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PEACE INDEPENDENCE DEMOCRACY UNITY PROSPERITY

MINISTRY OF PUBLIC WORKS AND TRANSPORT

Department of Roads

National Road 13 South Extension Improvement and Maintenance Project (NR13SE)

Volume C-1 Environmental and Social Management Plan (ESMP) (Final)

CONSULTANT:



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ABBREVIATIONS AND ACRONYMS

ADFD	Abu Dhabi Fund for Development
AIIB	Asian Infrastructure Investment Bank
BKX	Bolikhamxay (Province)
CE	Contracting Entity
COI	Corridor of Impacts
CR	Compensation and Resettlement
DBMOT	Design Build Maintenance Operate and Transfer
DESIA	Department of Environment and Social Impact Assessment
DMS	Detail Measurement Survey
DNREM	Department of Natural Resources and Environment Monitoring
DOE	Department of Environment
DOLSW	Department of Labour and Social Welfare
DONRE	District Office of Natural Resources and Environment
DoR	Department of Roads
DPWT(s)	Departments of Public Works and Transport (Provincial level)
DRC	District Resettlement Committee
ECC	Environmental Compliance Certificate
EDPD	Environmental and Disaster Prevention Division
EG	Ethnic Groups
EGEF	Ethnic Groups Engagement Framework
EGEP	Ethnic Groups Engagement Plan
EIA	Environmental Impact Assessment
EIB	European Investment Bank
ESIA	Environmental and Social Impact Assessment
ESP	Environmental and Social Policy
ESS	Environmental and Social Safeguards
ESU	Environmental and Social Unit
FGD	Focus Group Discussions
GoL	Government of Laos
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
HHS	Households
IEE	Initial Environmental Examination
ISMC	Implementation Support and Monitoring Consultant
IR	Involuntary Resettlement
KM	Khammouan (Province)
LAK	Lao Kip
Lao PDR	Lao People's Democratic Republic

LFND	Lao Front for National Development
LOS	Level of Service
LRSP	Lao Road Sector Project
LWU	Lao Women Union
MAF	Ministry of Agriculture and Forestry
MOF	Ministry of Finance
MONRE	Ministry of Natural Resources and Environment
MPI	Ministry of Planning and Investment
MPWT	Ministry of Public Works and Transport
NA	National Assembly
NR13S	National Road Number 13 South
NR13SE	National Road 13 South Extension
NTFPs	Non-Timber Forest Products
O&M	Operation and Maintenance
OPBRC	Output- and Performance-Based Road Contract
PA	Provincial Assembly
PAHs	Project Affected Households
PAPs	Project Affected Persons
PLWU	Provincial Lao Women Union
PMU	Project Management Unit
PONRE	Provincial Office of Natural Resources and Environment
PPM	Project-affected People's Mechanism
PRC	Project Resettlement Committee
PRO	Provincial Resettlement Office
PTI	Public Works and Transport Institute
RMF	Road Maintenance Fund
RoW	Right of Way
RP	Resettlement Plan
RPF	Resettlement Policy Framework
SIA	Social Impacts Assessment
TC	Typical Cross-Section
VGC	Village Grievance Committee
VRC	Village Resettlement Committee
VTE	Vientiane Capital
WB	World Bank

EXECUTIVE SUMMARY

Project Background

The Government of Lao PDR (GOL) has prepared this Environmental and Social Management Plan (ESMP) for of the National Road 13 South Extension Improvement and Maintenance Project from kilometer (KM) 21+300 to KM71+300 (NR13SE-the proposed project), in order to address the potentially adverse environmental and social impacts that may be caused by the proposed project.

The GOL through the Ministry of Public Works and Transport (MPWT) and with assistance from the Asian Infrastructure Investment Bank (AIIB), is planning to implement the National Road 13 South Extension Improvement and Maintenance Project from kilometer (KM) 21+300 to KM71+300. The Project Road will be financing by AIIB while the Government of Lao's Road Management Fund (RMF) will provide the counterpart fund.

Key Objective of ESMP

The key aim of this document is to provide details of the environmental and social commitments, management and monitoring requirements that will need to be carried out by the MPWT/DOR and its contractors through the life of the project in order to achieve the following objectives:

- Strive to prevent or mitigate potentially adverse environmental or social impacts that may result from Project implementation;
- To adopt a mitigation hierarchy to anticipate and avoid, or where avoidance is not possible, minimize, and, where residual impacts remain, compensate/offset for risks and impacts to workers, affected communities, and the environment;
- Maximize beneficial impacts and minimize unavoidable negative impacts to an acceptable level for the receiving environment and communities;
- Meet environmental and social commitments and measures as well as relevant policies and environmental management systems; and
- Comply with national legislation as well as AIIB Environmental and Social Policy (ESP) and Standards.

Project Description

The work in urban area will be widening of existing road alignment from 9m to 23m (from 2 lanes to 4 lanes) while in some parts through community area will be widening of existing road alignment from 9m to 15m (2 lanes through community area) and some parts through non-community area will be widening of existing road alignment from 9m to 12m (2 lanes through non-community area).

Implementation Arrangements

In line with the existing NR13S implementation arrangement, DOR through the Project Management Unit (PMU) and the Project Implementation Unit (PIU) are responsible for ensuring effective and timely oversee and/or facilitate the implementation of ESMP, RP, GAP and SEP and submit monitoring reports periodically to AIIB and ADFD and while EDPD/PTI is responsible for providing technical guidance to PMU/DOR and PIUs/DPWTs on the implementation and compliance monitoring of the approved ESMP, RP, GAP and SEP by AIIB including training, capacity building, and management of the ESMP budget for NR13SE. EDPD/PTI will conduct 6-month monitoring of ESS compliance and submit a report to AIIB and ADFD. EDPD/PTI will also ensure that the Project is also in compliance with GOL requirements regarding ESS. It was determined that an Initial Environment Examination (IEE) will be required for the subproject and compliance with an Environmental Compliance Certificate (ECC) will be monitored by a Safeguard Monitoring Working Group (SMWG) to be established by VTE and BKX. The SMWG will be chaired by DPWT of VTE and BKX and comprise representatives from key agencies responsible for ensuring compliance with GOL regulations during construction including key local communities to affected during construction and those to be involved during operations phase.

The Implementation Support and Monitoring Consultant (ISMC) and/or Field Engineers responsible for supervision and monitoring of works contracts will also be responsible for approval of the Contractor Environmental and Social Management Plan (C-ESMP) and day-to-day supervision and monitoring of contractor compliance with the C-ESMP during the implementation of the Project (NR13SE) including ensuring full compliance with the ESS measures as required by the AIIB and GOL.

Overall Impacts

The overall impacts of the proposed Project will be positive in improving road accessibility, road safety, flooding resilience, and well-being of the local people. Spot improvements of critical sections aim to improve the road's climate resilience that include elevating flood prone road sections, paving road sections with steep gradients and sections passing through large communities, drainage improvement/construction, and slope improvement/ stabilization. The Project will also provide significant capacity building through on-the-job training, the introduction and implementation of Output- and Performance-Based Road Contract (OPBRC) on road improvement, and the environmental and social planning and management that goes along with the Project activities.

Negative environmental and social impacts during the construction phase are likely to include land acquisition and resettlement, terrestrial biodiversity impact, noise, dust and air emissions, disposal of solid and hazardous wastes, wastewater, water contamination, siltation of water bodies, blockage of drainage, soil erosion and contamination, and removal of vegetation/ impact on biodiversity, caused by various construction activities, batching and asphalt plants, contraction camps, heavy machinery use, and site management issues related to influx of workers (e.g. hygiene and sanitation, community health and safety), traffic disruption and

traffic safety during construction, and occupational health and safety (OHS) risks for the construction workers. Similarly, air and noise emissions due to increased traffic flows, waste generation from road users, traffic safety, and OHS risks for workers are the potential environmental impacts during the O&M phase. Pollution may also be induced by road incidents or accidents during both construction and O&M phases. Given that the Project is going through the catchment of Mekong River and several of its first order tributaries, special attention will be paid to impacts on surface water during both construction and O&M phases. These impacts are likely to be site-specific and limited to the Project areas and surroundings.

The Detailed Measurement Survey (DMS) has been conducted during 16 January to 16 February 2023 within the existing right of way with a Corridor Impacts (COIs) ranging from 15m (non-community area) to 26m (urban area) covering roadway width, 2 lateral margins, the slope and 2 safe zones of 1.5m. The DMS indicates that the Project will affect 556 Project Affected Households (PAHs) with 3,078 Project Affected Persons (PAPs) including 1,371 females in 21 villages, three districts and two provinces by various forms of losses including land acquisitions, housing structures, shops/restaurants, secondary structures and trees. Among the 556PAHs (3,078PAPs), there are 208 PAHs (925 PAPs) will have their lands, housing structures and shops to be affected by the Project. Some of these affected are located in private-owned land while some are located in Government owned-land. The owners agreed to do self-relocation subject to receiving acceptable and agreeable compensation rates and amounts. The total amount for compensation payment and income and livelihood supports for affected houses, shops, poor and vulnerable households, is estimated to be **LAK26,277,154,325 (USD1,282,063)**.

Adverse social risks and impacts during the construction phase include temporary business disruption due to land closure or restricted access, temporary restriction of access to houses, shops, temples and graves, temporary disruption of the water and electricity supplies, impacts on schools and healthcare facilities, in terms of noise and vibration, safety and access, potential labour influx and the conduct of road workers during construction, and health and safety issues for the communities along the road. The negative social impacts and risks during the operation and maintenance phase are mostly associated with noise and road accidents.

The present ESMP includes measures to address the above impacts, including a chance finds procedure for archaeological, historical and sacred sites (Section 3). The ESMP also includes monitoring and reporting requirements, capacity building needs, and stakeholder consultation details.

Impacts on Terrestrial Biodiversity

Despite minor re-alignment in some sections, the entire Project footprint occurs within the existing national road alignment. It is an urban and semi-urban setting with significant changes in land use. No natural habitat occurs within the COI as it has been significantly degraded through urban and historical road development. Most land use types identified within the COI are existing road and road corridor reserve area (~98%) with a small proportion of wetland and

residential land. Natural terrestrial vegetation (e.g. scrub) within the COI are highly degraded and fragmented. All-natural vegetation to be removed have been directly disturbed by anthropogenic sources in some way.

The remaining tree species identified along the COI, either planted or natural are mainly managed by private individuals. Some threatened species such as agarwood, teak, and Burma Padauk are often planted by households across the country due to their high commercial value.

The key Project impact to terrestrial biodiversity is the loss of 13 *Pterocarpus macrocarpus* which is listed as Endangered in the IUNC Red List of Threatened Species and the loss of at least 458 tree stems of planted and natural growth species during the construction phase.

Key avoidance, management and mitigation measures for terrestrial biodiversity are include:

- Limit the vegetation clearance to the minimum necessary during construction to prevent the loss of natural habitats and associated species;
- Design Project to strictly minimise disturbance to priority flora species by clearly marking the tree species that need to be retained and liaise with the construction contractor on the requirements;
- High conservation value species including larger sized trees (e.g. *Samanea saman*) will be retained where possible with a consideration of road safety. Regular pruning and trimming of tree branches should be conducted to maintain visibility of road users.
- Contractor prepares and implements plan for site clearance, excavation, restoration, tree replantation, etc. ISMC will review and approve the plan and monitor its implementation and report to PMU/DOR and DPWT;
- Removal of trees will need to be consulted with local authorities and impacted households. The District Agriculture and Forestry Office (DAFO) should provide oversight the vegetation clearing activities. Where practical, the high conservation value HCV species should be transplanted in appropriate locations with support from the Contractor . The affected households who own these tree species should be given opportunities to transplant or harvest timbers in advance of clearing activities provided that they have appropriate personal safety equipment (PPE); Cleared areas should be progressively revegetated and rehabilitated throughout the life of the Project to restore vegetated areas where possible;
- Support local authorities and communities with seedlings to plant and/or maintain native trees especially the high conservation value species along the Project alignment during the operation to offset biodiversity loss due to the Project. It is recommended to plant more native saplings of the same species for each tree cut; and
- Environmental education and awareness programs should be conducted for Project staff and contractors (e.g. through staff inductions) to ensure that the prohibitions and penalties regarding the collection of forest resources are widely known including hunting, buying or trading of wildlife.

In addition to ESMP, a Resettlement Plan (RP), Gender Action Plan (GAP), and Stakeholder Engagement Plan (SEP) as standalone documents have been prepared to address the

involuntary resettlement impacts of the proposed Project, gender aspects and stakeholder engagement during the construction as well as O&M phases.

ESMP Implementation Budget

The ESMP implementation cost will be part of the Project cost. It comprises (a) cost of UXO clearance (if required) and (b) cost for preparation and implementation of the mitigation measures during road rehabilitation and maintenance (C-ESMP); (c) cost for implementation of SEP and GAP including GRM and concerns related SEA/SH and VAC ; (d) cost of land acquisition and/or compensation of assets or relocations provided in the RP will be part of GoL cost (RMF); (e) cost for RP implementation is included in the ESIA consultant cost; and (f) cost for Monitoring, reporting, and capacity building/training of ESMP, GAP and SEP. At present, it has been agreed that the cost for (a), (b), (c) will be incorporated into the works contract cost while the cost for (d) and (e) will be part of GOL cost (RMF). Costs for (f) will be part of ISMC cost.

1 INTRODUCTION

1. The Government of Lao PDR (GOL) has prepared this Environmental and Social Management Plan (ESMP) for of the National Road 13 South Extension Improvement and Maintenance Project from kilometer (KM) 21+300 to KM71+300 (NR13SE-the proposed project), in order to address the potentially adverse environmental and social impacts that may be caused by the proposed project.

1.1 Project Background

2. The National Road 13 (NR13) is the most important transport corridor in Lao PDR in terms of both domestic and regional connectivity and its upgrade, rehabilitation, and maintenance could result in significant benefits for the country. The entire NR13 is a north-south corridor (1,500 KM) and the backbone of the country that connects Lao PDR with China in the north and with Cambodia in the south. The NR13 South begins from Vientiane Capital to the Lao-Cambodian border (829 KM) and NR13 North (671 KM) extends from Vientiane Capital to Boten on the Chinese border. The main sections of the road were completed in 1997 and have not been rehabilitated since, receiving only periodic and emergency maintenance.

3. The MPWT is currently implementing the Lao National Road 13 South Improvement and Maintenance Project (the On-going Project) on NR13S, with support from WB, AIIB and EIB. The on-going project supports improvement works, and maintenance and operation of KM71 to KM 346 of NR13S from Ban Saysavang in Bolikhamxay Province to Thakhek in Khammouane Province. The project is under implementation with civil works started in 2021. An Environmental and Social Management Plan (ESMP), an Ethnic Group Engagement Plan (EGEP) and a Resettlement Plan (RP) for WB, AIIB and EIB sections respectively were prepared, cleared by the Financiers and publicly disclosed in January 2021.

4. The GOL through the Ministry of Public Works and Transport (MPWT), with assistance from the Asian Infrastructure Investment Bank (AIIB) and ADFD Kuwait Fund, is planning to implement the National Road 13 South Extension Improvement and Maintenance Project from kilometer (KM) 21+300 to KM71+300 (see **Figure 1-1**). The Project Road will be financing by AIIB and ADFD Kuwait Fund while the Government of Lao's Road Management Fund (RMF) will provide the counterpart fund.

5. The Survey and Conceptual Design for National Road 13 South Extension (NR 13 SE) Improvement and Maintenance Project, Section Vientiane Capital (KM21+300) to Bolikhamxay (KM71+300) was carried out in 2019 and the draft final report was submitted in June 2019. A draft Environmental and Social Impact Assessment (ESIA) and a draft RP were also prepared for the NR13 SE in 2019. Since financing is being secured by AIIB, ADFD Kuwait Fund, Road Fund and MCDF grant for implementation of this missing linked between

Xaythany district Vientiane Capital and Thaphabath district Borikhamxay Province, the other sections, already under implementation.

1.2 Project Implementation

6. The Project will be implemented through an Output- and Performance-Based Road Contract (OPBRC) similar to that being used for North, with a 10-year contract life. The OPBRC expands the role of the private sector from a simple execution of works to a management and maintenance of road assets and the contractor is paid through a combination of output payments for defined improvement works along with periodic performance-based lump-sum payments for bringing the road to a certain service level and then maintaining it at that level for a relatively long period. The 10-year OPBRC will comprise the first 2- or 3-year construction/periodic maintenance period (called the “Construction Phase”) and follow-up operations and maintenance (O&M) which may begin from the start of the contract and extend for 7 or 8 years beyond completion of the Construction Phase. The payments for the Construction Phase will be made if the contractor meets or exceeds the performance indicators for defined fully finished road sections (“milestones”), and against works certification issued by the construction supervision consultant.

7. The Department of Roads (DOR), under MPWT, is responsible for implementation of this Project including overall technical oversight, execution, and management of the Project and has appointed a dedicated team (Project Management Unit - PMU) to be responsible for the day-to-day implementation, and operation of the project, including contracting and supervision of all consultants. The Environment Research and Natural Disaster Prevention Division (EDPD) of the Public Works and Transport Institute (PTI) under MPWT are responsible for monitoring and supervision of environmental and social safeguards (ESS) and providing technical assistance and capacity building.

1.3 Purpose of this Document

8. The key aim of this document is to provide details of the environmental and social commitments, management and monitoring requirements that will need to be carried out by the MPWT/DOR and its contractors through the life of the project in order to achieve the following objectives:

- Strive to prevent or mitigate potentially adverse environmental or social impacts that may result from Project implementation;
- To adopt a mitigation hierarchy to anticipate and avoid, or where avoidance is not possible, minimize, and, where residual impacts remain, compensate/offset for risks and impacts to workers, affected communities, and the environment;
- Maximize beneficial impacts and minimize unavoidable negative impacts to an

acceptable level for the receiving environment and communities;

- Meet environmental and social commitments and measures as well as relevant policies and environmental management systems; and
- Comply with national legislation as well as AIB Environmental and Social Policy (ESP) and Standards.

1.4 The NR13SE under OPBRC Project Overview

9. The OPBRC contract format based on Design Build Maintenance Operate and Transfer (DBMOT) methodology, requires the Consultants to prepare a detailed technical and financial analysis for road asset management of the road, involving road rehabilitation/improvement/ upgrading, maintenance (routine and periodic) works as well as management of the road Right of Way (RoW) until handing over to the client.

10. The duration of such contract involving the mentioned civil works and RoW management, is estimated to be about 10 years for asphalt based paved roads and about 17-20 years for concrete cement rigid pavements. The sequence of the required civil works will depend on the traffic, environmental and climate conditions, and be decided based on the deterioration of its pavement, providing at all times the required residual life of the pavement.

11. The entire project will be designed under one integral civil works and management operation, using an output-based performance contract format, involving the agreed Level of Service (LOS) indicators of quality and quantity nature, thus making sure that the Contracting Entity (CE). The Contractor (an Entity involving contractor and consultant) has adequate incentives to maintain his service during the maintenance period given the fact that the majority of funding will be spent on rehabilitation/improvement activities. The “life span of the project”, which governs this concept-asset management, will include a “full cycle” of the road interventions, i.e. between two major road intervention (from rehabilitation to rehabilitation works), providing at all the times the approved Level of Service conditions from user’s point of view and from the road durability aspects (strength and residual life of the pavement). At the end of the project life-span, at the handing over to Employer event, the road conditions will be in accordance to the agreed Level of Service conditions, defined by the contract.

12. The payments to the Contracting Entity will be met only if the Level of Service conditions are met and are in accordance to the other conditions of the contract, to be developed under this assignment. The CE will undertake majority of the project implementation and operation risks, which otherwise and traditionally, have been vested with Employer. Therefore, the CE will prepare the required detailed designs and other required construction details and shopping drawings, based on detailed field investigations, also to be carried by him, and in accordance to the defined specifications (technical,

environmental, social, legal, etc.), developed under this assignment. These detailed designs will be checked and recommended for approval by the Project Monitoring/Supervision Consultant, before actual construction. However, the CE will decide on “when and how” the works will be implemented, thus involving his optimal use of resource and potential innovations. In addition, OPBRC are a fixed price contracts, allowing only for the price fluctuations during the life-span of the project.

1.5 Project Location

13. The section of NR13SE commences in the outskirts area of Vientiane Capital with the starting point at Ban Na Monh, KM 21+300 KM in Xaythany District, North West from the Capital City and ending point at Ban. Xaysavang, KM71+300 in Thapabath District, Bolikhamxay Province with a total length of 50KM. The NR13SE Project runs through two provinces including Vientiane Capital (VTE) and Borikhamxay Province (BKX); three districts including Xaythany and PakNgum Districts in VTE and Thaphabath District in BKX; and 21 villages (19 villages in VTE and 2 villages in BKX). Please see Figure 1-1 Project Location Map and Table 2-1 List of Project Villages.



Figure 1-1 Project Location

1.6 Project Proponent

14. The GoL through the MPWT is the Project proponent. The project will be implemented through the existing Government structures. MPWT through the Department of Roads (DoR) is the Project Implementing Agency and a Project Management Unit established and a Project Manager appointed for day-to-day project execution, who will be supported by a technical consultant. PMU includes a team of staff appointed from Environment and Disaster Prevention Division (EDPD) under the Public Works and Transport Institute (PTI), MPWT.

15. The contact details for the Project proponent are as follows:

Ministry of Public Works and Transport of Lao PDR
Lanxang Avenue, Vientiane Capital, Lao PDR
Contact: 856-21 412250 Fax: 856-21 412250

1.7 Project Objectives and Outcomes

16. The Project's primary objectives are to improve and maintain the existing national road to relieve traffic congestion and enhance the efficiency of the road network and transport in the Project area and southern region of the Lao PDR. The Project will improve socio-economic development, reduce road transport costs, reduce vehicle emissions and improve road safety. It will also improve connectivity to the sub-region and provide improved links between Thailand, China, Cambodia, Vietnam and Lao PDR.

17. The Project is expected to deliver a relatively high Economic Internal Rate of Return, mainly due to reduced vehicle operating costs and travel times. GoL intends to implement the Project as an Output- and Performance-Based Road Contract (OPBRC), with a 10-year concession life. An OPBRC approach in line with the one adopted for NR13 South is envisaged for the Project.

2 LEGAL FRAMEWORKS AND INSTITUTIONAL MECHANISM

2.1 Applicable Legal Frameworks

18. Applicable national legislations and AIIB's Environmental and Social Policy (ESP), and Environmental and Social Standards (ESSs) are provided in the Section 2 of the ESIA Report.

2.2 Implementation Arrangements

19. In line with the existing NR13S implementation arrangement, DOR through the Project Management Unit (PMU)¹ and the Project Implementation Unit (PIU) are

¹ At Project level, the PMU/DOW is responsible for management, procurement, contracting and financial management of the NR13SE project as well as monitoring the implementation progress against the agreed

responsible for ensuring effective and timely oversee and/or facilitate the implementation of ESMP, RP, GAP and SEP and submit monitoring reports periodically to AIIB and ADFD and while EDPD/PTI as member of PMU is responsible for providing technical guidance to PMU/DOR and PIUs/DPWTs on the implementation and compliance monitoring of the approved ESMP, RP, GAP and SEP by AIIB while training, capacity building, and reporting of the ESMP, RP, GAP and SEP are responsible by Implementation Support and Monitoring Consultant (ISMC). With TA from ISMC, EDPD/PTI will conduct 6-month monitoring of ESS compliance and submit a report to AIIB and ADFD. EDPD/PTI will also ensure that the Project is also in compliance with GOL requirements regarding ESS. It was determined that an Initial Environment Examination (IEE) will be required for the subproject and compliance with an Environmental Compliance Certificate (ECC) will be monitored by a Safeguard Monitoring Working Group (SMWG) to be established by VTE and BKX. The SMWG will be chaired by DPWT of VTE and BKX and comprise representatives from key agencies responsible for ensuring compliance with GOL regulations during construction including key local communities to affected during construction and those to be involved during operations phase.

20. For the Project level, the Project Implementing Unit (PIU) (DPWT of VTE and BKX) is responsible for ensuring timely and effective implementation of the ESMP during preconstruction, construction, and operations including those related to RP, GAP and SEP planning and implementation and monitoring of the Project and all safety related on the ground while PMU/DOR with TA EDPD/PTI will be responsible for supervision, monitoring, and reporting to AIIB and ADFD. Key roles and responsibilities can be highlighted as follows:

- During preconstruction, the PIU/DPWT of VTE and BKX will establish the provincial resettlement and grievance committee (PRGC) and district resettlement and grievance committee (DRGC) to be responsible for timely implementation of RP as approved by AIIB. PMU/DOR through Road Maintenance Fund (RMF) will provide funds for implementation of RP.
- During construction and O&M, the PIUs/DPWTs and the ISMC/FE will be responsible for the day-to-day compliance monitoring on sites, including ensuring close consultation between contractor and LA/LC and submit quarterly progress reports to PMU/DOR and EDPD/PTI. The PIUs/DPWTs will also liaise with the concerned local agencies and authorities to ensure effective and timely coordination among contractor, ISMC, and local authorities and local communities (LA/LC), and identify issues arising from sites and propose solutions to the PMU/DOR and PTI and/or higher-level management. The PIUs/DPWTs will also be responsible for establishment of the SMWGs to ensure compliance monitoring with the ECC and other GOL regulations while PMU/DOR will sign a contract with the ISMC and the

performance indicators and produce period progress reports. The PMU/DOR is responsible for managing the detailed design and also provides oversight of Project implementation and consultation with key stakeholders and the public including the management of the supervision consultant (CSC) during Project implementation.

contractor and also provide budget for PIUs for the planning and compliance monitoring by the SWMGs and other associated costs while PTI will ensure effective fund flow from PMU/DOR to SMWG to performance their functions. The member of SMWG consists of DPWT; Provincial Department of Natural Resources and Environment (PONRE); Provincial Lao Women Union (PLWU); Provincial Department of Labour and Social Welfare (DOLSW); the Lao Front for National Development (LFND); and Provincial Assembly (PA).

21. The ISMC or responsible for supervision and monitoring of works contracts will also be responsible for approval of the Contractor Environmental and Social Management Plan (C-ESMP) and day-to-day supervision and monitoring of contractor compliance with the C-ESMP during the implementation of the Project (NR13SE) including ensuring full compliance with the ESS measures as required by the AIIB and GOL. Provision of at least four ES consultants: one environmental safeguard specialist, one social safeguard specialist (community relation, GRM, SEA/SH & VAC, and gender), and one road safety specialist and one occupational, health and safety specialist (OHS) is required to assist PTI for E&S supervision, planning, capacity building/training, monitoring and reporting of implementation of ESMP/C-ESMP, SEP, GRM and GAP including concerns related to SEA/SH and VAC. The ES related tasks of ISWS include, but not limited to, the followings:

- Review and recommend for approval of the detailed designs as well as the C-ESMP to be prepared and submitted by the contractor (including any adjustments, compliance with design standards and international best-practice in terms of climate resilience, recommendations on road safety from road safety audits, ESS measures especially those related to safety of workers and local communities, etc.) in line with the Project ESMP, RP, SEP and GAP approved by AIIB and GOL;
- Monitor works progress, compliance with minimum requirement of technical specifications of the works and quality control, as well as ensuring compliance with C-ESMP and other ESS requirements during construction and maintenance works;
- Monitor compliance with service levels of the O&M activities from start up till the end of the Assignment, including providing advice to MPWT on technical issues, contract management, and safeguard activities;
- Supervise and monitor the implementation of mitigation measures to reduce potential negative impacts on local environment and local people during construction and maintenance services as required by the AIIB and GOL, including review, approve, and monitor the C-ESMP to be prepared and implemented by Contractor. Special consideration will be given to ensure effective implementation of the ESHS measures to prevent and address occupational and community health and safety issues of workers and local communities and compliance with the Code of Conduct (COC) related to SEA/SH and VAC, and the campaigns related to HIV/AIDs awareness and road safety;

- Strengthen the capacity of DoR/MPWT to implement and monitor OPBRC contracts and climate resilient roads including those related to ESS measures;
- Arrange management meetings, site inspections and other jobs conferences in liaison with the OPBRC Contractor;
- Engage external service from a certified iRAP (international Road Assessment Programme) consultant to perform baseline and post-construction assessments and star ratings for the Project Road;
- Other ESS tasks as required in the ISMC's TOR.

