitor environmental and social compliance on-site through CDR's PIU E&S specialists and the supervising engineer.
- Apply Part 2 to verify implementation of mitigation measures and Part 3 to track monitoring requirements and performance indicators.
- Conduct regular site inspections, document progress, and prepare compliance reports, using the ESMP Checklist as the standard supervision tool.
- Require prompt corrective actions, document follow-up, and ensure that contractors maintain continuous adherence to the ESMP Checklist and the OHS Management Plan.

4 MONITORING AND REPORTING

To ensure that all ESHS mitigation measures are effectively implemented during project implementation, the Project adopts a comprehensive monitoring framework (Part 3 of the ESMP Checklist) that defines clear indicators, monitoring frequency, responsibilities, and reporting requirements for each impact area. Monitoring covers environmental parameters (dust, noise, debris and waste handling, runoff and spills), social safeguards (labor conditions, GBV/SEA/SH prevention, GRM performance, community access and inclusion of vulnerable groups), and post-conflict area hazards and emergency-related OHS aspects, including ERW/UXO, machinery safety, hazardous materials, and worker Personal Protective Equipment (PPE) compliance.

The framework is implemented jointly by the Contractor, who shall conduct daily implementation and self-monitoring, maintain records of all monitoring activities, and take immediate corrective actions in case of non-compliance, the Supervising Engineer (verification, site inspections, document review, non-compliance notices), and the CDR PIU (oversight, field verification, and reporting to the World Bank as per the ESCP requirements).

Additional institutional support is provided by municipalities and Unions of Municipalities, the MoE for waste transport oversight, the ISF / Ministry of Interior (MoI) for traffic safety, the MoC/DGA for chance finds, LAF/LMAC for UXO/ERW clearance and emergency response, and the Ministry of Public Health (MoPH), ISF and the public prosecutor for chance finds involving human remains. All monitoring findings shall be documented, and corrective actions shall be applied immediately.

Annex 1: ESMP Checklist – Nabatiyeh CAZA

Project: Damaged Roads Clearing and Restoration in South Lebanon

Component: LEAP – Component 1

Implementing Agency: Council for Development and Reconstruction (CDR)

Funder: World Bank (WB)

Sub-project: Nabatiyeh Caza

Part 1: Site Passport

The Site Passport for Nabatiyeh Caza provides a concise overview of the target roads and the scope of works—namely, emergency debris clearance and initial restoration works under Component 1 / Phase 1 of LEAP Project, which is the focus of this ESMP Checklist. While the ESMP Checklist applies exclusively to Phase 1 activities, the identification of sensitive receptors was undertaken at the Caza level, in order to better understand the wider safety and community context.

It is expected that, along heavily damaged road corridors, many social receptors (e.g., houses, places of worship, clinics) may no longer be present due to widespread destruction during the conflict. Where receptors remain standing, they are to be identified and flagged by the Contractor for verification—to confirm whether they are functional or inhabited—and for the application of precautionary measures during implementation.

ESMP Checklist Part 1 : Site Passport	
Institutional & Implementation Arrangements	- Implementing Agency: CDR – PIU - Supervision: CDR PIU E&S Specialists; Supervising Engineer - Contractor: Responsible for full implementation of ESMP Checklist and OHS management plan - Local Authorities: Nabatiyeh Governorate, Nabatiyeh caza, and concerned municipalities (access, coordination, debris transport verification) - LMAC/LAF: UXO/ERW clearance prior to any works
Project Location	- Coverage: Nabatiyeh Caza - Right-of-Way: Within existing ROW. No land acquisition or displacement – ESS5 not triggered.
Scope of works Under component 1	Road Condition Categories: - Total closure: Clearing + temporary restoration - Partial closure: Clearing + temporary restoration - Open but damaged: temporary restoration. Operational Focus: - Restoring access in heavily damaged local roads. - Primary roads were largely reopened during earlier emergency interventions; therefore, Phase 1 primarily targets local roads, which constitute the majority of the treated network. Sensitivity is higher in areas where returnees are present, while community interaction is lower in frontline villages with minimal population return. Work Method Sequence - LMAC/LAF Non-Technical Survey (NTS) & daily clearance - No physical work (debris removal, excavation) begins without written LAF/LMAC clearance for the specific segment. - Remove rubble from road corridors - Excavate damaged pavement layers - Load immediately and transport via covered vehicles to MoE-approved TSS/quarries - Reconstruction of pavement: placement and compaction of base and subbase layers. - Temporary asphalt surfacing: single layer applied over reconstructed pavement to restore immediate access and structural integrity.
Applicable Legislation and World Bank requirements	- The Project shall comply with applicable national legislation and environmental standards, as well as the World Bank Environmental and Social Framework (ESS1, ESS2, ESS3, ESS4, ESS6, ESS8, and ESS10). Detailed references are provided in the contextual text of the ESMP Checklist (Chapter 2).

Environmental Constraints	- Hydrogeological sensitivity: Large portions of Nabatiyeh Caza are underlain by karstified Jurassic and Cretaceous limestone formations, characteristic of the wider South Lebanon karst system, with rapid infiltration and direct hydraulic connectivity to underlying aquifers. In such zones, any fuel, oil, or asphalt-related spill can migrate quickly into groundwater with limited natural attenuation. <u><i>This requires strict control of fuel storage, debris handling, and surface runoff at all work fronts, with specific karst-sensitivity to be re-verified at the road-segment level once specific alignments are confirmed.</i></u> - The caza is drained by the Al Zahrani River and numerous springs at varying elevations, several of which cross or run near primary and secondary roads. Where road segments cross rivers or springs, special measures (spill containment, sediment control) are required during clearing and reconstruction works - Natural habitats: - o Despite extensive damage and pollution in the project area, remaining Mediterranean scrubland, oak patches, olive groves and agricultural mosaics need to be preserved from further damage. - o Trees present near roads are typically olive, cypress, eucalyptus, etc. and outside the road right-of-way — general caution against encroachment still applies.
Social Baseline	- Nabatiyeh Caza had an estimated population of 180,200 in 2020 (CAS), while Nabatiyeh Governorate had approximately 330,000 inhabitants. Prior to the conflict, 16,578 registered Syrian refugees were residing within host communities in the Caza (UNHCR, 2021), with no informal tented settlements recorded. - Nabatiyeh was among the areas most severely affected by the October 2023–December 2024 conflict. The resulting destruction generated substantial quantities of rubble, some of which obstructed or restricted access along affected roads. The World Bank’s Rapid Damage and Needs Assessment identified Nabatiyeh and South Lebanon as the most affected governorates. Accordingly, the proposed works will contribute to post-conflict recovery by removing conflict-related rubble and restoring safe access along affected roads in Nabatiyeh Caza.
Vulnerable Groups	- Vulnerable groups—including elderly persons, women-headed households, persons with disabilities, chronically ill individuals, returning Lebanese households, Syrian refugees—remain exposed to high risks from damaged housing, unstable structures, UXO/ERW, and limited access to services.
Social Sensitive Receptors	- Where mosques, hospitals, and/or schools are located along the road segments to be cleared and restored, special care shall be taken during maintenance activities to avoid disrupting access to and operations of these sensitive receptors, particularly with regard to air quality, noise, dust, and traffic disturbances.
Conflict-Related Constraints	- High UXO/ERW risk across all villages, requiring strict adherence to LMAC procedures. - LMAC clearance is mandatory for every road segment prior to commencement of any works. - Rubble may contain hazardous, chemical, or war-related residues; disturbance is prohibited until clearance and authorization are confirmed. - Active post-conflict operating context, with intermittent security incidents and the potential for renewed hostilities, creating ongoing risks for workers and nearby communities.
Key Site Constraints and Risks	- Local roads → slow speeds, spotters, strict pedestrian safety (especially where repopulated). - High-value LULC (olive terraces, oak woodlands, agricultural plots in concerned villages and adjacent to alignments) → proper waste management, strict dust/runoff control, no debris push-aside, no machinery encroachment - Karstic geology in several segments → robust spill prevention, lined storage areas and sediment/runoff control, especially near river and wadi crossings. - Unstable rubble / conflict damage → trained workers, LMAC-cleared access, STOP-WORK when unsafe.
UXO/ERW Procedures	- No works permitted without prior LMAC Non-Technical Survey (NTS) or Technical Survey confirmation.

