

DAMAGED ROADS CLEARING & RESTORATION

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

Occupational Health
& Safety
Management Plan
(OHSMP)

JULY 2026



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

TABLE OF CONTENTS

TABLE OF CONTENTS.....	i
LIST OF TABLES	i
LIST OF FIGURES	i
LIST OF ABBREVIATIONS & ACRONYMS	ii
DEFINITIONS.....	iii
1 INTRODUCTION	1
2 OHS POLICY, PRINCIPLES & OBJECTIVES.....	3
3 LEGAL AND OTHER REQUIREMENTS	7
4 OHS MANAGEMENT SYSTEM STRUCTURE	8
5 ROLES AND RESPONSIBILITIES	12
6 HAZARD IDENTIFICATION AND RISK ASSESSMENT	14
7 TRAFFIC & COMMUNITY SAFETY MANAGEMENT.....	16
8 EMERGENCY PREPAREDNESS & RESPONSE	18
9 TRAINING, INDUCTION & COMPETENCY REQUIREMENTS	22
10 DOCUMENTATION, REPORTING & RECORD-KEEPING REQUIREMENTS ..	25
11 PERFORMANCE MEASUREMENT, AUDITS & CORRECTIVE ACTIONS	30
12 APPENDICES	35
APPENDIX 1 UXO/ERW SAFETY PROCEDURES	35
APPENDIX 2 HAZARDOUS MATERIALS, ASBESTOS, AND CHEMICAL RESIDUES CONTROL.....	39

LIST OF TABLES

Table 1-1 Core Objectives to be Achieved through the OHSMP	2
Table 1-2 Minimum Anticipated OHS and Community Health & Safety Risk Categories and Associated Hazards	2
Table 2-1 Responsibility Matrix – Operational Safety Priorities for Contractors	5
Table 2-2 OHS KPIs	6
Table 3-1 Legal and Other Requirements Applicable to the Project	7
Table 4-1 ISO 45001 + A1:2024 Framework (Plan–Do–Check–Act Model).....	8
Table 4-2 Security Risk Management Integration into OHSMS	8
Table 5-1 Roles and Responsibilities for the OHSMP Implementation	12
Table 8-1 Minimum Required Equipment On-site	20
Table 10-1 Documentation Categories and Required Records (Checklist Format)	25
Table 10-2 Reporting Requirements and Frequency (Checklist Format).....	27
Table 11-1 Key Performance Indicators (KPIs) for Monthly Reporting	30

LIST OF FIGURES

No table of figures entries found.

LIST OF ABBREVIATIONS & ACRONYMS

Abbreviations and Acronyms	Description
ACM	Asbestos-Containing Materials
BAC	Battle Area Clearance (BAC)
CDR	Council for Development and Reconstruction
CDW	Construction and Demolition waste
CHS	Community Health and Safety
CoC	Code of Conduct
EO	Explosive Ordnance
EOD	Explosive Ordnance Disposal
EORE	Explosive Ordnance Risk Education
EPR	Emergency Preparedness and Response
EPRP	Emergency Preparedness and Response Plan
ERT	Emergency Response Team
ERW	Explosive Remnants of War
ESF	Environmental and Social Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standards
GRM	Grievance Redress Mechanism
JHA	Job Hazard Analysis
IFC	International Finance Cooperation
ILO	International Labour Organization
ISF	Internal Security Forces
ISO	International Organization for Standardization
KPIs	Key Performance Indicators
LAF	Lebanese Armed Forces
LMP	Labor Management Procedures
LMAC	Lebanon Mine Action Center
LTIFR	Lost-Time Injury Frequency Rate
MoE	Ministry of Environment
MoPH	Ministry of Public Health
NCN	Non-Compliance Notices
NGOs	Non-Governmental Organizations
OHS	Occupational Health and Safety
OSHA	Occupational Safety and Health Administration Standards
OHSMMP	Occupational Safety and Health Management Plan
PFA	Psychological First Aid
PIU	Project Implementation Unit
SEA	Sexual Exploitation and Abuse
SH	Sexual Harassment
SOPs	Standard Operating Procedures
TMP	Traffic Management Plan
TSS	Temporary Storage Site
UN	United Nations
UNDP	United Nations Development Programme
UNEP	UN Environment Program
UNOPS	United Nations Office for Project Services
UXO	Unexploded Ordnance
WB	World Bank

DEFINITIONS

The following terms are provided for reference.

Term	Definition
Accident	An unplanned event resulting in injury, illness, fatality, or damage to property, the environment, or community infrastructure.
Explosive Ordnance Risk Education (EORE)	Educational activities that reduce mines/ERW (including unexploded sub-munitions) injuries by raising awareness and promoting safe behavior among impacted communities.
Incident	Any unplanned event that caused or could have caused harm, including accidents, near-misses, unsafe acts, or unsafe conditions.
Near-Miss	An event that could have caused injury, fatality, or damage but did not, due to chance or immediate intervention.
Serious Near-Miss	A high-risk near-miss involving machinery, collapse, explosive ordnance, falling objects, or any scenario that could reasonably have resulted in severe injury or fatality.
Non-Compliance Notice (NCN):	A formal written notice issued by the Supervising Engineer to the Contractor when a deviation from the OHS Management Plan, ESMP Checklist, contractual obligations is identified. NCNs may be classified as Critical, Major, or Minor and require defined corrective actions within specified timeframes.
Unsafe Act	A human action that increases the likelihood of an incident (e.g., bypassing PPE, entering a hazard zone).
Unsafe Condition	A physical hazard in the workplace (e.g., unstable rubble, blocked roads, exposed wires).
STOP-WORK	Mandatory halt of activities when unsafe conditions or UXO/ERW suspicion is identified. Only the Supervising Engineer + Contractor OHS Officer + LMAC may authorize resumption.
UXO/ERW	Unexploded Ordnance / Explosive Remnants of War – items that may explode if disturbed. Clearance is the exclusive responsibility of LAF/LMAC.
LMAC	Lebanon Mine Action Center – the national authority for survey, risk management, mapping, and explosive ordnance disposal.
Debris	<i>As per OCHA–UNEP–MSB–UNDP disaster waste guidelines:</i> “A mixture of building waste and rubble typically arising from damaged buildings and their demolition, possibly including natural materials (clay, mud, wood, trees, branches).”
Disaster Waste	All solid and liquid waste generated from a disaster, including building materials, damaged infrastructure components, household furnishings, electronic waste, natural debris, industrial materials, chemicals, fuel, paints, solvents, healthcare waste, damaged vehicles, relief-operation waste, and UXO fragments.
Project Classification (Debris/Rubble)	For this Project, all debris from conflict-affected areas is treated as disaster waste due to mixed composition and possible contamination with hazardous materials and UXO. “Debris,” “rubble,” and “debris/rubble” are used interchangeably.
Debris Removal	Immediate post-crisis activity aimed at clearing access and enabling life-saving movement.
Debris Management	Medium- and long-term recovery process involving sorting, legal compliance, routing, treatment, recycling, and final disposal; includes debris removal.
MoE Circular 6/1 (2024)	Requires Municipalities/Unions to assign environmentally degraded quarry sites as debris reception areas and notify the Ministry of Environment; forms the legal basis for GPS tracking and trip-ticket procedures.
Trip Ticket	Official document recording rubble origin, routing, transport, delivery, and

	disposal in compliance with MoE Circular 6/1.
Job Hazard Analysis (JHA)	Task-specific risk assessment required before any activity, identifying hazards, controls, PPE, supervision, and STOP-WORK triggers.
Permit-to-Work (PTW)	Formal written authorization for high-risk tasks (excavation near unstable structures, mechanical loading, hot works, handling hazardous materials).
Exclusion Zone	Physically demarcated area where worker entry is restricted due to hazards (UXO, unstable structures, heavy machinery).
Competent Person	A trained, experienced individual authorized to identify hazards and implement corrective actions (e.g., OHS Officer, UXO focal point).
Emergency Assembly Point	Pre-designated safe location where workers must gather during evacuations.
LMAC Clearance	Written confirmation from LMAC that an area is safe for work following NTS/TS/EO clearance procedures.
High-Risk Activity	Any work with potential for serious injury (UXO exposure, excavation near unstable structures, mechanical loading, hazardous materials handling, work at height).

1 INTRODUCTION

1.1 Purpose and Applicability

This document defines the mandatory occupational health, safety, and community protection requirements that the Contractor's Occupational Health and Safety Management Plan (OHSMP) must address. It applies to Component 1 (Immediate Response) activities in Nabatiyeh Caza, including worksites, transport routes, and ancillary facilities.

The Contractor shall prepare and submit the OHSMP after contract award, subject to review and approval by the Supervising Engineer before any Works commence. The approved plan must be implemented throughout the contract and updated whenever site conditions, risks, or scope change.

1.2 Project Context and Scope of Works

In response to urgent national priorities, the proposed project—implemented by the Council for Development and Reconstruction (CDR) with support from the Ministry of Public Works and Transport (MoPWT) and funded by the World Bank (WB)—aims to restore conflict-damaged classified and local roads in priority areas, including Nabatiyeh Caza.

The works are carried out under Component 1 (Immediate Response) and Component 2 (Rapid Recovery) of the Lebanon Emergency Assistance Project (LEAP). The scope covered under this document concerns Component 1 (Immediate Response) works in Nabatiyeh Caza only. Component 1 works include: Removal of obstacles and debris from conflict-damaged Class A roads; Reconstruction of base and subbase layers where damaged; and localized temporary asphalt surfacing to restore immediate access.

1.3 Post-Conflict Operating Environment

The Works are executed in a post-conflict environment characterized by complex safety, environmental, and community risks requiring structured risk management. The operating environment includes:

- Presence of Explosive Remnants of War (ERW) and Unexploded Ordnance (UXO);
- Unstable roadside and adjacent structures;
- Hazardous debris, including possible asbestos-containing materials (ACM);
- Close interaction between heavy machinery, workers, and returning communities;
- Context-specific emergency scenarios, including sudden security escalation or accidental discovery of hazardous materials or human remains.

Accordingly, the Contractor's OHSMP shall fully integrate: National UXO/ERW clearance procedures issued by the Lebanese Armed Forces (LAF) and the Lebanese Mine Action Center (LMAC); Debris handling and classification requirements issued by the Ministry of Environment (MoE); Applicable requirements of the World Bank Environmental and Social Framework (ESF), including ESS2 and ESS4; IFC General EHS Guidelines (2007); and ISO 45001:2018 + A1:2024 principles.

1.4 OHSMP Submission and Content Requirements

The Contractor shall submit a comprehensive OHSMP that defines the Contractor's OHS policy and objectives, establishes a structured OHS Management System aligned with ISO 45001, and includes a site-specific Hazard Identification and Risk Assessment (HIRA) covering all activities.

The OHSMP shall address all risk categories identified in Section 1.6 and incorporate relevant sub-plans, including the Traffic Management Plan (TMP), Emergency Response Plan (ERP), UXO/ERW

procedures, hazardous materials and asbestos management, and integration with permit-to-work and method statements. It shall define roles, responsibilities, and competencies; establish monitoring, reporting, incident investigation, and corrective actions; include STOP-WORK protocols; demonstrate risk elimination or reduction to acceptable levels; and provide implementation arrangements, documentation templates, and reporting formats.