22. Contractor is responsible for preparation, implementation, self-monitoring and reporting of the C-ESMP and submits monthly report to ISMC. Provision of at least five ES consultants, one senior ES specialist (manager), one social safeguard specialist (community relation, GRM, SEA/SH & VAC, and gender), and one road safety specialist and one occupational, health and safety specialist (OHS) is required to daily monitoring and monthly reporting of C-ESMP, SEP and GAP including concerns related to SEA/SH and VAC.

23. Table 2-1 summarizes key institutional responsibilities for the implementation of the ESMP at various stages of the Project.

Table 2-1 Institutional Arrangement for ESMP Implementation

Project Stage	Responsible Institution	Key Responsibilities
Preparation		
Preparation and implementation of Resettlement Plan (RP)	PMU/DOR, EDPD/PTI, and PRGCs and DRGCs with TA from ESIA Consultant	<ul style="list-style-type: none"> • Secure AIB clearance of the RP and • Implement/Monitor/Report the implementation progress of the RP
Preparation of ESMP, GAP and SEP	PMU/DOR and EDPD/PTI with TA from ESIA Consultant	<ul style="list-style-type: none"> • Secure AIB clearance of the ESMP, GAP and SEP prior to the commencement of civil work. • Implement/Monitor/report the implementation progress of the ESMP, GAP and SEP
IEEs for BKX and IEE for KM	EDPD/PTI assisted by the in-house consultant	<ul style="list-style-type: none"> • Ensure approval by PONRE BKX and KM before construction begins • Implement/Monitor/report the compliance of ECC
Detailed Design and preparation of Bidding (BD) and Contract Documents (CD)	PMU/DOR and EDPD//PTI with the TA from ISMC	<ul style="list-style-type: none"> • Avoid and minimize the need for land acquisition and relocation of assets. • Incorporate ESMP mitigation measures into detailed engineering design.
	EDPD/PTI	<ul style="list-style-type: none"> • Ensure ESMP is incorporated into the BD/CD.

Project Stage	Responsible Institution	Key Responsibilities
		<ul style="list-style-type: none"> Review Contractors proposals to ensure that they are aware of the ESMP requirements and that line items for environmental management as per the ESMP are included in the BOQ.
Site Clearance and Construction	Contractor	<ul style="list-style-type: none"> Prepare C-ESMP in line with the SS-ESMP Obtain all necessary environmental and social related permits for construction.
	PMU/DOR, ISMC/Field Engineer	<ul style="list-style-type: none"> ISMC - Review and approve C-ESMP and send a copy of the approved C-ESMP to EDPD/PTI ISMC – implementing, monitoring and reporting of SEP
	Contractor	<ul style="list-style-type: none"> Attend periodical meeting on site management and monitoring with ISMC/Field Engineer Implementing and reporting of SEP
Construction and O&M phases during the OPBRC services	Contractor	<ul style="list-style-type: none"> Prepare, implement, reporting C-ESMP, SEP and GAP; Provision of at least four ES consultants, one senior ES specialist (manager), one social safeguard specialist (community relation, GRM, SEA/SH & VAC, and gender), one road safety specialist, and one occupational, health and safety specialist (OHS) is required to daily monitoring and monthly reporting of C-ESMP, SEP and GAP including concerns related to SEA/SH; Capacity buildings/training on the implementation of C-ESMP, GAP and SEP to contractors's workers and staffs working for the project. Development of GRM poster and dissemination of project information and GRM process in all affected villages. Daily monitoring of environmental and social issues by the contractor ESSM team. Preparation of weekly environmental and social checklists. Preparation of Monthly environmental and social monitoring report Preparing Corrective action plans as needed.
	PMU/DOR and	<ul style="list-style-type: none"> Capacity buildings/training on the

Project Stage	Responsible Institution	Key Responsibilities
	EDPD/PTI	<p>implementation of ESMP, RP, GAP and SEP to ISMC, SMWGs, PRGCs and DRGCs</p> <ul style="list-style-type: none"> • Periodic site visits (6-months) to monitor Contractors environmental and social performance. • Semi-annual Environmental and Social Monitoring Report and submitted to AIIB and ADFD.
	PIUs and SMWGs	<ul style="list-style-type: none"> • Ensuring timely and effective implementation of the ESMP including those related to RP, GAP and SEP planning and implementation and monitoring of the Project and all safety related on the ground
	ISMC/Field Engineer	<ul style="list-style-type: none"> • Provision of at least four ES consultants: one environmental safeguard specialist, one social safeguard specialist (community relation, GRM, SEA/SH & VAC, and gender), and one road safety specialist and one occupational, health and safety specialist (OHS) is required to assist PTI for E&S supervision, planning, capacity building/training, monitoring and reporting of implementation of ESMP/C-ESMP, SEP, GRM and GAP including concerns related to SEA/SH and VAC; • Capacity building/training on the implementation of C-ESMP, GAP and SEP to contractors and SMWGs. • Monitoring and reporting of C-ESMP, SEP and GAP • Weekly monitoring of the Contractors compliance with ESMP / C-ESMP. • Issuing the Contractor with Non-compliance Notices. • Monthly reporting to PMU/PTI of Contractors performance based on the review of Contractors weekly checklists and weekly site visits and Contractors' Monthly environmental and social monitoring reports. • Quarterly Environmental and Social Reports prepared by the ESS1 and submitted to PMU/PTI and AIIB. • Preparation of Semi-annual Environmental and

Project Stage	Responsible Institution	Key Responsibilities
		Social Monitoring Report and submitted to PMU/PTI.
3-months quarterly E&S monitoring and reporting	ISMC and PIUs/SMWGs	<ul style="list-style-type: none"> Monitor compliance and adequacy of the C-ESMP and ECC to be issued by PONRE of VTE and BKX.
Bi-Annual monitoring and reporting	EDPD/PTI with TA from in-house consultants	<ul style="list-style-type: none"> Monitor compliance and adequacy of Project ESMP (this ESMP)

3 SUMMARY OF POTENTIAL E&S IMPACTS AND PROPOSED MITIGATION MEASURES

3.1 Overall Impacts

24. The overall impacts of the proposed Project will be positive in improving road accessibility, road safety, flooding resilience, and well-being of the local people. Spot improvements of critical sections aim to improve the road’s climate resilience that include elevating flood prone road sections, paving road sections with steep gradients and sections passing through large communities, drainage improvement/construction, and slope improvement/ stabilization. The Project will also provide significant capacity building through on-the-job training, the introduction and implementation of OPBRCs on road improvement, and the environmental and social planning and management that goes along with the Project activities.

25. This impact assessment and mitigating measures cover the entire cycle of the Project activities, from design, pre-construction, construction and operation and maintenance. The coverage of the project phases is defined as follows:

- Preparation phase including time for preparation of Project activities and investment, preparation of the ESMP, RP, GAP and SEP including detailed measurement survey (DMS) and determination of compensation unit rate is completed as well as the mobilization of construction supervision consultant, detailed engineering design (DD) and preparation of bidding documents (BD) and contract document (CD) including all AIB clearances.
- Pre-Construction Phase is the time before the ‘Notice to Proceed’ is given to the contractor to commence the construction covering the beginning time for bidding and implementation of RP, GAP and SEP. Payment of compensation for project affected people as per RP and GOL issuance of the ECCs and other necessary approval must be completed before construction can begin.
- Construction Phase is the period from the completion of the Pre-construction

activities time until the issuing of the 'Certificate of Completion'. Implementation and compliance monitoring and reporting of the ESMP, GAP and SEP including ECC conditions.

- Operation and Maintenance (O&M) Phase is the time from completion of works (including site clearance) and maintenance activities during the OPBRC period. It is expected that after the OPBRC, the O&M responsibility will be under the responsibility of the DPWT of VTE and BKX.

26. Potential impacts of the Project can be classified as:

- Direct Impacts - i.e., those directly due to the Project itself such as the conversion of land previously used for agricultural purposes to transport use. Direct impacts also include the impact of construction expenditures in the local economy.
- Indirect Impacts – i.e., those resulting from activities prompted by the Project, but not directly attributable to it. The use of rock for the improved roadbeds, for example, has an indirect impact of increasing the demand for crushed rock and increased borrow operations.
- Cumulative Impacts – i.e., impacts in conjunction with other activities. A single road improvement may not exert a significant environmental impact, but if several roads comprising a network are developed in the same area, or are combined with agricultural reform programs in the same general area, the cumulative or additive effect could be large.

27. The nature of risks and impacts on local community and local environment is assessed according to key Project activities on physical, biological, and sociological characteristics of local conditions while the level of impacts can be categorized as short-term or long-term. Both short-term and long-term impacts may be either beneficial or adverse. Short-term positive impacts will include, for example, the generation of employment opportunities during construction period. Long-term benefits will include enhanced development opportunities, improved transport services, easier access to commercial and service facilities; faster communications and commodity transport; improved access to markets and growth centers and increased services and commercial facilities. Please refer to risks assessment and mitigation measures provided in Section 6 of ESIA Report.

3.2 Positive Impacts

28. **Social and economic benefits:** The development of the Project is considered necessary by the Government of Lao PDR to ease traffic congestion in NR13SE section, facilitate the movement of exports to and imports from the Vientiane to central and southern provinces regional countries, and improve the economic efficiency of the country. These include (1) Improvement of the economic conditions of beneficiary households; (2)

Increase household income and hence, reduce poverty due to (a); potential commercialization of agricultural and non-agricultural production expected to increase in the areas; (b) The buyers can come to collect and buy local products in place with reasonable prices thanks to the improved condition of road; (3) Savings on labor, time and local materials for the beneficiary households from the frequent repair of the road particularly during the wet season; (4) The creation of approximately 168 jobs during construction and 20 jobs during operations; and (5) Increased empowerment of women through their representation in other committees that will be established through the project implementation and project activities.

29. **Individual households (HH) benefits:** Beneficiary households and local people are expected to save time spent to access public services such as health centers, high schools, banks, agricultural technical service center located in the district and provincial towns. The road users could also benefit from improved access to economic domains as they would transport their agricultural and non-agricultural products (such as cassava, rice, maize, cardamom, jobs tea, galangal, ground nuts and variety of vegetables, non-timber products and animal products) to the districts and the provinces market. Their children also can come back from school in the same day or more quickly to help parent do domestic works due to improved condition of the road. They also can use tracks, bikes or carts to carry to the local markets. All those positive impacts mentioned will contribute HHs' improved livelihood and income to finance education for children and HH member health care.

30. In addition, the Project will also support community engagement in road operations and maintenance (O&M) through: (i) establishment and capability development of a road maintenance group that will be responsible for the rehabilitated/improved road system; (ii) collection of funds for the road O&M; (iii) improved management of the road maintenance; and (iv) institutionalized grievance redress mechanism into GoL system. During the consultation, all the participants agreed that the road upgraded is their dream. They all support this project for many positive reasons such as the new and standard road will show a good image of the community as well as the country, better road equals to better transportation, possibly reduces the issues of road accident and better road safety conditions.

31. However, there will be environmental and social impacts and risks associated with the development of the NR13SE that will need to be effectively managed to ensure that the Project is delivered and operated successfully. The key environmental and social impacts and risks are detailed below.

3.3 Negative E&S Impacts and Proposed Mitigation Measures (MMs)

32. **Overall.** Road rehabilitation works may cause involuntary resettlement impacts, disrupt the communities in the vicinity of the right of way, influx of workers, health and safety concerns, risks of Gender-based Violence (GBV) or Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH), increased traffic of heavy machines and possible

conflicts with the local population. Consultations with communities suggested that key concerns include increase in will mostly be limited to road safety issues, community and labor health and safety issues, temporary disruptions of local traffic, impacts on wastewater, waste management, water and soil contamination noise and vibration, dust/air quality, biodiversity, and change of flooding patterns. The negative impacts during road rehabilitation will be mostly short-term, localized, and can be mitigated through the application of specific requirements identified in this ESMP. The key issues and proposed measures to mitigate the potential risks and negative impacts of the proposed Project during preconstruction, construction, and operations phases are briefly discussed below while additional details are provided in Annex 1 to Annex 5. Results from the assessment provided in ESIA Report has suggested that most of the potential negative impacts are considered direct and short term with some long-term risks related to land use, socio-economic, and noise/vibration issues.

3.3.1 E&S Impacts and Proposed MMs during Pre-construction Phase

(a) Land Acquisition and Resettlement

33. The proposed works to be financed under the project will be carried on existing road and may involve minor realignments and insignificant expansion where necessary and where resettlement impacts and land acquisition are either unanticipated or minimal. The impacts will include small land acquisition of existing and encroaching structures and disruption of economic activities being conducted in the ROW announced before or after the original National Road Law (1996).

34. The Detailed Measurement Survey (DMS) has been conducted during 16 January to 16 February 2023 within the existing right of way with a Corridor Impacts (COIs) ranging from 15m (non-community area) to 26m (urban area) covering roadway width, 2 lateral margins, the slope and 2 safe zones of 1.5m. DMS indicates that the Project will affect 556 Project Affected Households (PAHs) with 3,078 Project Affected Persons (PAPs) including 1,371 females in 21 villages, three districts and two provinces by various forms of losses including land acquisitions, housing structures, shops/restaurants, secondary structures and trees. Among the 556PAHs (3,078PAPs), there are 208 PAHs (925 PAPs) will have their lands, housing structures and shops to be affected by the Project. Some of these affected are located in private-owned land while some are located in Government owned-land. The owners agreed to do self-relocation subject to receiving acceptable and agreeable compensation rates and amounts. They will construct their new shops within the existing land plot area covered in the land title/certificate. The losses are summarized below:

- **Affected private land:** 16,969m² of private-owned land belongs to 55 PAHs. This includes 5,906m² (52 PAHs) of residential land; 10,688m² (2 PAHs) of paddy field land; and 375m² of garden land (1 PAH).

- **Affected housing structures:** 12 housing structures of 12 PAHs with affected area of 562m² ranking from 9% to 100%. The affected area over 40% (7 housing structures);
- **Affected shops/restaurants:** 158 shops/restaurants of 141 PAHs with affected area of 5,541m² ranking from 2% to 100%. The affected area over 40% (82 shops) will be considered as entirely affected structure and will be fully compensated;
- **Affected secondary structures** include 7,890m² of porch of houses/shops, stores, movable shops, huts, spiritual houses, guardhouses, ATM machine, wall and gate; 1,887m of water well and fence; and 921 poles of fence and electricity poles;
- **Affected public structures:** 2 housing (offices) structures 39m², and 248m² of secondary structures;
- **Relocation of public utilities:** water supply system (4m² water supply storage, 2 water supply gates, and 2,988m of water supply piping system); electricity network (2 transformers, 30,163m of electricity cable, and 292 of electric light poles); 2 traffic light pole; and 1 CCTV camera and 4 CCTV camera poles.

35. Efforts have been made to minimize the resettlement impacts by analysis of design options to reduce the width of the COIs. In addition, and as part of the project's resettlement policy, PAHs will be provided with sufficient time and support to rebuild their houses and shops prior to the commencement of civil works. The project will ensure that PAPs are able to continue with access to their houses and their present livelihood activities during project implementation to possible degree. Impacts on their livelihood and business will be also minimized through close and effective contract management and work supervision by PMU and their supervision consultant and that works are completed as per work plan and timeframe to be agreed.

36. Based on the DMS conducted with the 1.5m safe zone each side, estimation of the compensation and income restoration for affected assets of PAPs such as land, housing structures, shops, secondary structures, and trees was calculated based on the draft Unit Rate for Compensation Costs as referred above. The total amount for compensation payment and income and livelihood supports for affected houses, shops, poor and vulnerable households, is estimated to be **LAK26,277,154,325 (USD1,282,063)**. This budget will be updated and confirmed upon the approval of Compensation Unit Rate and verification and confirmation of loss.

37. The compensation budget for affected public structures which is estimated at **LAK255,649,104 (USD12,473)**. The budget for relocation of public utilities will be calculated by respective government agencies.

(b) Ethnic Groups and Gender Integration

38. Majority of affected village are Lao Tai except four villages that have some ethnic minority groups. Those villages include Khoksivilay Village (0.55% Hmong), Phailom Village

(8.44% Hmong), Somsavanh Village (3% Khmu and 0.17% Hmong), and Khoksavang Village (0.56% Hmong). However, this Project will not directly affected ethnic groups in terms of land acquisition and relocation of affected structures; therefore, EGEP is not required. SEP is prepared to ensure meaningful engagement of ethnic groups throughout the Project implementation

39. Gender mainstreaming will be achieved in line with the principles defined in the AIB ESP. The following key gender issues will be considered and addressed as appropriate: (i) the local circumstances that may affect the different participation of females and males in road project; (ii) the contribution that females and males each could make to achieving development objective of the proposed project; (iii) the ways in which the proposed project might be disadvantageous to one gender relative to the other; and (iv) the project's proposed mechanisms for monitoring the different impacts of road project on females and males. Gender Action Plan (GAP) is prepared as a standalone documents and the implementation of the GAP will be incorporated in the RP and SEP implementation.

(c) UXO Risk

40. The risk of unexploded ordnance (UXO) is generally high for Lao PDR. Throughout the Second Indochina War (1964-1973) over two million tons of ordnance was dropped in Lao PDR. Approximately 25% of Lao PDR's 10,000 plus villages are UXO contaminated (NRA, 2020). However, The Project alignment is considered very low bombed area (refer to Volume B -Appendix 2: UXO) . As the NR13SE interventions proposed are essentially surface road upgrade works with no horizontal or vertical re-alignment required, it is assumed that unexploded ordnance is unlikely to be a concern. However, contractor needs to ensure the UXO risks during the earth work and operation of borrow pits. If necessary, complete UXO technical survey and secure obtainment of a NRA certificate.

(d) Conclusion

41. Before full construction, the contractor will be required to (i) If necessary, complete UXO technical survey and secure obtainment of a NRA certificate; (ii) Install appropriate fence/screen with adequate warning and safety signs (visible at day and night) around the construction sites, worker camp, and in specific areas (hospital, school, temple) and road/waterways transportation routes; (iii) Complete consultation with local authorities and communities and obtained written permission from local authorities including the ECC and/or land owners for the use of borrow-pit, quarry, and disposal sites; (iv) Ensure that compensation to affected people/assets has been completed; and (v) Submit and obtain approval of the Contractor-ESMP (C-ESMP) from DOR and/or CSC² as assigned.

3.3.2 E&S Impacts and Proposed MMs during Construction Phase

(a) Summary of Potential Negative Impacts

² Implementation Support and Monitoring Consultant (ISMC) / Field Engineer (FE) will be part of the Implementation Support and Works Supervision Consultant (ISWS)

42. Potential negative impacts of the proposed road improvement and rehabilitation activities on local communities and local environment will mostly be limited to road safety issues, community and labor health and safety issues, temporary disruptions of local traffic, impacts on wastewater, waste management, water and soil contamination noise and vibration, dust/air quality, biodiversity, and change of flooding patterns. These impacts will mostly be short-term, localized, and can be mitigated through the application of specific requirements identified in this ESMP as described in the site-specific mitigation measures identified in the Alignment Sheet and the implementation of ESCOP and COC on SEA/SH and VAC by contractors with close supervision and monitoring of ISMC, PONRE, and local communities.

43. The key negative impacts during the proposed rehabilitation works will include, but not limited to, the following activities: (i) removal of at least 458 trees of different sizes and species of planted and natural species including 13 Endangered (EN) species of the IUNC Red List; (ii) establishment and operation of worker camps, including disposal of waste generated from the camp; (iii) establishment and operation of construction materials and equipment yards and access roads, including access tracks/haulage routs; (iv) workers safety and hygienic conditions including hiring skilled workers from outside of the locality and other social issues due to workers; (v) arranging water for staff and workers consumption and construction, including interruption of water supply; (vi) storage of hazardous materials (including wastes); and (vii) other typical construction activities such as excavation, earth work, asphaltting, operation of construction machinery, handling of fuels, oil spill and lubricants, cutting of trees in the right of way, excavation of drainage channels, disposal of excavated material, loss of fertile soil and vegetation and impacts on natural vegetation and embankment erosion, landslide, erosion and water contamination of rivers/streams along the watercourse, dust and smoke emissions, noise pollution, excavation of borrow areas, rehabilitation of borrow pits, encountering archaeological sites during earth works, aesthetic/scenic quality, and disturbance to temples and cemeteries, etc. More details on the impacts are provided in Section 6 of ESIA while specific impacts and mitigation measures are provided in Annex 1 and Annex 2.

(b) Avoidance, Management and Mitigation Measures

44. To mitigate these impacts and facilitate effective implementation, the present ESMP has been prepared by identifying key issues, proposing mitigation measures, and monitoring indicator in the form of an Alignment Sheet (see Annex 1). In addition, the ESCOP (Annex 2) identify typical actions/mitigations to reduce impacts such as generation of dust, noise, vibration, safety, waste, water quality, biodiversity, and social aspect including “chance finds procedure” and environmental, social, health, and safety (ESHS) aspects while the COC on GBV and VAC (Annex 3) provide guidance on management of worker behavior to avoid gender-based violence and violence against children in compliance with the guidelines

provided in the ESMP. These mitigation measures will be included in the bidding document (BD) and contract document (CD) for the Project Road.

45. The contractors will be required to (a) provide adequate information on the rehabilitation period and contact person in case local community want to complain, (b) pay particular attention to reduce road safety risks during rehabilitation and adequate signs/information will be provided in critical area where high risks are anticipated; (c) conduct/maintain a bi-weekly meeting with local communities to explain the rehabilitation plan/activities, and provide temporary crossing facilities to ensure continued accessibility. These mitigation measures will be included in the bidding document (BD) and contract document (CD) for the Project Road. The BD/CD will also require the bidder to submit a strategy and plan to implement these measures³ while the contractor will be required to prepare and submit their Construction-ESMP (C-ESMP) (or site specific ESMP) as soon as they are on board (within 28 days after the contract is awarded). The ISMC and field engineer (FE) will be required to review and approve the C-ESMP and supervise its implementation on a regular basis. PIUs/DPWTs and local authorities will be required to monitor the C-ESMP and other ESS activities (SEP and GAP) on monthly/quarterly basis while EDPD/PTI will conduct 6-monthly monitoring and submit the ESS monitoring reports to AIIB and ADFD.

46. Consultation with local community and implementation of grievance redress mechanism (GRM) will also be required. During construction, ISWS and contractor will be required to regularly conduct consultations with local community and report to DPWT as monthly basis as provided in SEP. The ISMC and contractor will also be required to establish and implement a GRM system. Monitoring and reporting of contractor performance on the GRM implementation and tracking forms (provided in SEP) will be provided in the ESS monitoring reports. Grievance related to safeguard issues from communities, poor and vulnerable groups and other stakeholders that result from project activities will be resolved by the Grievance Redress Committee (GRC). However, the complainant also retains the right to bypass this procedure and can address a grievance directly to the EDPD/PTI Office or the National Assembly, as provided for by law in Lao PDR. At each level, grievance details, discussions, and outcomes will be recorded in a grievance logbook. The status of submitted grievances and grievance redress will be reported to Project Manager through the monthly reports. The GRM for project execution issues is contractor driven and needs to be manned by personnel with appropriate skills. More details are provided in SEP.

(c) Terrestrial Biodiversity

47. Despite minor re-alignment in some sections, the entire Project footprint occurs within the existing national road alignment. It is an urban and semi-urban setting with significant changes in land use. No natural habitat occurs within the COI as it has been significantly degraded through urban and historical road development. Most land use types

³ This is referred to the ESH-MSIP in the BD

identified within the COI are existing road and road corridor reserve areas (~98%) with a small proportion of wetland and residential land. Natural terrestrial vegetation (e.g. scrub) within the COI is highly degraded and fragmented. All-natural vegetation to be removed have been directly disturbed by anthropogenic sources in some way.

48. The remaining tree species identified along the COI, either planted or natural are mainly managed by private individuals. Some threatened species such as agarwood, teak, and Burma Padauk are often planted by households across the country due to their high commercial value.

49. Vegetation clearance for the Project will result in removal of at least 458 trees of different sizes and species of planted and natural species. There are 13 Endangered (EN) species of the IUNC Red List of Threatened Burma Padauk Species (*Pterocarpus macrocarpus*) identified within the COI and 12 species of these will be directly lost, if cleared (refer to Volume A-Main ESIA Report). Most of these species are planted by private individuals and are relatively smaller in sizes with the largest diameter stand was measured approximately 60cm of diameter at breast height. However, this species is found common in the Project region with smaller stands.

50. Other species identified in the IUCN Red List include two planted agarwood (*Aquilaria malaccensis*) species (Critically Endangered), and 10 planted teak (*Tectona grandis*) species (EN). Planted of high conservation / commercial value species are found common across the Lao PDR such as teak, agar wood and even Burma Padauk (*Pterocarpus macrocarpus*). Two species of Near Threatened (*Dipterocarpus obtusifolius*) were also identified in the COI and one of these will be removed.

51. Key avoidance, management and mitigation measures for terrestrial biodiversity include:

- Limit the vegetation clearance to the minimum necessary during construction to prevent the loss of natural habitats and associated species;
- Design Project to strictly minimise disturbance to priority flora species by clearly marking the tree species that need to be retained and liaise with the construction contractor on the requirements;
- High conservation value species including larger sized trees (e.g. *Samanea saman*) will be retained where possible with a consideration of road safety. Regular pruning and trimming of tree branches should be conducted to maintain visibility of road users.
- Contractor prepares and implements plan for site clearance, excavation, restoration, tree replantation, etc. ISMC will review and approve the plan and monitor its implementation and report to PMU/DOR and DPWT;
- Removal of trees will need to be consulted with local authorities and impacted households. The District Agriculture and Forestry Office (DAFO) should provide oversight the vegetation clearing activities. Where practical, the high conservation

value HCV) species should be transplanted in appropriate locations with support from the Contractor. The affected households who own these tree species should be given opportunities to transplant or harvest timbers in advance of clearing activities provided that they have appropriate personal safety equipment (PPE); Cleared areas should be progressively revegetated and rehabilitated throughout the life of the Project to restore vegetated areas where possible;

- Support local authorities and communities with seedlings to plant and/or maintain native trees especially the high conservation value species along the Project alignment during the operation to offset biodiversity loss due to the Project. It is recommended to plant more native saplings of the same species for each tree cut; and
- Environmental education and awareness programs should be conducted for Project staff and contractors (e.g. through staff inductions) to ensure that the prohibitions and penalties regarding the collection of forest resources are widely known including hunting, buying or trading of wildlife.

(d) Preparation of C-ESMP

52. The Annex 1 provides guidance for the preparation and approval of the C-ESMP in the form of an Alignment Sheet. Following the award of the contract and prior to construction commencing the Contractor will review the issues identified in the present ESMP (particularly Annex 1 and Annex 2) and develop detailed mitigations in the C-ESMP including identification of key persons who will be responsible for undertaking and supervising the work within the Contractor's team. Details can be presented in a series of site plans covering specific site details during construction phase as agreed with the supervision consultant and/or field engineer (ISMC/FE). Priority plans provided in the ESCOP (Annex 2) will include, but not limited to, the followings:

- i. Occupational Health and Safety Plan (OHSP)
- ii. Community Health Safety Plan (CHSP);
- iii. Site clearance and revegetation plan;
- iv. Labor Influx and Labor Management Plan (LMP) – COC;
- v. Works/Worker Camp Management Plan (WCMP);
- vi. Construction Sites Management Plan (CSMP);
- vii. Construction Materials Management Plan (CMMP);
- viii. Waste Management and Recycling Plan (WMRP);
- ix. Traffic and Transportation Management Plan (TTMP);
- x. Environmental Quality Management Plan (EQMP);
- xi. Project Change Management Plan/ Adaptive Management Plan (AMP);
- xii. Emergency Preparedness and Response Plan (EPRP);

xiii. Monitoring and Reporting Plan (MRP).