	- Mandatory LMAC clearance for all areas with identified or suspected UXO/ERW risk. - Access restricted to LMAC-cleared areas and trained personnel only. - Immediate STOP-WORK if any suspicious object, fragment, or anomaly is observed. Evacuate and notify LMAC as per the agreed reporting process.
Debris & Waste Management	- No on-site sorting, direct loading + covered transport to MoE-approved temporary storage sites. - Prohibited: Dumping in wadis, agricultural land, or informal sites or any other site beyond the MoE-approved TSS
Grievance Redress Mechanism (GRM)	- Accessible to all community members and workers through phone (01-980096), fax (01-981255), email (GRM.LEAP@cdr.gov.lb), or written submissions to CDR (Tallet el-Serail, Beirut) during operational hours (08:00–16:30); SEA/SH complaints are handled confidentially via survivor-centered GBV pathways.
Public Consultation Summary	A consultation for Nabatiyeh Caza was held on 27 November 2025 with 24 participants (including three women, among them the Governor of Nabatiyeh). Key issues raised: - Debris management and UXO/ERW clearance requirements. - Eligibility limited to conflict-damaged roads. - Contractor OHS/EHS obligations and supervision responsibilities. - Additional roads suggested by municipalities; some integrated into project scope. - Municipalities committed to supporting access and assigning focal points.
Capacity Building Needs	- The Contractor and all workers must receive induction covering World Bank ESS requirements, ESMP Checklist implementation and monitoring, UXO/ERW safety, OHS procedures and emergency response, TMP, GRM use, Code of Conduct and SEA/SH prevention, and safe debris-clearing and handling near unstable rubble.

Part 2: Environmental and Social Screening and Mitigation Measures (Part 2)

The screening below assesses the environmental and social sensitivities of Nabatiyeh Caza in relation to the clearing and initial restoration of conflict-damaged roads, and identifies the mitigation measures required under the World Bank ESF.

A structured **Yes/No screening matrix**, which operationalizes the information in the Site Passport, was then applied to assess potential risks and link them to the mitigation measures and monitoring actions presented in **Part 2 (Mitigation Measures)** and **Part 3 (Monitoring Plan)** of this ESMP Checklist. The screening reflects the general post-conflict conditions in Nabatiyeh, including the presence of sensitive receptors, narrow local roads, war-damaged structures, and other post-conflict constraints, to be confirmed by the Contractor at the segment level prior to works.

Part 2 – Environmental and Social Screening			
Question	Yes/No	Description of Site Conditions & Risks	Required Action / Linked Mitigation
Will the sub-project involve clearing or generating debris/rubble?	Yes – High Risk	- All road segments contain war-related debris, unstable rubble, broken asphalt, damaged shoulders, and potentially hazardous fragments. Works will focus on clearing existing conflict-related debris and expected spoil from surface leveling activities.	Section A – Debris & Waste Management (MoE Circular 6/1); Section B – Community Safety; Section C – Debris Handling Safety & UXO/ERW Protocols.
Karstic geology / spill sensitivity?	Yes	- Where road segments lie directly on high-permeability karst formations These areas have rapid infiltration and direct aquifer connectivity , meaning that any fuel, oil, or asphalt spill would migrate quickly into groundwater .	Section A – Spill Prevention.
Excavation or soil disturbance?	Moderate to High	- Pavement excavation and grading required for restoration works along road sections. Only shallow surface/subbase work anticipated; no deep trenching.	Section A – Soil Protection.
Dust emissions likely?	Yes	- Debris loading, unpaved sections, gravel works.	Section A – Dust Control.
Works near wadis/drainage?	Yes	- Where road alignment crosses a wadi, the main risks are blockage of side drains, sediment-laden runoff , and accidental deposition of debris near riparian edges .	Section A – Stormwater Management.
Heavy machinery required?	Yes	- Loaders, graders, compactors, dump trucks.	Section C – Machinery Safety.
Hazardous materials/spill risk?	Yes	- Fuel, lubricants, possible ACM fragments in rubble.	Section A – Spill Prevention; Section C – Hazardous Material & ACM Safety.
Biodiversity impacts?	Moderate	- Vegetation along shoulders (shrubs, oaks, olive trees) has already been partly damaged by conflict and fire; no further disturbance is permitted. Off-site impacts are possible if debris is mismanaged.	Section A – Vegetation Protection; Debris & Waste Management.
Cultural heritage nearby?	Low-Possible	- Debris removal and surface disturbance may expose buried cultural materials.	Apply ESS8 Chance-Find Procedure – As a precautionary measure.
Temporary traffic disruption?	Low to Moderate	- Works on local roads—including debris removal, transport, and initial restoration—may temporarily affect circulation within villages and along connecting routes. - TMP measures—including signage, speed control, and the use of banksmen—will still apply to protect workers and occasional residents, particularly during debris transport and equipment movement. - Priority access must always be maintained for emergency vehicles, especially toward the nearest hospitals .	Section B – Community Engagement & Notices; Vulnerability Checks; GRM Access; TMP & Access Management (controlled access; short work cycles; emergency vehicle priority; banksmen; signage; municipal + ISF + LAF/LMAC coordination)
Social risk?	Yes	- High-density towns require reinforced pedestrian safety, clear access management, and continuous communication due to higher population concentration and mixed residential–commercial areas.	Section B – Community Engagement & Notices; Vulnerability Checks; GRM Access; TMP & Access Management.