1.5 Main Objectives

The OHSMP shall be developed and implemented to achieve the core objectives set out in Table 1-1. These objectives define the minimum expected performance outcomes.

Table 1-1 Core Objectives to be Achieved through the OHSMP

Objective	Objective Statement
Worker Safety	Ensure a safe and healthy work environment for all workers, supervisors, and field personnel.
Community Protection	Protect surrounding communities, maintain safe public access, and prevent secondary harm during road-clearing activities.
Incident & Fatality Prevention	Prevent fatalities, serious injuries, and high-risk exposure through structured hazard controls and STOP-WORK protocols.
UXO/ERW Risk Management	Integrate strict UXO/ERW procedures in accordance with LAF/LMAC guidance and mine-action standards.
Hazardous Material Control	Control exposure to hazardous rubble and asbestos-suspect materials through safe handling, isolation, and mandatory reporting.
Traffic & Machinery Safety	Reduce traffic and machinery-related risks in rural, agricultural, and urban settings.
Debris & CDW Management	Ensure safe and compliant debris and CDW handling, transport, and disposal in accordance with MoE Circular 6/1 and applicable SOPs (MoE–UNDP Standard Operating Procedures (SOPs) (2025)) ¹
Regulatory Compliance	Ensure compliance with Lebanese environmental & OHS legislation, the WB Environmental and Social Framework (ESF) ² , and IFC General EHS Guidelines (2007). ³
Operational Clarity for Contractors	Ensure structured operational procedures, templates, and permit-to-work systems are implemented to support safe execution of works.
Coordination & Interface Management	Ensure clear coordination between contractors, supervising engineers, CDR, municipalities, LAF/LMAC, and MoE during implementation.
Reporting & Continual Improvement	Promote transparent reporting, accountability, corrective action, and continual improvement in OHS performance.
Integration with ESMP Checklists	Ensure alignment with the Caza-level ESMP Checklists, forming the Project's overarching safeguards framework.

1.6 Key Anticipated OHS and Community Health & Safety Risk

The OHSMP shall, at a minimum, address the following risk categories:

Table 1-2 Minimum Anticipated OHS and Community Health & Safety Risk Categories and Associated Hazards

Risk Category	Specific Hazards / Risk Description
---------------	-------------------------------------

¹<https://www.undp.org/lebanon/publications/standard-operating-procedures-post-disaster-rubble-management-2025>

²<https://thedocs.worldbank.org/en/doc/837721522762050108-0290022018/original/ESFFramework.pdf>

³<https://www.ifc.org/content/dam/ifc/doc/2000/2007-general-ehs-guidelines-en.pdf>

UXO / ERW Risks	- Presence of unexploded items buried under debris, shoulders, or embankments - Fatal risk if machinery disturbs ERW - Need for STOP-WORK upon any suspicion; work proceeds only after LAF/LMAC clearance
Structural & Debris Hazards	- Collapse of unstable walls, retaining structures, or damaged buildings - Sharp, heavy, or unstable debris creating crush/impact injuries
Hazardous & Contaminated Materials	- Asbestos-containing materials (ACM) within demolished structures - Hazardous rubble requiring MoE classification - Potential chemical or electrical fragments
Machinery & Traffic Risks	- Heavy machinery movement in narrow village roads - Use of load handling and lifting equipment - Work-related driving control measures - Limited visibility; reversing equipment; blind spots - Risks to pedestrians, children, elderly, and vulnerable persons
Community Health & Safety (CHS)	- Obstruction of access to homes, farms, and local businesses - Movement of uncovered or overloaded trucks - Inadequate signage or temporary traffic control
Worker Health Risks	- Heat stress, fatigue, dehydration - Dust and emissions from machinery operations - Noise and dust exposure - Inadequate Personal Protective Equipment (PPE) or lack of training - Improper manual handling.
Security & Contextual Risks	- Escalation of conflict (shelling, rockets, drones) - Need for rapid evacuation and immediate suspension of works
Emergency / Rare Hazards	- Any sudden, non-routine incident not covered above, including accidental discoveries, unexpected chemical or biological hazards, fire, or other events requiring immediate STOP-WORK and coordination with authorities (Chapter 8)

1.7 Alignment With ESMP Checklist , World Bank ESSs, and Appendices

The OHSMP shall be fully aligned with the Caza-level ESMP Checklist and shall form an integral part of the Project’s environmental and social safeguards framework.

All OHS measures, procedures, and site-specific plans shall be consistent with national legislation, World Bank ESF requirements, and applicable technical standards. The Contractor shall ensure coordinated implementation with the Engineer, CDR, municipalities, and relevant national authorities throughout the execution of the Works.

Appendix 1 – UXO/ERW Safety Procedures and Appendix 2 – Hazardous Materials, Asbestos, and Chemical Residues Control, form part of the OHS requirements.

2 OHS POLICY, PRINCIPLES & OBJECTIVES

2.1 OHS Policy Statement

The Contractor shall implement the Works in a manner that prevents injury, occupational illness, harm to affected communities, damage to public and private property, and adverse environmental impacts.

Given the Project’s post-conflict context and elevated risk profile, **the Contractor shall** integrate occupational health, safety, and community protection requirements into all planning, mobilization, and operational activities to ensure compliance with this policy.

The Contractor shall:

- Comply fully with applicable Lebanese legislation.
- Apply World Bank ESS2 and ESS4, and the relevant IFC General EHS Guidelines.
- Follow the MoE/UNDP (2025) SOPs for Post-Disaster Rubble Management.
- Respect LAF/LMAC UXO/ERW clearance protocols as the sole national authority for explosive ordnance matters.
- Ensure that all workers have the right to STOP WORK if unsafe conditions or suspected UXO or hazardous materials are encountered.
- Provide all workers with mandatory trainings before the commencement of work and ongoing refreshers as needed, including safety measures and PPE, STOP-WORK procedures, emergency preparedness, and SEA/SH awareness, etc.
- Guarantee non-discrimination, fair working conditions, and strict enforcement of Codes of Conduct (CoC), including Prevention of Sexual Exploitation and Abuse / Sexual Harassment (SEA/SH)

The Contractor shall allocate sufficient financial, human, and technical resources to implement the approved OHS Management Plan (OHSMP).

2.2 OHS Commitments & Principles

The Contractor's OHS Management System shall be aligned with ISO 45001:2018 principles and integrated into all core operational processes, including planning, procurement, contractor management, scheduling, budgeting, logistics, and emergency response.

The following principles are mandatory:

1. Prevention-Based Risk Management:

- Hazards shall be identified and risks assessed prior to commencement of works. Elimination and engineering controls shall be prioritized over administrative measures and PPE.

2. Risk Management Approach (Plan–Do–Check–Act):

- **Plan:** Identify risks, establish controls, prepare procedures
- **Do:** Implement SOPs, train workers, supervise works
- **Check:** Monitor compliance, inspect sites, document non-conformities
- **Act:** Apply corrective actions and continually improve performance

3. Compliance with LMAC UXO Protocols:

- Work shall not commence without LMAC clearance.
- Upon suspicion or discovery of UXO/ERW: STOP WORK → Secure Area → Notify LMAC.

4. Respect for Community Safety:

- The Contractor shall ensure that works do not obstruct access to residences, places of worship, medical institutions, or agricultural land, or essential services without prior coordination with relevant authorities and communities

5. Transparency & Worker Engagement:

- Workers shall receive adequate training and shall be empowered to report hazards or unsafe conditions without retaliation.

6. SEA/SH Zero-Tolerance:

- Codes of Conduct (CoC) are mandatory for all workers and supervisors.
- SEA/SH awareness and reporting training is required for every worker before accessing any site.

- All SEA/SH allegations must be immediately reported and escalated to CDR-PIU in line with ESS2 and ESS4.
- Workers violating the CoC are subject to disciplinary measures, including removal from site.
- Anonymous reporting options must be available through the Worker GRM.

2.3 **Operational Safety Priorities for Contractors**

The Contractor shall be primarily responsible for implementing these operational safety priorities through the OHSMP, in coordination with the Supervising Engineer, CDR-PIU, LMAC, and Municipal authorities as indicated in Table 2-1.

Table 2-1 Responsibility Matrix – Operational Safety Priorities for Contractors

Operational Safety Priority	Contractor	Supervising Engineer	CDR-PIU	LMAC	Municipality
Prevent fatalities and life-altering injuries	R	A	C	I	I
Prevent UXO/ERW incidents through daily briefings, trained supervisors, and STOP-WORK authority	R	A	C	C/A (clearance & response)	I
Ensure safe use of machinery and vehicles, particularly on local roads	R	A	C	I	C
Maintain safe and unobstructed public access during works	R	A	C	I	C
Control exposure to dust, noise, asbestos-suspected materials, and hazardous debris	R	A	C	I	I
Ensure compliance with MoE Circular 6/1 for debris transport and disposal	R	A	C	I	C (verify trucks & routing)
Provide all workers with appropriate PPE, induction, and task-specific training	R	A	C	I	I
Implement effective traffic management and pedestrian safety management near communities and places of worship	R	A	C	I	C
Ensure full compliance with GRM and worker feedback channels	R	A	C	I	I
Maintain complete documentation: inspections, checklists, permits, and incident logs	R	A	C	I	I

R = Responsible (does the task) A = Accountable (signs/approves) C = Consulted (provides input) I = Informed (receives updates)

2.4 Worker Health & Welfare Commitment

To support safe working conditions and in alignment with ESS2 and ISO 45001, **the Contractor shall implement** the following measures on all active worksites:

- Providing drinking water, sanitation facilities, shaded rest areas, and heat-stress protection on all active worksites.
- Ensuring safe and reliable transportation arrangements for workers, particularly in remote villages.
- Limiting work to safe maximum daily hours in high-risk environments or extreme temperatures.
- Ensuring that migrant and vulnerable workers receive equal access to PPE, training, and welfare facilities.
- Maintaining respectful and dignified working conditions, including adequate rest breaks and on-site welfare arrangements.

2.5 OHS Targets and Key Performance Indicators (KPIs)

Targets and Key Performance Indicators (KPIs) are presented in Table 2-2. The KPIs define minimum performance standards that the Contractor shall integrate into the OHSMP and monitor continuously during Project implementation.

Table 2-2 OHS KPIs

Area	Key Performance Indicator (KPI)	Target
Safety Performance	Lost-Time Injury Frequency Rate (LTIFR)	0
	Fatalities	0
	Serious Near Misses	0 serious near misses resulting in harm (all serious near misses to be recorded and investigated).
Training	% of workers receiving induction	100%
	Daily toolbox attendance	≥ 95%
UXO/ERW Safety	% of sites with daily UXO briefing	100%
	Response time to UXO STOP-WORK	Immediate
Debris Management	% of debris loads with trip tickets	100%
	% of trucks tracked via GPS	100%
Traffic Safety	% of sites with approved Traffic Management Plan (TMP) — 100%	100%
PPE Compliance	Observed PPE compliance rate	≥ 95%
Documentation	Daily OHS inspection reports	100% issued

3 LEGAL AND OTHER REQUIREMENTS

The Contractor's OHSMP shall comply with all applicable Lebanese laws, international standards, and World Bank requirements. Table 3-1 summarizes the key legal, regulatory, and institutional requirements that the OHSMP must integrate, covering occupational health and safety, labor conditions, debris management, hazardous materials, traffic safety, and UXO/ERW risk management.