53. These plans will be submitted to and approved by the supervision consultant and/or Field Engineer prior to the Contractor taking possession of any work site. The approved C-ESMP and/or specific plans will be submitted to EDPD/PTI for information. ISMC will provide technical support to the contractor in preparing and implementing the plans.

54. Annex 1, Table A1-1 presents the key issues and mitigation measures to be considered during the preparation of C-ESMP while Table A1-2 provides guidance for the preparation of C-ESMP. The Tables A1-1 and A1-2 will be included in the BD/CD of the Project.

3.3.3 E&S Impacts and Proposed MMs during O&M Phase

55. Potential negative impacts during operation and maintenance (O&M) phase will mainly be associated with increasing risks of road safety and increased noise, vibration, and increased traffic density due to an increase in vehicles traffic and driving speeds as well as on potential change of flooding pattern after completion of the rehabilitation works. However, improving climate resilience and flooding and road safety are the main objectives of the proposed Project and the interventions have been designed to meet the best feasible options to be implemented under the Project. Nonetheless, to further mitigate the potential negative impacts on road safety risk and the change of flooding pattern, additional efforts will be made. The key impacts and mitigation measures are discussed below.

56. Mitigating potential risk on road safety during operations. MPWT through the Department of Transport (DOT) and the DPWTs is making efforts to improve road safety and improve asset management and consideration of mitigation measures for sensitive receptors to be affected by traffic noise (through performance-based maintenance) of the road networks in Lao PDR. For the NR13SE Project, as part of safeguard capacity building. EDPD/PTI will make an effort to provide knowledge and support to DPWT of BKX province to enhance their capacity on road safety at community level and ensure proper road rehabilitation including clearing vegetation within the Corridor of Impact. In addition, efforts will also be made to conduct road safety campaigns and pilot activities to promote knowledge and understanding of local road users on road safety regulations and good practices as well as to encourage active participation of local community especially children and women in the road safety activities in area near schools and hospitals located along the NR13SE Project. Integration of gender in road safety will be implemented through GAP.

57. Mitigating risk due to change of local flooding pattern. Despite the Project benefits of addressing flooding and specific interventions in specific locations, the new road surfaces for NR13SE Project, road adjustment, and increasing embankment elevation in some areas may increase impervious surfaces and create some changes on flooding pattern along the road embankment. Roads maximize runoff generation during rainfall and introduce high flow velocities and significant flow accumulations at exit channels and culverts. These exit

channel and culverts will direct the increased runoff into existing and/or new watercourses and potentially will alter the flow and pathways of natural origins. This is particularly relevant to wetland areas in sections that pass through Thaphabath and Paksan Districts. This increase can also have the capacity to transport debris and waste towards the channels and culverts, leading to blockages that can eventually result in the roadway flooding in other areas. The roadway flooding would potentially cause disruptions to the daily operations of many communities that would rely on the NR13SE Project. Additionally, any infrastructure within the ROW may potentially be exposed to the large volume of water causing possible destruction.

58. To mitigate the potential impacts during operations phase, the following measures should be considered during detailed design of the Project:

- Storm water drainage and channels will need to be adequately designed to be able to adequately control flow on a regular basis. This is particularly relevant for urban catchments which, modeling suggests, exhibit a 'peaky' response due to the high levels of impermeable surfaces. New drainage infrastructure should be integrated with existing drainage where possible.
- Storm water drainage and channels will need to be regularly cleared of rubbish and other debris.
- Flow alteration: Construction of overflow drainage systems to adequately deal with irregular high rainfall events. Ensure that drainage infrastructure is regularly inspected and well maintained (cleared of blockages that may occur).

4 MONITORING ARRANGEMENTS

4.1 Compliance Monitoring

59. PMU/DOW (who is responsible for the day to-day implementation and operation of the Project, including contracting and supervision of all consultants for the Project) is responsible for ensuring effective implementation of the ESMP, GAP and SEP including adequate allocation of budget. PMU/DOR will also ensure that the ISMC is responsible for supervision and compliance monitoring of works contracts will also be responsible for supervision, capacity building, day-to-day compliance monitoring of contractor compliance with the C-ESMP. EDPD/PTI with TA from ISMC is responsible for providing technical guidance on the ESS requirements and periodical compliance monitoring of the ESMP, GAP and SEP implementation including management of the ESMP budget for the Project. EDPD/PTI with TA from ISMC will six-months compliance monitoring of ES compliance and submit bi-annual report to AIIB and ADFD. EDPD/PTI with TA from ISMC will also ensure that the Project is also in compliance with GOL requirements regarding ES requirements and standards (such as ECC conditions).

60. At provincial level, PIUs/DPWTs of VTE and BKX will assign specific staff and/or engineer (at least 1 full-time) to be responsible (as the ESU/DPWT) for ensuring full compliance with the E&S safeguard requirements on the ground and prepare E&S safeguard implementation quarterly monitoring report as agreed with EDPD/PTI.

61. The SMWG comprising DPWT, PONRE, LWU, and other related local be responsible for undertaking periodic compliance monitoring of the ESMP, GAP and SEP implementation including GRM tracking and Contractor performance of the approved C-ESMP. For land acquisition and relocation of assets, the PRGCs and DRGCs that have been established will be responsible for the review and oversight of RP implementation. The Village Grievance Committee (VGC) will be established to be responsible for overseeing the GRM implementation using the existing structures with a village mediation committees and fiduciary agencies (District and Provincial Office of Justice, Provincial Assembly, PWTOs and District Governor Office). EDPD/PTI with TA from ISMC will also be required to (a) review/adjust the current monitoring and reporting forms to enhance effectiveness of the monitoring and reporting process and (c) ensure that adequate budget can be transferred to the DPWT and the SMWG and timely submission of the ES monitoring report to AIB and ADFD.

62. Following approval of the C-ESMP, the Contractor will be required to attend a series of meetings with the ISMC and/or Field Engineers to ensure that all compliance conditions and procedures are clearly understood and actions can be implemented on the ground. As part of the day-to-day supervision of works, ISMC/Field Engineers are also responsible for day-to-day supervision and monitoring of compliance of the C-ESMP and report the results in the progress reports. The Contractor will be responsible for ensuring that all sub-contractors abide by the conditions of the ESMP, C-ESMP, ESCOP, and COC.

4.2 Effects Monitoring

63. ISMC shall be responsible for conducting the instrument monitoring and will engage external service from a certified laboratory for air quality, noise and water quality, as and when required (see **Table 4-1**). During the O&M phase, ISMC will be responsible for the monitoring until the contract ends (see **Table 4-2**). The monitoring shall be carried out in compliance with best international practices such as International Finance Corporation (IFC).

Table 4-1 Monitoring Plan – Construction Phase

Aspect/Impact	Parameters	Frequency	Location	Responsibility	
				Monitoring ⁴	Checking/ Verification
Air quality	PM _{2.5} and PM ₁₀ , Dust deposition rates	Quarterly	Near key sensitive receptors (schools and health care facilities). Minimum 5 sites along alignment. Sites should be moved progressively along alignment as construction progresses. Sites should also include receptors near quarries and borrow pits.	ISMC	DPWTs/PIU and PMU
	Visual inspect of dust	Daily	All construction sites, access roads and construction materials sites	Contractor and ISMC	DPWTs/PIU and PMU
Noise and vibration	Noise levels in dB(A) LAeq (daytime and night-time), Airblast dB(L), Ground vibration peak particle velocity (PPV)s	Quarterly	Near key sensitive receptors (schools and health care facilities). Minimum 5 sites along alignment. Sites should be moved progressively along alignment as construction progresses. Sites should include receptors near quarries and borrow pits.	ISMC	DPWTs/PIU and PMU
Water Quality	Field water parameters (pH, Redox potential (ORP), Dissolved Oxygen (DO), Electrical conductivity (EC), Total Dissolved Solids (TDS), Turbidity and temperature) Laboratory testing for pH, EC, Total Dissolved Solids (TDS) & Total Suspended Solids (TSS), Total alkalinity (or acidity), bicarbonate alkalinity, carbonate	Quarterly; and before, during and after construction of bridges over water bodies	Rivers, creeks and wetlands upstream and downstream of construction areas main watercourses with active construction sites.	ISMC	DPWTs/PIU and PMU

⁴ ISMC to engage external services from a certified laboratory for environmental instrumental monitoring of air quality, noise and water quality

Aspect/Impact	Parameters	Frequency	Location	Responsibility	
				Monitoring ⁴	Checking/ Verification
	alkalinity & total hardness as CaCO ₃ , Nutrients, Cations & anions, and Total & Dissolved metals				
Wastewater and effluents	Field measurements. Laboratory analyses: Total and fecal coliforms, total nitrogen, total phosphorous, COD, and BOD	Monthly	Waste water discharges from camps and offices	ISMC	DPWTs/PIU and PMU
Erosion and Sediment transport	Bed scour, bank failure, maintenance requirement for erosion / sediment control (visual inspection)	Weekly	Diversion channels, culverts, temporary water diversion structures, outlet protection, construction sites (slop), quarry and borrow pits.	ISMC	DPWTs/PIU and PMU
Waste management (general waste and hazardous waste)	Use of appropriate waste bins, separation and proper disposal of waste (visual inspection)	Weekly	Workers' camps, Construction areas, ancillary facilities, operational infrastructure	ISMC	DPWTs/PIU and PMU
Workers' camp management	General housekeeping, OHS, COC (Visual inspection)	Monthly	Workers' camps	ISMC	DPWTs/PIU and PMU
Implementation of C-ESMP	Compliance with all environmental, occupational, health and safety measures as specify in Attachment 5,6,7	Daily	Construction sites, camps and affected communities, other project sites	ISMC	DPWTs/PIU and PMU
Grievance monitoring	Complaint log book and comment box	Monthly	Affected villages and workers' camps	ISMC	DPWTs/PIU and PMU

Table 4-2 Monitoring Plan (O&M Phase)

Aspect/Impact	Parameters	Frequency	Location	Responsibility	
				Monitoring	Checking/ Verification
Air quality	PM _{2.5} and PM ₁₀ , Dust deposition rates	Six Monthly	Near key sensitive receptors (schools and health care facilities). Minimum 5 sites along alignment.	ISWS	PMU/DPWTs
Noise	Noise levels in dB(A) LAeq (daytime and night-time), Airblast dB(L), Ground vibration peak particle velocity (PPV)s	Six Monthly	Near key sensitive receptors (schools and health care facilities). Minimum 5 sites along alignment.	ISWS	PMU/DPWTs
Water Quality	Field water parameters (pH, Redox potential (ORP), Dissolved Oxygen (DO), Electrical conductivity (EC), Total Dissolved Solids (TDS), Turbidity and temperature) Laboratory testing for pH, EC, Total Dissolved Solids (TDS) & Total Suspended Solids (TSS), Total alkalinity (or acidity), bicarbonate alkalinity, carbonate alkalinity & total hardness as CaCO ₃ , Nutrients, Cations & anions, and Total & Dissolved metals	As required	Rivers, creeks and wetlands near any maintenance works	ISWS	PMU/DPWTs
Wastewater and effluents	Field measurements. Laboratory analyses: Total and fecal coliforms, total nitrogen, total phosphorous, COD, and BOD	Six Monthly	Discharges from camps and offices	ISWS	PMU/DPWTs
Waste management (general waste and hazardous waste)	Use of appropriate waste bins, separation and proper disposal of	Monthly	Workers' camps, operational infrastructure	ISWS	PMU/DPWTs

Aspect/Impact	Parameters	Frequency	Location	Responsibility	
				Monitoring	Checking/ Verification
	waste (Visual inspection)				
Workers' camp management	General housekeeping, OHS, COC (Visual inspection)	Weekly	Worker camps	ISWS	PMU/DPWTs
Implementation of C-ESMP	Compliance with all environmental, occupational, health and safety measures as specify in Attachment 5,6,7	Daily	Construction sites, camps and affected communities, other project sites	ISWS	PMU/DPWTs
Grievance monitoring	Complaint log book and comment box	Monthly	Affected villages and workers' camps	ISWS	PMU/DPWTs

5 CAPACITY BUILDING

64. The DPWTs of both VTE and BKX and local agencies (including SMWG) in VTE and BKX have some experience in the implementation of safeguard measures with AIIB financing projects such as NR13N and NR13S, as well as with other international donors such as the ADB. However, it is expected that additional training on specific measures identified for the subproject will be necessary and the key one are identified as follows: (a) Training for the planning and implementation of RP for PRGCs and DRGCs (b) Training on the monitoring of the ESMP, GAP and SEP for SMWGs, ISMC and Contractors; and (c) Training on the preparation and monitoring of contractor's ESMP including those related to ESHS and OHS and safety of local communities and waterways users. This section identifies priority areas that need capacity building and training plan for contractors as well as for PIU and staff of local agencies. To be effective, the training will be designed to (a) ensure compliance with GOL requirements on E&S safeguards during construction and operations and those required by AIIB under this ESMP and (b) building capacity of the LA/LC responsible for taking actions to mitigate ES risks and potential impacts during operation phase.

65. To mitigate potential negative impacts of the subproject during operation, it is necessary for DPWTs to build and maintain active engagement with local authorities and local communities (LA/LC) especially women engagement on road safety to reduce road accidents. Table 5-1 provide training plan for the Project.

Table 5-1 Capacity/Training Plan

No.	Training Topic	Trainer	Trainee	Timeline
1	Preparation and implementation of RP	PTI/EDPD and ESIA Consultant	PRGCs and DRGCs	Mar-Jul 2023
2	Implementation, monitoring and reporting of ESMP, GAP and SEP	PTI/EDPD with TA from Monitoring consultant/ISMC	SMWGs and ISMC, GRM Committees and Village Leaders	After project affective
3	Training on preparation of C-ESMP	ISMC/Monitoring Consultant	Contractors	Within 28 days of construction contract awarded; During construction as required
4	C-ESMP, GAP and SEP including GRM implementation, Worker health and safety as required in the ESCOP and COC on GBV/VAC	ISMC/Monitoring Consultant	Contractors	Before commencement of construction and during construction
5	Training on -ESMP, GAP and SEP including GRM implementation OHS including ESHG, COC on SEA/SH and VAC, HIV/AIDs	Contractor	Workers	Before commencement of construction and during construction
6	SEP, GRM and CHS	ISMC and contractors	Village Leaders and Affected communities	Before commencement of construction, during construction and post-construction completion
7	Training on road safety	ISMC and contractors with DOT	Village Leaders and Affected communities	during construction and O&M phases
8	Training to MPTW staff on road safety and OPBRC. The Road Safety Audit Consultant will provide technical road safety training to MPWT staff on innovative design solutions that reduce the likelihood of road accidents and unsafe situations and maximize positive and equitable benefits. Also, the OPBRC Monitoring Consultant will provide training on the OPBRC model.	RSA and ISMC	MPTW staffs	during construction and O&M phases

6 ESMP DOCUMENTATION AND REPORTING SYSTEM

6.1 PMU/PTI Reporting

66. PIUs/SMWGs will conduct quarterly compliance monitoring and submit a quarterly ESS monitoring to EDPD/PTI. EDPD/PTI with TA from ISMC will compile into Bi-Annual ESS Monitoring Reports and submit to AIIB and ADFD.

6.2 ISMC Reporting

67. The ISMC shall prepare the following reports:

- Inception Report (maximum length of 15 pages, excluding annexes). The Inception Report shall include a work plan for the assignment, team composition, challenges anticipated and comments to the TOR, if any. List of people met and minutes of meetings shall be provided in Annexes, if any. The draft Inception Report and Implementation Work plan to PMU and PTI/EDPD and the AIIB within two weeks after the date of contract signing. The final Inception Report and the implementation Work Plan shall be submitted within one week after receipt of approval from the PMU and EDPD/PTI and the AIIB.
- Monthly ESS Reports: The Consultants shall prepare a concise monthly ESS report, in a format to be agreed with DoR/MPWT. These reports will be sent to DoR/MPWT within one week of the end of the month. Such reports shall summarize the activities of the Consultants including those related to ESS activities, the progress of the OPBRC, all contract variations and design changes, the status of Contractor claims (if any), brief descriptions of the technical and contractual problems being encountered (and solutions recommended) progress and issues related to the implementation of the ESS activities and other relevant information.
- ISMC shall report accidents involving fatality or serious injuries to the owner immediately or no later than within 2 hours they come to know about the accident; PMU to report to the lenders within 24 hours. Other Lost-time accident shall be reported to the lenders within 3 days so the ISMC shall report to PMU accordingly in advance. Investigation shall be carried out by IWMC and submit a Root Cause Analysis report to the PMU within agreed timeframe so that the PMU could submit to the lenders in 45 days.
- The Consultants shall ensure the immediate reporting to DoR/MPWT, DPWT, and EDPD/PTI of complaints related to GBV and/or child abuse, any pollution incident/accident, any fatality and/or bodily harm affecting Project (including contractor) staff or project affected people, any public opposition, and the issuance of any notice or fine for breach of environmental, labor, health or safety laws and regulation.

- **ESS Quarterly Monitoring Reports:** In close consultation with EDPD/PTI, the Consultants shall prepare and submit to the MPWT, AIIB and ADFD (within 14 days after the end of the period) a consolidated semi-annual and annual monitoring report summarizing all environmental and social safeguard activities (ESMP, GAP and SEP including GRM) including progress and records on GRM and other aspects related to road safety, workers OHS, employment, community health and safety, etc. The report shall also summarize the performance of the Consultant's staff in implementing their supervision responsibilities. The quarterly report shall also summarize the performance of the Consultant's staff in implementing their monitoring supervision responsibilities. In addition, the report will also include progress and issues related to the implementation of environmental and social safeguards, as well as works' compliance with AIIB requirements. Preparation of a separate RP implementation and/or other monitoring reports may also be required during the Assignment as requested by the GOL and/or AIIB.

6.3 Contractor Reporting

68. **Contractors Reporting -** The Contractor will prepare two levels of environmental and social reports:

- **Weekly Environmental and Social Checklists –** These will be prepared weekly by the Contractor's ES team and the checklist will be submitted to the ISMC/Engineer on a weekly basis.
- **Monthly Environmental and Social Summary Report -** in respect of compliance with C-ESMP will be submitted to the PMU/DOR through ISMC/Engineer. The report will be in line with the ESHS requirements as described in the BD Part II Section IX - Particular Conditions of Contract.
- **Contractor will report any incidents/accidents that may have impacts on the safety, health, environment or community, or any activity resulting in regulatory non-compliance or breach of GoL or AIIB's policies, standards or commitments.** ISMC/Engineer will need to develop an incident/accident reporting system to document any reportable events such as injury, hazardous spills, or community incidents (e.g. private property damage). The reporting system should record the following events:
 - Injury, illness or accident;
 - Near miss (with serious or major potential for loss);
 - Non-contained fires within or near operational areas;
 - Chemical spills;
 - Uncontrolled gas emissions;
 - Spills of fuel or oil greater than 50 L within banded workshop or other operational areas (safety and environmental incident);

- Spills of fuel or oil outside of banded areas greater than 10 liters (environment incident);
 - Community incidents (e.g. private property damage, injury to livestock);
 - Any other environmental and social incident involving damage to the environment and grievance from the workers and communities or road user's during construction.
- Accidents / incidents will be classified according to their actual and potential safety, environmental or social impacts using a standard consequence matrix to ensure consistency. The system will need to record the following types of auditable information into a report:
 - Description of the incident / accident/event and its causes;
 - Risk rating of the event (according to a standard rating system / consequence matrix);
 - Root cause analysis
 - Description of appropriate corrective and preventative actions and their proposed timeline for implementation;
 - Status of corrective actions (to be updated once closed out); and
 - Actual or estimated costs of repair, clean-up or other remedial measures.

6.4 Non-Compliance Reporting Procedures

69. The Contractor and its subcontractors if any must comply with the ESMP, C-ESMP, GAP and SEP. To ensure that necessary action has been undertaken and that steps to avoid adverse impacts and/or reoccurrence have been implemented, the Project Manager/ES Manager, and/or the Contractor must advise PMU/DOR, DPWT, EDPD/PTI within 24 hours of any serious incidents of non-compliance that may have serious consequence so that PMU/PTI can advise AIIB and ADFD within 48 hours. In the event of working practices being deemed dangerous either by the subproject owners, the local authorities, or the other concerned agencies, immediate remedial action must be taken by the Contractors. The Contractor must keep records of any incidents and accident and any corrective/ameliorative action taken. The records of non-compliance that could be practically addressed (not cause serious impacts) will be reported to PMU/DOR and DPWT with a copy to EDPD/PTI on a monthly basis.

70. The Contractor will be responsible for dealing with any reports/grievance forwarded by the project investment owner, Police or other agencies (by following instruction from the project investment owner representative as appropriate) as soon as practicable, preferably within one hour but always within 24 hours of receipt by either the Contractor. The Project Manager/ES Manager will monitor and ensure that the Contractor has taken appropriate action. Where appropriate, approval remedial actions may require an agreement from the local authorities and/or other Government agencies. Procedures should be put in place to

ensure, as far as is reasonably practical, that necessary actions can be undertaken to avoid recurrence and/or serious damage (**see form in SEP**).

7 COST AND BUDGET FOR ESMP IMPLEMENTATION

71. The ESMP implementation cost will be part of the Project cost. It comprises (a) cost of UXO clearance (if required) and (b) cost for preparation and implementation of the mitigation measures during road rehabilitation and maintenance (C-ESMP); (c) cost for implementation of SEP and GAP including GRM and concerns related SEA/SH and VAC ; (d) cost of land acquisition and/or compensation of assets or relocations provided in the RP will be part of GoL cost (RMF); (e) cost for RP implementation is included in the ESIA consultant cost; and (f) cost for Monitoring, reporting, and capacity building/training of ESMP, GAP and SEP. At present, it has been agreed that the cost for (a) & (d) will be incorporated into the works contract cost while the cost for (b) will be part of GOL cost (RMF), (c) and (d) will be part of PCU/PMU. See Table 7-1 below.

Table 7-1 ESMP Implementation Budget

Cost Item	Estimated Cost (USD)	Notes
(a) cost of UXO clearance (if required)	-	To be included in the civil works cost
(b) Mitigation Measures: implementation of ESMP/C-ESMP	-	To be included in the civil works cost
(c) cost for implementation of SEP and GAP including concerns related SEA/SH and VAC and development of GRM poster and dissemination of project information and GRM process in all affected villages	-	To be included in the Contractor cost
(d) Compensation budget	Provide in RP	RMF ກອງທຶນທາງ
(e) RP implementation (excluding compensation budget)	-	included in ESIA consultant cost
(f) Compliance Monitoring by PTI and provincial committees (GRM and SMWGs): Compliance monitoring of implementation of ESMP, SEP, GRM and GAP during construction phases	32,000	Included in PMU/PCU budget

8 ANNEXES

- Annex 1: Key Issues and Mitigation Measures for C-ESMP and Site Specific Alignment Sheet
- Annex 2: Environment and Social Code of Practices (ESCAP)
- Annex 3: Project Code of Conduct (CoC) on Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH), AND Violence Against Children (VAC)

- Annex 4 Accident Reporting Procedure and Form
- Annex 5: Contingency Planning for Response to COVID-19

Annex 1: Key Issues and Mitigation Measures for C-ESMP and Site Specific Alignment Sheet

A1.1 Introduction

1. This Annex presents the Environmental and Social Management Plan (ESMP) of NR13S (Project-ESMP) both in the form of issues and mitigation matrix (Table A1-1) and the Alignment Sheet (Table A1-2) to be applied for all OPBRC packages. This Annex provides technical guidance for the preparation, approval, implementation, and monitoring of the contractor's ESMP (C-ESMP).

2. In addition to this Annex, the Project-ESMP also includes the environment and social code of practices (ESCOP in Annex 2); the code of conduct on gender-based violence and violence against children (COC in Annex 3); forms for accident reporting and grievance redress mechanism (in SEP); and other measures described in the ESMP report (Section 3) to be included in detailed design (DD) and bidding/contract documents (BD/CD) and those related to grievance redress mechanism (GRM) and the ESMP implementation and budget arrangement. Section A1.2 briefly highlights ESS requirements to be considered during DD while Section A1.3 highlights the requirements related to GRM. The contractor will also be required to maintain close consultation with local communities and operationalize its GRM in connection with that of DPWTs and EDPD/PTI.

3. The Project-ESMP is also closely connected to the Resettlement Plan (RP), Stakeholder Engagement Plan (SEP), and Gender Action Plan (GAP) to be cleared by Asian Infrastructure Investment Bank (AIIB) as well as the approval conditions of the Government of Lao PDR (GOL) for the Initial Impacts Examination (IEE) and issuance of the Environmental and Compliance Certificate (ECC) and other regulatory authorities attached to any permits or approvals for the Project. These requirements will be considered during the preparation and approval of the C-ESMP and its sub-plans. Preparation and implementation of the C-ESMP is the contractor responsibility while those for RP, SEP and GAP are the responsibility of GOL.

4. Since this is a 10-year OPBRC, the contractors will be responsible for implementation of the mitigation measure during the first 2-3-year construction phase as well as the following 7-8-year operations and maintenance (O&M) while the construction supervision consultant and/or field engineer (ISMC/FE) will be responsible for approval of the C-ESMP and day-to-day monitoring of its implementation compliance. The implementation cost of the C-ESMP will be part of the OPBRC cost while that for RP will be responsible by GOL. During bidding, the bidder will be required to prepare a Management Strategy and Implementation Plan to manage the key environmental, social, health and safety (ESHS-MSIP) risks and impacts. The ESHS-MSIP will collectively comprise an indicative C-ESMP describing the proposed mitigation measures to address environment and social (E&S) risks and impacts. The final C-ESMP which will be prepared by the contractor and approved by

PMU/DOR and/or ISMC/FE. The C-ESMP may include a number of plans/sub-plans as agreed between the contractor and ISMC/FE and scope of the plan/sub-plan is provided in Part 3 of the ESCOP (Annex 2).

5. PMU/DOR and EDPD/PTI will ensure that (a) the recommendations on road safety and on local flooding and GRM as provided in Sections A1.2 and A1.3 will be integrated into the detailed designs and (b) the guidelines for preparation of C-ESMP provided in Annex 1,2,3,4 & 5 are included in the bidding document (BD) and contract document (CD). PMU/DOR and EDPD/PTI will also establish a GRM process provided in SEP at MPWT, DPWT, and contractor levels and ensure that the contractor establish and maintain close relations with local authorities and local communities.

A1.2 Key Mitigation Measures to be Considered during Detailed Design

(a) Road safety

6. A road safety audit was prepared in 2023 (Volume B – Appendix 4 of the ESIA) while preparation of DD and draft BD/CD are on-going. Based on the road safety assessment and discussion during appraisal of NR13SE the following measures will be considered:

- Assessing gaps and challenges related to safety, security, and accessibility of women and vulnerable groups. To integrate gender and inclusion dimensions in the planning and implementation of road projects, stakeholders need to be fully aware of how women and vulnerable groups access and use road infrastructure, and what challenges and issues they face. To this aim, the Project has conducted designated group consultations and public consultations on road safety. Hence, women and vulnerable groups' concerns have been identified and incorporated in the design and implementation of the Project.
- Enhancing safety, security, and accessibility in the project design. PMU has engaged Road Safety Audit Consultant and Concept Review Design Consultant to enhance the initial concept design, aiming, among others, to improve the safety, security and accessibility of the project road.

(b) Climate Change Mitigation

7. To ensure the all-year pass ability, the following design criteria were applied for the designing:

- ▶ Bridges: flood return frequency of 100 years;
- ▶ Box culverts and short bridges ≤ 10 m span: flood return frequency of 50 years;
- ▶ Road and pipe culvert < 2 m diameter: flood frequency of 25 years;
- ▶ Side drains and ditches: flood frequency of 10 years.

8. Climate change is a macroscopic and global issue, and, as outlined above, there is confidence in the project's changes in hydrology and rainfall. Therefore, the measures

outlined in the Road Design Manual of MPWT (2018) are applied for dealing with the issue of climate change for road drainage design for local road in the project.

- ▶ Use new calculated IDF curves, constructed based on the series of rainfall measurements from 2002 to 2022;
- ▶ Adding a 15 % increase (RCP6.5-RCP8.5) to the calculated 10, 25, 50 or 100-year return storm events in order to react to increases in short duration rainfall intensities.