Part 2 – Environmental and Social Screening			
Question	Yes/No	Description of Site Conditions & Risks	Required Action / Linked Mitigation
		- Road works must be carefully coordinated to avoid exacerbating vulnerabilities for returnees, elderly residents, and households re-entering partially destroyed neighborhoods. - Where roads are adjacent to active farmland or agricultural areas under recovery, works may temporarily restrict access and increase sensitivity to dust, vibration, and machinery encroachment	
Presence of vulnerable groups?	Yes	Elderly persons, women-headed households, persons with disabilities, and chronically ill individuals remain in some partially damaged villages—face high exposure due to damaged housing and reduced services. Returning Lebanese households and Syrian refugees may face higher vulnerability because they are re-entering damaged, high-risk areas with unstable structures and UXO/ERW exposure. Farmers with adjacent plots may face access constraints if they have returned and plan to repair their damaged lands.	Section B – Vulnerable Groups & Social Inclusion (mandatory pre-work <i>vulnerability check</i> ; <i>tailored communication</i> ; <i>safe routes</i> ; <i>accessible GRM</i> ; <i>support for elderly/disabled</i>).
Works near sensitive receptors (houses, mosques, clinics/hospitals)?	Yes	Field verification is required prior to works to confirm the presence, condition, and functional status of mosques, residences, and other structures located close to the road segments to be cleared and restored, as some may be partially damaged or non-operational. Where health facilities are located near proposed works, access routes must remain open at all times for emergency vehicles, regardless of exact distance from the road.	Section A – Dust/Noise Control; Section B – TMP & Access.
Labor influx risks?	Low	Small temporary workforce; no labor camps; limited interaction with communities, particularly in low-population villages.	Section B – Labor Management & SEA/SH Controls.
Child labor risk?	Possible	- Known risk in local contracting chains, especially for temporary labor. - Contextual pressures (economic hardship and school closures) may increase the likelihood of underage workers being engaged indirectly.	Section C – ESS2 Labor Compliance (age verification; contractor labor registry; zero-tolerance for minors; site monitoring).
UXO/ERW risk?	Yes – Critical	- Entire Caza must be treated as UXO suspect until LAF/LMAC clearance. - UXO may also be present within rubble piles, shoulders, and under collapsed walls, requiring daily LMAC confirmation.	Section C – UXO/ERW Clearance Protocols (LMAC). Contractor to maintain daily UXO/ERW verification logs ; STOP-WORK authority enforced; all findings reported immediately to Supervising Engineer and CDR.
Human remains risk?	Possible – Critical	Chance finds may occur during debris clearing and pavement excavation; risks include psychological distress to workers and communities, and legal/reputational	Section B – Social / Community Awareness & Notification; Section C – OHS Chance-

Part 2 – Environmental and Social Screening			
Question	Yes/No	Description of Site Conditions & Risks	Required Action / Linked Mitigation
		implications if remains are disturbed.	Find Procedures (STOP-WORK, notification, and respectful handling).
Unstable structures near road?	Yes	- Partially collapsed houses, walls, and detected mosques may pose collapse risk during vibration from machinery.	Section C – Structural Safety & Exclusion Zones (pre-work stability check).
Utilities at risk?	Yes	- Shallow telecom/electricity/water lines may be present; some emergency reconnections ongoing.	Section C – Utility Safety Protocols (LOTO; STOP-WORK).
Need municipal coordination?	Yes	- Municipalities + Union + Governorate involved in access, routing, debris verification.	Section B – Community Engagement & Notices.
GRM disclosed in site areas?	To Be Implemented	- Leap GRM established but not yet displayed at work sites (no posters/numbers installed).	Section B – GRM Disclosure. Contractor must install signage prior to works commencement.
Security risk?	High	- Some villages face elevated contextual security risks that may affect worker safety, access continuity, and timing of emergency response; site teams must be prepared for rapid suspension of works and activation of emergency communication protocols.	Section B – Community Safety; Section C – Emergency Preparedness & Security Coordination.

EHS MANAGEMENT PLAN

SECTION A — ENVIRONMENTAL PROTECTION

This section identifies potential environmental impacts associated with Project implementation under Component 1 (Immediate Response). Impacts are grouped by air quality, noise, water and soil quality, waste management, vegetation, and physical cultural resources. Mitigation measures emphasize protection of the environment, public safety, and compliance with relevant regulations and best practice.

Section A: Potential Environmental Impacts and their Mitigation Measures			
Parameter	Activities	Potential Impacts	Mitigation Measures (Environmental)
Air Quality, Dust & Odor Control	Debris clearing, pavement excavation, gravel/base-course placement, and single-layer asphalt surfacing.	- Dust emissions from debris removal and truck movement. - Dust generated during pavement excavation and material loading activities. - Short-term emissions (fumes) from asphalt laying and compaction. - Air pollution from machinery and truck exhaust.	- Apply water spraying during debris clearing, loading, transport, gravel placement, and other dust-generating activities. - Cover all trucks transporting debris or fine materials to prevent dust emissions or material spillage. - Use water spraying during excavation and pavement cutting to prevent airborne dust. - Carry out asphalt works during favorable weather conditions and limit exposure time near sensitive receptors. - Limit vehicle and machinery speeds on unpaved or disturbed sections to reduce dust generation. - Maintain machinery and equipment in good working condition to minimize black smoke and exhaust emissions. - Position machinery exhaust outlets away from sensitive receptors.
Noise & Vibration	Operation of equipment, and truck movement	- Increased noise levels affecting nearby residents namely recent returnees. - Short-term vibration from compactors, rollers, and heavy machinery, which may disturb returnees and may affect unstable or conflict-damaged structures.	- Restrict noisy works to daylight hours. - Use well-maintained equipment with functioning mufflers. - Place stationary equipment away from sensitive receptors whenever possible. - Provide advance notification to residents, shops, and institutions before starting high-noise activities. - Avoid prolonged idling of machinery. - In areas with damaged or unstable buildings, minimize vibration-intensive operations, use lighter compaction where feasible, and maintain safe standoff distances. - Use flaggers and community-safety personnel when operating large machinery in narrow streets or near homes, shops, and pedestrian areas. - Prohibit night works
Water & Soil Quality / Spill Prevention	Refueling, machinery operation, debris clearing,	- Improper handling of debris leading to localized contamination - Localized contamination from	- Vehicle Maintenance: Ensure all transport and work vehicles are well-maintained to prevent fuel, oil, or hazardous material leaks. - Prohibition of Dumping: Absolutely no disposal of debris in fields, valleys, wadis, or watercourses.