Table 3-1 Legal and Other Requirements Applicable to the Project

Category	Legal / Standard Source	Requirement
Occupational Health & Safety / Labor	Labor Law (1946)	- Governs worker rights, non-discrimination, working hours, minimum age, and safe working conditions.
	ILO Conventions (29, 105, 111, 122, 138)	- Prohibit forced labor and discrimination, ensure equal employment opportunities, and strictly forbid child labor or hazardous work for persons under 18.
	OHS Decree 11802/2004	- Establishes employer obligations for hazard prevention, PPE provision, supervision, and accident prevention.
Waste & Debris Management	Law 80/2018	- Integrated Solid Waste Management Law, covering hazardous and non-hazardous waste routing and roles of authorities.
	Decree 5605/2019	- Tasks Unions of Municipalities with CDW collection centers.
	Decree 5606/2019	- Defines hazardous waste classification, transport, and disposal processes.
	Decree 118/1977	- Assigns municipalities responsibility for waste collection and transport, and Governorates for disposal.
	MoE Circular 6/1 (2024)	- Requires municipalities and Unions to designate degraded quarry sites as temporary rubble reception areas and mandates debris transport controls, including GPS tracking and trip-ticket procedures.
Traffic & Transport Safety	Traffic Law 243	- Governs roadside safety, signage, speed control, and protection of road users during operations.
Lebanon's National Mine Action Policy	Official Gazette (Art. 3–7)	- All UXO/ERW procedures under this Project shall follow LMAC instructions, and only LMAC/LAF Explosive Ordnance Disposal (EOD) teams are authorized to assess or remove explosive ordnance. - Contractors are limited to STOP-WORK, securing the area, and notifying LMAC.
World Bank ESF	ESS2 – Labor and Working Conditions	- Addresses worker safety, nondiscrimination, prevention of child labor, Codes of Conduct, worker GRM, and OHS obligations.
	ESS4 – Community Health and Safety	- Requires mitigation of risks from machinery, traffic, debris movement, hazardous materials, UXO, and emergency preparedness.
IFC EHS Guidelines	IFC Environmental, Health and Safety (EHS) Guidelines	- The Contractor shall comply with IFC EHS Guidelines as a minimum international benchmark for safe machinery operation, dust/noise control, waste management, and traffic safety.
ISO 45001	ISO 45001:2018 + A1:2024	- The OHSMS shall integrate hazard identification, risk assessment, competency and training, participation and communication, monitoring, and continual improvement, embedding OHS into planning, procurement, scheduling, and contractor management.
MoE–UNDP Rubble SOP (2025)	UNDP–MoE SOPs for Post-Disaster Rubble Management (2025)	- Provide national guidance for handling debris, hazardous materials, and EO-contaminated rubble in post-conflict settings.

4 OHS MANAGEMENT SYSTEM STRUCTURE

The Contractor shall establish, implement, and maintain an OHS Management System that provides the framework for hazard identification, operational control, emergency preparedness, monitoring, reporting, and continual improvement across all Project activities.

4.1 ISO 45001+A12024 Framework (Plan–Do–Check–Act Model)

The Contractor's OHSMS shall be structured in accordance with ISO 45001:2018 (as amended by A1:2024) and follow the **PDCA cycle** (Table 4-1), ensuring continuous risk reduction:

Table 4-1 ISO 45001 + A1:2024 Framework (Plan–Do–Check–Act Model)

PDCA Stage	Requirements
PLAN	- Integrate OHS considerations into work planning, design reviews, procurement decisions, and contractor onboarding (ISO 45001 +A1:2024). - Identify hazards (UXO/ERW, debris, unstable structures, machinery, hazardous materials) - Conduct Job Hazard Analyses (JHAs) - Establish safe-work procedures and mitigation measures - Integrate all legal and regulatory requirements from Chapter 3. - Set OHS objectives and KPIs (per Chapter 2)
DO	- Implement all OHS procedures and Safe Operating Practices - Deliver worker induction and task-specific training - Provide PPE before work commencement and enforce compliance with disciplinary measures for repeated non-adherence. - Enforce STOP-WORK authority - Apply LMAC-compliant UXO safety methods - Conduct safe debris clearing, transport, and traffic management - Ensure procurement, scheduling, and resource allocation explicitly incorporate OHS requirements.
CHECK	- Daily inspections by the Contractor OHS Officer - Facilitate audits and inspections by the Supervising Engineer and CDR–PIU. - Monitor compliance with applicable legal and regulatory requirements, including MoE Circular 6/1. - Record and report all incidents, near-misses, and UXO discoveries in accordance with approved procedures. - Maintain documentation reviews and performance tracking against defined OHS objectives and KPIs.
ACT	- Implement corrective and preventive actions - Revise method statements and JHAs based on lessons learned - Update OHS procedures as conditions change - Continually improve safety performance

4.1.1 Integration of Security Risk Management

Due to the unstable security environment, the OHSMS integrates a Security Risk Management layer (Table 4 2). This layer is directly linked to the Emergency Evacuation Procedure described in Chapter 8. Daily security assessments and the GO/NO-GO decision tool trigger emergency response and suspension of works when thresholds are exceeded.

Table 4-2 Security Risk Management Integration into OHSMS

Security Risk Management Component	Requirement
Daily Security	- Daily assessment of security conditions before deployment.

Assessment	
GO/NO-GO Tool	- A Red/Amber/Green (RAG) “GO / NO-GO” operational decision tool for immediate work approval or suspension.
Mandatory Suspension of Work	- Work shall be immediately suspended upon detection of shelling, drones, or cross-border fire, as directed by LAF/ISF or the Contractor’s Security Focal Point. Evacuation procedures follow Chapter 8.
Coordination with Security Forces	- Coordination with LAF/ISF for safe access routes.

4.2 Components of the Project OHS Management System

At minimum, the OHSMP shall include the following components:

- OHS Policy and Leadership Commitment (Chapter 2)
- Legal and Other Requirements Register (Chapter 3)
- Roles and Responsibilities (refer to Chapter 5 for full details)
- Hazard Identification and Risk Assessment System (Chapter 6)
- Operational Controls and Standard Operating Procedures, including:
 - UXO/ERW risk management
 - Debris and hazardous-material handling
 - Machinery and electrical safety
 - Traffic and community safety
- Permit-to-Work (PTW) System for high-risk activities
- Emergency Preparedness and Response Plan (EPRP) (Chapter 8)
- Training, Competency, and Worker Participation Framework (Chapter 9)
- Monitoring, Reporting, and OHS Documentation Requirements (Chapter 10)
- Incident Notification, Investigation, and Corrective Action System (Chapter 11)
- Continual Improvement Mechanism

These components collectively ensure that all activities are conducted safely, compliantly, and efficiently.

4.3 Worker Welfare Provisions (ISO 45001 & ESS2)

The Contractor shall implement the worker welfare commitments described in Section 2.4 through, at minimum, the following measures:

- Develop and implement a heat stress prevention plan, including work-rest cycles and hydration protocols.
- Provide rest breaks proportionate to task risk level and environmental conditions.
- Ensure availability of shaded or protected rest areas at all active work sites.
- Provide sanitary and hygiene facilities in sufficient number, maintained in clean and functional condition, in accordance with applicable Lebanese regulations and ESS2 requirements.
- Ensure safe and suitable transportation arrangements for workers deployed to remote or high-risk locations.

4.4 Roles & Responsibilities within the OHSMS

Full roles and responsibilities are defined in Chapter 5. The Contractor shall ensure all personnel comply with the roles and responsibilities described therein. Key coordination interfaces include CDR–PIU, Supervising Engineer, LMAC/LAF, Municipal authorities, and MoE/MoPH. All procedures and responsibilities shall be incorporated into the Contractor’s OHSMP and submitted for approval prior to commencement of works.

4.5 Communication and Coordination Mechanisms

The OHSMS requires structured communication and coordination among all parties, including daily toolbox talks and UXO/ERW briefings, coordination with municipalities and LMAC focal points, and reporting to CDR-PIU and the World Bank as per the ESCP requirements

4.6 OHS Documentation and Record-Keeping

All operational documentation—including UXO briefings, debris trip tickets, inspections, PTW forms, and training records—must be maintained onsite, updated regularly, and provided to the Supervising Engineer/CDR-PIU as requested. Documents must be stored securely for auditing.

4.6.1 Security Communication Protocols

All sites shall maintain dedicated communication channels for security alerts, including real-time instructions from LAF/ISF, evacuation notifications, and redundant radio/phone systems to ensure continuity during network outages.

4.7 Continual Improvement

In alignment with ISO 45001 Clause 10, continual improvement is achieved through:

- Lessons learned from incidents and near misses
- Updates to JHAs and SOPs
- Feedback from workers, municipalities, and communities
- Audit findings and corrective actions
- Changes in site conditions or new risks (e.g., newly exposed UXO)
- All corrective actions shall be tracked and closed within defined timelines.

The Contractor shall update their OHSMP and related documents whenever risks evolve.

4.8 Operational Control and SOPs

The Contractor shall develop site-specific SOPs for UXO/ERW, rubble and hazardous material handling, and community protection, based on the principles outlined in Appendices 1–2. STOP-WORK authority must be enforced at all times, and the Contractor shall not perform any explosive ordnance (EO) search independently.

The Contractor shall review and update site-specific SOPs whenever conditions change or new risks are identified.

Specific SOPs cover rubble removal in EO-contaminated areas, emergency response, handling of sensitive/cultural items, and asbestos/hazardous material management.

4.8.1 Rubble Removal in EO-Contaminated Areas (refer to Appendix 1).

- Use of **LMAC risk database** for rubble task classification.
- Mandatory **non-technical survey (NTS)** before works.
- **Three-phase** clearance methodology (Visual Search & Marking, Mechanical Removal with EOD Support, Thin-layer spreading for final inspection under LMAC supervision; see Appendix 1 for details)
- STOP-WORK upon suspicion of UXO/ERW.
- Continuous **risk assessment and risk review** during operations.

- Protection of **culturally significant and religious items** found within rubble.

4.8.2 Emergency Response & First Responders

- Only **LMAC/LAF EOD teams** may handle or remove UXO.
- The Contractor shall maintain immediate communication with LMAC focal points.

4.8.3 Handling Sensitive or Sacred Items

Debris may contain objects of **religious or cultural value**.

These shall be handled respectfully, documented, and returned through coordination with:

- local authorities
- religious leaders
- community representatives

4.8.4 Hazardous Materials and Asbestos Handling

The following measures are indicative; detailed procedures and site-specific implementation are provided in Appendix 2 – Hazardous Materials and ACM Handling:

- Identification of suspect asbestos-containing materials (ACM) during debris clearance.
- **STOP-WORK and notify MoE if ACM is encountered**
- Isolation of the area until classification is confirmed by a MoE-approved entity .
- Use of appropriate PPE (Type 5/6 protective suits, P3 respirators).
- No cutting, breaking, crushing, or dry sweeping of ACM-containing debris.
- Moisture application to minimize dust.
- Proper bagging, labeling, and routing under MoE supervision.
- Only MoE-approved entities may classify or dispose of ACM
- All procedures must be incorporated into the OHSMP (see section 1.2) and implemented as site-specific SOPs.