9. Regarding the raising in the flood plains or back flood, in accordance with MPWT and following the international practice, the road bed was set to be above the calculated flood level, the edge of road shoulder is placed 50 cm (minimum) above the flood level. But in conceptual design phase for NR13S, mostly of the road elevation is still follows with the existing elevation, due to there is no data of annual high-water level of each river, which this is applied to flood frequency analysis.

Table A1-1 Envisaged and implemented measures for Climate Change adaptation on the project road⁵

Asset	Risk	Possible Adaptation Measures	Implemented / Envisaged (infrastructure)
Road alignment	Disruption due to overtopping during intense rain	The raising of flood-prone areas above the calculated flood levels, for “NR13S” only back floods from Nampark and Namkor river during August 2022	Included in the earlier concept Design for the location of the bridge approach, but for the road, the segment is still based on existing road elevation.
Pavement	Cracking and early deterioration through water ingress	Improve the surface integrity by using stronger surface courses	All Sections to be paved using 2 layers of asphalt concrete mixes.
	Rutting and bleeding due to hot climate	Use of harder-grade bitumen Improved asphalt mixes to resist rutting (mix design using asphalt rutting test)	Appropriate Asphalt mix design to be implemented.
	Deformation due to moisture variations	Lime or cement stabilization of sub-base and base	Not envisaged if the pavement subbase is placed above the design flood level.
Bridges	Bleeding of sealed joints	Use of modified joint sealant materials	Requested as part of specifications
	Increased scour due to debris flows	Scour protection of piers	Included in the earlier concept design.
	Overtopping during intense rainfall	The hydraulic capacity of Bridges and resulting opening of bridges calculated with 15%	Included in the earlier concept design.

⁵ This will be replaced with the final measures presented in the Design Review Report

Asset	Risk	Possible Adaptation Measures	Implemented / Envisaged (infrastructure)
		safety coefficient	
Bridge supports and foundations	Settlement due to insufficient bearing capacity of the foundations	Deep foundation included in concept design	The bridge foundation design is included in the earlier concept design.
Culverts	Overloading during intense rainfall	The hydraulic capacity of culverts calculated with 15% safety coefficient and considering 25 / 50- year flood return periods	Included in the earlier concept design.
Drainage	Overtopping during intense rainfall	The hydraulic capacity of culverts calculated with 15% safety coefficient and 10-year flood return period	Included in the earlier concept design.
Side slopes	Erosion due to intense rainfall, the section of unstable slope	Vetiver planting for slope stabilization, slope protection by wall, rip- rap and etc.,	Not included, as with climate and fast-growing plantations in Lao, it is naturally achieved to be incorporated during implementation.
Side slopes near the river bank	Scouring during high river levels	River Bank protection considered in selected locations	Identified at constructed bridge location and included in the earlier concept design.

Source: LEA Consulting 2023

A1.3 Community Consultation and GRM

10. To mitigate potential impacts on local community, community consultation will be made throughout the OPBRC services while grievances will be addressed at the village, district, province, and national levels as per SEP. The GRM principles and process described in SEP will be applied at all Project levels including contractors. Contractor is responsible for development of GRM poster and dissemination of project information and GRM process in all affected villages. Grievance related to safeguard issues from poor, vulnerable and ethnic groups that result from Project activities will be resolved by the Grievance Redress Committee (GRC). At each level grievance details, discussions, and outcomes will be recorded in a grievance logbook, and the data provided to the GRC for recording in the 'Grievance and Complaints Logging System' (GCLS). Status of grievances submitted, and grievance redress will be reported to DPWT management through the monthly reporting as generated by the GCLS. The complainant also retains the right to bypass this procedure and can address a grievance directly to the PMU Office or the National and Provincial Assembly, as provided for by law in Lao PDR as well as to the AIIB through the AIIB's Project-affected People's Mechanism (PPM). More requirements of GRM are provided in SEP.

A1.4 Implementation Arrangement

11. The Project-ESMP implementation arrangement, capacity building and training, and budget arrangement will be implemented according to Section 2, 4, 5, 6 of the ESMP report. To ensure effective implementation of these activities on the ground, priority actions will be as follows:

- DPWT will establish a Monitoring Working Groups (MWG) comprising ESU/ DPWT, PONRE, LWU, and other related local authorities to be responsible for undertaking periodic monitoring of the ESMP/C-ESMP, RP, SEP and GAP implementation including GRM tracking and Contractor performance of the approved C-ESMP.
- PMU/PTI will (a) provide specific guidelines and more extensive training and capacity building on occupational and community health and safety (OCHS) to DPWT, PONRE, contractors, and the MWG, including ways for achieving effective site management and use of Personal Protection Equipment (PPE), active participation of local communities, and effective application of GRM record; (b) review/revise the current monitoring and reporting forms to enhance effectiveness of the monitoring and reporting process; and (c) ensure that adequate budget can be transferred to the ESU/DPWT and the SMWGs and timely submission of the ESS monitoring report.
- The ISMC or responsible for supervision and monitoring of works contracts will also be responsible for approval of the Contractor Environmental and Social Management Plan (C-ESMP) and day-to-day supervision and monitoring of contractor compliance with the C-ESMP during the implementation of the Project (NR13SE) including ensuring full compliance with the ESS measures as required by the AIIB and GOL. Provision of at least three ES consultants: one environmental consultant, one social consultant (community relation, GRM, SEA/SH & VAC, and gender), and one health and safety consultant (OHS and CHS) is required to assist PTI for E&S supervision, planning, capacity building/training, monitoring and reporting of implementation of ESMP/C-ESMP, SEP, GRM and GAP including concerns related to SEA/SH during construction phases. See Section 2-2 and Table 2-1 for more details.
- Contractor is responsible for preparation, implementation, self-monitoring and reporting of the C-ESMP, SEP and GEP including GRM and issues related to SEA/SH and VAC and submits monthly report to ISMC. Provision of at least four ES consultants: one ES manager, one environmental consultant, one social consultant (community relation, GRM, SEA/SH & VAC, and gender), and one health and safety consultant (OHS and CHS) is required to conduct daily monitoring and monthly reporting of C-ESMP, SEP and GAP including concerns related to SEA/SH. See Section 2-2 and Table 2-1 in the Main Report for more details.

Table A1-1 Key issues and mitigation measures during preconstruction, construction, and O&M phases

*For NR13SE, the ISMC/FE will be the Implementation Support and Works Supervision Consultant (ISWS) to be mobilized by the Project Management Unit (PMU) of the Department of Road (PMU/DOR)

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
Pre-construction Phase					
P-1	Relocation of small structures and facilities and small land acquisition may cause adverse impacts on local land user and/or local people, especially the poor and vulnerable groups (PVG)	<ul style="list-style-type: none"> • RP has been prepared. AIB clearance of the RP will be required before implementation. • Establish and operationalize Project Grievance Redress Mechanism (GRM). • PMU/DOR and EDPD/PTI will assist the local authorities and ensure effective and timely implementation of RP. 	<ul style="list-style-type: none"> • PMU/DOR • EDPD/PTI • DPWT • ESIA/RP Consultant 	<ul style="list-style-type: none"> • Number of related complaints. • Number of unresolved complaints. • GRM record 	
P-2	Relocation of public utilities	<ul style="list-style-type: none"> • Early consultation with the public utility owners/organizations and local community since it will involve relocation cost. • PMU/DOR to prepare a Public Utility Relocation Plan (PURP) and take appropriate actions to minimize impacts on local peoples. • 	<ul style="list-style-type: none"> • PMU/DOR • ISMC/FE • DPWT • ESIA/RP Consultant 	Timely completed and implemented the PURP.	This can be part of the works site clearance plan
P-3	Works execution can increase dust, noise, vibration, and other impacts on local environment and local community	<ul style="list-style-type: none"> • Contractor will prepare C-ESMP and ESCOP and COC. • ISMC/FE will approve the C-ESMP 	<ul style="list-style-type: none"> • ISMC/FE • PMU/DOR • DPWT • Contractor 	See indicators under construction below	See below and ESCOP
P-4	UXO risk	<ul style="list-style-type: none"> • Even though the risk is low, but consultation with local community/ agency will be made. 	<ul style="list-style-type: none"> • ISMC/FE • PMU/DOR • DPWT 	No accident due to UXO	Also see borrow pits plan in ESCOP
P-5	Road safety design	Recommendations from Road Safety Audit	<ul style="list-style-type: none"> • Conceptual Design 	Road safety measures	

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
		<p>Consultant are:</p> <ul style="list-style-type: none"> • To ensure a smooth transition of the vehicle's driving state, a certain length of horizontal curves should be ensured, especially for small corner curves, which should have sufficient length to avoid distortion in the appearance of the road; • Apply speed control measures before entering the curve such as speed limited signs or a spiral line before and after curves with superelevation; • At Km35+869-Km 36+037: It is recommended to set the staircase of the overpass at the school entrance, which is the most convenient location for pedestrians to use. If the overpass is constructed, it is recommended to set up physical isolations in median within a range of 100m to 200m before and after the overpass to prevent pedestrians from crossing; • It is recommended to increase the radius of the horizontal curve of this section as much as possible, if conditions permit, and remove roadside trees, to ensure sight distance. It is recommended 80m spiral length before and after the curve to make the alignment feasible for clear sight distance and provide aesthetic to alignment; • It is recommended to merge the intersections on the left side and to enlarge the intersection angle on the right side and add stop signs since there is no traffic control has been adopted. Stop sign shall be proposed at all access roads; • To ensure a smooth transition of the vehicle's driving state , a certain length of horizontal curves 	<p>Review Consultant and Road Safety consultant</p>	<p>are included in the design.</p>	

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
		<p>should be ensured , especially for small corner curves , which should have sufficient length to avoid distortion in the appearance of the road;</p> <ul style="list-style-type: none"> • At major bridges: volume of heavy vehicles and trucks of this project is high, and there is a need for student to commute to school. It is recommended to install guardrails with collision avoidance capabilities between the sidewalks and the motor vehicle lanes; • Speed limits should be considered from the perspective of road users, taking into account traffic safety and operational efficiency; • It is recommended to consider factors such as function of the road, technical indicators, operational characteristics, roadside interference, environmental and social needs along the road when determine the speed limit; • The speed limit should avoid frequent changes, and the difference in deceleration between adjacent sections is not recommended to exceed 20km/h; • Speed limit signs should be obvious to increase driver’s compliance with speed limits • Ensure sufficient sight distance and remove obstacles such as trees, houses, etc. that may affect driver’s sight; <p>However, measures for road safety will follow the recommendations provided the final approved Road Safety Audit Report (2023).</p>			
P-5	Others	<ul style="list-style-type: none"> • Contractor includes mitigation measures in detailed designs to mitigate potential negative impacts during O&M, esp. those related to road safety risk and local flooding. 	<ul style="list-style-type: none"> • Contractor • ISMC/FE • PMU/DOR • EDPD/PTI 	Measures are considered in DD	Also see and ESCOP

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
		<ul style="list-style-type: none"> • The detailed design includes 1) pollution control structures for preventing water contamination by spills from transport accidents or from contaminated run-off, detention ponds, drainage systems, and any wastes generated during maintenance and operations, and 2) sound barriers for traffic noise control at sensitive receptors. • PMU/DOR and EDPD/PTI to ensure that proper measures are included in detailed design (DD). 	<ul style="list-style-type: none"> • DPWT 		
Construction phase					
C-1	<p>Cutting of trees in the right of way where required: Vegetation clearance for the Project will result in removal of at least 458 trees of different sizes and species of planted and natural species. There are 13 Endangered (EN) species of the IUNC Red List of Threatened Burma Padauk Species (<i>Pterocarpus macrocarpus</i>) identified within the COI and 12 species of these will be directly lost, if cleared. Most of these species are relatively small in size with the largest diameter stand was measured approximately 60cm of diameter at breast height.</p>	<ul style="list-style-type: none"> • Limit the vegetation clearance to the minimum necessary during construction to prevent the loss of natural habitats and associated species; • Design Project to strictly minimise disturbance to priority flora species by clearly marking the tree species that need to be retained and liaise with the construction contractor on the requirements; • High conservation value species including larger sized trees (e.g. <i>Samanea saman</i>) will be retained where possible with a consideration of road safety. Regular pruning and trimming of tree branches should be conducted to maintain visibility of road users. • Contractor prepares and implements plan for site clearance, excavation, restoration, tree replantation, etc. ISMC will review and approve the plan and monitor its implementation and report to PMU/DOR and DPWT; • Removal of trees will need to be consulted with local authorities and impacted households. The District Agriculture and Forestry Office (DAFO) should 	<ul style="list-style-type: none"> • Implementing by contractor • Monitoring by: <ul style="list-style-type: none"> - ISMC/FE - PMU/DOR - EDPD/PTI - DPWT - PONRE - DAFO 	<p>No complaints from local authority and/or residents.</p> <ul style="list-style-type: none"> • Number of trees replanted. 	<p>Also see related plans in ESCOP Part 3</p>

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
	<p>However, this species is found common in the Project region with smaller stands. More details are provided in ESIA Report (6.6.1)</p>	<p>provide oversight the vegetation clearing activities. Where practical, the high conservation value HCV) species should be transplanted in appropriate locations with support from the Contractor . The affected households who own these tree species should be given opportunities to transplant or harvest timbers in advance of clearing activities provided that they have appropriate personal safety equipment (PPE); Cleared areas should be progressively revegetated and rehabilitated throughout the life of the Project to restore vegetated areas where possible;</p> <ul style="list-style-type: none"> • Support local authorities and communities with seedlings to plant and/or maintain native trees especially the high conservation value species along the Project alignment during the operation to offset biodiversity loss due to the Project. It is recommended to plant more native saplings of the same species for each tree cut; and • Environmental education and awareness programs should be conducted for Project staff and contractors (e.g. through staff inductions) to ensure that the prohibitions and penalties regarding the collection of forest resources are widely known including hunting, buying or trading of wildlife. 			
C-2	<p>Establishment and operation of worker camps could increase waste generation, water pollution, and disturbance and other direct and indirect social impacts</p>	<ul style="list-style-type: none"> • Ensure that the sites for campsite are approved by the Project and local authority; Selection of the camp sites should be made through tripartite consultation including community, Contractor, and the project representative. • Ensure that basic camp facilities are provided 	<ul style="list-style-type: none"> • Implementing by contractor • Monitoring by: <ul style="list-style-type: none"> - ISMC/FE - PMU/DOR - EDPD/PTI 	<ul style="list-style-type: none"> • Location of the work camp should be shown in the alignment sheet and C-ESMP. 	<p>Also see related plans in ESCOP Part 3</p>

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
	to local community	<p>including security, septic tanks, latrines, safe water supply, mosquito net, blanket, safe paths, fire prevention equipment, etc.</p> <ul style="list-style-type: none"> • Ensure that (a) washing areas, demarcated and water from washing areas and kitchen is released in sumps, (b) septic tanks of appropriate design have been used for sewage treatment and outlets are released into sumps and must not create a pond of stagnant water, and (c) the latrines, septic tanks, and sumps are built at a safe distance from water body, stream, or dry streambed, and the sump bottom is above the groundwater level. • Details will be included in the C-ESMP under the Worker Camp Management Plan (WCMP). • Contractor prepares and implements the plan to management worker camp. • ISMC/FE will review and approve the plan and monitor its implementation and report results to PMU/DOR and DPWT. 	<ul style="list-style-type: none"> - DPWT - PONRE 	<ul style="list-style-type: none"> • No complaints from local authorities and local residents due to location and activities of the worker camps. <p>*Safe and comfortable living of staff and workers</p>	
C-3	Establishment and operation of construction materials and equipment yards and access roads would increase dust, noise, vibration, safety, and disturbance to local people	<ul style="list-style-type: none"> • Ensure that the locations are far away from residential areas and watercourses, and take actions to mitigate dust, noise, vibration, water pollution, waste, etc. • Implement measures indicated in related sub-plans described in ESCOP. • Contractor prepares and implements the plan on environmental quality management. • Implement safety measures as per the approved road safety audit report where relevant. • ISMC/FE will review and approve the plans and monitor the implementation and report to 	<ul style="list-style-type: none"> • Implementing by contractor • Monitoring by: <ul style="list-style-type: none"> - ISMC/FE - PMU/DOR - EDPD/PTI - DPWT - PONRE 	<p>Proper management of the site and no complaints from local authorities and residents</p> <p>Any related complaint</p>	Also see related plans in ESCOP Part 3

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
		PMU/DOR and DPWT.			
C-4	Disposal of waste generated from project sites may increase health issues to local people and unclean environment	<ul style="list-style-type: none"> Recycle metallic, glass waste; bury organic waste in impervious pit covered with soil. Ensure that waste material is properly disposed of in a manner that does not affect the natural drainage. Properly store and dispose hazardous wastes in accordance with ESCOP. Contractor prepares and implements the plan on waste management. ISMC/FE will review and approve the plan and monitor its implementation and report to PMU/DOR and DPWT. 	<ul style="list-style-type: none"> Implementing by contractor Monitoring by: <ul style="list-style-type: none"> ISMC/FE PMU/DOR EDPD/PTI DPWT PONRE 	<ul style="list-style-type: none"> No health issue occurred. Clean work sites and worker camp Any related complaint 	Also see related plans in ESCOP Part 3
C-5	Access tracks/ haulage routs	<ul style="list-style-type: none"> The moving machinery should remain within the project boundary. Ensure that the access tracks, which are prone to dust emissions and disturbance to local resident are managed by water spraying daily and the areas sensitive to noise and vibration are managed through enforcement of speed limit control. After completion of construction work all the damaged roads / tracks will be restored by the Contractor, as it is Contractor's obligations. Ensure that surface run-off controls are installed and maintained to minimize erosion. Restriction on movement of Contractor's vehicles on designation routes; deploy traffic men at the villages to control the traffic as needed. Place road safety warning sign visible during the day and the night, and signs marking of the road edge and construction areas. 	<ul style="list-style-type: none"> Implementing by contractor Monitoring by: <ul style="list-style-type: none"> ISMC/FE PMU/DOR EDPD/PTI DPWT PONRE 	No complaints from local residents regarding dust, noise, vibration, road safety, and the usage of the tracks/access roads	Also see related plans in ESCOP Part 3

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
		<ul style="list-style-type: none"> • Implement safety measures as per the approved road safety audit report where relevant. • Contractor prepares and implements the plan on traffic and transport management. • ISMC/FE will review and approved the plan and monitor its implementation and report to PMU/DOR and DPWT. 			
C-6	Hiring skilled workers from outside of the locality can create social conflicts with local peoples	<ul style="list-style-type: none"> • Hiring of workers from the local communities as much as possible. • Contractor prepares and implements the plan on labor management. 	<ul style="list-style-type: none"> • Implementing by contractor • Monitoring by: <ul style="list-style-type: none"> - ISMC/FE - PMU/DOR - EDPD/PTI - DPWT - PONRE 	Number of local workers at the worksite.	Also see related plans in ESCOP Part 3
C-7	Poor workers safety and hygienic conditions may cause accidents and illness of workers and/or create poor health and other social issues to local peoples	<ul style="list-style-type: none"> • Provide personal protective clothing and equipment for workers especially those handling hazardous materials, (helmets, adequate footwear) for concrete works (long boots, gloves), for welders (protective screen, gloves dungaree), etc. • Contractor prepares and implements the plan on occupational and community health and safety. • ISMC/FE will review and approved the plan and monitor its implementation and report to PMU/DOR and DPWT. 	<ul style="list-style-type: none"> • Implementing by contractor • Monitoring by: <ul style="list-style-type: none"> - ISMC/FE - PMU/DOR - EDPD/PTI - DPWT - PONRE 	Safe working conditions Number of accidents	Also see related plans in ESCOP Part 3
C-8	Water for staff and workers consumption and construction	<ul style="list-style-type: none"> • Provide adequate and safe water for consumption at sites and work camp. • Contractor prepares and implements the plan on work yard/camp. 	<ul style="list-style-type: none"> • Implementing by contractor • Monitoring by: <ul style="list-style-type: none"> - ISMC/FE 	Water tanker and pump provided by the Contractor	Also see related plans in ESCOP Part 3

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
		<ul style="list-style-type: none"> • ISMC/FE will review and approve the plan and monitor its implementation and report to PMU/DOR and DPWT. 	<ul style="list-style-type: none"> - PMU/DOR - EDPD/PTI - DPWT - PONRE 		
C-9	Interruption of water supply	<ul style="list-style-type: none"> • Inform residents and provide water supply as needed. • Contractor takes actions 	<ul style="list-style-type: none"> • Implementing by contractor • Monitoring by: <ul style="list-style-type: none"> - ISMC/FE - PMU/DOR - EDPD/PTI - DPWT - PONRE 	No complaint from residents	Also see related plans in ESCOP Part 3
C-10	Social issues	<ul style="list-style-type: none"> • Ensure that conflicts with local authorities and local communities are avoided. • Ensure that consultations and focus group meetings are conducted with both men and women to identify any water related and/or other issues related to the project implementation. • Contractor prepares and implements the Code of Conduct and plan on labor management. • ISMC/FE will review and approve the plan and monitor its implementation and report to PMU/DOR and DPWT. 	<ul style="list-style-type: none"> • Implementing by contractor • Monitoring by: <ul style="list-style-type: none"> - ISMC/FE - PMU/DOR - EDPD/PTI - DPWT - PONRE 	No social conflicts due to the subproject activities and/or workers. Any related complaint	Also see related plans in ESCOP Part 3
C-11	Storage of hazardous material (including wastes)	<ul style="list-style-type: none"> • Provide hard compacted, impervious and bounded flooring to hazardous material storage areas; Label each container indicating what is stored within; Train staff in safe handling techniques. • Contractor prepares and implements the plan on construction site management. 	<ul style="list-style-type: none"> • Implementing by contractor • Monitoring by: <ul style="list-style-type: none"> - ISMC/FE - PMU/DOR - EDPD/PTI 	No health hazard and water contamination occurred. Record of any accidents Any related complaint	Also see related plans in ESCOP Part 3

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
		<ul style="list-style-type: none"> • ISMC/FE will review and approve the plan and monitor its implementation and report to PMU/DOR and DPWT. 	<ul style="list-style-type: none"> - DPWT - PONRE 		
C-12	Construction activities; handling of fuels, oil spill and lubricants	<ul style="list-style-type: none"> • Ensure that no contaminated effluent is released to the environment. • Ensure that fuels, oils, and other hazardous substances handled and stored according to standard safety practices such as secondary containment. • Fuel tanks should be labeled and stored in impervious lining and dykes etc • Fire fighting arrangements should be made available • Ensure that vehicle refuelling to be planned on need basis to minimize travel and chance spills. • Ensure that operating vehicles are checked regularly for any fuel, oil, or battery fluid leakage. • Contractor prepares and implements the plan on construction site management including an Emergency Response Plan. • ISMC/FE will review and approve the plan and monitor its implementation and report to PMU/DOR and DPWT. 	<ul style="list-style-type: none"> • Implementing by contractor • Monitoring by: <ul style="list-style-type: none"> - ISMC/FE - PMU/DOR - EDPD/PTI - DPWT - PONRE 	No oil spill observed Record of any accidents	Also see related plans in ESCOP Part 3
C-13	Excavation of channels	<ul style="list-style-type: none"> • Proper compaction and water sprinkling. • Implement erosion control measures. 	<ul style="list-style-type: none"> • Implementing by contractor • Monitoring by: <ul style="list-style-type: none"> - ISMC/FE - PMU/DOR - EDPD/PTI - DPWT - PONRE 	Erosion and dust emission minimized	Also see related plans in ESCOP Part 3
C-14	Disposal of excavated material	<ul style="list-style-type: none"> • Stockpile the excavated material to non-agriculture and in a minimum area and away from storm water. Dispose in consultation with DPWT and community 		Minimum loss of habitat	

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
C-15	Loss of fertile soil and vegetation; impacts on natural vegetation and embankment erosion along the watercourse.	<ul style="list-style-type: none"> Remove top layer of soil of the location, stock in a proper place and once the construction is finished, put the soil back on that place. The leftover spoil soil should be collected and kept aside for rehabilitation of the site at later stage of the work; re-vegetate the embankments with indigenous plant species. Contractor prepares and implements the plan for site clearance and restoration. ISMC/FE will review and approve the plan and monitor its implementation and report to PMU/DOR and DPWT. 	<ul style="list-style-type: none"> Implementing by contractor Monitoring by: <ul style="list-style-type: none"> - ISMC/FE - PMU/DOR - EDPD/PTI - DPWT - PONRE 	River banks stabilized and re-vegetated	
C-16	Dust and smoke emissions	<ul style="list-style-type: none"> Cover all truckloads of loose materials during transportation. Water spraying at least 3 times per day before commuting to work/schools or any other methods are used by the Contractor to maintain the works areas, adjacent areas, and roads, in a dustless condition, as well the vehicle speed not to be exceeded from 30Km/h. Vehicles will be tuned regularly to minimize the smoke emissions. Contractor prepares and implements the plan for environmental quality management. ISMC/FE will review and approve the plan and monitor its implementation and report to PMU/DOR and DPWT. 	<ul style="list-style-type: none"> Implementing by contractor Monitoring by: <ul style="list-style-type: none"> - ISMC/FE - PMU/DOR - EDPD/PTI - DPWT - PONRE 	Dust and smoke controlled Any related complaint	Also see related plans in ESCOP Part 3 (EQMP)
C-17	Noise pollution, Vibration	<ul style="list-style-type: none"> Conduct vibration risk assessment as part of CESMP where especially where the community structures are located at the adjacent to the COI. Ensure the construction method statement to avoid vibration impacts to the community or/and 		Excessive noise generation controlled Any related complaint	Also see related plans in ESCOP Part 3 (EQMP)

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
		individual structures and facilities. <ul style="list-style-type: none"> • Pay compensation to any damages such as crack to the structures or properties. • Vehicles and equipment to be fitted, as applicable, with properly maintained silencers. Restrictions on using vehicle horns, loudly playing radio/tape recorders etc. • Contractor prepares and implements the plan for environmental quality management. • Nighttime construction works near sensitive receptors such as hospitals will be avoided. Liaison with the communities will be maintained for carrying out works near the communities in order the schedule the noise generating works appropriately thus causing least disturbance to the communities. • Noise monitoring will be carried out at sensitive receptors (eg, schools and healthcare facilities) and appropriate/feasible mitigation measures will be considered and integrated into the detailed design in consultation with all the key stakeholders. • It will be ensured that the noise levels remain within relevant standards (eg WHO). • ISMC/FE will review and approve the plan and the design of mitigation measures and monitor its implementation and report to PMU/DOR and DPWT.. 			
C-18	Excavation of borrow areas	<ul style="list-style-type: none"> • Excavate borrow soil up to maximum depth of 0.5m; with slope boundaries. • Implement erosion control measures. • Contractor prepares and implements the plan for 	<ul style="list-style-type: none"> • Implementing by contractor • Monitoring by: <ul style="list-style-type: none"> - ISMC/FE 	Borrow area rehabilitated as per specification Any related complaint	Also see related plans in ESCOP Part 3

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
		quarry and borrow pit management plan. • ISMC/FE will review and approve the plan and monitor its implementation and report to PMU/DOR and DPWT.	- PMU/DOR - EDPD/PTI - DPWT - PONRE		
C-19	Rehabilitation of borrow pits	• Proper rehabilitation of borrow pits; Removal and storage of top 15 cm topsoil having organic materials and spreading it back during restoration of borrow area. • Contractor prepares and implements the plan for quarry and borrow pit management plan. • ISMC/FE will review and approve the plan and monitor its implementation and report to PMU/DOR and DPWT.		Borrow areas rehabilitated Any related complaint	
C-20	Encountering archaeological sites during earth works	• The subproject field supervisor (ISMC or filed engineer) will halt the work at the site and inform to the regional team leader and Archaeological Department immediately. • Contractor to follow “chance finds procedure” in ESCOP. • ISMC/FE will review and approve the plan and monitor its implementation and report to PMU/DOR and DPWT. • Contractor to follow “chance finds procedure” in ESCOP • ISMC/FE will review and approve the plan and monitor its implementation and report to PMU/DOR and DPWT.	• Implementing by contractor • Monitoring by: - ISMC/FE - PMU/DOR - EDPD/PTI - DPWT - PONRE	The report from the ISMC/FE, community, and contractor	See “chance find procedures” in ESCOP
C-21	Aesthetic/ scenic quality	• Carry out complete restoration of the construction sites.	• Implementing by contractor • Monitoring by:	Cleanliness and tidiness of works sites and work camp	See all relevant plans in ESCOP

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
		<ul style="list-style-type: none"> Remove all waste, debris, unused construction material, and spoil from the worksites. Contractor to follow all ESS requirements in ESCOP ISMC/FE will review and approve the plan and monitor its implementation and report to PMU/DOR and DPWT. 	<ul style="list-style-type: none"> ISMC/FE PMU/DOR EDPD/PTI DPWT PONRE 	Any related complaint	
C-22	Disruption of local businesses and loss of income	<ul style="list-style-type: none"> Development of a recruitment system that allows for employment opportunities across all project affected communities. Develop contracts for casual laborer. Ensure that legal wages are paid to construction and ancillary workers in line with Lao Labor Law and minimum wages set in the Project area. Implement a transparent and participatory compensation and livelihood restoration process as per the RP. 	<ul style="list-style-type: none"> Implementing by contractor Monitoring by: <ul style="list-style-type: none"> ISMC/FE PMU/DOR EDPD/PTI DPWT PONRE 	<ul style="list-style-type: none"> Number of local people employed by the Project/contractor in casual and full time jobs; Compensation and livelihood restoration have been delivered to affected households appropriately. No complaints from local people. 	Refer to RP
C-23	Impacts and/or disturbance on cultural, traditional and heritage sites including secret sites, cemeteries and temples, caused by the construction activities and the influx of construction workers into the region.	<ul style="list-style-type: none"> Develop control measures (do's and don'ts) for non-Lao workers, site engineers and consultants Conduct induction training on Lao culture and traditional for non-Lao workers, site engineers and consultants Before commencement of construction, consult with village authorities to inform on the potential impacts and seek advice on appropriate procedure and ceremony implemented by different cultures and beliefs especially ethnic groups Respect Lao/local beliefs and traditional such as no 	<ul style="list-style-type: none"> Implementing by contractor Monitoring by: <ul style="list-style-type: none"> ISMC/FE PMU/DOR EDPD/PTI DPWT PONRE 	<ul style="list-style-type: none"> Complaints received. Number of unresolved complaints regarding cultural resources. Number of related trainings conducted. Number of community consultation conducted on cultural issues. 	