Section A: Potential Environmental Impacts and their Mitigation Measures			
Parameter	Activities	Potential Impacts	Mitigation Measures (Environmental)
	gravel/base-course placement, and asphalt works.	- improper debris handling or blockage of drainage. - Illegal dumping of debris or waste. - Soil compaction from machinery movement leading to increased runoff - Localized soil or surface contamination from accidental spillage of bituminous materials during asphalt laying. - Fuel and oil spills contaminating soil or water. - Improper storage or disposal of waste materials.	- Truck Covering: All debris-transport trucks must be fully covered to prevent dust dispersion and material spillage. - Drainage Protection: Keep rubble, gravel, asphalt, and other materials away from natural drainage depressions; do not obstruct runoff paths. - Bituminous Material Control: Handle asphalt and bituminous materials carefully; immediately contain and remove any accidental spills and dispose of waste asphalt at approved facilities only. - Safe Fuel Handling: Store fuel and lubricants in secure, leak-proof containers placed on impermeable surfaces. - Refueling Controls: Conduct refueling and maintenance off-site whenever possible; if on-site, use spill trays and remain at least 20–30 m away from drains or watercourses. - Spill Preparedness: Maintain spill kits at all work fronts and ensure workers are trained in spill response. - Restricted Machinery Movement: Keep machinery strictly on the existing road platform to avoid unnecessary soil disturbance and compaction. - Immediate Clean-Up: Clean any fuel or oil spills immediately and dispose of contaminated materials safely in accordance with regulations. - Proper Waste Disposal: Collect and dispose of all waste (oily rags, filters, plastics, domestic waste) through municipal or approved disposal channels.
Stormwater & Runoff Management	Debris clearing, roadbed excavation and preparation, base-course placement, and asphalt surfacing (as required).	- Blocked roadside drains or natural runoff channels due to debris or excavated material. - Sediment flow onto adjacent land or roads from exposed soil during excavation - Runoff contamination during rain events (fuel/oil spills, fresh asphalt works, equipment maintenance, or improper material storage) - Diversion of natural drainage paths due to temporary mounds of gravel or excavated soil. - Formation of waterlogging or uncontrolled runoff around newly restored pavement	- Immediate Debris Removal: Remove cleared material without delay; no stockpiling that may obstruct natural drainage or divert runoff. - Drainage Preservation: Strictly prohibit disposal of debris, gravel, or asphalt materials in wadis, low points, or natural depressions that channel stormwater. - Erosion Monitoring & Control: Regularly inspect disturbed slopes and soil surfaces. Prevent runoff or sediment wash-off from newly excavated or reconstructed pavement surfaces. - Pollution Prevention: Prevent fuel, oils, cement residue, bituminous materials, or chemicals from reaching drains or watercourses during all stages (clearing, excavation, asphalt surfacing). - Safe Material Storage: Store gravel and construction equipment away from drainage lines and natural surface-water flow paths. - Rapid Spill Response: Clean and contain any spills immediately; remove contaminated soil and manage according to regulations. - Final Drainage Check: After asphalt surfacing, ensure runoff drains correctly and no new blockages or diversions have formed. - Rainfall Management: Avoid works during heavy rainfall where practicable; suspend debris-handling activities during intense rain, and implement temporary drainage or erosion controls as needed.

Section A: Potential Environmental Impacts and their Mitigation Measures			
Parameter	Activities	Potential Impacts	Mitigation Measures (Environmental)
		layers.	
Debris & Waste Management (MoE Circular 6/1)	Road clearing and Pavement excavation	- Off-site dumping leading to soil, water, and habitat contamination. - Blockage of wadis, valleys, or agricultural areas if debris is disposed improperly. - Mixing hazardous rubble (asbestos, chemicals, unexploded ordnance debris) with inert waste. - Any site with suspected Asbestos-Containing Material (ACM) becomes a hazardous-material zone. - Traffic and community safety risks during debris loading and transport. - Improper handling of small quantities of hazardous waste	- No sorting, no on-site segregation, and no temporary stockpiling — all war rubble and road construction/demolition waste, including pavement excavation spoil, must be loaded directly onto trucks at the point of clearance. - Immediate transport of this rubble/CDW to MoE-approved TSS in line with MoE Circular 6/1; storage is permitted only in environmentally degraded quarries formally designated by municipalities/unions and approved by the MoE (more than 26 sites are under MoE examination). - Contractor shall submit a Debris Management Plan before mobilization, in coordination with local authorities for approval by the Supervising Engineer and the CDR-PIU. Municipalities, Unions of Municipalities, and Majles el-Jnoub (South Council) supervise routing, transport, and reception at authorized quarry sites. - The Debris Management Plan shall include the use of MoE-authorized disposal sites and quarries, defined haulage routes and alternatives, a chain-of-custody system for debris with trip tickets, weight/volume records, GPS tracking of trucks, and procedures to identify and isolate hazardous debris. - Strict prohibition of dumping in valleys, riverbeds, wadis, agricultural land, natural habitats, or any informal/unauthorized site. - Truck requirements: - o All trucks must be fully covered. - o No overloading. - o Clean up any accidental spillage along public roads. - Chain-of-custody: Maintain daily transport logs including origin, road ID/segment, estimated quantity, truck plate, date/time, destination, and receiving-site signature. - ACM / Hazardous Materials: - o Any suspected asbestos-containing material (ACM) or other hazardous fragments must trigger STOP-WORK, isolation of the material, and handling by a trained specialist in accordance with MoE Circular 6/1 and ESS3. - o Store, transport, and dispose of hazardous waste exclusively through MoE-approved pathways. - Non-rubble waste: - o Domestic waste, packaging, and plastics stored in covered bins for municipal collection. - o Hazardous small waste (oily rags, used filters, contaminated PPE) sent to licensed handlers. - o Before work begins, the Contractor shall coordinate with the relevant municipalities to ensure proper collection and management of non-rubble waste.

Section A: Potential Environmental Impacts and their Mitigation Measures			
Parameter	Activities	Potential Impacts	Mitigation Measures (Environmental)
			○ Supervision: Supervising engineer, municipalities, and CDR must conduct regular site inspections to verify proper loading, routing, and disposal.
Vegetation & Biodiversity Protection	All works.	- Minor and temporary disturbance to roadside vegetation (shrubs, grasses, agricultural edges), within an already degraded post-conflict environment. - Dust deposition on crops or shrubs during debris removal or gravel works. - Accidental discharge of gravel, debris, or other waste materials into adjacent fields or natural areas (wadis/maquis patches). - Habitat disturbance only if debris is improperly dumped off-site in natural or agricultural areas. - Short-term disturbance to small fauna due to machinery noise and truck movement (fully reversible).	- Strict prohibition of dumping debris and other waste materials in natural areas, wadis, orchards, or agricultural fields (MoE Circular 6/1 compliance). - Restrict machinery strictly to the existing road corridor, no off-road deviation into fields, orchards, or remaining natural areas. - Remove debris immediately and transport to MoE-approved sites, no roadside stockpiling. - Use water spraying near natural habitats to minimize dust deposition. - Avoid cutting vegetation, prune shrubs only if necessary and in coordination with the municipality. - Clean accidental spills immediately (fuel, gravel, asphalt) near vegetation or farmland. - Allow wildlife to move away naturally; workers must not handle or disturb fauna. - Worker briefing on vegetation protection and prohibition of dumping or damage.
Resource Efficiency	All works	- Excessive fuel/water use; inefficient material application	- Avoid machinery idling. - Maintain machinery regularly to ensure its efficient operation which leads to efficient fuel consumption. - Optimize truck routing to MoE sites. - Use water only when needed for dust suppression. - Apply binder and aggregates in required quantities only.
Physical Cultural Resources	Road clearing, debris removal, limited surface disturbance.	- Chance exposure of buried cultural materials during debris removal or surface disturbance. - Vibration, dust, or accidental machinery encroachment	Worker Training/induction - All workers must receive induction on the Chance-Find Procedure before commencement of work. - The Contractor shall include a brief on this procedure in all worker inductions and toolbox talks. - Before starting debris-clearing or any activity that may disturb the ground surface, the contractor must visually inspect the work zone for signs of archaeological materials or old structural remains.