4.8.5 Security and Emergency Law Compliance

- Comply with LAF, ISF, Civil Defense, and Governorate directives.
- Adhere to security restrictions, road closures, curfews, and access limitations.
- Immediately suspend works when required, activating the Emergency Evacuation Plan (Chapter 8).
- Follow Civil Defense protocols during shelling, drone activity, or cross-border fire.
- Coordinate with security authorities to ensure safe deployment of personnel and equipment

5 ROLES AND RESPONSIBILITIES

Effective implementation of OHS provisions requires clear assignment of responsibilities across all Project entities. The roles below are aligned with ISO 45001 (Leadership and Worker Participation) and reflect the governance structure of CDR, the Supervising Engineer, LMAC, MoE, and the World Bank.

Table 5-1 presents the most important responsibilities and obligations of the Contractor, as well as the roles of other entities, defining who approves, supervises, implements, and enforces OHS measures during all emergency road-clearing and restoration activities.

Table 5-1 Roles and Responsibilities for the OHSMP Implementation

Entity	Key Responsibilities
CDR – Project Implementing Unit (PIU)	- Ensure OHSMP implementation across all Cazas and contracts. - Oversee performance of contractors and Supervising Engineer. - Require corrective action for non-compliance. - Report significant OHS incidents to the World Bank. - The report must be submitted within 48 hours of the incident or accident being identified. - Coordinate with MoE, LAF/LMAC, MoPH, ISF, and municipalities.
Supervising Engineer (Consultant)	- Conduct site inspections, audits, and verification. - Approve Method Statements, JHAs, PTWs, TMPs. - Issue Non-Compliance Notices (NCNs). - Verify STOP-WORK implementation (UXO, asbestos, instability). - Ensure full contractor documentation and reporting.
Contractor – Project Manager	- Implement OHS on site and provide resources (staff, PPE, equipment). - Approve JHAs and method statements. - Ensure all worker training and inductions. - Guarantee compliance with MoE Circular 6/1. - Enforce disciplinary measures including SEA/SH zero-tolerance.
Contractor – OHS Officer (Mandatory)	- Conduct daily inspections and enforce OHS rules. - Lead toolbox talks + daily UXO/ERW briefings. - Identify hazards and activate STOP-WORK. - Maintain OHS and debris documentation. - Coordinate with Engineer, PIU, LMAC, MoE, municipalities.
Specific OHS Officer Protocols	- Ensure immediate STOP-WORK and activation of emergency procedures for any hazard or incident (e.g., UXO/ERW, human remains, hazardous materials, electrical risks, structural instability, security threats, serious injuries), in accordance with the Contractor's OHSMP, which shall be developed in accordance with Chapter 8 – Emergency Response & First Responders and supported by Appendices 1–2.
Contractor – Additional Required Designations	- Security & Access Focal Point: responsible for monitoring official security channels (LAF, ISF, municipality), assessing daily security conditions, implementing the GO/NO-GO assessment, ordering immediate evacuation or site lockdown if threats are identified. The name and contact details of the Security & Access Focal Point shall be included in the site Emergency Response Team (ERT) binder and Emergency Contact List. - Traffic Management Supervisor: oversees TMP implementation. - Certified Machine Operators: operate machinery in accordance with approved method statements, JHAs, and TMPs; participate in ERT response when required. - Training Coordinator: manages induction, toolbox talks, refresher training. - Operational site-specific roles: Fire Warden, First Aid/Medical Focal Point, and other site-specific positions as needed, all of which can be incorporated within the site Emergency Response Team (ERT) as

Entity	Key Responsibilities
	appropriate
Contractor – Obligations Before Mobilization	- Conduct hazard mapping and risk assessments. - Prepare and submit the OHSMP for approval. - Include emergency contacts and designated hospitals. - Submit the training plan, training materials, and ensure workers are trained before mobilization. - Submit the Debris Management Plan, including GPS tracking, trip tickets, and TSS verification. - Prepare Traffic Management Plans (TMPs) and all other site-specific OHS documents.
Contractor – Obligations During Works	- Daily UXO/ERW briefings + toolbox talks. - All-time OHS Officer on site. - Certified machinery operators + banksman for reversing. - PPE compliance; covered trucks + GPS + trip tickets. - SEA/SH, child labor, forced labor zero-tolerance.
Workers (Contractor/Subcontractor)	- Follow OHS procedures; attend training. - Wear PPE at all times. - Report hazards, unsafe conditions, and UXO suspicion. - Exercise STOP-WORK authority when needed.
Lebanon Mine Action Center (LMAC)	- Conduct NTS and maintain EO risk database. - Respond to UXO/ERW incidents and perform EOD. - Certify clearance. - Provide EORE training; support safe rubble removal.
Ministry of Environment (MoE)	- Classify hazardous materials (including asbestos). - Approve TSS/quarry sites under Circular 6/1. - Oversee debris transport chain-of-custody. - Monitor environmental compliance.
Municipalities & Unions	- Facilitate access, detours, community notifications. - Support Circular 6/1 implementation. - Coordinate with households and local leaders. - Support emergency response.
Ministry of Public Health (MoPH)	- Lead human remains protocols. - Provide hospital referral pathways. - Coordinate with local health centers.
Internal Security Forces (ISF) / MoI	- Support traffic management. - Secure debris transport routes. - Support crowd control in emergencies.

The Contractor shall assign qualified personnel, establish operational controls, and implement the responsibilities listed in Table 5-1 at all active worksites. The Contractor shall also establish a site-specific Emergency Response Team (ERT) as part of the OHSMP, detailing members, roles, and responsibilities, in accordance with Chapter 8. The ERT composition and procedures shall be submitted for approval prior to commencement of works.

6 HAZARD IDENTIFICATION AND RISK ASSESSMENT

This chapter establishes the approach for systematically identifying, assessing, and controlling hazards in accordance with ISO 45001 Clause 6.1, World Bank ESS2/ESS4, and MoE/UNDP Debris Management SOPs. These are requirements for the Contractor to develop detailed, task-specific procedures in the OHSMP, to be submitted to the Supervising Engineer for review and approval prior to commencement of works.

These requirements apply to all Project activities, including UXO/ERW-exposed rubble clearance, debris handling and transport, road restoration, and operations on narrow village roads.

6.1 Risk Management Approach

The Contractor shall apply a structured risk management cycle consistent with ISO 45001 and national guidance. The process shall include:

1. **Risk Identification** – Identification of all hazards associated with planned activities, work environments, equipment, materials, workforce conditions, and reasonably foreseeable emergency situations.
2. **Risk Analysis** – Assessment of likelihood and severity for each identified hazard.
3. **Risk Evaluation** - Classification of risk levels (e.g., low, medium, high) with prioritization of life-threatening and high-consequence risks.
4. **Risk Treatment** – Selection and implementation of control measures following the hierarchy of controls:
 - Elimination
 - Substitution
 - Engineering controls
 - Administrative controls
 - Personal Protective Equipment (PPE)
5. **Risk Review and Update** – Continuously reassess whenever conditions change, including new debris exposure, UXO/ERW findings, community movement, weather, or operational modifications.

Risk assessments shall explicitly consider **reasonably foreseeable emergency situations**, as required under ISO 45001: 2018+A1:2024 requirement.

6.2 Main Hazard Categories

The hazard categories presented in Table 1-2 (Section 1.3) constitute the minimum anticipated OHS and Community Health & Safety risk categories for this Project.

For the purpose of structured risk assessment, these hazards are consolidated under the following categories:

1. UXO / ERW and Explosive Ordnance Hazards
2. Structural, Debris, and Excavation Hazards
3. Hazardous and Contaminated Materials
4. Machinery and Traffic Hazards
5. Environmental and Occupational Exposure Hazards
6. Community Health and Safety Hazards
7. Labor, Social, and Workforce-Related Risks
8. Security and Context-Related Hazards
9. Emergency / Non-Routine Hazard Scenarios

These categories shall form the basis of all JHAs/JSAs, Method Statements, TMPs, Emergency Response Procedures (Chapter 8), and other site-specific OHS controls.

6.3 Documentation of Risk Assessment

The Contractor shall prepare and maintain site-specific Job Hazard Analyses (JHAs/JSAs) for all major tasks, including but not limited to debris clearing, excavation, loading, transport, traffic control, structural stabilization, and restoration works.

Each JHA/JSA shall:

- Identify hazards in accordance with the categories defined in Section 6.2
- Assess risk levels and specify control measures based on the hierarchy of controls.
- Define explicit STOP-WORK triggers aligned with high-risk conditions.
- Be submitted to the Supervising Engineer for review and approval prior to commencement of work.
- Be updated whenever site conditions change.
- Be maintained on-site for inspection and daily operational review.
- Ensure workers are briefed and trained on task-specific risks before commencing work.

No activity shall commence without an approved and communicated JHA/JSA.

Emergency-specific hazards, including UXO/ERW exposure and chance-find human remains, shall have dedicated procedures incorporated into the Contractor's OHSMP and aligned with Section 8.6 - Specific Emergency Procedures.

7 TRAFFIC & COMMUNITY SAFETY MANAGEMENT

Project works include road clearing, debris transport, and restoration along **existing roads**, many of which are currently closed or only partially accessible.

Traffic and community safety risks arise primarily where works interface with **re-populated villages, already open road segments, debris haulage routes, and adjacent connecting roads**. These conditions require strict, context-specific traffic and community safety controls in line with **ESS4** and the **World Bank EHS Guidelines**.

Given that debris transport is a primary risk driver, TMPs shall explicitly cover haulage routing to MoE-approved TSSs, including timing, speed controls, and community notifications along connecting roads.

This chapter sets mandatory requirements for traffic control, pedestrian protection, public access management, detour planning, and machinery operation **where community exposure exists**.

The Contractor shall prepare site-specific TMPs, reviewed by the Supervising Engineer, and approved by CDR–PIU prior to mobilization or work commencement.

7.1 Traffic Safety Objectives

- ✓ Prevent vehicle–pedestrian collisions.
- ✓ Protect vulnerable groups where present (e.g., children, elderly persons, persons with disabilities, farmers, and returning households), particularly along haulage routes and partially re-inhabited areas.
- ✓ Control vehicle speeds and unsafe driving behavior.
- ✓ Manage traffic flow to avoid unsafe overtaking and congestion on narrow roads.
- ✓ Separate machinery movement from pedestrian activity where interaction may occur.
- ✓ Maintain safe access to homes, farmland, community facilities, and services **where located along active work sections or haulage routes**.
- ✓ Warn communities in advance of works and temporary disturbances.
- ✓ Prevent secondary accidents caused by poor signage, dust, or visibility.
- ✓ Protect sensitive receptors **where identified within the project area**.

7.2 General Traffic Safety Requirements

TMPs are required for work locations and debris haulage routes **where interaction with vehicular traffic, pedestrians, or surrounding communities may occur**.

For fully closed and uninhabited segments, TMPs may be simplified, provided debris haulage routing, signage, and speed controls are maintained.