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
		major construction activities nearby community (temple, secret, cemetery) on the Buddha Day. <ul style="list-style-type: none"> • Implementation of “Chance Find Procedures” as specified in Part (2), Annex 2. • Application of NR13SE ESCOP (Annex 2) • Application of NR13SE Generic COC on SEA/SH/VAC (Annex 3) 			
C-24	Occupational health and safety (OHS): failure to implement measures to avoid accidents and injuries involving workers and the public; introduction of sexually transmitted or other diseases by non- local workers; outbreaks of diseases such as Covid-19, malaria, diarrhoea, etc. in the labor force; gender-based violence (discussed above), inadequate sanitation in worker’s camp (discussed in section on Worker’s Camp); pressures on existing health systems at the local level. Particular attention should be paid to women and other vulnerable persons.	<ul style="list-style-type: none"> • Appoint an Environmental Health and Safety Officer (EHSO) who shall be responsible for training, monitoring and reporting on EHS concerns and implementing health and safety related-programs. • Conduct orientation for construction workers regarding emergency response procedures and equipment in case of accidents (i.e. head injury from falling, burns from hot bitumen, spills of hazardous substances, etc.), fire, etc.; health and safety measures, such as on the use of hot bitumen products for paving of project roads, etc.; prevention of Covid-19, HIV/AIDS, malaria, diarrhoea, and other related diseases, as well as Code of Conduct (including discussion of sex and GBV). • Provide fire extinguish equipment and appropriate emergency response equipment (based on on-going construction activities) at the work areas and at construction and workers camps. • Provide first aid kits at each camp and working sites that are readily accessible by workers. In addition, the contractor shall prepare emergency procedures detailing arrangements with commune health center(s) or nearest hospital(s) to 	<ul style="list-style-type: none"> • Implementing by contractor • Monitoring by: <ul style="list-style-type: none"> - ISMC/FE - PMU/DOR - EDPD/PTI - DPWT - PONRE 	<ul style="list-style-type: none"> • Complaints received. Number of unresolved complaints regarding OHS • Number of community trainings conducted. • Number of community members involved in training. 	

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
		<p>accommodate emergency cases from the work location.</p> <ul style="list-style-type: none"> • Provide workers with appropriate safety equipment/devices (such as dust mask, safety helmets, safety shoes or boots, goggles, ear plugs, etc.) and strictly require them to use these as necessary. • Install sign boards, lighting system at the construction sites, borrow pits, or places which may cause accidents for vehicle, people and workers. • Strictly impose speed limits on construction vehicles along residential areas and where other sensitive receptors such as schools, pagodas, hospitals, and other populated areas are located. • Educate drivers on safe driving practices to minimize accidents and to prevent spill of hazardous substances and other construction materials by providing covers over transporting dump trucks. • Barriers (i.e. temporary fence) shall be installed at construction areas to deter pedestrian access to these areas except at designated crossing points. • Sufficient lighting at night as well as warning signs shall be provided in the periphery of the construction site. • The general public/ local residents, and in particular children, shall not be allowed in high-risk areas, i.e. excavation sites and areas where heavy equipment is in operation. • Provide fencing on all areas of excavation greater than 2m deep. • Ensure reversing signals are installed on all 			

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
		<p>construction vehicles.</p> <ul style="list-style-type: none"> • Measures to prevent malaria if in areas where malaria is an issue, shall be implemented (i.e. provision of insecticide treated mosquito nets to workers, spraying of insecticides, installation of proper drainage to avoid formation of stagnant water, etc.). • Discharge of untreated sewage shall be prohibited. • Conduct road safety trainings for workers and roadside community. • Conduct trainings on Covid-29, HIV/AIDS and STDs with workers and the community (separately). • Conduct trainings on SEA/SH and VAC with workers and the community (separately). • Ensure particular attention is provided to the needs of women and other vulnerable persons, for instance conducting specific trainings for them led by appropriate trainers (i.e. women-only training on HIV/AIDS and/or GBV led by a woman). • Ensure access to grievance redress mechanism. • Ongoing consultations and awareness raising of local communities. • Free testing for Covid-19 and HIV/AIDS. • Establish health facilities at worker’s camps and/or take measures to support or enhance existing health centers at the village, commune or district level. • Application of NR13SE ESCOP (Annex 2) • Application of NR13SE Generic COC on SEA/SH/VAC (Annex 3) • Implementation of CESMP 			

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
C-25	<p>Community health and safety and damages to community facilities/individual structures that may be caused by:</p> <ul style="list-style-type: none"> • Safe zone of 1.5m • transport of materials and spoils, operation of construction equipment and various construction activities community facilities. • the excavations/digging for installation of side drains especially where the community structures are located at the adjacent to the COI 	<ul style="list-style-type: none"> • Conduct risk assessment as part of CESMP. • Prepares and implements Community health and safety plan. • Implement a project grievance mechanism to record and respond to community complaints. • Implement community health and safety awareness activities. • Identify suitable speed limits for the primary and ancillary roads and require strict driver adherence, particularly through settlements. • Develop and follow a vehicle maintenance program. • Ongoing consultations with and provide notification to local communities on construction schedule and activities. • Provide sufficient watchmen during the construction activities especially where the community. • Install proper fence at where the community structures are located at the adjacent to the COI • Provide access over ditches at construction sites to community facilities and install fall protection fences. • Require driver training for all personnel that is specific to the type of vehicle that will be driven; • Identify suitable speed limits for the primary and ancillary roads and require strict driver adherence, particularly through settlements. • Not allow overloading of trucks used for all project-related activities. • Immediately repair any damage or pay compensation caused by the Project to community 	<ul style="list-style-type: none"> • Implementing by contractor • Monitoring by: <ul style="list-style-type: none"> - ISMC/FE - PMU/DOR - EDPD/PTI - DPWT - PONRE 	<ul style="list-style-type: none"> • Complaints received. • Number of unresolved complaints regarding community health and safety and damages to community facilities and structures and/or individual structures • Number of community trainings conducted. • Number of community members involved in training. 	

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
		<p>and/or private facilities such as water supply, power supply, irrigation canals, drainage, structures, etc. The contractor to pay adequate compensation to affected parties, as necessary.</p> <ul style="list-style-type: none"> • Access roads damaged during transport of construction materials and other project- related activities shall be reinstated upon completion of construction works. • All affected communities shall be made aware of the project grievance redress mechanism and will be provided information in advance on construction activities that may cause public nuisance and disturbance. • Application of NR13SE ESCOP (Annex 2) • Application of NR13SE Generic COC on SEA/SH/VAC (Annex 3) • Implement safety measures as per the approved road safety audit report where relevant. • Implementation of CESMP 			
C-26	<p>Traffic Disruption and Road Safety:</p> <ul style="list-style-type: none"> • Road construction works are expected to cause traffic disruption and congestion and obstruction of access to roadside properties and establishments. • Lack of proper traffic warning signs and other safety measures could 	<ul style="list-style-type: none"> • Include safety risks assessment/road safety audit results in this ESMP and will be included in the CESMP. • Contractor develops the plan on traffic and transport management for construction to identify and minimize risks associated with road transport in compliance with the the approved road safety audit report where relevant. • Require driver training for all personnel that is specific to the type of vehicle that will be driven; • Identify suitable speed limits for the primary and ancillary roads and require strict driver adherence, 	<ul style="list-style-type: none"> • Implementing by contractor • Monitoring by: <ul style="list-style-type: none"> - ISMC/FE - PMU/DOR - EDPD/PTI - DPWT - PONRE 	<ul style="list-style-type: none"> • Complaints received. • Number of unresolved complaints regarding traffic disruption • Number of community trainings conducted. • Number of community members involved in training. 	

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
	<p>cause accidents.</p> <ul style="list-style-type: none"> • Limit/block access to shops, schools, hospitals, restaurants, etc, and lose of incomes. 	<p>particularly through settlements.</p> <ul style="list-style-type: none"> • Develop and follow a vehicle maintenance program. • In cooperation with the local traffic authorities, properly organize transport of materials for the project to avoid congestion. • Set up clear traffic signal boards and traffic advisory signs at the roads going in and out the road and bridge construction sites to minimize traffic build-up. • Regularly monitor traffic conditions along access and Project roads to ensure that project vehicles are not causing congestion. • Provide sufficient lighting at night within and in the vicinity of construction sites. • Implement suitable safety measures to minimize risk of adverse interactions between construction works and traffic flows through provision of temporary signals or flag controls/flagman, adequate lighting, fencing, signage and road diversions. • Provide temporary accesses to properties and businesses affected by disruption to their permanent accesses. • Reinstate good quality permanent accesses following completion of construction. • Provide safe vehicle and pedestrian access around construction areas. • Provide adequate signage, barriers and flag persons for traffic control. • If necessary, traffic will be diverted for safe and smooth movement of vehicles to ensure smooth traffic flow and minimize accidents, traffic hold ups 			

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
		and congestion. <ul style="list-style-type: none"> • Temporary by-passes should be constructed and maintained (including dust control) during the construction period particularly at bridge crossings. Location of temporary bypasses shall be agreed with local authorities and such sites shall be reinstated upon completion of works. • Limit the activities to non-business hours (if possible) and complete the works soonest possible. A timeframe must be developed and consulted with affected parties before starting the works. • Provide appropriate temporary access (wood/steel platform) with handrails • Clear all construction material/equipment from the access path • At school, hospitals/referral hospitals, provided traffic signs and flagmen to facilitate traffic. • Implement safety measures as per the approved road safety audit report where relevant. • Conduct road safety awareness campaign with affected communities. • Application of NR13SE ESCOP (Annex 2) • Application of NR13SE Generic COC on SEA/SH/VAC (Annex 3) • Implementation of CESMP 			
Operation Phase					
O-1	Air emissions from traffic on NR13SE	<ul style="list-style-type: none"> • Contractor maintains the NR13 South road surface. • ISMC/FE supervises the operation and maintenance and reports to PMU/DOR and DPWT in the first 1-2 years of O&M phase. PMU/DOR and DPWT will 	<ul style="list-style-type: none"> • Contractor • ISMC/FE • PMU/DOR • DPWT 	Air quality parameters of interest are within the National Environmental Standards.	National Environmental Standards (2017) – Air Quality

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
		<p>supervise the maintenance afterwards.</p> <ul style="list-style-type: none"> • Introduce/encourage use of modern, efficient vehicles. • Introduce encourage use of low emission fuels. • Do not overload heavy trucks. • Implement an air quality public liaison and complaints procedures. • Regularly monitor air quality. 	<ul style="list-style-type: none"> • Road Users • General Public 		
O-2	Decongestion of the existing road network	<ul style="list-style-type: none"> • Beneficial impact, therefore no management measures are proposed. 	<ul style="list-style-type: none"> • N/A 	N/A	Positive
O-3	Improvement in regional accessibility and connectivity	<ul style="list-style-type: none"> • Implement appropriate signage on the NR13 South for urban areas bypassed by the project to identify these urban areas as stop-overs for fuel supplies, accommodation etc and to support the demand for goods and services in these areas. 	<ul style="list-style-type: none"> • Contractor • ISMC/FE • PMU/DOR • DPWT • 	Appropriate traffic and road signs have been installed and maintained.	N/A
O-4	Time travel reduction	<ul style="list-style-type: none"> • Beneficial impact, therefore no management measures are proposed. 	<ul style="list-style-type: none"> • N/A 	N/A	Positive
O-5	Disruption of local access routes as a result of land acquisition for the project alignment (including current vehicle access routes and pedestrian footpaths)	<ul style="list-style-type: none"> • Implement measures from Pre-Construction and Construction Phases, where applicable. • Severance impacts from the Construction phase will continue into the O&M phase. These will be partly mitigated through the appropriate design and development of crossing areas along the alignment. The level of impact will depend on distance from a crossing area. • Implement safety measures as per the approved road safety audit report where relevant. 	<ul style="list-style-type: none"> • Contractor • ISMC/FE • PMU/DOR • DPWT • 	The sensitive sections of the NR13 South have been further improved and maintained as required.	National Road Maintenance Fund may apply.

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
O-6	Community safety and changed traffic conditions	<ul style="list-style-type: none"> • Ensure accessibility impacts are minimized through provision of pedestrian crossings and alternate routes for vehicles where required. • Regularly monitor and maintain the installed road safety measures such as traffic signal boards, pedestrian crossings and etc. • Strictly enforce over-speed driving; • Conduct community education campaigns to raise awareness regarding the safety practices to help improve road safety behaviors. • Implement safety measures as per the approved road safety audit report where relevant. 	<ul style="list-style-type: none"> • Contractor • ISMC/FE • Department of Transport, DOR/MPWT • DPWT 	<ul style="list-style-type: none"> • Road traffic incidents reduced; • Road safety design measures implemented; • Community and general road users are aware of road safety and regulations. 	N/A
O-7	Traffic related noise and vibration impacts from traffic on communities	<ul style="list-style-type: none"> • Road safety programs should be developed and delivered to road side community and other frequent road users (such as schools). Special attention to villagers travelling by foot along road, including women, and children should be delivered. • Strengthening local enforcement mechanisms, such as additional support to local-level government to monitor road safety and implement road safety awareness activities. • Conduct operational noise monitoring within a year of operations to compare the actual noise performance of the project against predicted noise performance and review model and management measures if required. This should also include a review of the grievance register for any noise complaints. • Maintain the NR13 South road surface. • Prohibit use of truck hydraulic braking in community 	<ul style="list-style-type: none"> • Contractor • ISMC/FE • Department of Transport, DOR/MPWT • DPWT 	No complaint on noise pollution.	N/A

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
		<p>areas</p> <ul style="list-style-type: none"> • Implement a noise and vibration public liaison and complaints procedure. • Regularly monitor noise and vibration. 			
O-8	Waste management on the NR13SE	<ul style="list-style-type: none"> • Install ‘No littering’ signs along roadway and provide waste bins at rest areas. • Install drainage litter traps along the ROW. • Conduct regular litter collection activities along the roadside and embankments to prevent the accumulation of domestic waste (e.g. water bottles, packaging, vehicle waste (e.g. tyre material, wheel hub caps). 	<ul style="list-style-type: none"> • Contractor • ISMC/FE • Department of Transport, DOR/MPWT • DPWT 	The NR13 South has been maintained and cleaned.	National Road Maintenance Fund may apply
O-9	Water pollution due to road maintenance on NR13SE	<p>The following road maintenance measures should be applied to minimize water quality impacts of spills from transport accidents or from contaminated runoff, as part of a regular program:</p> <ul style="list-style-type: none"> • Inspect barriers, fences, erosion and sediment control devices. • Maintain retaining walls to minimize cracks and water damage. • Repair pot-holes and shoulder erosion to minimize risk of vehicle accidents. • Maintain stormwater energy dissipaters and velocity controls on open drains to lower runoff velocity and control soil erosion. • Dispose of accumulated sediment collected from detention ponds, drainage systems, and pollution control structures, and any wastes generated during maintenance operations in accordance with appropriate government requirements. 	<ul style="list-style-type: none"> • Contractor • ISMC/FE • Department of Transport, DOR/MPWT • DPWT 	The NR13 South has been maintained and cleaned.	National Road Maintenance Fund may apply

Ref.	Activities causing impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
		<ul style="list-style-type: none"> • Use techniques during bridge maintenance such as suspended tarpaulins, vacuum collection or booms to prevent paint spills, solvents and scrapings from becoming waterborne pollutants. • Keep drainage ditches free from accumulated debris. 			

Table A1-2 Site Specific-ESMP (Alignment Sheet)

Location	Conceptual Design re-alignment	Site Description	Potential Impacts (PI)	MMs – Construction Phase (MM-CP)	MMs –Operation Phase (MM-OP)
Generic Impacts and Mitigation Measures					
KM 21+300 to KM71+300	<ul style="list-style-type: none"> Overlay existing alignment 12m and expansion to 18m at some sections Median (2m) Side walk (2x1.5m) Safe zone (2x1.5m) Concrete Pavement Maintenance and extension Box culverts. Construction of Pipe Culverts Construction of Box Culverts in Access road. Construction of Bus stops. Construction of 1 U turn. Construction of RC-U ditch Permanent Project Engineer camp 	<ul style="list-style-type: none"> Villages, schools, health centers, temples, cemeteries Rivers and streams Fallow forest Residential and agriculture land 	<ul style="list-style-type: none"> Increased incidences of disease, HIV/AIDS infection rate, GBV, social issues and cultural destruction resulting from the influx of construction workers into the region. Potential employment issues due to labor influx from outside project areas. Wastes and spills of hydrocarbons at storage, work camp, stockyard, parking areas, etc. 	<ul style="list-style-type: none"> Comply with project RP Comply with the project ESMP, section 5.7 Comply with table A1-1 Application of NR13SE ESCOP (Annex 2) Application of NR13SE Generic COC on GBV/VAC (Annex 3) Prepare and implement Worker Camp Management and Operation; Occupational and Community Health and Safety Plans; Traffic Management Plan; Spill Response Plan; Labor Influx Management Plan; and Chance Find Procedure 	<ul style="list-style-type: none"> Prepare and implement ESS Pre-site Closure Plan; Regular monitoring, maintenance and cutting grasses/brushes growing on both sides of roads; Community training/awareness on road safety; Improvement in regional accessibility and connectivity. EDPD/PTI and DPWT in consultation with DOT shall conduct road safety meetings and campaigns DPWT shall keep the ROW clear of new encroachment and effectively manage existing ROW
Specific Impacts and Mitigation Measures					
Km 21+300-	<ul style="list-style-type: none"> Width of road 18m 	Village/Community Areas:	<ul style="list-style-type: none"> Increased incidences of disease, HIV/AIDS infection rate, GBV, social 	<ul style="list-style-type: none"> Comply with project RP Comply with the project 	<ul style="list-style-type: none"> Prepare and implement ESS Pre-site Closure Plan;

<p>Km 26+000</p>	<ul style="list-style-type: none"> • Median (2m) • Side walk (2x1.5m) • Concrete Pavement • Maintenance and extension 4 Box culverts. • Construction of 2 Pipe Culvert • Construction of 18 Box Culverts in Access road. • Construction of 4 Bus stops. • Construction of 1 U turn. • Construction of RC-U ditch 	<ul style="list-style-type: none"> • B. Khoksivilay • B. Nonthong • B. Phailom • B. Somsavanh • 2 Military camps • Faculty of Agriculture • 1 Market • 1 Revolutionary Cemetery • 1 Temple • 1 Health Center • 64 Trees: Ø10-Ø100 	<p>issues and cultural destruction resulting from the influx of construction workers into the region.</p> <ul style="list-style-type: none"> • Potential employment issues due to labor influx from outside project areas. • Wastes and spills of hydrocarbons at storage, work camp, stockyard, parking areas, etc. • Impact on residential property and land acquisition (refer to RP Section 2.3): <ul style="list-style-type: none"> • Affected residential land: 6 HHs, 1828.4 m² • Affected houses: 2HHs, Structures, 53.25m² • Affected Shops: 48 HHs, Structures, 1509.41m² • Affected secondary structures: <ul style="list-style-type: none"> Porch of house: 2 HHs ,49m² ; Porch of shop: 1 HHs,16.45m²; Kitchen:0 m² Hut: 3 HHs, 47m² Guard house:0 m² Brick wall fence: 11 HHs, 412.6m² Steel Fence: 11 HHs, 216.5m • Affected public utilities: <ul style="list-style-type: none"> Electric pole 8m No. 22 Electric pole 12m No. 17 Water supply pole No. 3 Steel lighting No. 2 	<p>ESMP, section 5.7</p> <ul style="list-style-type: none"> • Comply with table A1-1 (PC-1, C-1, C-2, C-5, C-6, C-7, C-9, C-18, C-19 • Application of NR13SE ESCOP (Annex 2) • Application of NR13SE Generic COC on GBV/VAC (Annex 3) • Prepare and implement Worker Camp Management and Operation; Occupational and Community Health and Safety Plans; Traffic Management Plan; Spill Response Plan; Labor Influx Management Plan; and Chance Find Procedure 	<ul style="list-style-type: none"> • Regular monitoring, maintenance and cutting grasses/brushes growing on both sides of roads; • Community training/awareness on road safety; • Improvement in regional accessibility and connectivity. • EDPD/PTI and DPWT in consultation with DOT shall conduct road safety meetings and campaigns • DPWT shall keep the ROW clear of new encroachment and effectively manage existing ROW
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<p>Km 26+000- Km 31+000</p>	<ul style="list-style-type: none"> • Width of road 18m • Median (2m) • Side walk (2x1.5m) • Concrete Pavement • Maintenance and extension 2 Box culvert • Maintenance and extension of 1 Pipe Culvert • Construction of 2 Pipe Culverts • Construction of 16 Box Culverts in Access road. • Construction of 2 Bus stops. • Construction of 2 U turns. • 1 Pedestrian crossing bridge • Construction of 	<p>Village/Community Areas:</p> <ul style="list-style-type: none"> • B. Somsavanh • B. Khoksavang • B. Phonsavanh • B. Naphasouk • 5 Temples • 1 Kindergarten School • 2 Primary Schools • 2 Market • 1 Military camp • 4 Light forest • 1 Vientiane fuel depot • 63 Trees: Ø12-Ø200 	<ul style="list-style-type: none"> • Erosion and sediment transport and suspended solid in downstream watercourses; • Long-term water diversion channels resulting in alteration of hydrological regime (flooding in raining season/reduced flow in dry season) poses negative impacts on community aquatic resources and water users/community; • Noise and dust pollution pose risks for impacts ranging from nuisance level to serious health impacts; • Changed road conditions during construction impacting on efficiency of travel modes and potential road safety; • Impact on residential property and land acquisition (refer to RP Section 2.3): <ul style="list-style-type: none"> • Affected residential land: 3 HHs, 368 m² • Affected houses: 1 HHs, 25.85m² • Affected Shops: 20 HHs, 674.4 m² • Affected secondary structures: Porch of house: 1 HHs , 16.45m² 	<ul style="list-style-type: none"> • Refer to Table A1-1: #C-1, C-3; #C-4; #C-6; #C-9; #C-11; #C-16; #C-17; #C-20; #C-21, #C-22, #C-23, #C-24, #C-25, #C26 	<ul style="list-style-type: none"> • Refer to Table A1-1: -O-1, #O-2; #O-3; #O-5; O-6, O-7, O-8,

	RC-U ditch		<p>Porch of shop: 27 HHs, 722.84m² Kitchen: m² Hut: 2 HHs, 49m² Guard house: 2 HHs, 23.5m² Brick wall fence: 10 HHs, 574.05m² Steel Fence: 6 HHs, 399m² Signs 43 HHs , area: 423.55 m²</p> <ul style="list-style-type: none"> Affected public utilities: Electric pole 8m No. 8 Electric pole 12m No. 23 Water supply pole No. 1 Water supply door No. 1 Signs No. 3, area: 37 m² Underground Cable: 3670 m 		
Km 31+000- Km 36+000	<ul style="list-style-type: none"> Width of road 18m Median (2m) Side walk (2x1.5m) Concrete Pavement Maintenance and extension 1 Box culverts. Maintenance and extension of 1 Pipe culvert Construction of 1 Pipe culvert Construction of 	<p>Village/Community Areas:</p> <ul style="list-style-type: none"> B. Naphasouk B. Dongkhouay B. Borlek 4 Light forest 1 Asphalt factory 2 Temple 1 Market 2 Primary School 1 Cemetery 63 Trees: Ø15-Ø180 	<ul style="list-style-type: none"> Noise and dust pollution pose risks for impacts at nuisance level; Community health and safety; Changed road conditions during construction impacting on efficiency of travel modes and potential road safety; Impact on residential property and land acquisition (refer to RP Section 2.3): Affected residential land: 16 HHs, 1423.75m² Affected garden land: 1 HHs, 375m² Affected houses: 2HHs with 2 Structures and 88.5m² 	Refer to Table A1-1: #P-1; #C-1; #C-2; C-3; #C-4; #C-16; #C-17; C-22; #C-23, #C-24, #C-25, #C26	Refer to Table A1-1: #O-1; #O-5; #O-6; #O-7; O-8;

	<ul style="list-style-type: none"> 19 Box Culverts in Access road. • Construction of 1 U turn. • Construction of 4 Bus stops. • Construction of 1 Pedestrian crossing bridge • Construction of RC-U ditch • Re-alignment Km 35+900 		<ul style="list-style-type: none"> • Affected Shops: 40 HHs, Structures, 1302.15m² • Affected secondary structures: Porch of house: 1 HHs , 24m² Porch of shop: 26 HHs, 591.96m² Kitchen: m² Hut: 1 HHs, 22.5m² Guard house: 1 HHs m² Brick wall fence: 16 HHs, 233.4m² Steel Fence: 6 HHs, 237.3m Signs 18 HHs , area: 533.79 m² Water Mater: HHs1 No.1 • Affected public utilities: Electric pole 8m No. 27 Electric pole 12m No. 38 Signs No. 1, area: 3.12 m² Underground Cable: 1950 m 		
<p>Km 36+000- Km 41+000</p>	<ul style="list-style-type: none"> • Width of road 18m • Median (2m) • Side walk (2x1.5m) • Concrete Pavement • Remove of 3 Pipe culverts • Construction of 1 Pipe culvert • Construction of 9 Box Culverts in Access road. • Construction of 2 	<p>Village/Community Areas:</p> <ul style="list-style-type: none"> • B. Borlek • B. Nongbuathong • B. Khoksa • 1 Dharma practice place • 1 Light forest • 2 Temples • 1 Secondary School • 1 Health Center 	<ul style="list-style-type: none"> • Noise and dust pollution pose risks for impacts at nuisance level; • Community health and safety; • Temporary impact on local stream hydrology and water quality during rainy season and construction period; • Changed road conditions during construction impacting on efficiency of travel modes and potential road safety. • Impact on residential property and land acquisition (refer to RP Section 	<p>Refer to Table A1-1: #P-1; #C-1; #C-2; C-3; #C-4; #C-16; #C-17; #C-20; C-22; #C-23, #C-24, #C-25, #C26</p>	<p>Refer to Table A1-1: #O-1; O-5; #O-6; #O-7, O-8</p>