Section A: Potential Environmental Impacts and their Mitigation Measures			
Parameter	Activities	Potential Impacts	Mitigation Measures (Environmental)
		affecting nearby heritage structures.	- The Contractor shall keep the contact details (phone/email) of the DGA and the PIU focal point on-site for immediate notification in the event of a chance find. <u>The following Chance-Find Procedure shall be strictly followed by the Contractor :</u> - Stop all work immediately in the area where an artifact, structure, bone, or cultural material is encountered—regardless of the activity. - Secure and fence off the area to prevent disturbance, damage, or removal of the find - Notify the Ministry of Culture / DGA within 24 hours, following national regulations (Law 166/LR of 1933 and Law 37/2008). - Document the find in a Chance-Find Log, including date, location (road ID/segment), description of item, photos if possible, and personnel involved. - Do not resume work in the affected area until the DGA provides written instructions and clearance to proceed. Maintain the secured area and update the supervising engineer/PIU on any communications or instructions from DGA.

SECTION B — SOCIAL MANAGEMENT PLAN (COMMUNITY AND WORKFORCE)

Section B identifies potential social, community, and worker wellbeing risks associated with project implementation. Risks are grouped into Community Safety and Access, Workforce Management and Labor Risks, and Post-Conflict Risks (Special Hazards). Mitigation measures emphasize safety, communication, inclusion, and coordination with local authorities. Worker-related measures in this section address psychosocial and community-interface risks, while technical occupational health and safety controls are detailed in Section C.

Section B: Potential Social Impacts and their Mitigation Measures			
Parameter	Activities	Potential Impacts	Mitigation Measures (Community and worker wellbeing)
Community Safety and Access			
Traffic Management & Access /Traffic Safety	- Road clearing; closures; truck movement; machinery in narrow streets	- Temporary access constraints near community facilities where restoration works occur on already open road segments. - Increased traffic-safety risks for returning residents and vulnerable groups due to debris transport and machinery movement.	Traffic Management Plan (TMP): - Prior to mobilization, the Contractor shall prepare and implement a site-specific Traffic Management Plan (TMP) for each work location prior to any road closure, debris haulage, machinery movement, or restoration works. - The TMP shall define the Program of Works, Method for Debris Clearing, haulage routes and routing to MoE-approved Temporary Storage Sites (TSSs), regulatory and informative signage, working hours, pedestrian safety measures, vehicle and driver safety requirements, and coordination arrangements with

		- Collision risk between trucks/machinery and pedestrians, especially in narrow village streets or areas with returning residents and vulnerable groups. - Safety risks near sensitive receptors such as schools, clinics, mosques, and churches. - Temporary traffic disturbance on adjacent roads during debris transport or asphalt works. - Increased stress or inconvenience for residents due to detours, noise, dust, or restricted access.	municipalities and the ISF. - TMP measures shall be tailored per village, prioritizing pedestrian safety and clear communication in inhabited or partially re-inhabited areas. <u>Debris haulage & routing:</u> - Formally agree with municipalities on debris haulage routes to MoE-approved TSSs, avoiding residential clusters, sensitive receptors, schools, clinics, mosques, churches, and areas with high pedestrian activity. - Coordinate detours, temporary closures, and alternating one-way traffic with municipalities and the ISF as required. <u>Traffic & pedestrian safety measures:</u> - Provide 24–48 hours’ advance notification to residents before starting works. - Install on-site notice boards with contractor name, work schedule, GRM contacts, and emergency numbers in simple Arabic. - Install warning signs, cones, reflectors, physical barriers, and night lighting as needed. - Place trained spotters/banksmen at constrained sections and blind corners. - Maintain safe, clearly marked pedestrian paths in active work areas. - Avoid debris transport during school opening and closing hours and enforce low speed limits (≤ 20 km/h) in inhabited or partially re-populated areas. <u>Vehicle compliance & spacing:</u> - Prohibit truck convoys and maintain safe spacing between vehicles. - Conduct random compliance checks for truck covering, load securing, and overloading. <u>Emergency access & communication:</u> - Keep emergency access routes open at all times or provide clearly marked and agreed alternatives. - Communicate work schedules and any changes in advance to affected communities. <u>Community liaison & incident monitoring:</u> - Assign a designated Community Liaison / H&S Focal Point at each active work site to coordinate daily with municipalities and respond to community concerns. - Record, review, and analyze traffic-related incidents and near-misses on a weekly basis and adjust TMP measures accordingly.
Vulnerable Groups & Social Inclusion	- All works along inhabited road sections	- Exclusion of vulnerable households (women-headed, elderly, persons with disabilities, displaced/returning families, refugees) from information and decision-making.	- Pre-work vulnerability check: Coordinate with municipalities to identify vulnerable households along each targeted road segment. - Targeted communication: Provide door-to-door or tailored notifications (using simple words and language most commonly used by the target group) to vulnerable households regarding work schedules, access changes, and GRM options.

		- Disproportionate impact of access restrictions, noise, dust, and traffic risks on vulnerable groups.	- Differentiated Outreach Strategy: ○ Border/frontline villages: Door-to-door engagement with remaining households, given low return levels and limited functioning communal structures. ○ Non-frontline villages: Broader communication through municipalities, local committees, and community leaders. - Protection during works: Where restoration works occur in re-populated villages or along connecting roads, prioritize safe pedestrian routes and ensure continued access to homes. Provide assistance to elderly persons and persons with disabilities where debris transport or machinery movement may temporarily affect mobility. - Accessible GRM: Maintain multiple channels (phone, municipal focal points, written submissions) to ensure vulnerable groups can raise concerns easily.
Community Disturbance & Protection of Sensitive Receptors	- Works near residential clusters, scattered houses, agricultural lands, and, where present, damaged or functional mosques.	- Noise and vibration may disturb residents—especially elderly persons—and may affect old or structurally fragile buildings located immediately along the road edge. - Dust emissions may impact respiratory health of vulnerable people and affect nearby crops and household environments. - Temporary safety-related disturbance may occur near homes, farmland, and small businesses due to debris transport and machinery movement. - Short-term livelihood disturbance may occur in re-populated areas, where present, due to increased truck movement during debris hauling, rather than access restrictions.	- Avoid works during prayer times where mosques are functional. - Apply enhanced dust-suppression measures near sensitive sites (residential clusters, vulnerable households, cropland). - Notify communities in advance of potentially disruptive works (households, shop owners, institutions). - Coordinate access arrangements with municipalities to avoid blocking residences, farms, or local services. - Limit works to <u>daytime hours</u> and avoid very early morning or late evening operations. - Maintain noise levels within national permissible limits and avoid unnecessary machinery idling. - Conduct regular water spraying during dusty operations. - Provide temporary footpaths or alternative safe pedestrian access where needed , and ensure that appropriate signage is installed. - Ensure the GRM sign is displayed along the road section where works are occurring.
Community Exposure to Hazards	- Debris loading, unstable rubble, trucks, machinery	- Risk of injury to residents from interaction with trucks, loaders, rollers, and other heavy machinery operating in confined village streets. - Children or returning residents inadvertently approaching work zones or unstable rubble piles, especially where roads are being	- Maintain clearly defined safety buffers between machinery operations and homes, shops, agricultural access points, and pedestrian paths. - Fence, barricade, or tape off active work zones and hazardous areas; restrict public access at all times. - Enforce low-speed driving within villages and along connecting roads used for debris transport (maximum 20 km/h). - Implement mandatory end-of-day site securing, including removal of sharp debris, stabilization of loose rubble, and safe parking or immobilization of machinery.