Each TMP shall include, as applicable:

- Road width and cross-section
- Expected traffic volumes (if any)
- Pedestrian movement and crossing points (where present)
- Access points to homes, farms, and businesses (where present)
- Signage and detour layout
- Banksman/flagger positions
- Machinery circulation and parking plan
- Coordination with municipalities and ISF
- Emergency access routes

Haulage routes to TSSs shall be agreed with municipalities/ISF prior to transport, prioritizing routes with the lowest social and safety impacts and avoiding sensitive receptors and pedestrian activity areas where feasible.

TMPs must be approved prior to work commencing on the relevant segment or haulage route.

7.3 Key Safety Requirements for Machinery Operation

- The Contractor shall ensure safe machinery operation procedures in the TMP, including reversing, visibility, access, and separation from pedestrians.
- Specific operational measures, including speed limits, banksmen use, and coordination near sensitive receptors, shall be defined in site-specific TMPs and operational procedures for review and approval prior to work.

7.4 Mandatory Signage and Road Devices

- The Contractor shall specify in the TMP the placement, type, and visibility of signage and traffic control devices required to protect workers, pedestrians, and communities.

7.5 Driver Safety Protocol

- The Contractor shall implement driver safety measures to ensure safe operation of vehicles and machinery, including managing fatigue, enforcing PPE and seatbelt use, preventing distracted driving, and controlling speeds in work zones and near communities.

7.6 Pedestrian & Community Protection

- The Contractor shall include in the TMP measures to ensure pedestrian and community safety, including safe access, physical separation where required, and high-visibility PPE for workers.
- **The TMP shall assess risks related to pedestrian exposure to moving machinery and specify engineering and administrative controls to eliminate or minimize such risks.**

7.7 Detours, Sensitive Receptors, and Community Notifications

- TMPs shall describe routine community notification measures related to traffic disruptions, detours, haulage schedules, and temporary access restrictions.

7.8 Enforcement and Monitoring

- The Contractor shall monitor site-specific TMPs implementation and report non-compliance or incidents to the Supervising Engineer.
- The Supervising Engineer shall review TMPs implementation, approve corrective actions, and report major non-compliance issues to CDR-PIU.
- The CDR-PIU provides final oversight, ensures compliance with ESS4, and reviews significant incidents.

8 EMERGENCY PREPAREDNESS & RESPONSE

Given the post-conflict context of the Project and the presence of war rubble, ERW/UXO, collapsed structures, and hazardous materials, emergency preparedness and response (EPR) is a critical aspect of safe implementation.

This chapter establishes the minimum requirements for immediate and coordinated actions to prevent fatalities, reduce injuries, protect nearby communities where exposure exists, and ensure effective coordination with competent authorities.

The Contractor shall develop a Site-Specific Emergency Preparedness and Response Plan (EPRP), which shall form a dedicated section of the OHSMP and consolidate all emergency procedures, roles, communication protocols, and equipment requirements referenced in this Chapter.

The EPRP shall be submitted for approval prior to mobilization.

8.1 Emergency Scenarios Anticipated

Based on the Project's post-conflict context and risk profile, the following emergency scenarios are reasonably foreseeable and shall be considered at a minimum:

- UXO/ERW discovery or detonation
- Structural collapse (retaining walls, unstable debris)
- Discovery of human remains
- Machinery-related accidents
- Traffic accidents
- Hazardous material or asbestos exposure
- Fire outbreaks
- Security escalation or armed activity
- Medical emergencies
- Evacuation due to external threats

The EPRP shall define a specific procedure corresponding to each identified emergency scenario.

Security-related scenarios and escalation risks:

The EPRP shall, at a minimum, include:

- Pre-identified and communicated evacuation routes
- Clearly marked assembly points
- Availability of fueled vehicles for emergency withdrawal
- Designation of a site Security Focal Point responsible for monitoring security updates
- Integration of daily security briefings into toolbox talks

The EPRP shall further define clear STOP-WORK triggers, evacuation measures, internal and external notification protocols, and coordination procedures with relevant authorities for each identified emergency scenario.

All emergency scenarios shall be explicitly considered during site risk assessments, in accordance with ISO 45001:2018+A1:2024 requirements regarding reasonably foreseeable emergencies.

8.2 Emergency Response Team (ERT)

The Contractor shall establish an Emergency Response Team (ERT) on every active site, and the OHSMP shall define the composition, roles, responsibilities, and coordination arrangements with internal and external personnel. The ERT shall operate in coordination with the Contractor's designated security focal points and relevant national authorities.

Relevant National Authorities (for coordination as applicable):

- LMAC – UXO/ERW response
- LAF – Security and cordon control
- Lebanese Red Cross (LRC) – Emergency medical response
- Civil Defense – Fire and evacuation support
- Ministry of Environment (MoE) – Hazardous materials incidents
- Ministry of Public Health (MoPH) – Human remains coordination
- ISF / Municipal Police – Traffic and crowd control

8.3 Emergency Equipment Required On-Site

The Contractor shall ensure that the OHSMP defines emergency equipment requirements appropriate to identified site risks, including availability, accessibility, maintenance, and location. Equipment categories shall include, but not be limited to:

- Medical and first-aid supplies
- Fire prevention and firefighting equipment
- UXO/ERW marking and safety equipment
- Communication devices and emergency contact information
- Safety gear, high-visibility clothing, and evacuation aids
- Security and evacuation measures

Table 8-1 provides minimum required equipment expected on site

The EPRP shall specify quantities, locations, and inspection frequency.

Table 8-1 Minimum Required Equipment On-site

Type	Description
Medical	- First-aid kit compliant with Lebanese Red Cross standards shall be readily accessible within 2-3 minutes from any work location. - Stretcher - Eye-wash bottle - Burn kit - Trauma kit (pressure dressings, tourniquets) – essential for blast/sharp-object injuries - Defibrillator (AED for <i>large teams</i> (>20 workers)) - Emergency thermal blankets - Dedicated first-aid responder on each site
Fire	- Fire extinguishers (powder + CO₂) - Machines - Sand bucket - Fire blanket - Fire-beaters (if vegetation fire risk exists)
UXO/ERW	- Hazard cones and barrier tape - UXO marking flags (preferred format by LMAC) - Whistle/horn for immediate STOP-WORK - Laminated UXO “DO NOT TOUCH / KEEP OUT” signs - GPS or mobile app for recording coordinates of suspect item
Communication	- Charged phones (minimum 2 dedicated for emergencies) - Laminated emergency contact list (LAF/LMAC, ISF, nearest hospital, Supervising Engineer, municipality) - Loudspeaker or megaphone - Two-way radios (mandatory where mobile network is unreliable) - Vehicle-mounted horn/siren for evacuation signal
Other	- Flashlights - High-visibility vests - Hard hats, gloves, goggles, and steel-toe boots - Emergency vehicle access kept open at all times - Spill-control kit (absorbent pads, sand, containment) - Traffic safety kit: cones, reflectors, stop/slow paddle, night reflectors - Temporary shelter or safe assembly point marked and known by all workers

8.4 Emergency Contact List (Mandatory on ALL Sites)

The Contractor shall prepare, maintain, and update a site-specific Emergency Contact List as part of the OHS Plan and Emergency Response Team (ERT) binder.

The list shall be displayed visibly at each active site, verified prior to mobilization, and updated throughout the works. It **shall include internal project contacts and all authorities required for immediate notification in the event of fatalities, serious incidents, forensic investigations, or security escalation.**

8.5 Emergency Evacuation Procedure

The EPRP shall include site-specific evacuation procedures identifying:

- Pre-designated assembly points
- Pre-planned evacuation routes
- Responsibilities for headcount and accountability
- Coordination with local authorities

8.6 Specific Emergency Procedures (Critical)

For each emergency scenario identified in Section 8.1, the EPRP shall define:

- **Clear STOP-WORK triggers**
- Evacuation measures
- Internal and external notification sequence
- Authority coordination procedures
- Incident documentation requirements
- **Conditions for safe resumption of work, subject to authorization by the competent authority or Supervising Engineer**

8.7 Communication & Reporting Flowchart

The EPRP shall include a site-specific emergency communication and reporting flowchart as an annex.

The flowchart shall define:

- Internal reporting sequence
- External notification requirements
- Escalation steps
- Responsible personnel
- Reporting timelines

8.8 Training & Drills

The EPRP shall define emergency preparedness training requirements for all personnel, including:

- UXO/ERW awareness
- First aid
- Fire response
- Spill response
- Emergency communication procedures

The EPRP shall define the minimum frequency, format, and scope of emergency drills appropriate to site-specific risk conditions.

The Contractor shall conduct drills in accordance with the EPRP, document attendance, observations, and corrective actions, and adjust procedures based on lessons learned.

At minimum, one emergency drill shall be conducted during mobilization and repeated periodically depending on project duration, risk profile, and security constraints.

8.9 Community Emergency Notification

The EPRP shall include procedures for community notification in emergencies that may affect public safety.

Procedures shall define:

- Notification methods
- Responsible personnel
- Coordination with local authorities
- Measures for area closure and traffic control where required

9 TRAINING, INDUCTION & COMPETENCY REQUIREMENTS

The Contractor shall ensure that all personnel, including workers, operators, supervisors, and other site staff, have the necessary knowledge, skills, and awareness to safely perform their assigned tasks. Training shall address project-specific hazards, including but not limited to: UXO/ERW; Unstable structures and debris; Traffic and machinery risks; Hazardous and contaminated materials, including asbestos; Chance-find human remains; and Sensitive community areas.

The Contractor shall also ensure personnel understand emergency procedures, STOP-WORK authority, notification protocols, and site cordoning requirements.

This Chapter establishes mandatory requirements for training, induction, and competency to ensure personnel preparedness for both routine and emergency scenarios. All training shall be documented to support compliance, monitoring, and auditing, in line with ISO 45001:2018+A1:2024, World Bank ESS2 and ESS4, project requirements, and applicable national regulations.

9.1 OHS Training Plan

All training requirements shall be implemented through a detailed OHS Training Plan, to be submitted to the Supervising Engineer for review and approval prior to execution. The Plan shall cover training topics, target groups, delivery methods and materials, trainer qualifications, session schedules and frequency, and mechanisms for evaluating competency and effectiveness. All training content shall align with project hazards and the Emergency Preparedness & Response requirements described in Chapter 8.

9.2 General Training Requirements

The Contractor shall:

- Provide OHS induction to **all workers before they enter the site**
- Keep training records, attendance lists, and competency certificates
- Ensure machinery operators are certified and trained for applicable equipment
- **Provide refresher training at least monthly or as work conditions change**
- **Provide specialized training for OHS-critical tasks, including flagging, machinery handling, and chemical handling**
- Ensure training is in Arabic, with simple instructions and demonstrations

Ensure training complies with ISO 45001 Clause 7.2 (Competence) and fits emergency-response conditions.

9.3 Mandatory Induction Training (Before Any Worker Starts Work)

All personnel shall receive induction covering:

- Project overview and key hazards.
- STOP-WORK authority and notification procedures.
- Worker rights and responsibilities.
- Emergency response procedures and coordination with the site Emergency Response Team.
- Use and care of Personal Protective Equipment (PPE).
- Environmental protection and site hygiene requirements.