	<p>bus stops</p> <ul style="list-style-type: none"> • Construction of 2 U turns • Construction of RC-U ditch 	<ul style="list-style-type: none"> • 51 Trees: Ø10-Ø100 	<p>2.3):</p> <ul style="list-style-type: none"> • Affected residential land: 11 HHs, 1034.95m² • Affected paddy field land: 2 HHs, 10687.5m² • Affected houses: 3 HHs with 92.8m² • Affected Shops: 9 HHs with 243.75m² • Affected secondary structures: Porch of house: 2 HHs , 47m² Porch of shop: 12 HHs, 337.54m² Kitchen: m² Hut: 1 HHs, 12.5m² Guard house: m² Brick wall fence: 2 HHs, 125.9m² Steel Fence: 8 HHs, 348.5m² Signs 21 HHs , area: 180.35 m² Electric pole 8m: 1 HHs,No.1 • Affected public utilities: Electric pole 8m No. 11 Electric pole 12m No. 18 Power divider No. 1 Manhole of water supply No. 1 Water supply door No. 2 Signs No.2 , area: 14 m² Underground Cable: 5588 m Tamarind tree No. 1 Porch: 13.89 m² 		
<p>Km 41+000- Km 46+000</p>	<ul style="list-style-type: none"> • Width of road (12m, 18m) • Median (0m, 2m) 	<p>Village/Community Areas:</p> <ul style="list-style-type: none"> • B. Khoksa 	<ul style="list-style-type: none"> • Noise and dust pollution pose risks for impacts at nuisance to sensitive receptors particularly the 	<p>Refer to Table A1-1: #P-1; #C-1; #C-2; C-3; #C-4; #C-16; #C-17; C-22; #C-23, #C-</p>	<p>Refer to Table A1-1: #O-1; O-5; #O-6; #O-7, O-8</p>

	<ul style="list-style-type: none"> • Side walk (0m, 2x1.5m) • Concrete Pavement • Construction of 2 Pipe culverts • Construction of 9 Box culverts in Access road • Construction of 8 Pipe culverts in Access road • Construction of 2 bus stops • Construction of RC-U ditch 	<ul style="list-style-type: none"> • B. Thangkhong • B. Donehai • B. Naxone • 1 Primary School • 1 Market • 2 Cemeteries • 1 Temple • 2 Light forest • 44 Trees: Ø10-Ø90 	<p>community health center.</p> <ul style="list-style-type: none"> • Community health and safety; • Changed road conditions during construction impacting on efficiency of travel modes and potential road safety. • Impact on residential property and land acquisition (refer to RP Section 2.3): • Affected residential land: 2 HHs, 126m² • Affected Shops: 1 HHs with 16m² • Affected secondary structures: Porch of house: HHs , m² Porch of shop: 6 HHs, 81.8m² Kitchen: m² Hut: m² Guard house: m² Brick wall fence: 1 HHs, 7m² Steel Fence: 2 HHs, 22.1m Signs 17 HHs , area: 101.52 m² Water supply pipe: 1 HHs, 2900m Street light pole: 3 HHs, No.3 • Affected public utilities: Electric pole 8m No. 12 Electric pole 12m No. 2 Street light pole No. 2 Underground Cable: 2065 m 	<p>24, #C-25, #C26</p>	
<p>Km 46+000- Km 51+000</p>	<ul style="list-style-type: none"> • Width of road 12m • Side walk (0m, 2x1.5m) • Concrete 	<p>Village/Community Areas:</p> <ul style="list-style-type: none"> • B. Naxone 	<ul style="list-style-type: none"> • Noise and dust pollution pose risks for impacts at nuisance to sensitive receptors; • Community health and safety; 	<p>Refer to Table A1-1: #P-1; #C-1; #C-2; C-3; #C-4; #C-16; #C-17; C-20; C-22; #C-</p>	<p>Refer to Table A1-1: #O-1; O-5; #O-6; #O-7, O-8</p>

	<ul style="list-style-type: none"> Pavement Construction of 3 Pipe culverts Remove of 1 Pipe culvert Maintenance and extension of 1 Box culvert Maintenance and extension of 4 Pipe culverts Construction of 5 Pipe culverts in Access road Construction of 12 Box culverts in Access road Construction of 4 bus stops Construction of 1 Parking bay Construction of RC-U ditch 	<ul style="list-style-type: none"> 5 Light forest 1 Cemetery 2 Temples 1 Primary School 1 Health Center 25 Trees: Ø10-Ø80 	<ul style="list-style-type: none"> Changed road conditions during construction impacting on efficiency of travel modes and potential road safety. Impact on residential property and land acquisition (refer to RP Section 2.3): <ul style="list-style-type: none"> Affected residential land: 4 HHs, 370m² Affected Shops: 8 HHs with 111.45m² Affected secondary structures: <ul style="list-style-type: none"> Porch of house: 1 HHs , 57.5m² Porch of shop: 13 HHs, 164.1m² Kitchen: m² Hut: m² Guard house: m² Brick wall fence: 4 HHs, 92.9m² Steel Fence: 7 HHs, 216.5m Affected public utilities: <ul style="list-style-type: none"> Electric pole 8m No. 17 Electric pole 12m No. 2 Wingwall: 30.44 m² Signs No.2 , area: 6 m² Underground Cable: 4325 m 	<p>23, #C-24, #C-25, #C26</p>	
<p>Km 51+000- Km 56+000</p>	<ul style="list-style-type: none"> Width of road 12m Concrete Pavement Side walk 	<p>Village/Community Areas:</p> <ul style="list-style-type: none"> B. Naxon B.Phao 1 Temple 	<ul style="list-style-type: none"> Community health and safety particularly school students using the roads. Noise and dust pollution pose risks for impacts at nuisance to sensitive 	<p>Refer to Table A1-1: #C-1; #C-2; C-3; C-4; #C-11; #C-16; #C17; #C-20; C-22; #C-23, #C-24, #C-25, #C26</p>	<p>Refer to Table A1-1: #O-1; O-5; #O-6; #O-7, O-8</p>

	<p>(2x1.5m)</p> <ul style="list-style-type: none"> • Construction of 5 Pipe Culverts • Construction of 1 Box Culverts • Construction of 3 Pipe Culverts in Access road • Construction of 5 Box Culverts in Access road • Construction of 1 bus stop • Construction of RC-U ditch 	<ul style="list-style-type: none"> • 38 Trees: Ø10-Ø70 	<p>receptors;</p> <ul style="list-style-type: none"> • Changed road conditions during construction impacting on efficiency of travel modes and potential road safety. • Impact on residential property and land acquisition (refer to RP Section 2.3): <ul style="list-style-type: none"> • Affected residential land: 3 HHs, 330.28m² • Affected Shops: 3 HHs, with 45m² • Affected secondary structures: <ul style="list-style-type: none"> Porch of house: HHs ,m² Porch of shop: 1 HHs, 19.2m² Kitchen: m² Hut: 1 HHs, 20m² Guard house: m² Brick wall fence: 3 HHs, 58.34m² Steel Fence: 2 HHs, 48m Signs 8 HHs , area: 44.54 m² Street light pole: 1 HHs, No.1 • Affected public utilities: <ul style="list-style-type: none"> Hut: 8 m² 		
<p>Km 56+000- Km 61+000</p>	<ul style="list-style-type: none"> • Width of road 12m • Concrete Pavement • Side walk (2x1.5m) • Construction of 8 Pipe Culverts • Construction of 	<p>Village/Community Areas:</p> <ul style="list-style-type: none"> • B.Phao • B.Sompaserd • B. Hai • 2 Temple • Construction of 1 Pedestrian crossing bridge 	<ul style="list-style-type: none"> • Temporary alteration of water quality and hydrology during construction phase of local streams; • Community health and safety particularly school students using the roads. • Noise and dust pollution pose risks for impacts at nuisance to sensitive receptors. 	<p>Refer to Table A1-1: #P-1; #P-2; #C-1; #C-2; C-3; C-4; #C-10; #C-11; #C-14; #C-16;C-17; #C-20; #C-22; C-23, #C-24, #C-25, #C26</p>	<p>Refer to Table A1-1: #O-1; O-5; #O-6; #O-7, O-8</p>

	<p>25 Box Culverts in Access road</p> <ul style="list-style-type: none"> • Construction of 6 Pipe Culverts in Access road • Construction of 2 bus stop • Construction of 2 parking bay • Construction of RC-U ditch • Construction of 1 Pedestrian crossing bridge 	<ul style="list-style-type: none"> • 1 Primary School • 1 Market • 1 Hospital • 1 Cemetery • Administration of PakNgum District • 54 Trees: Ø10-Ø80 	<ul style="list-style-type: none"> • Changed road conditions during construction impacting on efficiency of travel modes and potential road safety. • Impact on residential property and land acquisition (refer to RP Section 2.3): <ul style="list-style-type: none"> • Affected residential land: 3 HHs, 307m² • Affected houses: 1 HH with 6.65m² • Affected Shops: 6 HHs with 144.32m² <p>Affected secondary structures:</p> <ul style="list-style-type: none"> Porch of house: 1 HHs, 36m² Porch of shop: 12 HHs, 230.07m² Kitchen: m², Hut: 1 HHs, 18m² Guard house: m² Brick wall fence: 2 HHs, 12.44m² Steel Fence: 2 HHs, 140m Signs 16 HHs, area: 79.55 m² Street light pole: 1 HHs, No.1 Electric pole 8m : 1 HHs, No.1 • Affected public utilities: <ul style="list-style-type: none"> Electric pole 8m No. 32 Electric pole 12m No. 7 Street light pole No. 37 CCTV cameras No. 1 Water supply pipe: 20 m Wingwall: 3 m2 Signs No. 4, area: 16.48 m² Underground Cable: 6025 m 		
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<p>Km 61+000- Km 66+000</p>	<ul style="list-style-type: none"> • Width of road 12m • Concrete Pavement • Construction of 7 Pipe Culverts • Construction of 28 Box Culverts in Access road • Construction of RC-U ditch • Construction of 2 parking bay • Construction of 4 bus stop • Maintenance of 1 bridge (Sithong bridge) • Construction of 1 Pedestrian crossing bridge • Re-alignment <ul style="list-style-type: none"> • Km 63+600 • Km 65+100 	<p>Village/Community Areas:</p> <ul style="list-style-type: none"> • B. Hai • B. Somsavad • B. Naxai • 2 Police office of PakNgum District • 1 Secondary School • 1 Police Sergeant School • 1 Market • 125 Trees: Ø 10-Ø100 <p>Rivers/streams:</p> <ul style="list-style-type: none"> • Nam Ngum 	<ul style="list-style-type: none"> • Temporary alteration of water quality and hydrology during construction phase in 3 local streams; • Community health and safety particularly school students using the roads. • Noise and dust pollution pose risks for impacts at nuisance to sensitive receptors. • Changed road conditions during construction impacting on efficiency of travel modes and potential road safety. • Impact on residential property and land acquisition (refer to RP Section 2.3): <ul style="list-style-type: none"> • Affected residential land: 4 HHs, 182.96m² • Affected houses: 2 HHs with 56m² • Affected Shops: 9 HHs with 144.42m² • Affected secondary structures: <ul style="list-style-type: none"> Porch of house: 5 HHs , 45m² Porch of shop: 17 HHs, 411.12m² Kitchen: m² Hut: m² Guard house: m² Brick wall fence: 3 HHs, 36.4m² Steel Fence: 3 HHs, 73m Signs 30 HHs , area: 239.75 m² • Affected public utilities: 	<p>Refer to Table A1-1: #P-1; #P-2; #C-1; #C-2; C-3;C-4; #C-10; #C-11; #C-14; #C-16; C-17; #C-20; #C-22; #C-23, #C-24, #C-25, #C26</p>	<p>Refer to Table A1-1: #O-1; #O-3; #O-5; #O-6; #O-7; #O-8</p>
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			<p>Electric pole 8m No. 9 Electric pole 12m No. 2 Street light pole No. 24 CCTV cameras No. 3 Power divider No. 1 Porch of office: 7 m² Office: 38.9 m² Signs No.2 , area: 3.62 m² Underground Cable: 4120 m</p>		
<p>Km 66+000- Km 71+000</p>	<ul style="list-style-type: none"> • Width of road 12m • Concrete Pavement • Construction of 10 Pipe Culverts • Construction of 8 Box Culverts in Access road • Construction of 7 Pipe Culverts in Access road • Construction of 2 bus stop • Construction of RC-U ditch • Re-alignment Km 70+000 	<p>Village/Community Areas:</p> <ul style="list-style-type: none"> • B. Naxai • B. Xaisavang • 2 Naxai School • 1 Naxai Temple • 1 Cametery Area • 34 Trees: Ø10-Ø70 	<ul style="list-style-type: none"> • Temporary alteration of water quality and hydrology during construction phase in Nam Sang River; • Community health and safety particularly school students using the roads. • Noise and dust pollution pose risks for impacts at nuisance to sensitive receptors. • Changed road conditions during construction impacting on efficiency of travel modes and potential road safety. • Impact on residential property and land acquisition (refer to RP Section 2.3): <ul style="list-style-type: none"> • Affected residential land: 1 HHs, 120.75m² • Affected houses: 1 HHs, with 3.5m² • Affected Shops: 5 HHs with 64.83m² 	<p>Refer to Table A1-1: #P-1; #P-2; #C-1; #C-2; C-3; C-4; #C-10; #C-11; #C-14; #C-16; C-17; #C-20; #C-22; #C-23, #C-24, #C-25, #C26</p>	<p>Refer to Table A1-1: #O-1; #O-3; #O-5; #O-6; #O-7; #O-8</p>

			<ul style="list-style-type: none"> • Affected secondary structures: Porch of house: HHs ,m² Porch of shop: 6 HHs, 56.3m²; Kitchen: m² Hut: 2 HHs, 11m² Guard house: m² Brick wall fence: 2 HHs, 66m² Steel Fence: 5 HHs, 186.3m Signs 5 HHs , area: 18.35 m² • Affected public utilities: Electric pole 12m No. 1 CCTV cameras No. 1 Underground Cable: 1715 m 		
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Annex 2: Environment and Social Code of Practices (ESCOP)

1. This attachment presents a generic Environment and Social Code of Practices (ESCOP) to be applied during the preparation of the contractor's Environmental and Social Management Plan (C-ESMP) to be prepared and implemented by contractor. This ESCOP is considered part of the Project-ESMP and it will be incorporated into the bidding document (BD) and contract document (CD) while the implementation cost will be part of the contract cost (OPBRC). The ESCOP will be implemented in connected with the code of conduct on Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH) and Violence against Children (VAC) provided in Annex 3; Accident Reporting Procedure and Form provided in Annex 4; and Contingency Planning for Response to Covid-19 provided in Annex 5. It has also taken into account the recommendations provided on the road safety (Volume B – Appendix 4) and other mitigation measures described in the ESMP report (Section 3) and results from the consultation meetings (SEP).

2. The Project Management Unit of Department of Road (PMU/DOR) will assign ISMC⁶ and/or Field Engineer (ISMC/FE) to supervise and monitor Contractor's compliance with ESCOP on a day-to-day basis while assigning at least one full time staff (the Environment and Social Unit, ESU/DWPT) to be responsible for conducting monthly monitoring and reporting. The Department of Road (DOR), the Environment Research and Disaster Prevention of the Public Works and Transport Institute (EDPD/PTI), the local authorities (PONRE/DONRE), and local communities will conduct periodic (quarterly and semi-annual) monitoring of contractor performance, as needed. DPWT assisted by ISMC/FE will be responsible for review and approval of the C-ESMP and its sub-plans to be prepared and submitted by contractors and ensuring its compliance during implementation of road maintenance works.

3. *Objective and scope of ESCOP:* The ESCOP aims to mitigate the potential negative impacts of road maintenance works such as increased in air, noise, vibration, waste generation, safety risks, local traffic, etc. which could be mitigated through good environmental and social management and construction practices in general. Site-specific measures and/or plan/sub-plan can be prepared to address site-specific issues that require specific actions as requested by local authorities, local communities, PMU/DOR, AIIB and/or other financing agencies during the preparation and clearance of the C-ESMP and other safeguard documents (RP, SEP and GAP). In summary, the ESCOP comprise the following three parts:

- a. **Part (1) General Provision and Planning.** This part describes general provision and basic principles on contract management including roles and responsibility of the project owner (PMU/DOR), contractors, ISMC/FE, EDPD/PTI, and local authorities. It

⁶ For NR13SE, the ISMC will be the Implementation Support and Works Supervision Consultant (ISWS) and this responsibility will be included in the TOR of the ISWS.

has also incorporated the mitigation measures for the pre- construction phase as proposed in the ESMP report (Section 3).

- b. **Part (2) ESS Specific Requirements.** This part describes specific environment and social safeguard (ESS) requirements and/or actions as required by AIB, GOL, and key measures to be considered during detailed design and preparation of bidding and contract documents as well as those that may be requested by local authorities/communities during implementation and/or supervision.
 - c. **Part (3) Works Management and Monitoring.** This describes the mitigation measures to reduce potential negative impacts on air, noise, vibration, water, etc. to be implemented during works execution through the preparation and implementation of specific management plans/sub-plans taking into account the activities, potential impacts, and mitigation measures proposed in the ESMP Section 3.
4. This ESCOP Part (2) has incorporated specific requirements of the AIB regarding the “chance find procedures” and the “occupational and community health and safety (OCHS)” including other social obligations to ensure safety of workers and local communities. The concerns/suggestions expressed by local authorities and communities during consultation have also been considered.

Part (1): General Provision and Planning

Section (1.1) Contractor responsibility

5. The Contractor is responsible for making best effort to reduce and mitigate the potential negative impacts on local environment and local resident including making payment for all damages that may occur. Performance of the Contractor will be regularly supervised and monitored by the ISMC/FE as well as periodic monitored by PMU/DOR (through the ESU/DPWT) and EDPD/PTI. Results of the ESCOP compliance monitoring will be included as part of the project progress report. Compliance with ESCOP will be required throughout the construction period.
6. For clarity, the term “works” and/or “construction” in this document includes all site preparation, demolition, spoil disposal, materials and waste removal and all related engineering and construction activities.
7. Since this is a 10-year OPBRC, the contractors will be responsible for implementation of the mitigation measure during the first 2-3 year construction phase as well as the following 7-8 year operations and maintenance (O&M) while the ISMC and/or field engineer will be responsible for approval and day-to-day monitoring of the C-ESMP implementation and ensure compliance. The implementation cost of the C-ESMP will be part of the OPBRC cost while that for RP will be responsible by GOL. The ESS requirements described in The

Project-ESMP⁷ as well as GOL requirements/ conditions during approval of the Initial Impacts Examination (IEE) and issuance of the Environment and Compliance Certificate (ECC) will be considered during the preparation and approval of the C-ESMP and its sub-plans.

8. Contractor is responsible for preparation, implementation, self-monitoring and reporting of the C-ESMP, SEP and GEP including GRM and issues related to SEA/SH and VAC and submits monthly report to ISMC. Provision of at least four ES consultants: one ES manager, one environmental consultant, one social consultant (community relation, GRM, SEA/SH & VAC, and gender), and one health and safety consultant (OHS and CHS) is required to conduct daily monitoring and monthly reporting of C-ESMP, SEP and GAP including concerns related to SEA/SH. See Section 2-2 and Table 2-1 in the Main Report for more details.

Section (1.2) Non-compliance reporting procedures

9. The Contractor (and its subcontractors if any) must comply with this ESCOP. To ensure that necessary action has been undertaken and that steps to avoid adverse impacts and/or reoccurrence have been implemented, the ISMC/FE, the ESU/DPWT, and/or the Contractors must advise the PMU/DOR and EDPD/PTI within 24 hours of any serious accidents and/or incidents of non-compliance with the ESCOP that may have serious consequence. In the event of working practices being deemed dangerous either by the ISMC/FE, PMU/DOR, EDPD/PTI, the local authorities, or the other concerned agencies, immediate remedial action must be taken by the Contractors. The Contractors must keep records of any incidents and any corrective action taken. The records on non-compliance that could be practically addressed (not cause serious impacts) will be reported to the ISMC/FE and PMU/DOR on a monthly basis.

10. The Contractor will be responsible for dealing with any reports/grievance requested by the ISMC/FE, PMU/DOR, EDPD/PTI, Police, or other agencies as soon as practicable, preferably within 24 hours of receipt. The ISMC/FE will monitor and ensure that the Contractor has taken appropriate action. Where appropriate, approval of remedial actions may require an agreement from the local authorities and/or other Government agencies. Procedures should be put in place to ensure, as far as is reasonably practical, that necessary actions can be undertaken to avoid recurrence and/or serious damage (also see form in SEP).

11. In case the Contractor does not comply with local regulations, PMU/DOR and/or the local authorities will have the power to suspend the construction operations. The Contractor will be responsible for mitigating and/or compensating for any damage and/or adverse environmental impacts during the construction caused by the Contractor.

⁷ This include Attachment 2b (road safety), Attachment 5 (issues and mitigation and the Alignment Sheet, Attachment 6 (ESCOP), Attachment 7 (COC), and Attachments 8 and 9 (accident report and GRM forms).

Section (1.3) Liaising with local authorities and the public

12. Prior to the commencement of project and throughout the construction duration, the Contractor will work closely with the local authorities and other agencies to ensure full compliance with Government regulations and will also provide adequate information on the Project to the general public, especially those that may cause public safety, nuisance, and sensitive areas and the locations of storage and special handling areas. The Contractor will provide information and reporting telephone “Hot Line” staffed at all times during working hours. Information on this facility shall be prominently displayed on site hoardings.

Section (1.4) Community relations and GRM

13. The Contractor will assign one community-relation personnel, who will be responsible for building relations with local community and to provide appropriate information and be the first line of response to resolve issues of concern. Contractor will take reasonable steps to engage with residents of ethnic minority backgrounds and residents with disabilities (or other priority groups as appropriate), who may be differentially affected by construction impacts. The contractor will implement SEP.

14. The Contractor will ensure that local residents nearby the construction sites will be informed in advance of works taking place, including the estimated duration. In the case of work required in response to an emergency, local residents shall be advised as soon as reasonably practicable that emergency work is taking place. Potentially affected residents will also be notified of the ‘Hotline’ number, which will operate during working hours. The “Hotline” will be maintained to handle enquiries regarding construction activities from the general public as well as to act as a first point of contact and information in the case of any emergency. All calls will be logged, together with the responses given and the callers' concerns action and a response provided promptly. The helpline will be widely advertised and displayed on site signboards.

15. The Contractor will respond quickly to emergencies, complaints or other contacts made via the ‘Hotline’ or any other recognized means and liaise closely with the emergency services, local authority officers and other agencies (based on established contacts) who may be involved in incidents or emergency situations.

16. The Contractor will manage the work sites, work camps, and workers in a way that is acceptable to local residents and will not create any social impacts due to workers. Any construction workers, office staff, Contractor’s employees, or any other person related to the Project found violating the “prohibitions” activities listed in Section (1.5) below may be subject to disciplinary actions that can range from a simple reprimand to termination of his/her employment depending on the seriousness of the violation.

17. To mitigate potential impacts on local community, community consultation will be made throughout the OPBRC services while grievances will be addressed at the village, district, province, and national levels as per SEP. The GRM principles and process described

in SEP will be applied at all Project levels including contractors. Contractor is responsible for development of GRM poster and dissemination of project information and GRM process in all affected villages. Grievance related to safeguard issues from poor, vulnerable and ethnic groups that result from Project activities will be resolved by the Grievance Redress Committee (GRC). At each level grievance details, discussions, and outcomes will be recorded in a grievance logbook, and the data provided to the GRC for recording in the 'Grievance and Complaints Logging System' (GCLS). Status of grievances submitted, and grievance redress will be reported to DPWT management through the monthly reporting as generated by the GCLS. The complainant also retains the right to bypass this procedure and can address a grievance directly to the EDPD/PTI Office or the National and Provincial Assembly, as provided for by law in Lao PDR as well as to the AIIB through the AIIB's Project-affected People's Mechanism (PPM). More requirements of GRM are provided in SEP. The GRM for project execution issues is contractor driven and needs to be manned by personnel with appropriate skills.

Section (1.5) Prohibitions

18. The following activities are prohibited on or near the Project sites:

- Cutting of trees for any reason outside the approved construction area; Hunting, fishing, wildlife capture, or plant collection; Buying of wild animals for food; Having caged wild animals (especially birds) in camps; Poaching of any description; Explosive and chemical fishing; Disturbance to anything with architectural or historical value;
- Building of fires; Use of unapproved toxic materials, including lead-based paints, asbestos, etc.; Use of firearms (except authorized security guards); Use of alcohol by workers in office hours; Driving in an unsafe manner in local roads; and
- Washing cars or machinery in streams or creeks; Maintenance (change of oils and filters) of cars and equipment outside authorized areas; Creating nuisances and disturbances in or near communities; Disposing garbage in unauthorized places; Indiscriminate disposal of rubbish or construction wastes; Littering the site; Spillage of potential pollutants, such as petroleum products; Collection of firewood; Urinating or defecating outside the designated facilities; and Burning of wastes and/or cleared vegetation.

Part (2) ESS Specific Requirements

Section (2.1) Implementation of "Chance Find Procedures"

19. If the Contractor discovers archeological sites, historical sites, remains and objects, including graveyards and/or individual graves during excavation or construction, the Contractor will carry out the following steps:

- Stop the construction activities in the area of the chance finds;

- Delineate the discovered site or area;
- Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities or the National Culture Administration take over;
- Notify the project engineer, supervisor, the project owner (PMU/DOR), and/or DPWT and EDPD/PTI who in turn will notify the responsible local authorities and the provincial Culture Department immediately (within 24 hours or less);
- Responsible local authorities and the provincial Culture Department would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by the archeologists of National Culture Administration. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values;
- Decisions on how to handle the finding shall be taken by the responsible authorities and the provincial Culture Department. This could include changes in the layout (such as when finding an irremovable remain of cultural or archeological importance) conservation, preservation, restoration and salvage;
- Implementation for the authority decision concerning the management of the finding shall be communicated in writing by relevant local authorities; and
- Construction work could resume only after permission is given from the responsible local authorities or the provincial Culture Department concerning safeguard of the heritage.

Section (2.2) Implementation of the Environmental, Health, and Safety (EHS) guideline

20. The Contractor is required to comply with the AIB's Environmental Health and Safety Guidelines (EHSG)⁸. For the Project, the Contractor will prepare a number of management plans/sub-plans to protect the local environment and ensuring safety of workers and local peoples. On the latter, an occupational and community health and safety plan (OCHSP) will be prepared and incorporated into the Contractor's own Standard Operating Procedures (C-SOPs). At a minimum the following rules will be strictly followed, however, more comprehensive measures may be required:

Site Environment and OCHS Rules

⁸ The WB's EHSG provides general guidance on the pollution prevention and abatement measures and workplace and community health and safety guidelines. The EHSG are divided in two parts: general guidelines on health and safety and pollution prevention and abatement, including general standards for air and water quality, and a set of sector-specific guidelines for various types of development projects.

- Daily and weekly OCHS orientation sessions before starting work;
- Wearing of personal protective equipment (PPE) such as gloves, helmets, safety shoes, dungarees, goggles etc.;
- Follow the messages and instructions displayed on the environmental management plans and OCHS notice boards installed on site;
- Promptly reporting all accidents to the concerned authority;
- Maintain appropriate barricades of dangerous areas, as required;
- Vehicles must be driven at a safe speed, observing speed limits of 30 Km/h in sensitive areas and use only the designated routes as mentioned in the Traffic and Transport Management Plan (TTMP);
- Drivers must have a valid driving license for the class of vehicle they are operating;
- Vehicles should only be parked in designated parking areas; and
- Land mines/UXO clearance of the project area as needed.