		- reopened after prolonged closure. Community safety concerns arising from sharp debris, unstable rubble, or partially cleared road sections if not properly secured at the end of the workday.	- Implement a proper GRM with clearly defined uptake channels, disseminated to the local community.
Workforce Management & Labor Risks			
Labor Influx & Workforce Management	- Contractor workforce mobilization, labor recruitment	- Social tension between local and migrant laborers. - SEA/SH risks in communities. - Perceived unfair recruitment practices.	- Prioritize hiring from local communities and encourage gender mainstreaming within the project. - Ensure all site personnel are briefed on, and sign, the Code of Conduct (CoC) prior to mobilization. The Contractor shall prepare the CoC in the CESMP, including clear guidance on conduct towards community members and provisions covering Gender-Based Violence (GBV) and SEA/SH, subject to review and approval by the supervising engineer/PIU. - Enforce the CoC for all workers with SEA/SH clauses. - Conduct SEA/SH awareness induction for workers, before the start of works, and regularly as needed throughout the works. - Provide an accessible, confidential worker GRM, communicated in a language and format understandable to workers, including a separate log for SEA/SH-related cases, capturing dates, actions taken, and resolutions. - Maintain transparent hiring criteria and publicly communicate labor opportunities.
Child Labor & Labor Conditions	- Contractor workforce mobilization, labor recruitment	- Risk of child labor in subcontracted work. - Poor working conditions; unsafe practices. - Wage and working hours violations or lack of legal documentation.	- Verify worker age and maintain an audited labor registry. Include IDs of all workers. - Daily registration of workers and verification of their age to prevent child labor. - Ensure contractor workers are aware of penalties imposed by Lebanese Labor Law in case of child labor. - Include contractual penalties for child labor. - Enforce compliance with Lebanese Labor Law and Decision 29/1 (2018). - Monitor wages, contract terms, OHS conditions, and working hours. - Provide an accessible and confidential worker GRM in a language and format understandable to workers. - Maintain daily registration forms recording working hours and break times for all workers
Gender & Social Equity	- Workforce recruitment and community interaction	- Risk of unequal treatment or exclusion of women in hiring for non-technical roles. - Risk of SEA/SH incidents affecting women and girls, particularly among	- Apply non-discriminatory recruitment practices for all project-related employment, including support and administrative roles, in line with ESS2. - Clearly prohibit SEA/SH through enforceable Codes of Conduct (CoCs) which shall be prepared by the Contractor in the CESMP and signed by all workers; ensuring zero tolerance for misconduct.

		returning households and vulnerable groups. - Barriers for women, elderly, and persons with disabilities to access information or the GRM.	- Provide SEA/SH awareness briefings to workers prior to mobilization and reinforce obligations through toolbox talks. - Ensure that project information and GRM access are communicated through multiple channels (municipal focal points, phone, written submissions) to accommodate women, elderly persons, and persons with disabilities. - Ensure confidentiality and survivor-centered referral pathways for SEA/SH-related complaints in line with the project GRM.
Post-Conflict Risks			
UXO / ERW	- Clearing debris; disturbing shoulders or collapsed structures	- Anxiety or fear among local communities; reputational risks if community members enter work zones.	- Coordinate with municipalities to share UXO/ERW risk-awareness messages before works. - Post LMAC-approved warning signage at work locations and access points (“Do Not Touch” + emergency contacts). - Establish community notification pathway: residents may alert municipal focal points or Supervising Engineer if suspicious items are seen. - All work is conducted following LAF/LMAC NTS and STOP-WORK procedures as detailed in the OHS Management Plan.
Human Remains (Chance Finds)	- Clearing debris	- Psychological distress or trauma; reputational and legal risks if remains are disturbed	Worker and Community Awareness: - Sensitize workers and local community: do not disturb remains. - Inform community that formal procedures are in place for respectful handling. Actions if Human Remains Are Found: - Cease work immediately in the affected area. - Secure the site to prevent any disturbance. - Notify authorities promptly: Ministry of Public Health (MoPH), Internal Security Forces (ISF), and Public Prosecutor. - Follow national chance-find procedures to ensure proper handling and documentation.
Religious / Spiritual Items	- Clearing debris	- Damage or perceived disrespect may upset local communities	- Engage local religious or community leaders prior to resuming work. - Safeguard items until consulted.
Personal Belongings / Valuable Materials	- Clearing debris	- Loss or damage may cause complaints or conflict	- Allow recovery under controlled conditions. - Notify affected households and authorities if valuable items are found.
Hazardous Rubble (e.g., asbestos)	- Clearing debris	- Community exposure to dust or hazardous materials	- Restrict access for residents near work zones. - Communicate hazards to community. - Ensure that any complaints are recorded and responded to through the GRM. - Only qualified personnel handle hazardous materials, following safety protocols in the OHS Plan.

SECTION C— OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT PLAN

This section identifies potential occupational health and safety (OHS) hazards during Project implementation and outlines corresponding mitigation measures. Hazard-specific procedures, including for UXO/ERW and chance-find of human remains, are included, alongside site-wide emergency preparedness and first-aid protocols.

Section C: Potential OHS Impacts and their Mitigation Measures			
Hazard/Risk	Activities	Potential Impacts	Mitigation Measures (Worker Health and Safety)
UXO/ERW	Road clearing; debris removal; disturbing shoulders; stabilizing collapsed edges.	- Fatal or severe injury from UXO/ERW disturbance - Secondary injuries during uncontrolled site access or panic response.	- No work may begin without formal LAF/LMAC clearance, including NTS and, where required, Technical Survey or EOD clearance. - Workers must receive LMAC-approved UXO/ERW induction training before entering the site. - Community awareness posters (LMAC format) must be placed at site entrances and near residential clusters. - No excavation, grading, or debris pushing may occur until LMAC clearance and the daily clearance briefing are confirmed on-site. - Daily UXO/ERW safety briefing for all workers. - Maintain a UXO/ERW Daily Logbook signed by the contractor and the LMAC focal point. - Workers are prohibited from touching, moving, or photographing suspicious items. - STOP-WORK immediately if any suspicious object is found; secure the area and call LMAC. - Maintain an exclusion zone as defined by LMAC during EOD operations..
Chance-Find of Human Remains	Road clearing; debris removal; and excavation.	- Psychological trauma and stress to workers	- Immediate STOP-WORK upon discovery of suspected human remains. - Secure and cordon off the area; no touching, moving, or photographing remains. - Activate site Emergency Response Team (ERT). - Notify chain of command (Contractor OHS Officer → Supervising Engineer → CDR PIU). - Notify ISF and MoPH / forensic authorities as per national procedures. - Provide Psychological First Aid (PFA) to affected workers. - Resume works only after written clearance from competent authorities.