9.4 Specialized Training Requirements

Certain roles require enhanced training:

9.4.1 UXO/ERW Awareness Training (MANDATORY FOR ALL WORKERS)

UXO/ERW awareness training is a critical requirement of the Project. The Contractor shall train all personnel on recognition of common explosive ordnance, identification of suspicious items, safe distances, STOP-WORK procedures, reporting protocols, evacuation, and marking procedures. Training shall be delivered by LMAC, an LMAC-certified organization, or by a Supervising Engineer/Contractor OHS Officer trained and certified by LMAC. Training content shall be adapted to site-specific conditions and Project risks.

9.4.2 Chance-Find Human Remains Awareness

The Contractor shall train personnel to recognize human remains, implement STOP-WORK and cordoning procedures, follow an indicative notification sequence (Worker → ERT → Supervising Engineer → CDR-PIU → MoPH / ISF → other relevant authorities), provide basic psychological first-aid to colleagues, and document/report incidents. Content and delivery shall be site-specific and aligned with project hazards and authorities.

9.4.3 Machinery Operator Training

The Contractor shall ensure operators are trained and certified for all relevant machinery, including excavators, wheel loaders, skid-steer loaders, and dump trucks. Training shall cover safe operation, hazard recognition, site-specific conditions, and procedures if machinery encounters unexpected resistance (e.g., potential UXO).

9.4.4 Traffic Controllers / Flaggers

The Contractor shall train traffic controllers/flaggers to safely manage traffic, communicate with machinery, protect workers and community members, and respond to emergencies.

9.4.5 Asbestos & Hazardous Materials Awareness

The Contractor shall train all personnel to recognize asbestos-containing materials (ACM) and chemical hazards, implement STOP-WORK procedures, follow decontamination and PPE handling requirements, and immediately notify the OHS Officer.

9.4.6 First Aid and Emergency Response Training

Contractor shall train designated first-aiders and personnel to respond to medical emergencies, provide basic first aid, and coordinate evacuations.

9.4.7 Fire Safety Training

The Contractor shall train personnel, including machine operators, to prevent, respond to, and evacuate safely from fire incidents.

9.5 **Toolbox Talks**

The Contractor shall conduct toolbox talks to address work-specific hazards and reinforce emergency preparedness.

9.6 **Competency Verification**

The Contractor shall verify that all personnel can safely perform their assigned duties, including correct use of PPE, adherence to STOP-WORK procedures, and recognition of project-specific

hazards, before commencing work. Personnel failing to demonstrate required competency shall be retrained and re-assessed prior to site deployment.

9.7 Training Records and Documentation

The Contractor shall maintain records of all training and competency verification, including:

- Training materials and presentations
- Attendance sheets and participant signatures
- Certificates and refresher logs
- Toolbox talk records
- Evaluation results

These records shall be made available to the Supervising Engineer, CDR–PIU, and World Bank missions upon request.

10 DOCUMENTATION, REPORTING & RECORD-KEEPING REQUIREMENTS

Proper documentation and accurate reporting are essential to ensure compliance with ISO 45001, the World Bank Environmental and Social Framework (ESF), Lebanese legislation, and sector-specific SOPs for post-conflict environments. All documentation enables verification, accountability, traceability, and effective emergency response—particularly for **UXO/ERW, hazardous materials, traffic incidents, and community safety concerns**. The Contractor shall establish a **Document Control System** ensuring that all records are stored, accessible, and protected from loss or tampering.

This Chapter establishes the mandatory documentation, reporting, and record-keeping requirements that the Contractor shall implement to ensure OHS and operational compliance across all Project activities.

10.1 Categories of Required Documentation

Documentation shall be maintained in the following categories. The table defines the specific documentation, reporting, and control requirements that the Contractor is required to implement.

“The ‘Check’ column is to be completed by the Contractor and verified by the Supervising Engineer during implementation.”

Table 10-1 Documentation Categories and Required Records (Checklist Format)

Category	Required Documentation / Checklist Items	Check
A. OHS Management Documentation	✓ OHSMP ✓ Site-specific Traffic Management Plan (TMP) ✓ Site-specific Emergency Response Plan (ERP) ✓ Hazard Identification & Risk Assessments (HIRA/Risk Matrix) ✓ Job Hazard Analyses (JHAs) ✓ Method Statements (MS) ✓ Permits to Work (PTWs) ✓ Daily Toolbox Talk Records ✓ Worker Induction & Training Records	☐
B. UXO/ERW Documentation	✓ Daily UXO Awareness Briefing Sheets ✓ UXO/ERW Suspicion & Discovery Reports ✓ UXO Logbook (LMAC format) ✓ LMAC Clearance Confirmations ✓ Updated Clearance Plans ✓ Hazard Mapping	☐
C. Hazardous Material & Asbestos Documentation	✓ STOP-WORK notifications ✓ Suspected asbestos/chemical hazard reports ✓ MoE classification reports ✓ Hazardous-waste tracking forms ✓ Decontamination records ✓ Disposal receipts at MoE-approved sites	☐
D. Traffic & Community Safety Documentation	✓ TMP implementation logs ✓ Traffic incident records ✓ Signage/emplacement checklists ✓ Community notification records (WhatsApp, municipal messages, posters) ✓ Sensitive receptor access records (schools, mosques, hospitals)	☐

Category	Required Documentation / Checklist Items	Check
E. Monitoring & Supervision Documentation	✓ Daily OHS Inspection Checklists ✓ Weekly Supervising Engineer Reports ✓ Non-Compliance Notices (NCNs) ✓ Corrective Action Logs ✓ Photographic evidence (before/after)	☐
F. Debris Management Documentation (MoE Circular 6/1 – 2024)	The Contractor shall maintain trip-level documentation ensuring full traceability of debris from origin to authorized disposal site, in accordance with applicable national regulations. At a minimum, such documentation shall include: ✓ Trip tickets (origin → transport → quarry) ✓ GPS vehicle tracking records ✓ Chain-of-custody forms ✓ Quarry site receipts ✓ Tonnage/volume logs ✓ Vehicle inspection checklists	☐
G. Incident & Emergency Documentation	✓ Incident Notification Form (within 2 hours) ✓ Full Incident Report (within 24 hours) ✓ Root Cause Analysis (within 72 hours) ✓ First-aid treatment log ✓ Emergency drills log ✓ Evidence/photos/maps ✓ Human Remains Discovery Report: - Location, date, time of discovery - Personnel involved - Immediate actions taken (STOP-WORK, cordoning) - Notification shall follow the communication chain defined in the OHSMP and comply with instructions from the relevant competent authorities (e.g., Ministry of Public Health, ISF, Civil Defense, Municipality). An indicative sequence may include: worker → ERT → Supervising Engineer → CDR-PIU → relevant authorities. - Follow-up actions and outcomes - Photographic or site mapping evidence (only if safe and authorized)	☐

10.2 Document Control Requirements

The Contractor shall implement document control procedures to ensure:

10.2.1 Availability

Documents must be accessible to:

- Contractor PM & OHS Officer
- Supervising Engineer
- CDR-PIU
- World Bank missions
- Relevant Lebanese authorities (LMAC, MoE, MoPH, ISF) upon request

10.2.2 Version Control

All documents must include:

- Version number
- Date of issue
- Author / approval signature
- Validity period

10.3 Reporting Frequency

Reporting requirements shall be incorporated into the Project's Document Control System. The following table defines the **reporting requirements**, specifying the expected levels, frequency, and required contents for all parties involved in implementation. While the **Contractor is responsible** for preparing and submitting reports, the **Supervising Engineer and CDR-PIU** are responsible for reviewing, verifying, and enforcing compliance with the OHSMP and related procedures.

Table 10-2 Reporting Requirements and Frequency (Checklist Format)

Reporting Level	Report Type / Frequency	Required Contents	Check
Contractor → Supervising Engineer	Daily Report	➤ Work activities ➤ OHS inspection results ➤ Toolbox talk summary ➤ UXO daily briefing ➤ Traffic safety notes ➤ Any near-miss or unsafe act ➤ Photos of work zone ➤ Weather / visibility risks	☐
Supervising Engineer → CDR-PIU	Weekly Report	➤ Summary of safety compliance ➤ Status of TMP implementation ➤ Corrective actions issued/closed ➤ EO/UXO interactions with LMAC ➤ Environmental observations ➤ Debris transport compliance (trip tickets) ➤ Community concerns / GRM updates	☐
CDR-PIU → World Bank	Monthly Report	➤ Safety performance indicators ➤ Number of trained workers ➤ Number of inspections ➤ Incident and near-miss statistics ➤ Hazardous-material events ➤ Community safety updates ➤ Gender / SEA-SH monitoring ➤ GRM summary	☐

10.4 Incident Reporting Protocol

Contractor shall follow these reporting protocols, while retaining flexibility to adjust internal processes consistent with Supervising Engineer approval.

10.4.1 Immediate Notification without delay (and in any case within a maximum of 1 hour)

“Immediate verbal notification followed by written confirmation.”

To:

- Contractor PM
- Supervising Engineer

- CDR-PIU
- LMAC (if UXO/ERW)
- Municipality / ISF as needed

10.4.2 Preliminary Report (within 2 hours)

Contains:

- time, location, activity
- type of incident
- injured persons (if any)
- immediate actions taken
- STOP-WORK status

10.4.3 Full Investigation Report (within 24 hours)

Includes:

- event description
- photographic evidence
- witness statements
- root cause
- corrective and preventive measures

10.4.4 Root Cause Analysis (within 72 hours)

Required for:

- fatality
- severe injury
- UXO/ERW event
- collapse
- major traffic accident
- hazardous-material exposure

10.5 Key Performance Indicators (KPIs)

Contractor shall report KPIs monthly, including:

- number of incidents
- number of near-misses
- number of STOP-WORK activations
- number of EO/UXO findings
- number of community complaints
- % of workers trained
- number of toolbox talks
- TMP compliance score
- number of environmental spills

These KPIs are minimum requirements that the Contractor shall monitor, report monthly, and use to assess performance, compliance, and trends.

10.6 Record Keeping for Debris Transport & Disposal (MoE Circular 6/1)

To ensure legal compliance: Mandatory Records

- origin of debris
- truck plate number
- routing path
- departure/arrival time

- GPS coordinates
- driver signature
- site supervisor signature
- quarry gate receipt
- weight/volume data

Records must be maintained in a manner that supports both internal review and external verification by Supervising Engineer, CDR–PIU, and relevant authorities

10.7 Contractor Forms, Templates, and Checklists

These shall cover, at a minimum: inspections, job hazard analyses (JHAs/JSAs), permit-to-work procedures, emergency response and incident management, UXO/ERW safety, hazardous materials and asbestos control, rubble and debris management, traffic and community safety, and other supportive worker tools.

All forms shall be **annexed to the OHSMP**, submitted to the Supervising Engineer for review and approval prior to mobilization or commencement of works. The Contractor shall ensure that all forms are consistent with project requirements, applicable national regulations, and site-specific conditions.

The approved annex shall serve as the definitive checklist for implementation, verification, and audit purposes.