Health and Hygiene: The measures should include:

- Provision of adequate medical facilities to the staff;
- Provision of hygienic food to the employees;
- Provision of cooling and heating facilities to the staff; and
- Provision of drainage, sewerage and septic tanks in camp area.

Security: Security measures should include:

- Regular attendance and a controlled time keeping of all employees;
- Restriction of un-authorized persons to the work areas and/or worker camps;
- Restriction of carrying weapons and control hunting by employees; and
- Provision of boundary walls/ fences with proper exits to the camp.

Section (2.3) ESS Requirements before Commencement of Construction

21. Before construction begins (at each Project site), all the following requirements will be completed, checked and approved by DWPT, PONRE, and EDPD/PTI:

- Within 28 days after contract awarded, submission of the C-ESMP with adequate measures to mitigate potential negative impacts described in this ESCOP. The C-ESMP will be prepared in line with the Project-ESMP and it will be reviewed and approved by PMU/DOR and/or the ISMC/FE. The approved C-ESMP will be sent to EDPD/PTI, DPWT, and/or PONRE.

- Recruitment of key ESS staff of the contractor to be responsible for environmental, social and safety aspects.
 - Establishment of worker camps with quality health services and sanitary equipment and all required supporting facilities and workshop/material storage area in comply with the ESS requirements related to the labor management, worker camp and storage area described in Part 3. Worker camps and storage areas will be checked and approved by DPWT and PONRE before moving or utilization of the area.
 - Development of Code of Conducts (COC) and Company Project Rules regarding health and safety of workers and local communities to prevent and address potential risks and issues associated with possible labor influx including SEA, SEA/SH and VAC (see Annex 3). The Contractor will provide training to all Contractor's staffs and workers working for the Project. Code of Conducts and Company Project Rules will be signed and stamped by company management team and all staffs and workers.
 - Provision of a list of Contractor's key staff, engineers, and worker to be working on site. The information will be included, but not limited to, personal data, criminal check and health data to ensure that all employees are free of the following diseases: liver cancer and sexually transmitted diseases (STDs) with the following information: names and surnames, ages, address (village, district, province, contact details, status (single, married), health (good), family information (number of children, name of wife, address and contact details) and among others. The list of employees will need to be attached in C-ESMP and distribute to all project affected communities/villages.
 - Consultation with affected communities/villages on Project activities, risks/ impacts, prevention and mitigation measures and other community health and safety information. The consultation reports will be submitted to DWPT and EDPD/PTI with list of participation and minutes of consultation.
22. The Contractor will (a) install signs and signals on works in progress to ensure safety both during day and night time; (b) ensure no blockage of access to households during construction and/or provide alternative access, provide footbridges and access of neighbors; and (c) endure construction of proper drainage on the site. The measures recommended in the Safety Risk Assessment (see in DD report) should be considered and the key ones are highlighted as follows:
- Project sign board will be installed at the beginning and the end sections of the Project.
 - Speed limit signs will be installed at both edges of village, communities, schools, hospitals and other sensitive areas with speed limit between 20-25km/hr or any speed issued by local authorities;

- Speed limit and caution signs at both edges of each active construction area;
- Install signs indicating way to work camps, borrow pits, quarries, etc.,
- Bypass signs, reflection, etc.,
- Ensuring that local communities are active involvement in the planning and installation of these signs and help preventing damages and/or loss as much as possible.

23. The Contractor will also be required to complete the environmental management subplans and the OCHS Plan and complete at least one training for all contractor staff and workers working for the Project with records of any training and induction. Periodic and follow-up trainings will be conducted at least once in every three months.

Section (2.4) ESS Requirements during Construction and Project-Site Closure

24. The ESS requirements during Construction is provided in Part 3. The Contractor will also be required to manage all activities in compliance with laws, rules and other permits related to site construction regulations (what is allowed and not allowed on work sites) and will protect public properties. Degradation and demolition of private properties will be avoided. Paying compensation to damage to the public facilities and/or private property will be required. The Contractor will inform PMU/DOR and DPWT on issue and/or damages that may unexpectedly occur.

25. As part of the ESCOP, the Contractor is responsible for protection of local environment against dust, air, noise, vibration, exhaust fuels and oils, and other solid wastes generated from the work sites. The Contractor will manage waste properly and do not burn them on site and will also provide proper storage for construction materials, organize parking and displacements of machines in the site. Used oil and construction waste materials must be appropriately disposed-off and adequate waste disposal and sanitation services will be provided at the construction site next to the generated areas. In order to protect soil, surface and ground water the Contractor will avoid any wastewater discharge, oil spill and discharge of any type of pollutants on soils, in surface or ground waters, in sewers and drainage ditches. Compensation measures may be required.

26. *Construction site closure.* Before each Project site is considered completed, the following actions will be undertaken:

- Clean up all wastes and disruption and removal of construction equipment, construction waste and general wastes from the Project ROW and all location used by the Project during construction such as worker camps, parking bays, and storage areas, borrow pits, quarries and ancillary facilities.
- Stabilize all borrow pits or implement all agreed measures in accordance with agreements stipulated in minutes or documents signed between the Contractor and

landowners. If needed, signing of a handover documents for borrow pits will be required.

- Stabilize and/or rehabilitate all project sites to ensure community safety and erosion control.
- Together with DPWT and PONRE, provide training on road safety to all affected community. All training will be recorded and affected communities will sign the training received sheet.
- Submission of ESS Site Closure Report to DPWT and EDPF/PTI one month before project completion inspection. Any potentially defects to the works will be fixed to ensure good conditions before completing the contract.

Section (2.5) GOL Regulations and Comments from Local Communities

27. It is expected that EDPD/PTI will prepare two IEEs including consultation for the Project (one for VTE and one for BKX) as agreed with PONREs and that an Environment and Compliance Certificate (ECC) will be issued before commencement of construction. The Contractor will be required to comply with the ECC approval conditions as well as to be responsive to the concerns and/or the requests made by local authorities and/or local communities throughout the contract period.

Part (3) Works Management and Monitoring

28. This section provides technical guidance on the ESS requirements during construction phase. At a minimum, the Contractor is required to prepare and submit to ISMC/FE the following, but not limited to, plans/subplans: Occupational Health and Safety Plan (OHSP);

- i. Occupational Health and Safety Plan (OHSP)
- ii. Community Health Safety Plan (CHSP);
- iii. Site clearance and revegetation plan;
- iv. Labor Influx and Labor Management Plan (LMP) – COC;
- v. Works/Worker Camp Management Plan (WCMP);
- vi. Construction Sites Management Plan (CSMP);
- vii. Construction Materials Management Plan (CMMP);
- viii. Waste Management and Recycling Plan (WMRP);
- ix. Traffic and Transportation Management Plan (TTMP);
- x. Environmental Quality Management Plan (EQMP);
- xi. Project Change Management Plan/ Adaptive Management Plan (AMP);

- xii. Emergency Preparedness and Response Plan (EPRP);
 - xiii. Monitoring and Reporting Plan (MRP);
29. Scope of these plans are described below.

Section (3.1) Occupational Health and Safety Plan (OHSP)

30. The objectives for occupational health and safety (OHS) management for the Project include:

- ▶ Avoid or minimise potential OHS risks to personnel and contractors of the Project; and
- ▶ Comply with applicable Lao PDR’s road and traffic laws and decrees and align with international standards and guidelines regarding OHS (i.e. AIIBG EHSF Guidelines).

31. MPWT/DOR and PMU are committed to building a workforce that is motivated, healthy and has a good working ability, and to creating healthy and safe workplaces that are free from accidents and work-related disease, in compliance with the Lao PDR’s Occupation Safety and Health (No. 22/GoL, 2019). The OHS program for the Project will also take into account the AIIBG EHSF Guidelines.

32. Workers on the Project will be exposed to many risks from dust, noise, blasting activities, traffic, and handling of hazardous materials. Appropriate precautions will need to be taken to avoid work-related accidents, injuries or illness. PMU and the Contractor will work to (i) identify potential hazards to workers, particularly those that may be life threatening; (ii) provide preventive and protective measures, including modification, substitution, or elimination of hazardous conditions or substances; (iii) train workers; (iv) document and report occupational accidents, diseases, and incidents; and (v) organise for emergency prevention, preparedness, and response.

Sample Management and Mitigation Measures - this sample table format can apply to all section (3.2) to (3.12)

Aspect	Mitigation Action	Schedule / Frequency	Responsibility	
			Implementating	Checking / Monitoring
Occupational health and safety (OHS):	<ul style="list-style-type: none"> • Appoint an Environmental Health and Safety Officer (EHSO) who shall be responsible for training, monitoring and reporting on EHS concerns and implementing health and safety related-programs. • Conduct orientation for construction workers regarding emergency response procedures and equipment in case of accidents (i.e. head injury from falling, burns from hot bitumen, spills of hazardous substances, etc.), fire, etc.; health and safety measures, such as on the 	Construction	Contractor	CSC/FE PMU/DOR EDPD/PTRI DPWT PONRE

Aspect	Mitigation Action	Schedule / Frequency	Responsibility	
			Implementating	Checking / Monitoring
	<p>use of hot bitumen products for paving of project roads, etc.; prevention of Covid-19, HIV/AIDS, malaria, diarrhea, and other related diseases, as well as Code of Conduct (including discussion of sex and GBV).</p> <ul style="list-style-type: none"> • Provide fire extinguish equipment and appropriate emergency response equipment (based on on-going construction activities) at the work areas and at construction and workers camps. • Provide first aid kits at each camp and working sites that are readily accessible by workers. In addition, the contractor shall prepare emergency procedures detailing arrangements with commune health center(s) or nearest hospital(s) to accommodate emergency cases from the work location. • A pre-medical examination should be conducted for workers and this should be followed by routine medical examinations during construction works. • Visitors to the worksite should be required to use PPE in order to be allowed on work sites. The contractor should keep a set of PPE for use by visitors to the construction sites, quarry sites and ancillary facilities. • The use of child labour on any of the working sites will be strictly prohibited. • Provide workers with appropriate safety equipment/devices (such as dust mask, safety helmets, safety shoes or boots, goggles, ear plugs, etc.) and strictly require them to use these as necessary. • Install sign boards, lighting system at the construction sites, borrow pits, or places which may cause accidents for vehicle, people and workers. • Strictly impose speed limits on construction vehicles along residential areas and where other sensitive receptors such as schools, pagodas, hospitals, and other populated areas are located. • Educate drivers on safe driving practices to minimize accidents and to prevent spill of hazardous substances and other construction 			

Aspect	Mitigation Action	Schedule / Frequency	Responsibility	
			Implementating	Checking / Monitoring
	<p>materials by providing covers over transporting dump trucks.</p> <ul style="list-style-type: none"> • Barriers (i.e. temporary fence) shall be installed at construction areas to deter pedestrian access to these areas except at designated crossing points. • Sufficient lighting at night as well as warning signs shall be provided in the periphery of the construction site. • The general public/ local residents, and in particular children, shall not be allowed in high-risk areas, i.e. excavation sites and areas where heavy equipment is in operation. • Provide fencing on all areas of excavation greater than 2m deep. • Ensure reversing signals are installed on all construction vehicles. • Measures to prevent malaria if in areas where malaria is an issue, shall be implemented (i.e. provision of insecticide treated mosquito nets to workers, spraying of insecticides, installation of proper drainage to avoid formation of stagnant water, etc.). • Discharge of untreated sewage shall be prohibited. • Ensure access to grievance redress mechanism. • Ongoing consultations and awareness raising of local communities. • Free testing for Covid-19 and treatment. • Establish health facilities at worker’s camps and a first aid kit should be provided at every active working site and in every staff vehicle. • Prohibit the use of drugs and alcohol for workers during work hours, including prescription medication labelled as unsafe for driving. • Ensure all drivers hold appropriate licenses and have completed transport safety and safe driver training. • Conduct trainings on Covid-29, HIV/AIDS and STDs with workers and the community 			

Aspect	Mitigation Action	Schedule / Frequency	Responsibility	
			Implementing	Checking / Monitoring
	(separately). <ul style="list-style-type: none"> Conduct trainings on GBV and VAC with workers and the community (separately). Ensure particular attention is provided to the needs of women and other vulnerable persons, for instance conducting specific trainings for them led by appropriate trainers (i.e. women-only training on HIV/AIDS and/or GBV led by a woman). Conducting trainings on driver safety training, enforcement of speed limits, emergency response procedures and response kits (spill kits). Application of NR13S Generic COC on GBV/VAC (Annex 3) Implement Covid-19 Prevention Measures (Annex 5) 			
Traffic Safety	<ul style="list-style-type: none"> 			
Blasting				
Air Quality, Noise, work camp and Traffic Safety	<ul style="list-style-type: none"> 			
Sanitation, health and accommodation facilities	<ul style="list-style-type: none"> 			

Sample Monitoring Checklist – this sample table format can apply to all section (3.2) to (3.12)

Aspect / Impact	Monitoring Measure	Construction	Operation	Method	Parameters	Frequency	Location

Aspect / Impact	Monitoring Measure	Construction	Operation	Method	Parameters	Frequency	Location
				<p>whom it is given (he/she will sign for it);</p> <ul style="list-style-type: none"> The next time the PPE will be inspected; When are the replacement times (e.g. for elements, etc) 			
Occupational Health and Safety	Site inspections			Site inspections	<p>Confirm implementation of all measures in OHS Plan.</p> <p>Presence/absence of fire extinguishers, spill kits, MSDS etc.</p> <p>Hazmat storage practices etc.</p>	Weekly	Entire site
Occupational Health and Safety	Incident investigations			Conduct post incident investigation and evaluation and monitor implementation of any corrective actions that arise, including measures to minimise risk of recurrence	As required	Post-emergency	As required
Occupational Health and Safety	Incident investigations			Review OHS incident register for any trends	No of incidents, Causes of incidents etc.	Monthly	Entire site
Occupational Health and Safety	Introduction / increased transmission of disease (e.g. malaria, STIs, etc.)			HIV/AIDS and Covid-19 awareness / prevention programme for workers	Number of community and worker sessions conducted; Number of community members involved in programme.	Conducted as part of inductions for all new staff,	At each Camp site and neighbouring communities

Aspect / Impact	Monitoring Measure	Construction	Operation	Method	Parameters	Frequency	Location
						then as required	
Occupational Health and Safety	Health monitoring			Monitoring of health status in the workforce (e.g. for malaria, STIs, etc)	Health indicators for the construction workforce to be developed (e.g. STI rates, malaria rates)	Every 6 months during construction	At each Accommodation Camp site, staff health facilities

Section (3.2) Community Health Safety Plan (CHSP)

33. *This plan aims to ensure safety and protection of community.* Experience of road rehabilitation and maintenance works in Lao PDR suggested that safety of local community are high priority, especially when the activities are conducted in rural and/or mountainous areas due to limited space/area for operations of heavy equipment and vehicles. The Project should help to reduce road traffic incidents in the region through the provision of a dedicated roadway with an improved alignment, which isolates vehicle traffic from pedestrians and non-motorised vehicles, provides a dual carriageway (Km 21+300 – Km41).

34. Aside from a potential improvement in the rate of road accidents, the largest impact on community health will be improvements in air quality in some areas. The air quality in Vientiane and Bolikhamxay is already heavily affected by traffic, cooking fuel and burning activities. Once operational, the Project should lead to more efficient motorised transport in Vientiane and Bolikhamxay and potentially a slight improvement in overall air quality due to reduced congestion. Improved fuel and car technology will be the biggest potential driver of air quality in Lao PDR in general.

35. The CHS aspect has become mandatory to all projects with AIIB financing projects. It is closely connected to those related to construction material extraction and transportation mentioned under section above. Subproject construction poses OHS risks to workers and subproject staff while community health and safety (CHS) has received attention in several respects, ranging from potential for serious injury / death to nuisance level of impacts. Community Health and Safety issues need to be handled by personnel with appropriate skills. In summary key risks for communities include:

- *Traffic and road safety:* Traffic on the NR13SE will generate significant traffic related noise for potential receptors in close proximity to the Project. Haul truck drivers and other staff driving

to and from the subproject sites may be exposed to traffic conditions, unsafe drivers, poor quality road conditions, pedestrians and other obstacles, etc. that may lead to accidents and injury. Implementation of the outlined measures such as noise barriers will be important to minimise potential noise disturbance to acceptable levels in these areas.

- *Noise and dust* pose risks for impacts ranging from nuisance level to serious health impacts. Some short-term localised impacts on community health and safety may occur during the construction period including air emissions, noise disturbance and changes in accessibility. Construction of the Project is expected to be staged and construction management plans will be implemented to reduce these impacts.
- *Accident/safety risks* to local people, road user, pedestrians or bicycle rider in settlements, subproject sites and between settlements along the hauling route for construction materials / disposal of construction wastes;
- Potential for introduction or increased incidences of communicable and infectious diseases resulting from the influx of construction workers into the region.

36. The Contractor is required to take the following actions:

- Conduct a safety risk assessment of all construct sites and identify the area and type of safety risks and prepare/implement measures to mitigate them effectively. Electric equipment should be safely insulated during the construction process while the workers knowledge on safety techniques and ways to give first aid to persons who get electric shock and/or accident should also be provided.
- Ensure that key managers and workers are fully capable in the jobs they perform under regulations. Operators of construction machines and equipment and performers of jobs with strict labor safety requirements are trained in labor safety and possess labor safety cards under regulations. Workers at the construction site are provided with medical checks-up and safety training and adequate personal safety equipment under the labor law.
- Construction machines and equipment with strict labor safety requirements are inspected by and registered with competent agencies under regulations for operation at the construction site. During operation, they comply with safety processes and measures. If construction equipment is operated outside the construction site, the investor approves safety measures for construction-affected people, machines, equipment and works inside and outside the construction site. If due to construction conditions, equipment have to be placed outside the construction site and while not in operation, if they operate outside the construction site, such is permitted by authorized agencies under local regulations.
- Unexploded Ordnance (UXO): Although the risk is considered low, but due consideration and actions will be required. The response process needs to be

included in emergency procedures. The emergency procedures will be prepared and carried out if UXO risk is identified at the construction site.

37. The Contractor is also responsible for maintaining good hygiene, safety, and social welfare security of the work sites, including protection of and health and safety of staff and workers. The Contractor will prevent standing water in open construction pits, quarries or fill areas to avoid potential contamination of the water table and the development of a habitat for disease-carrying vectors and insects. Safe and sustainable construction materials and construction method should be used.

Section (3.3) Labor Influx and Labor Management Plan (LMP) - COC

38. *This plan aims to minimize potential direct and indirect social impacts of contractor's staff and workers including their behaviors on local communities.* The total number of workers that will likely be engaged is 168 people. The subproject may require a portion of the labor force that is not local. It is expected that the non-local workers will be recruited nationally and should have a similar socioeconomic and cultural background to that of the local community. Efforts will be made to hire local workers (including skilled workers) and provide sufficient accommodation, water, sanitation and hygiene and first aid facilities to the non-local workers, including adequate measures for effective prevention of COVID-19.

39. The contractor will be required to provide a list of key staff, engineers, and workers to be working on site during day time and night time. The disclosable information will be included, but not limited to names and surnames, ages, address (village, district, province), status (single, married), health (good), family information (name of wife), criminal records and health data to ensure that all employees are free of the following diseases (communicable or transmitted diseases including COVID-19 and STD/HIVAID). The list of employees will need to be attached in C-ESMP and distribute to all subproject affected communities/villages.

40. The Contractor will be required to have appropriate contract arrangement with staff and workers as well as to prohibit actions that may cause negative social impacts (direct and indirect) due to labor influx and possible health impacts (STDs, AIDS, etc.) to local peoples. The Contractor is required to implement and comply with Occupational Health and Community Safety Plan (OHCSPP) as one of main part of overall ESHS requirements. The Contractor is encouraged to hire local labor including community and female workers to extent possible. Where local labor are not adequately available in the Project sites, labor or camp site management plan and is required to be prepared and implemented and monitored potential external labor influx and associated risks including SEA, SEA/SH and VAC. Code of Conducts (COC) and Company Project Rules regarding health and safety of workers and local communities will be applied by the contractors and their sub-contractors and workers to be hired under the Project to manage the risks anticipated.

41. **Potential Impacts on SH/SEA and VAC:** To mitigate the potential social impacts during construction, Code of Conduct (COC) on Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH), and Violence Against Children (VAC) is provided in Annex 3. This will be required to be complied with by the contractor and its workers as part of the works contract. During pre-qualification, contractors are required to declare whether any contracts have been suspended, or cancelled, or bid bonds called, for incidents related to SH/SEA/VAC. Workers' Codes of Conduct are now mandatory for all projects with AIIB financing and will include prohibitions against SEA/SH/VAC, including a prohibition of sexual activities with children (under 18 years of age). This standard must hold even when national standards, laws and policies have a different age of consent. All contracts should set explicit expectations for monitoring contractor performance of its SEA/SH/VAC obligations, with a protocol in place for immediate, timely mandatory and confidential reporting to the Government and to the AIIB in cases of egregious (for example, sexual assault) allegations. Training on environmental, social, health and safety measures including the COC to minimize the risk of SEA/SH/VAC will be carried out by the ISMC or Implementation Support and Works Supervision (ISWS). At the end of the training, the supervision consultant will ensure that all contractor's workers trained sign the COC before beginning of their works.

42. Contractors are required to assign a focal point to monitor and report on implementation of occupation health and safety and labor management plans. She/he will receive, address and manage the resolution process of grievances that may be raised by contractor's workers and local community or victims. These include, but should not be limited to, employment contracts, working conditions, compliance with COC by workers, SEA/SH/VAC issues.

43. In the event if severe environmental and social incident/accident including serious accident cases and fatality associated with the subproject happens during the subproject implementation, the Contractor Focal point of OHS and CHS will promptly notify or report on such incident to the ISMC, PIU and the local Public Security Office respectively. For resolution of SEA/SH and VAC incidents, a representative of District and Provincial Lao Women's Union (LWU) will be engaged in a committee to be set up. PIU/PMU is required to immediately and within 48 hours, after becomes aware of the incident/accident, notify the AIIB and ADFD if severe environmental and social incident has occurred during construction. Severe environmental and social including clearing of sensitive areas, serious accident cases and fatality, forced or child labor, abuses of community members by project workers (including GBV), trafficking in endangered species, etc.

44. The Contractor will also be responsible for maintaining good hygiene, safety, and social welfare security of the work sites, including protection of and health and safety of staff and workers. The Contractor will prevent standing water in open construction pits, quarries or fill areas to avoid potential contamination of the water table and the

development of a habitat for disease-carrying vectors and insects. Safe and sustainable construction materials and construction method should be used.

45. In a situation when there is a spread of COVID-19, contractor has to apply or comply with the government guidelines launched in line with WHO.

Section (3.4) Works/Worker Camp Management Plan (WCMP)

46. *This plan aims to mitigate negative impacts due to establishment and operations of work yard and worker camps including storage site management.* The Contractor will carry out, but not limited to, the following:

- The Worker Camp and workshop storage area will be located on areas far enough from water points, houses and sensitive areas in consultation with the community and the subproject owner. Worker camps shall not be located within 500 meters of any sensitive receptors, urban area and at least 200 meters from any surface water course and not within 2 km of any protected area.
- Worker camps, cooking facilities, and toilets will be provided with roofs, walls and wooden floors or paved with concrete while the camp yards and storage can be compacted or paved with gravels. If possible, the worker camps should be fenced and provided with entrance gates to prevent unauthorized entry. In addition, the worker camps will be provided with storm water drainage system around the camp facilities to prevent flooding, mud, erosion and sediment transport to natural environment.
- Worker camps will be provided with basic facilities and utilities including but not limited to: office, notice boards and regulations of the company and about the Project, beds, mosquito nets, blankets, clean drinking water and safe portable water, sufficient waste bins, first aid kits and necessary medicines, fire extinguishers, etc.
- For bathing and toilets, the Contractor will ensure that (1) separate toilets for males and females and sewage and wastewater will be retained in sediment pond(s); (2) Toilet chambers will be designed appropriately to be able to treat sludge and sewage prior to discharge to closed retention ponds without exposure to vectors and/or diseases; (3) building of toilet rooms, sewage chambers and retention ponds will be away from natural water bodies, streams, and wetland areas. The floor of retention chambers will be above the aquifer layer.
- Material storage facilities and workshop will be in proximity or within work camp area with fences, compacted ground or paved with gravel and drainage system.
- Hazardous material storage area will be provided with roof, walls and concrete floor and bunds, storm water drainage and oil traps. Engine oil change requires steel trays on the floor to prevent hydrocarbon spills on soils. If spill is found, immediate

cleaning is required by collecting contaminated soil and to a temporary container and maintained in hazardous storage area.

47. The Contractor will consult with local authority regarding the location of the worker camps and will provide appropriate water supply, garbage collection, toilets, mosquito net, and other health protection measures to all workers. Fishing, wildlife hunting, and other social disturbance to local societies are prohibited. Training of workers on safety, good hygiene, and prohibitions activities is required. Detail measures as follow:

(a) During the preconstruction stage:

- Contractor will consult with local authority and subproject management unit regarding the location of the worker camps
- Once work camp location is identified, the Contractor will set up temporary accommodation for all the workers throughout the construction or maintenance period. In terms of supply and storage of domestic water at the work camp area, the Contractor will comply with the following requirements: (a) Provide adequate drinking water supply for the work camps in appropriate tanks/containers. The Contractor will identify appropriate public water source for drinking in consultation with the local authority; (b) in case no appropriate source of water is identified, the Contractor will take water from other sources which will be tested and treated before supplied to the work camps; (c) All water supply and storage areas must be away from the wastewater storage area, drainage system or other sources of contamination according to the regulations. Water from drains or contaminated water must not be used as domestic water at the site.
- At all construction sites, facilities for washing and necessary and appropriate tools must be provided by the Contractor. Bathrooms must be provided separately for male and female workers. Such facilities must ensure convenience for use and cleaning.
- Waste discharges, wastewater must be properly collected and disposed-off.
- First aid/Emergency aid kit. The first/emergency aid kit must be available at the work camp area and managed by a responsible person. This person must be trained on emergency/first aid. Injured or seriously sick people must be taken to the nearest hospital.
- Community relations. The Contractor will ensure that conflicts between the workers and local population are avoided.

(b) Construction stage:

- Work camps must be kept clean and tidy, unaffected by oil spill and construction wastes. Any oil spilt or leaked must be cleaned immediately to avoid soil and water contamination. Some actions to carry out are as follow: (a) avoid oil leakage

into surface water or groundwater; (b) wastewater must not be disposed directly to natural water areas; (c) solid waste materials are removed and discharged in prescribed places at frequent intervals; (d) First/Emergency aid supplies and materials and cleaning tools are regularly provided.

- PMU/DOR and/or ISMC/FE will monitor the housekeeping of work camp areas and ensure these areas are kept clean throughout the construction period.

(c) Construction completion.

- During this stage, all work camps and facilities will be cleared away and removed from the site. The site will be rehabilitated to ensure the operation of the works.

Section (3.5) Construction Sites Management Plan (CSMP)

48. *This plan aims to mitigate potential impacts at the construction sites in general. Key requirements are related to working hours, site layout and appearance and good housekeeping as well as operations of equipment and vehicles including prevention of spill and emergency response. Monthly inspection/meeting should be conducted to ensure that these procedures are adhered to. The Contractor must follow a 'good housekeeping' policy at all times. Preparation of contractor SOP (C-SOP) may be required by ISMC/FE. All Project sites should be cleared by the Contractor on completion of the construction.*

(a) General requirements on construction sites

49. The Contractor is required to minimize, as far as reasonably practicable, any adverse environmental impact of their construction activities. All appropriate licenses and consents in respect of site operations will be timely secured. A construction site should satisfy the following requirements:

- Working hours: Core working hours will be from 0800 to 1800 on weekdays and 0800 to 1300 on Saturday and this should be established in close consultation with local authorities and local resident. Noisy operations will not take place outside these hours without prior approval from the ISMC/FE. All construction related traffic can be adjusted according to the agreed working hours for each site. Any exemption will require an agreement with the PMU/DOR, ISMC/FE, and/or local authorities.
- Site layout. The overall site layout must be designed and approved under regulations to suit the construction location, the site's area, natural and climate conditions in the place of construction, facilitate the construction and ensure safety for human, machines and equipment at the construction site and the surrounding areas affected by construction activities.
- Site arrangement. Supplies and materials are placed neatly according to the approved overall plan design. Supplies, materials and obstacles are not placed on roads, emergency exits or fire entrances. Flammable and explosive material warehouses are not arranged near the place of construction and tents. Waste

materials are removed and discharged in prescribed places. Water drainage systems are regularly cleared to ensure that the construction ground is always dry.