Section C: Potential OHS Impacts and their Mitigation Measures			
Hazard/Risk	Activities	Potential Impacts	Mitigation Measures (Worker Health and Safety)
Debris Handling Safety	Loading debris into trucks; clearing collapsed material; removing obstacles.	- Cuts, crush injuries, falling rubble, dust exposure. - Hazardous rubble (asbestos, chemicals).	- Mandatory PPE: helmets, cut-resistant gloves, steel-toe boots, reflective vests, dust masks/respirators (N95), and hearing protection (earplugs). - Damaged PPEs should be replaced at all times. - Workers are forbidden from manually handling sharp or lifted edges. - Use light water spraying for dust control before and during handling of friable or light debris. - No manual breaking of rubble; use machinery only. - Workers are forbidden from climbing rubble piles. - Segregation-free loading; no on-site sorting. - Workers must be trained to recognize asbestos-containing material (ACM) visual cues (friable, fibrous, layered material). - If ACM is suspected: establish a 10 m exclusion zone and stop all dust-generating activities. - STOP-WORK if suspected ACM is confirmed or highly likely → manage as hazardous waste with a certified expert in line with national regulations. - Conduct toolbox talks every morning on debris hazards, unstable materials, ACM suspicion signs, and STOP-WORK triggers. - Workers must maintain a minimum 2–3 m distance from machinery when loading debris. - Debris must never be pushed against standing walls or damaged façades.
Structural Instability / Collapsed Edges	- Working near cracked pavements, collapsed retaining edges, unstable facades.	- Collapsed road edges and unstable building façades present structural risks	- Conduct visual stability check before entering work zone. - Set exclusion zones around unstable structures. - No machinery operation within unsafe distance; use spotters. - STOP-WORK if structural movement or cracking is observed. - Use a structural engineer / site supervisor to approve work zones where buildings show cracks, bulging, or tilting. - Erect physical barriers (not tape only) around high-risk collapsible areas. - Contractor must maintain a photographic record of unstable structures prior to works.
Machinery Operation Safety	- Loader operation; compactors; rollers; excavators	- Roll-over, collision, blind spots, pedestrian impacts.	- Operators must be licensed, trained, and authorized to operate the assigned machinery. - Maintain a machinery maintenance log documenting all inspections, servicing, and repairs. - Mandatory banksman/spotter for all reversing, tight turns, and blind corners. - Machinery must have functional audible alarms, flashing lights, and reflective markings. - Enforce strict slow-speed limits (≤ 20 km/h in villages and work zones). - Always maintain a safe separation distance between machinery and workers; workers must remain outside blind-spot zones. - Daily pre-start inspection of brakes, hydraulics, horns, mirrors, tires, and safety devices is mandatory.

Section C: Potential OHS Impacts and their Mitigation Measures			
Hazard/Risk	Activities	Potential Impacts	Mitigation Measures (Worker Health and Safety)
			- Machinery must never reverse without a banksman present and in visual contact. - Operators must maintain radio/phone communication with the banksman during maneuvers. - A fire extinguisher must be mounted on each machine, inspected monthly. - Workers must be trained on the use of fire extinguishers before start of works and regular refresher trainings throughout the implementation period
Trucking & Transport Safety	- Hauling debris from sites to MoE-approved locations	- Collision risks, unsecured loads, dust, spills.	- All trucks must be covered, no overloading. - Inspect brakes, lights, tires daily. - Spill kits kept in transport vehicles. - Use only approved haulage routes and avoid school zones during peak times. - All haulage trucks must carry spill kits and wheel chocks. - Trucks must not idle near homes, schools, or clinics (noise + emissions control). - GPS tracking of debris trucks must always be active as part of chain of custody. - Follow general TMP provisions to maintain safe vehicle movement and prevent accidents.
Hazardous Materials Safety (Fuel, Oils, Asphalt/Bituminous Binder)	- Refueling machinery on or near site. - temporary fuel storage. - Handling lubricants and oils. - Applying light bituminous binder or asphalt	- Risk of fire, burns, or inhalation from fuel, oils, or hot asphalt/bituminous binder.	- Store fuel in bunded areas $\geq 110\%$ capacity; no smoking or open flames near fuel/bitumen. - Train workers on safe handling of bituminous materials, including PPE (heat-resistant gloves, long sleeves, eye protection, respiratory masks) and STOP-WORK triggers, before commencement of works. - Provide shaded rest areas and hydration stations during hot work. - Record all spills; clean immediately following MoE guidelines. - Toolbox talks must cover bituminous binder handling, hot asphalt safety, and STOP-WORK triggers for unsafe conditions.
Working in Narrow Local Roads & Re-populated Areas	- All works - Machinery and truck movement	- Pedestrian collision, trapped workers, community interference.	- Separate machinery and pedestrians using barriers/tape. - Assign traffic marshals in narrow lanes. - Maintain clear escape routes for workers. - Maintain audible signals when machinery enters blind corners - Manage traffic-related risks in alignment with the TMP to ensure safe operations and minimize accidents.
Electrical & Utility Safety	- Shallow excavation, grading, removal of damaged road furniture; work	- Striking uncharted water or telecom lines; electrocution from re-	- Coordinate with municipalities and utility providers before excavation. - Emergency reconnection works may have restored partial electricity or water supply; therefore all utilities must be treated as active until proven otherwise. - Field-verify all visible and suspected utilities - STOP-WORK if uncharted cables or pipes are found.

Section C: Potential OHS Impacts and their Mitigation Measures			
Hazard/Risk	Activities	Potential Impacts	Mitigation Measures (Worker Health and Safety)
	near overhead lines	energized cables	- Use insulated tools and maintain clearance from overhead lines. - Implement a Lock-Out/Tag-Out (LOTO) procedure for isolated lines and equipment. - Signage “Danger — Electrical Hazard”.
Weather / Heavy Rainfall	- All site activities, machinery operation, debris handling	- Slips, trips, falls, debris displacement, machinery instability, localized flooding, and flash-flood hazards	- Monitor local weather forecasts daily before work commencement. - Suspend works during heavy rainfall or flash-flood warnings. - Implement temporary drainage or barriers to manage runoff. - Ensure safe access and egress routes for workers and vehicles.
Emergency Preparedness & First Aid	- All site activities.	- Injury, accidents, fire, fatalities. - Medical emergencies, and sudden deterioration of the security context.	- Maintain on-site first-aid kit and trained first-aider per road section (Lebanese Red Cross standards). - Establish a site Emergency Response Team (ERT) with clear roles and authority to STOP WORK immediately if unsafe conditions arise. - Conduct daily toolbox talks including safety and security briefings. - Display emergency contacts prominently (LMAC, ISF, Civil Defense, MoPH, nearest hospital) and maintain immediate communication with authorities in case of incident. - Ensure emergency equipment is available and functional (e.g., fire extinguishers, stretcher, trauma kit, eye-wash/burn kit, AED/defibrillator, whistle/horn, hazard cones/flags, barrier tape, spill kit, flashlights, high-visibility vests, helmets, gloves, goggles, steel-toe boots, two-way radios or backup phones). - Pre-identify evacuation routes and safe assembly points. - Conduct regular emergency drills, scaled to site size and risk. - Emergency response procedures should ensure the Worker GRM addresses psychosocial and community-interface concerns during any incident. - Follow hazard-specific emergency procedures for UXO/ERW, chance-find human remains, or other project-specific risks. - Maintain incident reporting flow: OHS Officer → Supervising Engineer → CDR-PIU → relevant authorities. - Refer to the detailed Emergency Procedures in the OHSMP for further guidance.