11 PERFORMANCE MEASUREMENT, AUDITS & CORRECTIVE ACTIONS

Effective monitoring, evaluation, and continuous improvement are essential for the safe and compliant implementation of emergency road-clearing and restoration works. This chapter outlines **the mandatory performance measurement requirements** in accordance with ISO 45001, World Bank ESS2/ESS4, CDR requirements, LMAC EO protocols, and MoE Circular 6/1 for debris routing. The Contractor shall develop and implement a performance measurement, audit, and corrective action plan in alignment with these requirements, defining operational procedures, responsibilities, and reporting formats tailored to their specific site conditions.

Performance measurement ensures that the Contractor, Supervising Engineer, and CDR-PIU systematically identify unsafe practices, detect non-compliances, and implement corrective actions to prevent recurrence.

11.1 Objectives of Performance Measurement

The objectives are to:

- Evaluate the effectiveness of the OHSMP
- Identify systemic weaknesses in site operations
- Measure compliance with national and international safety requirements
- Track trends in incidents, near misses, and STOP-WORK events
- Evaluate the effectiveness and timeliness of emergency responses by the site Emergency Response Team (ERT), including incidents involving UXO/ERW, human remains, fire, hazardous materials, machinery accidents, traffic events, and site security
- Ensure continuous improvement
- Support reporting to CDR and the World Bank
- Maintain safety in a post-conflict environment with heightened risks

11.2 Key Performance Indicators (KPIs)

The Contractor shall **compile and submit** KPIs monthly to Supervising Engineer and CDR-PIU. These indicators form part of WB monitoring.

UXO/ERW and human remains are monitored as **separate hazard categories** under hazard-specific and emergency-related KPIs, to ensure targeted oversight, compliance with national legal requirements and international protocols, and the safe management of post-conflict risks. **Indicator D (Emergency Response & Security)** measures overall site emergency preparedness, coordination, and response performance across all incident types. This structure enables both detailed risk tracking and integrated assessment of emergency response effectiveness at the site level.

Table 11-1 Key Performance Indicators (KPIs) for Monthly Reporting

KPI Category	Indicators
A. Safety Indicators	❖ Number of incidents (fatalities, lost-time injuries, minor injuries) ❖ Number of near misses ❖ Number of STOP-WORK activations ❖ Number of unsafe acts/unsafe conditions observed ❖ Number of site-hours worked without a lost-time incident
B. UXO/ERW Indicators	❖ Number of UXO/ERW suspicions ❖ Number of confirmed UXO/ERW findings ❖ Number of requests submitted to LMAC ❖ Time between UXO discovery and LMAC response ❖ % of workers who completed UXO awareness training

KPI Category	Indicators
C. Human remains discovery indicators	❖ Number of confirmed human remains findings ❖ Number of chance-find suspicions reported ❖ Number of STOP-WORK activations due to suspected remains ❖ Time between discovery and notification of ISF/MoPH/Forensic authorities ❖ % of workers trained in chance-find emergency procedures ❖ Number of incidents where Psychological First Aid (PFA) was provided to workers ❖ Number of worksites cleared to resume after official written authorization
D. Emergency Response & Security Indicators	❖ Number of ERT activation ❖ Response time to incidents (medical, fire XO/ERW, human remains) ❖ Number of times Security & Access Focal Point issued GO/NO-GO or site lockdown order ❖ % of ERT members trained and current on emergency protocols
E. Traffic & Community Safety Indicators	❖ Number of traffic incidents (vehicle/vehicle or vehicle/pedestrian) ❖ TMP compliance score (checklist-based) ❖ Number of signage deficiencies detected ❖ Number of community complaints related to traffic/dust/noise/access
F. Hazardous Materials & Environmental Indicators	❖ Number of hazardous-material STOP-WORK events ❖ Number of asbestos/chemical hazard identifications ❖ % compliance with MoE Circular 6/1 trip-ticket requirements ❖ Number of spills/leaks observed ❖ Dust/noise exceedances
G. Training & Competency Indicators	❖ % of workers inducted ❖ % of workers trained in UXO/ERW awareness ❖ Number of toolbox talks conducted ❖ Number of workers trained in first aid, flagging, machinery operation
H. Corrective Action Indicators	❖ Number of Non-Compliance Notices (NCNs) issued ❖ % of NCNs closed on time ❖ Number of repeated non-compliances ❖ Number of major vs minor non-conformities

11.3 Site Inspections

Inspections ensure that operations remain safe and compliant throughout implementation.

11.3.1 Daily Contractor Inspections

Performed by:

- Contractor OHS Officer
- Site Engineer

Includes:

- PPE compliance
- Machinery operation safety
- Traffic control

- Signage/barriers
- Debris transport controls
- Hazardous materials
- UXO/ERW checks
- Community access

11.3.2 Weekly Independent Supervision Inspections

Supervising Engineer must:

- Verify Contractor's daily inspections
- Issue NCNs
- Follow up on corrective actions
- Assess TMP implementation
- Verify debris routing and trip tickets
- Audit training and documentation
- Assess community safety

11.3.3 Monthly CDR–PIU Field Reviews

CDR–PIU must:

- Review Supervising Engineer's findings
- Spot-check high-risk segments
- Verify EO/UXO reports
- Verify MOE Circular 6/1 compliance
- Confirm closure of major NCNs
- Report summary to World Bank

11.4 Internal Audits (ISO 45001 Clause 9.2)

The Contractor shall perform **internal OHS audits every 8 weeks**, covering:

- OHSMP implementation
- Training records
- Incident reporting
- Hazardous material management
- Trip-ticket chain of custody
- Equipment maintenance
- Emergency readiness
- Worker interviews
- Compliance with STOP-WORK procedures
- Compliance with LMAC clearance requirements
- Compliance with WB ESS2/ESS4 provisions

Findings must be documented and shared with Supervising Engineer.

11.5 Non-Compliance Management

A **NCN** is issued by Supervising Engineer when a deviation from the OHSMP, ESSs, or contractual obligations is observed.

11.5.1 Categories of Non-Compliance

- **Critical:** Life-threatening / immediate danger (EO, collapse, machinery strike, major traffic risk)
- **Major:** Creates serious unsafe conditions; work must stop until corrected
- **Minor:** Does not immediately threaten safety but requires correction

11.5.2 Contractor Obligations

The Contractor shall:

- Respond to NCNs in writing within **24 hours**
- Propose corrective actions
- Implement corrective measures within supervising engineer-defined deadlines
- Provide photographic and documentary evidence of closure

11.6 Corrective and Preventive Actions

Corrective actions address **existing issues**, while preventive actions reduce the chance of recurrence.

Corrective Action Procedure

1. Identify the non-compliance
2. Assign responsible person
3. Define corrective action
4. Implement corrective measure
5. Document completion
6. Verify effectiveness (Supervising Engineer + CDR–PIU)

Preventive Action Procedure

1. Identify trends (repeated NCNs, near misses)
2. Modify method statements or JHAs
3. Enhance training or toolbox talks
4. Improve signage or traffic control
5. Update Emergency Response Plan if needed
6. Strengthen communication with communities

11.7 Incident Investigation & Root Cause Analysis

Major incidents require full RCA:

- UXO/ERW event
- Machinery rollover
- Structural collapse
- Fatality or severe injury
- Hazardous material exposure
- Serious community incident

RCA must identify:

- Immediate causes
- Underlying causes
- Organizational issues
- Training gaps
- Preventive measures

RCA must be submitted to Supervising Engineer and CDR–PIU within **72 hours**.

11.8 Continuous Improvement (ISO 45001 Clause 10.3)

OHS performance must improve progressively. Continuous improvement is achieved through:

- Lessons learned from incidents
- Monthly KPI review
- Updated training programs
- Revised risk assessments
- Improved traffic management
- Better emergency readiness
- Enhanced communication with residents
- Integration of LMAC feedback
- Periodic OHSMP revisions

12 APPENDICES

APPENDIX 1 UXO/ERW SAFETY PROCEDURES

(ISO 45001 Clause 6.1 – Eliminating life-threatening hazards)

Explosive Remnants of War (ERW) and Unexploded Ordnance (UXO) are **major life-threatening hazards** in South Lebanon. The Project must fully comply with all **LMAC and LAF EO safety protocols**, as these are the **only national authorities** permitted to assess, clear, or remove explosive ordnance.

This appendix summarizes the mandatory safety principles related to UXO/ERW risks to guide the Contractor in developing their site-specific Operational UXO/ERW Risk Management Plan, which shall be submitted for approval prior to commencement of works. It also guides the Contractor's preparation of detailed site-specific operational procedures, emergency response workflows, and coordination protocols with LMAC and LAF.

Mandatory Principles

These principles apply to ALL workers, supervisors, and contractors:

- No work begins without prior LMAC clearance and daily safety briefings.
- If ANY suspicious item is found → STOP WORK IMMEDIATELY.
- Workers must never touch or move EO. Photography is prohibited **for general staff**.
 - If instructed by LMAC for reporting purposes, photography may be conducted **ONLY** by the Contractor OHS Officer or Supervising Engineer from a safe distance.
 - A **proposed safe distance** (e.g., >50 m using zoom) may be used, solely for official reporting purposes.
 - The **exact minimum safe distance and photography protocol** shall be confirmed and approved by LMAC prior to field implementation.
 - Photos are for **official reporting only** and must **not be shared publicly**.
- Only LAF/LMAC are authorized to investigate, assess, or remove UXO.
- A minimum 100 m safety distance is mandatory when EO is suspected or found.
- All EO incidents must be recorded and communicated within 15 minutes.

LMAC EO Risk Database and Non-Technical Survey (NTS)

LMAC deployed **Non-Technical Survey teams** in all war-affected villages to classify:

- Areas with **immediate EO threats**
- Rubble sites requiring safe removal
- Sites requiring **Battle Area Clearance (BAC)**
- Priority levels based on:
 - EO risk
 - structural stability
 - presence of asbestos or other hazards

Before the Contractor begins work:

- Supervising Engineer and Contractor must consult the **LMAC rubble risk database**.
- Each road segment must be cross-checked against LMAC's NTS classifications.
- High-risk zones must receive specific LMAC instructions before operations.

EO Risk Assessment

Hazards are evaluated by assessing:

- Type and condition of expected EO
- Building integrity / structural risk (any unstable structure next to the road)
- Environmental & terrain conditions
- Weather impacts (visibility, rain)
- Probability of unintentional detonation
- Presence of chemicals (including possible phosphorus residues)
- Human factors (fatigue, inexperience)
- Machine-related risk
- Security situation

This assessment must be updated **daily** and whenever conditions change.

The following describes the national LMAC clearance methodology for reference. The Contractor shall not undertake any explosive ordnance search or clearance activities and shall operate strictly under LMAC direction and authorization.

Three-Phase LMAC Clearance Methodology

The Project MUST follow LMAC's **three-phase safe clearance workflow** before any debris is removed or roads are opened.

The following three-phase methodology is adapted from MoE/UNDP SOPs (2025) for Post Disaster Rubble Management, Ministry of Environment. Beirut, Lebanon.

Phase 1 — Visual Search of the Marked Area

Performed by **LMAC-trained searchers** under EOD-experienced supervision.

Tasks:

1. Conduct a **systematic visual search** of the marked area.
2. Identify any suspicious EO items.
3. STOP-WORK immediately if anything is suspected.
4. Notify LMAC for EOD response.
5. Update the clearance plan based on findings.
6. Mark safe lanes and hazard areas.