Part 3: EHS Monitoring

This section outlines the monitoring framework for environmental, social, and occupational health and safety risks, specifying parameters, frequency, methods, standards, KPIs, and responsibilities to ensure compliance with mitigation measures and regulatory requirements.

EHS Monitoring Plan								
Impact / Source	Parameters to Monitor	Frequency	Monitoring Location	Monitoring Method	Standard / Guidelines	KPIs	Monitoring Responsibility	Institutional Follow-up
<i>Air Emissions / Dust</i>	Visible dust; suppression applied; trucks covered; exhaust machines smoke	Daily	Work fronts; truck routes; near sensitive receptors if any	Visual inspection	MoE 52/1 (1996); WB EHS (2007)	100% trucks covered; 0 dust complaints; Water applied during dust events	Supervising Consultant	CDR (PIU)
<i>Noise</i>	Equipment mufflers; noise near homes/mosques	Daily + Weekly meter check + upon complaint	Sensitive receptors	Visual + handheld meter	MoE 52/1 (1996)	≤65 dB daytime / ≤55 dB evening; 100% mufflers; 0-night works unless approved	Supervising Consultant	CDR (PIU)
<i>Wastewater (Toilets)</i>	Integrity of portable toilets; safe discharge; disposal receipts if pumped	Daily	Toilets / discharge points	Visual + log review	MoE 8/1 (2001)	0 leakage; 100% disposal documented	Supervising Consultant	CDR (PIU)
<i>Accidental Releases</i>	Fuel/oil or asphalt leaks; use spill kits	Daily	Machinery & refueling areas	Visual inspection	MoE directives	100% spill kits present; 0 uncontained spills; cleanup <30 min	Supervising Consultant	CDR (PIU)
<i>Debris & Waste Management</i>	No roadside dumping; daily removal; trip tickets; GPS logs	Daily	Loading & disposal points	Visual inspection; receipts	MoE Circular 6/1; UNDP–UNOPS DMF SOPs	0 unauthorized dumping; 100% loads covered; 100% trip tickets signed	Contractor → Supervisor	CDR (PIU)
<i>Hazardous Rubble (Possible)</i>	Suspicious ACM; exclusion zones	Daily	Debris loading zones	Visual + photos	WBG EHS General Guidelines, including on ACM; MoE/UNDP	0 uncontrolled handling; 100% STOP-WORK	Supervising Consultant	CDR (PIU)

EHS Monitoring Plan								
Impact / Source	Parameters to Monitor	Frequency	Monitoring Location	Monitoring Method	Standard / Guidelines	KPIs	Monitoring Responsibility	Institutional Follow-up
<i>ACM)</i>					(2025) SOP for Post-Disaster Rubble Management; and UNDP/UNEP Guidelines for ACM	compliance		
<i>Fuel & Water Consumption</i>	Efficiency checks	Monthly	Storage areas	Logbook review	N/A	Reduced idling; optimized routing	Supervising Consultant	CDR (PIU)
<i>Vegetation / Biodiversity</i>	Disturbance to olives / oaks; dumping avoidance	Weekly	Road shoulders; adjacent land	Visual	ESS6	0 new damage; 0 dumping in natural/Agri land	Supervising Consultant	CDR (PIU)
<i>SEA/SH Prevention</i>	CoC signed; workers trained; monthly refreshers	Before mobilization + Monthly	Site office	Records	ESS2; WB SEA/SH GPN (2022)	100% trained & signed CoC, Monthly refresher conducted; % of workers attending refresher sessions	Supervising Consultant	CDR (PIU)
<i>SEA/SH Grievances</i>	Reported cases; confidential GRM functioning	Monthly + immediate upon complaint	Work zones	GRM log review	ESS10	0 unresolved >14 days; confidentiality ensured	Supervising Consultant	CDR (PIU)
<i>Worker Grievances / Labor Mix</i>	Complaints; workforce gender & nationality	Monthly and upon complaint	Workforce registry	Log review	ESS2	Registry updated monthly; 0 retaliation	Supervising Consultant	CDR (PIU)
<i>Access Obstruction</i>	Type/duration; emergency access	Daily	Work fronts	Visual	ESS4	Emergency access always open	Supervising Consultant	CDR (PIU)
<i>Working Conditions</i>	Contracts; wages; documentation	Monthly	Site office	Records check	Labor Law; ESS2	100% legal documentation; 0 delayed payments	Supervising Consultant	CDR (PIU)
<i>Child Labor</i>	Age verification (IDs)	Daily	All work zones	ID check	Labor Law; ESS2	0 under-18 workers	Supervising Consultant	CDR (PIU)

EHS Monitoring Plan								
Impact / Source	Parameters to Monitor	Frequency	Monitoring Location	Monitoring Method	Standard / Guidelines	KPIs	Monitoring Responsibility	Institutional Follow-up
<i>Women's Inclusion</i>	% women in workforce	Monthly	Registry	Record review	ESS2	Monitored monthly ; outreach if < target	Supervising Consultant	CDR (PIU)
<i>Social Grievances</i>	GRM logs	Weekly + upon complaint	All sites	GRM review	ESS10	100% logged within 24h; 90% resolved <14 days	Supervising Consultant	CDR (PIU)
<i>Traffic Safety / TMP</i>	Banksmen; signs; speeds ≤20 km/h	Daily	Roads & village centers	Visual	ESS4; Traffic Law	0 safety incidents; 100% signage	Supervising Consultant	CDR (PIU)
<i>Debris Transport Safety</i>	Covers; correct route; no spillage	Daily	Haul routes	Visual	MoE Circular 6/1	100% trucks covered; 0 road spillage	Supervising Consultant	CDR (PIU)
<i>UXO/ERW</i>	LMAC daily clearance; toolbox talks; STOP-WORK triggers	Daily before works	Work fronts	LMAC forms	LAF/LMAC SOPs	100% daily LMAC clearance; 0 unauthorized digging	Supervising Consultant + LMAC	CDR (PIU)
<i>Structural Instability</i>	Cracks; façade tilt; post-vibration re-check	Daily + after vibration	Buildings near road	Visual + photos	UNDP/UNOPS SOPs	0 collapses; exclusion zones enforced 100%	Supervising Consultant	CDR (PIU)
<i>Damage to Utilities</i>	Breakage of telecom/water lines	Daily	Work fronts	Visual	N/A	0 unreported damage; 100% repaired promptly	Supervising Consultant	CDR (PIU)
<i>Chance find Human Remains</i>	Incident report; area secured; authorities notified within 1 hour; worker psychological support provided.	Upon discovery	Work sites/Debris Zone/road section	Written reports, photos, official authority logs, and PFA delivery confirmation.	MoPH instructions, national forensic procedures, relevant Lebanese law.	100% compliance with STOP-WORK & notification protocol; 0 incidents of improper handling.	Supervising Consultant	CDR (PIU)

EHS Monitoring Plan								
Impact / Source	Parameters to Monitor	Frequency	Monitoring Location	Monitoring Method	Standard / Guidelines	KPIs	Monitoring Responsibility	Institutional Follow-up
<i>Cultural Heritage</i>	Chance-find documentation; DGA notification	Upon discovery	Work sites	Photos + notification	ESS8; Law 166/LR	<i>0 disturbance after discovery</i>	Supervising Consultant	DGA