Only after this is completed may machinery enter the site.

Phase 2 — Mechanical Clearance of Rubble with EOD Support

During mechanical works:

- The machinery operator must maintain **clear visual control** of rubble.
- Work must stop **immediately** if anything suspicious appears.
- The site supervisor must maintain **at least 100 m distance** from the machine OR be behind solid cover.
- All staff must evacuate the danger area when EO is suspected.
- LMAC will evaluate, secure, and clear the EO.
- The clearance plan will be updated **every time new hazards appear**.

Phase 3 — Transporting and Spreading Rubble for Final Visual Search

Where Phase 3 is required, the inspection area and sequence shall be determined by LMAC; transport to TSSs proceeds only after LMAC confirms clearance/authorization for the relevant material stream

After machine removal:

- Wheel loaders transport rubble to a designated inspection area identified by LMAC.
- Rubble is spread in thin, controlled layers to allow safe inspection.
- Spreading and inspection occur only under LMAC instruction and supervision; the Contractor does not conduct any explosive ordnance search.
- LMAC-trained searchers visually inspect each layer for potential EO fragments or items.
- Any suspicious or confirmed EO is marked, cordoned, and immediately reported to LMAC for EOD response.
- No rubble may be reused, stockpiled, or transported to disposal sites until LMAC confirms the area as cleared.

EO Reconnaissance and First Responders

The LMAC Humanitarian Demining School trains first responders (LRC, Civil Defense, NGOs). Contractor OHS Officers and key supervisors **must attend LMAC's EO awareness induction** or receive equivalent LMAC-approved training.

Required training topics:

- EO identification basics
- What NOT to do
- Safe approach distances
- Communication protocol
- Emergency actions
- Scene isolation
- Marking and reporting

STOP-WORK Triggers

STOP-WORK must be activated **immediately** if:

1. A suspicious object or fragment is seen.
2. A machine hits hard/fixed resistance.
3. A worker reports unusual smoke, burning, oily residues (possible phosphorus).
4. Unstable structures vibrate or shift unexpectedly.
5. A member of the public enters an exclusion zone.

Everyone has STOP-WORK authority — not just supervisors.

Site Control Measures

The Contractor must implement:

- Marked safe lanes for machines and separate lanes for personnel
- Daily UXO toolbox talks
- Clear signage: "DANGER – UXO RISK AREA"
- 100 m exclusion zones during suspected EO events
- No person may approach a suspected EO item to use mobile phones or take photographs; all communications shall be conducted from the designated safe area in accordance with the reporting chain
- Safe escape routes and assembly points

Coordination Protocol With LMAC

The Contractor OHS Officer must:

- Maintain daily communication with LMAC focal points
- Share NTS data with Supervising Engineer and CDR-PIU
- Notify LMAC **immediately** when EO is suspected or found
- Document all EO events in the EO Logbook
- Ensure STOP-WORK zones are protected until LMAC declares the site safe

Emergency Procedures for UXO/ERW

In case of EO discovery:

1. **STOP-WORK** immediately
2. Evacuate workers to a safe area (≥ 100 m)
3. Secure the area
4. Notify LMAC (provide exact location, GPS coordinates, photos **ONLY** from safe distance)
5. Notify Supervising Engineer and CDR-PIU
6. Record the incident in the EO Logbook
7. Await LMAC EOD assessment
8. Resume work **ONLY** after LMAC confirmation

Documentation Requirements

Mandatory records include:

- Daily UXO/ERW briefings (toolbox talk) are mandatory before works start and when conditions change
- EO suspicion / EO discovery reports
- EO Logbook (LMAC format)
- Updated clearance plans
- Updated risk assessments
- Site maps with hazard markings
- LMAC communication log
- Final clearance confirmation

No debris may be transported until EO clearance is formally confirmed by LMAC.

APPENDIX 2 HAZARDOUS MATERIALS, ASBESTOS, AND CHEMICAL RESIDUES CONTROL

Conflict-damaged structures, roadside rubble, and collapsed buildings may contain a variety of **hazardous materials**, including asbestos-containing materials (ACM), chemicals, oils, paints, solvents, and unknown residues. Improper handling creates serious risks to workers, communities, and the environment.

This appendix provides guidance; the Contractor shall develop detailed site-specific procedures for hazardous materials identification, handling, and disposal as part of the OHSMP to be prepared.

Core Principles

All Contractor teams must apply the following principles:

- STOP-WORK if any hazardous material is suspected.
- Workers must NEVER touch, break, or disturb hazardous materials.
- Only MoE-authorized specialists classify hazardous waste.
- No debris segregation, sorting, or handling is permitted on site until LMAC has cleared the work area of EO risks and the material has been confirmed safe from hazardous substances; only identification and marking of items is allowed on site, while segregation, recovery, and processing will take place at designated Temporary Storage Sites (TSS).
- ACM must be handled intact, not crushed.
- All hazardous waste must be double-bagged, labelled, and transported ONLY to MoE-approved facilities.
- All workers must wear minimum required PPE for dust, fibers, and chemical exposure.

Types of Hazardous Materials Expected in the Project Area

Based on MoE/UNDP SOPs (2025) and field conditions in South Lebanon, the following hazards are possible:

A. Asbestos-Containing Materials (ACM)

Common in old construction in the study area including:

- Corrugated roofing sheets
- Wall panels
- Insulating wraps on hot water pipes
- Decorative wall layers
- Cement-asbestos boards
- False ceilings

B. Chemical Residues

Potentially present in destroyed commercial workshops, garages, and agricultural structures, such as:

- Oils and lubricants
- Solvents and adhesives
- Battery residues
- Paint cans
- Pesticide containers
- Fuel contamination from damaged underground tanks

C. Conflict-Related Combustion and EO Residues

Including:

- Powder residues from munitions
- Oily black residues
- Phosphorus scorch marks (rare but possible)
- Localized scorch marks and residues from incendiary or phosphorus-based munitions (in limited, site-specific areas)
- Burnt chemical deposits

D. Household Hazardous Waste in Rubble

- Broken cleaning chemical containers
- Chlorine products
- Small gas cylinders
- Paint thinners
- Electronic waste

E. Biological and Decomposition Hazards

- Dead animals
- Spoiled food
- Mold-contaminated materials
- Household waste mixed into rubble

Identification of Suspected Asbestos or Hazardous Materials

Workers and supervisors must be trained to **recognize warning signs**, including:

Asbestos indicators

- Grey, white, or brown corrugated sheets
- Fibrous material exposed from broken edges
- Old water heaters wrapped with white insulation
- Dust that “flakes” in fibers
- Disintegrating flat boards

Chemical contamination indicators

- Strong chemical smells
- Oily patches or unexpected discoloration
- Intact or ruptured chemical containers
- Residues that corrode metal
- Smoke or fumes from disturbed rubble

Phosphorus residue indicators

- White or yellow chunks that ignite or smoke on contact with air
- Oily, garlic-like odor
- Persistent white smoke from rubble

Workers must NOT test or disturb the item.

STOP-WORK Triggers for Hazardous Materials

STOP-WORK must be activated immediately if workers observe:

- Any suspect asbestos sheets or insulation
- Fibrous dust clouds
- Smoke, fumes, or oily residues
- Ruptured chemical containers
- Drums or barrels

- Unknown powders
- Unusual odors
- Suspected phosphorus residue
- Black oily burn patterns (possible eo residue)
- Leaking batteries
- Suspicious liquids on debris

No work resumes until Supervising Engineer, MoE, and LMAC confirm the area is safe.

PPE Requirements for Hazardous Material Situations

For suspected asbestos, chemical residues, or EO burn/phosphorus residues, contractor workers are **not** allowed to perform intrusive handling or decontamination. Their role is limited to safe evacuation, basic isolation, and protection from incidental dust or contact until MoE/LMAC or other specialized teams intervene.

Minimum PPE for workers in the vicinity of suspected hazardous materials:

- Type 5/6 disposable protective suit (or equivalent coveralls)
- P3 filter mask (EN 143) or half-face respirator with P3 particulate filter
- Chemical-resistant gloves (EN 374)
- Safety boots (EN 20345)
- Chemical splash goggles (EN 166)
- High-visibility vest (EN ISO 20471) when near traffic

In case MoE/LMAC confirm the presence of active phosphorus or other complex hazardous materials, **only specialized, authorized teams** equipped with specific PPE will handle removal and decontamination. The Contractor's duty is to maintain the exclusion zone and follow MoE/LMAC instructions.

Handling of Suspected Asbestos

Workers must NOT:

- Break, cut, or disturb ACM
- Use heavy machinery directly on ACM
- Crush ACM into fragments
- Sweep or blow dust
- Unload ACM into mixed debris piles

Procedures:

- STOP WORK.
- Mark the area and prevent access.
- Notify the Contractor OHS Officer.
- The OHS Officer notifies SUPERVISING ENGINEER + MoE focal point.
- Only MoE-authorized waste specialists classify ACM.

If removal is required, it must be:

- Handled intact
- Double-bagged in 200-micron labelled bags
- Sealed with duct tape
- Temporarily stored in a designated safe zone
- Transported with a trip ticket system
- ACM must be disposed only at MOE-approved hazardous waste receiving sites.

Handling of Chemical or Unknown Hazardous Materials

When chemicals or unknown residues are found:

Workers must NOT:

- Open any container
- Inhale fumes
- Dilute or wash residues into soil or drains
- Attempt to identify substances manually

Contractor OHS Officer must:

- Isolate the area
- Classify the situation as **low / moderate / high risk**
- Notify supervising engineer + MOE
- Ventilate the area (if safe and open-air)
- Prevent public access

For ruptured batteries, oils, solvents, or fuels:

- Absorb with sand or inert absorbent
- Double-bag
- Treat as hazardous waste
- Never dispose with general rubble

Rubble Handling Requirements

No on-site sorting - Segregation, recovery, and processing will take place at designated TSS.

No crushing of rubble on site- Reduces release of fibers and hazardous dust.

Vehicles must:

- Be covered with impermeable liners
- Prevent dust emissions during transport
- Avoid spills
- Follow MOE-approved routing to quarry sites

Transport controls:

- GPS tracking (as required by MOE)
- Trip tickets
- Chain-of-custody documentation
- Disposal verification at receiving site

Decontamination Procedures

When hazardous materials are suspected:

- Establish a **basic decontamination station** near the site.
- Workers exiting the hazard zone must:
 - Remove PPE carefully
 - Place disposable PPE in hazardous waste bags
 - Wash face and hands with clean water

- No PPE may be reused if visibly contaminated.

Final Clearance and Handover

A hazardous-materials clearance can only be issued by:

- **MoE**
- **LMAC (if EO or phosphorus contamination is involved)**
- **Supervisor Engineer (supervision validation)**

Clearance includes:

- Photographic evidence
- List of materials removed
- Trip ticket proofs
- Disposal site certification

Only after full clearance may activities resume

Any confirmed phosphorus-related contamination or complex EO residue is treated as an Explosive Ordnance / hazardous-material incident and is managed exclusively by LMAC and MoE or their specialized partners. The Contractor's role is strictly limited to STOP-WORK, isolating the area, and maintaining the exclusion perimeter until authorities take over.