- Signs. At the construction site, appropriate signs must be installed. At the main entrance, a plan of the overall ground of the construction site and working regulations is displayed. Safety measures and rules are publicized at the construction site for compliance. At dangerous places at the construction site, such as areas going through local community with limited space and/or dangerous operations, installation of temporary fences, warning signs and instructions for accident prevention (including installation of light/reflection) must be provided.
- Good housekeeping: The Contractor will follow a 'good housekeeping' policy at all time for the workers and the surrounding environment. This will include, but not necessarily be limited to the following: dust and noise control; waste treatment, keeping the site clean and tidy. To sites located near residential areas, wastes must be covered and collected and properly disposed-off. Construction and waste materials during transportation must be properly covered to ensure safety and environmental sanitation.
- Training of staff and workers. Before starting construction, an approved design of construction measures including those related to transportation of construction materials are required. The measures will include those to ensure safety of workers, construction machines and equipment for each job, and/or local people. Training of workers and/or drivers on technical and use instructions, etc. will also be required. During construction, the approved design as well as regulations, standards and technical processes are complied with. Jobs dependent on the quality of previous jobs are performed only after the previous jobs have been tested to meet quality requirements under regulations.
- The most significant potential impact requiring diligent management is the potential for the company/contractor vehicle to strike of a pedestrian or other vehicle. With a well-developed driver training program, and staff adherence to local traffic regulations, the risks for impact to pedestrians/occupants of other vehicles in the subproject area may be considered substantial if not effectively managed. The risk for accident is significant, as other drivers may be at fault while there are many community activities near roads, and/or illegal used of local road users. Design controls, induction and routine training, and consistent management to provide for a culture of OHS will be critical for contractor's staff/drivers throughout subproject construction.

(b) Ecology and Biodiversity

50. No natural habitat occurs within the ROW. Most land use types identified within the COI are existing road area (~98%) with a small proportion of wetland and residential land (refer to Table 6.15 in ESIA). Vegetation clearance for the Project will result in removal of at least 458 trees of different sizes and species of planted and natural species. There are 13 Endangered (EN) species of the IUNC Red List of Threatened Burma Padauk Species (*Pterocarpus macrocarpus*) identified within the COI and 12 species of these will be directly lost, if cleared. Most of these species are relatively small in size with the largest diameter stand was measured approximately 60cm of diameter at breast height. However, this species is found common in the Project region with smaller stands. Around 282 trees (fruit trees, industrial trees, bamboo trees and flower trees) of Project Affected Household (PAH) will be affected by the project. However, during the Detailed Measurement Survey (DMS) PAHs agreed to donate as most of them are naturally growth. Removal of trees will need to be consulted with local authorities and impacted households. Natural terrestrial vegetation (e.g. scrub) within the ROW are highly fragmented. All-natural vegetation to be removed have been directly disturbed by anthropogenic sources in some way. The natural growth and shrubs will not be entitled for compensation.

51. No international protected areas such as sites on the World Heritage List or Ramsar Wetlands will be impacted by the Project. The Project will also not impact any protected areas of national significance such as National Parks, Wildlife Reserves or Wildlife Sanctuaries as no such areas occur in the vicinity of the Project. The Project alignment passes near Phou Khao KHouay National Park for a distance of 2 km between Km 68+000 to Km 71+300.

52. Avoidance, management and mitigation measures include:

Limit the vegetation clearance to the minimum necessary during construction to prevent the loss of natural habitats and associated species;

Design Project to strictly minimise disturbance to priority flora species by clearly marking the tree species that need to be retained and liaise with the construction contractor on the requirements;

Sensitive habitats near construction areas (e.g. riparian forest) should be designated and clearly marked as 'no go' areas where they can be avoided;

Conduct progressive rehabilitation / revegetation of disturbed areas using native and non-invasive species for rehabilitation works as well as soil, mulch and vegetation debris containing natural seed to facilitate the revegetation of the disturbed areas;

High conservation value species including larger sized trees (e.g. *Samanea saman*) will be retained where possible with a consideration of road safety. Regular pruning and trimming of tree branches should be conducted to maintain visibility of road users.

Environmental education and awareness programs should be conducted for Project staff and contractors (e.g. through staff inductions) to ensure that the prohibitions and penalties regarding the collection of forest resources are widely known;

Pre-clearance detailed flora surveys should be conducted, and where species of conservation significance are identified mitigation measures to minimise impacts on species should be implemented (e.g. translocation of threatened flora if small enough);

Contractor prepares and implements plan for site clearance, excavation, restoration, tree replantation, etc. ISMC will review and approve the plan and monitor its implementation and report to PMU/DOR and DPWT;

Consultations with affected households concluded that planted/natural tree species owned by individuals are not required for compensation as they voluntarily contribute to the Project.

Removal of trees will need to be consulted with local authorities and impacted households. The District Agriculture and Forestry Office (DAFO) should provide oversight the vegetation clearing activities. Where practical, the high conservation value (HCV) species should be transplanted in appropriate locations with support from the Project Management Unit. The affected households who own these tree species should be given opportunities to harvest timbers in advance of clearing activities provided that they have appropriate personal safety equipment (PPE); Cleared areas should be progressively revegetated and rehabilitated throughout the life of the Project to restore vegetated areas where possible; and

Support local authorities and communities to plant and/or maintain native trees especially the high conservation value species along the Project alignment during the operation to offset biodiversity loss due to the Project;

Wash down the vehicles before entering the designated site to prevent the introduction and spread of invasive species into the area and ensure a regular weed management and monitoring.

The Contractor will use a quarry of materials according to the regulations and compensate by planting of trees in case of deforestation or tree felling. When possible, the Contractor should develop maintenance and reclamation plans, protect soil surfaces during construction and re-vegetate or physically stabilize eligible surfaces, preserve existing fauna and flora and preserve natural habitats along streams, steep slopes, and ecologically sensitive areas.

(c) Archaeology and Cultural Heritage

53. The NR13 Project does not impact on any known archaeological sites of global or national significance. However, there are 14 temples, and 7 cremation / cemetery sites are located in adjacent to the NR13SE's RoW and proposed borrow pits. There are three spirit houses & statues identified within the COI and need to be removed. It is important that

construction activities impacted cultural sites such as cemeteries is conducted in a participative way with involvement from local communities and local spiritual leaders.

54. Intangible heritage can include traditions or living expressions inherited from our ancestors and passed on to our descendants, such as oral traditions, performing arts, social practices, rituals, festive events, knowledge and practices concerning nature and the universe or the knowledge and skills to produce traditional crafts. No intangible heritage values are expected to be significantly affected by the Project.

55. The Contractor is required to respect local cultural/historical sites, including temples and other spiritual sites/resources for ethnic peoples and ensuring security and privacy of women and households in close proximity to the camps.

Section (3.6) Construction Materials Management Plan (CMMP)

56. *This plan aims to mitigate negative impacts due to excavation, site clearance, tree cutting in ROW, stockpiling, quarries, and borrow pits including the needs for revegetation and/or rehabilitation of the work sites.* The Project road is predominantly located on existing alignment and substantial sections of the first quarter of the alignment will be built using embankments over swamp and soft ground. Considerable amounts of borrow materials will therefore be needed to improve the swamp ground, including replacement of swamp deposits with rock fill, and in areas of embankment to attain the appropriate height of earthworks on which to form the required road grade. Capping layers may also be required to achieve a uniform roadbed support. The materials required to be sourced locally for road construction include:

- Natural granular material for possible application as sub base;
- Borrow materials for embankment fill (typically obtained from nearby NR13 South alignment but from private owned/operate borrow areas in some cases);
- Quarry stone for production of aggregates for asphalt, crushed stone base, concrete and masonry works; and
- Sand for concrete and mortar.

(a) Tree cutting, quarry and borrow pit

57. The Contractor will use a quarry of materials according to the regulations and compensate by planting of trees in case of deforestation or tree felling. When possible, the Contractor should develop maintenance and reclamation plans, protect soil surfaces during construction and re-vegetate or physically stabilize eligible surfaces, preserve existing fauna and flora and preserve natural habitats along streams, steep slopes, and ecologically sensitive areas.

58. The materials required to be sourced locally for road construction include: Natural granular material for possible application as subbase; Borrow materials for embankment fill (typically obtained from nearby NR13 South alignment but from private owned/operate

borrow areas in some cases); Quarry stone for production of aggregates for asphalt, crushed stone base, concrete and masonry works; and Sand for concrete and mortar. Locations of these materials have been identified nearby the Project road. It is expected that these sites will supply source materials to the closest section of the alignment to minimize the impact of transporting materials.

59. Commercial quarries and borrow pits approved by local environmental agencies should be used as much as possible. If non-commercial quarries and/or borrow pits are newly opened or expanded and used, in consultation with the ISMC/FE, the Contractor will comply with the following requirements:

- Large-scale borrow pits or stockpiles will need site-specific measures that may go beyond those required in this ESCOP.
- All locations to be used must be previously identified in the approved construction specifications. Sensitive sites such as scenic spots, areas of natural habitat, areas near sensitive receptors, or areas near water should be avoided.
- When water pollution is expected, an open ditch will be built around the stockpile site to intercept wastewater.
- Stockpile topsoil when first opening a borrow pit and use it later to restore the area to near natural conditions.
- If needed, disposal sites will include a retaining wall.
- If the need for new sites arises during construction, they must be pre-approved by the responsible local authorities.
- If landowners are affected by use of their areas for stockpiles or borrow pits, they must be included in the project resettlement plan and proper agreement and record will be secured.
- For any stockpile, quarry, or borrow pit sites opened for this project should be used only for the project activities and it should not to be used afterwards, unless it has been authorized by local authorities.
- If access/rescue roads are needed, actions to mitigate all negative impacts described in this ESCOP will also be applied. The alignment for each of these roads must be clearly determined with its impacts and mitigation measures.

(b) Earth excavation and demolition materials

60. During site physical clearance, earth excavation must be carefully handled to reduce dust and possible obstruction and causing nuisance and health impacts to local residents. Excavation that affects existing traffic and public utilities (such as pipeline, water supply, and bridges) must be properly planned in consultation with local authority and informed to the residents in advance. All excavation materials and old road surface will be reused for

dike/road construction and/or land filling at or nearby the work site. Demolition materials must be properly disposed-off. The Contractor must consult PMU/DOR and/or ISMC/FE on the final selection of disposal sites and methods.

61. To mitigate potential impacts of material excavation include: Potential UXO risk; Exposure of soil that has the potential to lead to increased erosion and discharge of sediment into waterways; Exposed faces and slopes that may be at risk of landslide or collapse; The dewatering of some areas within source sites has potential to impact on flow activation of potential plumes; Discharge of effluents from aggregate washing and crushing has potential to impact on water quality; and Increased noise, dust and vibrations in the local area surrounding the source sites. The Contractor will consult local authorities and communities on UXO risks at all borrow materials, quarry stone and sand site, a quick assessment is undertaken for each site to ensure that UXO risk and impacts on local community and local environment are low and appropriate actions will be made to mitigate these risks/impacts. Obtaining approval letter from local authorities is required before utilization of each site. Each site should have a clear plan for mitigation of erosion and/or sedimentation measures including construction of drainage controls and sedimentation ponds, daily deployment and maintenance of sediment control devices such as silt fences and jute netting, and planning of quarrying operations to minimize long-term exposure of erosive materials. It is expected that each quarry will also have a rehabilitation plan for the closure of the site after the sourcing of materials.

(c) Protection of natural habitats.

62. No natural habitat occurs within the ROW. Most land use types identified within the COI are existing road area (~98%) with a small proportion of wetland and residential land. No international protected areas such as sites on the World Heritage List or Ramsar Wetlands will be impacted by the Project. The Project will also not impact any protected areas of national significance such as National Parks, Wildlife Reserves or Wildlife Sanctuaries as no such areas occur in the vicinity of the Project. The Project alignment passes near Phou Khao Khouay National Park for a distance of 2 km between Km 68+000 to Km 71+300.

63. The Contractor must observe the national and local regulations and policies related to protected areas/species, wildlife sanctuaries. No trees in nearby sensitive areas can be cut without obtaining prior agreement with the authorities. When possible, organize training courses to improve environmental protection awareness of the staff and local communities. When the construction activities are carried out near and/or within sensitive areas (such as conservation and protection areas), the Contractor will ensure that the workers will not be involved in fishing and wildlife hunting and/or collection of plants, biodiversity and the activities (such as borrow pit) will not be located in the sensitive area without permission of local authorities.

(d) Site restoration.

64. The Contractor will use a quarry of materials according to the regulations and compensate by planting of trees in case of deforestation or tree felling. When possible, the Contractor should develop maintenance and reclamation plans, protect soil surfaces during construction and re-vegetate or physically stabilize eligible surfaces, preserve existing fauna and flora and preserve natural habitats along streams, steep slopes, and ecologically sensitive areas.

Section (3.7) Waste Management and Recycling Plan (WMRP)

65. *This plan aims to mitigate potential negative impacts due to generation of construction wastes and operations of works and worker camps (construction, hazardous, domestic) including recycle and reuse plan to be conducted during road construction and maintenance.*

66. The Project will generate a number of different waste streams, with the most significant waste expected to be generated during construction. The largest amounts of waste are likely to be demolition waste from land clearance and demolition activities during Project land acquisition, and construction waste (e.g. concrete, asphalt, piping, scrap metal etc.) from the production and sourcing of materials for road construction.

67. An opportunity exists to sustainably manage Project resources and minimise the amount of waste generated from the Project through the re-use and recycling of recovered materials either for Project activities or within the local industry and community. This is particularly the case for demolition and construction waste where a number of materials such as excavated material, timber, bricks, concrete, asphalt and steel can be recycled or reprocessed.

68. This is expected to help avoid excessive waste from being channelled to landfill, thereby reducing potential environmental and social impacts associated with waste generation.

(a) Construction and hazardous wastes.

69. 51. Preconstruction and construction activities may generate large amount of construction wastes including those generating from resurfacing and excavation of soil, old road surface and/or concrete structure and other surplus materials (oily wastes, miscellaneous woods, steel, etc.). Although most of these wastes are not toxic or dangerous (except for some oily wastes such as oily cloths after cleansing machines and equipment, etc.), proper measures for waste collection and treatment are required to avoid contaminating local environment (water quality, soil, natural habitats, land scape, and scenery) and local residents. The Contractor will prepare and implement a plan to reduce the generation of these wastes. When possible, these wastes should be properly reused and/or recycle. Bags and other solid wastes will be collected for recycling while appropriate arrangement will be made if a temporary disposal area will be required. Appropriate final disposal sites must be identified and implemented.

(b) Domestic solid wastes

70. Generation of these wastes (food wastes and garbage including plastic) will be minimized and/or reused when possible. The Contractor must carry out appropriate measures for waste collection and treatment. The domestic wastes will be collected in plastic or wooden bins with lids placed in convenient places and in worker canteens. Periodically, at appropriate time, transport those bins to the disposal sites (the sites should be approved by local authorities). The Contractor must sign a contract with the Urban Environmental and Construction Company to collect and treat these wastes during construction. In case the wastes cannot be transported to the dumping site (for example, due to lack of appropriate transport route), wastes must be buried at temporary dumps in the project area in a sanitary way – a waste layer covered by a layer of soil, and when the dump is filled, it is covered by a soil layer about 50 cm thick. Temporary dump sites must be located at least 500 m away from residential areas, 200 m away from work camps and surface water sources, and not in the prevalent wind direction of the area. Upon completion of works, cover the entire temporary dumps with soil, ensure land, and landscape restoration for the subproject area.

Section (3.8) Traffic and Transportation Management Plan (TTMP)

71. *This plan aims to address negative impacts due to increase in traffic and transportation of construction materials especially those related to road safety, traffic congestions, dust, noise, and vibration.*

72. The Project will relieve current congestion and cater for future growth between Xaythany to Thaphabath Districts. It will facilitate greater access to towns serviced by the road, thus promoting economic development. The Project will also help improve the amenity of the towns along the road through a reduction of noise, air pollution and visual impacts associated with a reduction in traffic congestion and the separation of local and through traffic.

73. The Project will facilitate greater accessibility to the industrial and economic hubs in Vientiane Capital, as well as to Bolikhamxay through the NR13 South. This is expected to have a positive impact on the economy through the reduction of costs arising from congestion and the longer than expected delivery times for goods and services. As a result of the Project, road users are expected to experience the following benefits:

- Increased capacity, which would enable the road network to accommodate the expected future traffic volumes;
- Time travel savings through a reduction in the number of intersections, provision of continuous overtaking opportunities and removing the need to reduce speed when driving through towns;
- Reduced vehicle operating costs and fuel saving through a more efficient road network; and
- Improved efficiency and safety for national and international road freight.

74. The Project will also improve road safety by providing an alternative to the existing undivided roads, with a dual carriageway between Km21 – Km41, improved alignment geometry, more overtaking opportunities.

75. The construction of the Project would have short term impacts on the existing road network including reduced speed limits near construction sites and access routes. Construction of the Project would be staged and traffic management plans will need to be implemented to reduce these impacts.

76. Land acquisition for the Project will result in significant accessibility issues for residents and businesses in areas where the Projects alignment disrupts or cuts off local access routes for motorised vehicles and pedestrians. Provision of motorised vehicle and pedestrian crossings in over passes and under passes will partially mitigate this impact. Key requirements are as follows:

- The Contractor will be required to use designated construction traffic routes as agreed and/or directed by the local authorities and the Police. The number of truck movements, hours of operation and any truck holding areas will be agreed in advance with the local authority and the Police. Plans will be required for each site showing the site entrances/exits and the agreed access roads for use to the nearest main road, and the routes to be used by truck to and from the strategic road network.
- The Contractor will maintain an up to date log of all drivers that will include a written undertaking from them to adhere to the local authority's approved routes for construction traffic. In the case of non-compliance, the Contractor and/or their sub-contractor(s) would be in breach of contract, necessitating disciplinary action against individual drivers.
- The Contractor may be required to provide truck stickers uniquely identifying the group of construction sites included in each contract, details of which shall be submitted to the local authority for approval. For identification purposes the Contractor will fix these in a prominent position on all trucks frequently serving the construction site. The identification will need to be sufficiently large to be easily read from a distance of 20 meters. Trucks waiting to enter or leave the site must switch off their engines to avoid unnecessary engine noise and emissions. Restrictions on the size and weight of vehicles accessing each site may be imposed depending on agreed access routes.

77. For construction that interference with a carriageway or footway, the Contractor will inform the local authorities, responsible agencies, and local residents before commencing the works and proposed measures to minimize the safety risk and inconvenience to the public. All necessary consents and licenses must be obtained in advance. The safety of the

public must be ensured. In the case of temporary footways, reasonable access shall be provided for people in accordance with the following requirements:

- Any temporary footways and carriageways will be constructed to the reasonable requirements of the local authorities and should have uniform surfaces as much as possible;
- Clear signing must be provided at all times for pedestrian routes with the minimum number of changes to all temporary layouts in order to reduce confusion. Advance warning should, if possible, indicate alternative existing wheelchair-accessible routes;
- After completion of the works all materials arising from the works will be cleared from the highway leaving the same in a clean and tidy condition to the reasonable requirements of the local authorities; and
- The Contractor will be responsible for any damage caused by their activities to the roads and public facilities in the vicinity of the worksite. Any defects caused by the Contractors must be rectified immediately if dangerous or otherwise within 24 hours.
- Any street furniture (electrical or non-electrical) cannot be removed or relocated by the Contractor or any of its sub-contractors without written agreement from the responsible agencies.

78. Road safety campaign in the high risks area will be prepared and implemented as agreed with DPWT and/or ISMC/FE.

Section (3.9) Environmental Quality Management Plan (EQMP)

79. *This plan aims to reduce potential impacts on air, noise, vibration, and water quality.* During construction, the Contractor will specifically take serious actions on the following:

- To control dust by using water or through other means and the construction site will be cleaned on a daily basis;
- To work with local authority and management local traffic effectively and ensure traffic access of road safety of local residents and road users during the works. Speed limit at work sites and community area will be applied to all vehicles and cars. All vehicles and their drivers must be identified and registered, and the drivers are properly trained;

80. **Air emission:** The Project will lead to a change of traffic patterns including current traffic congestion in the NR13SE section. There will be reduced air emissions associated with more efficient transportation, although traffic is expected to increase due to the more efficient transportation provided by the road (NR13SE). Air emissions especially during the dry season are a major issue in Lao PDR, especially as the city grows and the use of vehicles

increases. In particular, the impacts of fine particulates from vehicle emissions is well known to affect the health of people living in proximity to major roads. During construction of the Project, dust emissions from the unpaved road base may cause short-term impacts to near-field receptors. Maximum concentrations of CO, NO₂ and PM₁₀ generated by the Project are not predicted to exceed WHO or Lao PDR air quality criteria on any section of the existing NR13SE. However, PM_{2.5} WHO guidelines are expected to be exceeded at several sections of each road. Receptor impacts are predicted to be relative to the angle of the road to the prevailing wind, with maximum concentrations predicted within 30 m of the roadside.

81. **Noise and vibration:** Noise generated by expressways is significant and measures will be required to protect people from the adverse impacts, especially in urban areas where there are a lot of dwellings close to the Project (e.g. <20m). In rural areas, the Project may add a new source of noise (e.g. where the alignment passes through communities). Noise mitigation via sound barriers will be required in certain sections of the road to ensure that noise emissions are within regulatory requirements, enabling remaining residences to not be severely impacted by the development. Maximum noise levels remain relatively consistent along the NR13SE, but levels reduce with distance from the alignment section of the Project. Noise impacts from the Project include annoyances to community with maximum noise receptor impacts predicted to be typically within 50 m of the roadside. Construction noise activities will primarily be associated with the clearing of land, earthworks and hauling of construction materials. Some noise and vibration are also expected during the construction phase and this will be associated excavation of rock, road cuttings and construction of culverts, drainages. However, impacts will be localised and short-term.

82. **Avoidance, management and mitigation measures for dust, noise, and vibration.** The Contractor must make efforts to control dust, noise, and vibration levels from the site, as far as is reasonably practicable. Excessive noise/vibration generation activities must be in accordance with GOL standards. For critical areas, the Contractor may be required to conduct noise measurement in close consultation with the local residents and establish appropriate measures to control and manage noise level. Measures for reducing dust and other air pollution, noise, and vibration are provided as follows:

- *Inform the residents:* Prior to commencement of work at any site, the Contractor will be required to inform the local authority and residents regarding the construction plan and potential noise and vibration that may occur from the construction activities, including measures to reduce noise and vibration.
- *Dust control:* The Contractor will ensure that no burning of waste materials on site; adequate water supply is available on site; dry sweeping of large areas is not allowed; Cover all trucks carrying loose or potentially dusty materials (soil, mud, etc.) to and from construction site; Water or sprinkle the construction areas periodically, especially at site located near residential area; avoid overloaded of trucks; routinely

clean public roads and access routes; Ensure vehicles working on site have exhausts positioned such that the risk of re-suspension of ground dust is minimized (exhausts should preferably point upwards), where reasonably practicable; Control driving speed on un-surfaced haul routes and work areas; Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery; Mix large quantities of cement, grouts and other similar materials in designated areas; Store materials with the potential to produce dust away from site boundaries where reasonably practicable; Minimize the amount of excavated material held on site; Sheet, seal or damp down unavoidable stockpiles of excavated material held on site, where required; Seal or re-vegetate completed earthworks as soon as reasonably practicable after completion.

- Care must be undertaken during the transportation of construction materials to and from the construction site; the spoil must be covered at all time. Fly-tipping will not be permitted. Loads must only be deposited at designated sites. The Contractor will be responsible for all the trucks delivering to, or exiting from, a worksite and will clean up all damage that may occur to public road and other public facilities. Care should be taken when loading or unloading vehicles or dismantling scaffolding or moving materials to reduce impact noise. Loading or unloading bays may have to be housed in suitable acoustic enclosures.
- Noisy plant or equipment including will be sited as far away as is practicable from noise sensitive buildings. The use of barriers, (e.g. soil mounds), site huts, acoustic sheds or partitions to deflect noise away from noise sensitive areas should be employed wherever practicable.
- The Contractor will be obliged to comply with the vibration levels according to GOL standards. Due attention will be given to minimize human exposure (1 Hz to 80 Hz) and protection of damage to nearby structures.

83. **Water quality.** The key potential impact on water quality that will need to be managed during construction will be the potential for increased erosion and sedimentation from construction areas. Careful planning for development of drainage control measures will be required for the Project including appropriate technical systems for sedimentation ponds, vegetation swales and other runoff measures needed to deal with the predicted pollution and flow alteration to minimise the risk of impacting the water quality and potential impacts on wetlands and rivers. Water sources downstream in the form of springs, wells and open water affected by the Project need to be protected and monitored to ensure that unavoidable impacts are minimised, mitigated and managed appropriately in the short or long term by the NR13SE.

84. Once operational, the Project will result in a linear impervious area (where there was previously mixed pervious areas) which will increase surface water run-off. The stormwater drainage system of the Project will need to be designed to manage these increased flows throughout the Operation Phase and particularly during high rainfall events.

85. The Contractor must take all the efforts to prevent wastes (solid and liquid) discharge into all rivers and to protect surface and groundwater from pollution and other adverse impacts including changes to water levels, flows and general water quality. Discharge of engine oil and oily waste from dredgers and construction machines to the rivers will be strictly prohibited. Engine oil, used oil, and other toxic substances and hazardous wastes must be properly collected, stored, treated, and/or disposed-off. Key measures are as follows:

- *Used oil/engine oil:* The oil container at the construction site (especially when the site is located less than 10 meters from the waterways) must be of sufficient strength to ensure to prevent leakage. The container must be situated within a secondary containment system (bund), which will prevent the release of any leaked oil. The Contractor must make provisions to ensure that all hazardous substances including oil drums or containers on site are properly labeled and properly stored and that no oil or other contaminants are allowed to reach water courses or groundwater.
- *Wastewater from sites:* Whenever possible, the Contractor must minimize the amounts of wastewater that need to be discharged and find alternative means of disposal. The Contractor will ensure that any seepage and wastewater arising from the works and camp sites must be collected and discharged via a settlement tank. The standards for wastewater treatment prior to discharge must be agreed in advance with the ESA. Contaminated water or water of an uncertain quality must be discharged into sewers by tankers or other approved means of disposal.
- *Drainage.* Water drainage must be designed to avoid stagnant conditions that could create bad smell and unsanitary condition. The Contractor must agree with the ESA in advance, details of the methodology to be employed, prior to commencement of the construction. Particular attention must be given to regular pest control treatment (particularly rats and flies); removal of sludge and other debris after drainage; reducing smell nuisance from sludge and algae by measures including deodorizing, hosing down etc. Safety measures must also be taken to protect both the general public and employees and to prevent fly-tipping and illegal access during the development works.

Section (3.10) Project Change Management Plan/ Adaptive Management Plan

86. Adaptive management aims to continually improve environmental and social management processes by monitoring and evaluating their effectiveness and implementing

strategies and actions to incorporate learnings quickly and proactively into operational implementation of monitoring and management and in future planning for the NR13SE (the Project). Monitoring associated with adaptive management as described in this plan will focus on monitoring changes to the environment against established (including but not limited to regulatory) thresholds, beyond which the implementation of action will be necessary to reduce observed impacts where changes are reasonably associated with the Project. Adaptive management will take place within the context of an industrial project, which will operate in an environmentally responsible manner but by nature cannot operate without any effects.

87. This Adaptive Management Plan (AMP) for NR13SE provides an overview of the management mechanisms established to identify where mitigation measures may not sufficiently address potential adverse effects, and to address uncertainty or conditions that may occur during operations that were not anticipated during the planning phase. A precautionary approach to managing the Project inclusive of this adaptive management plan acknowledges uncertainties exist while developing systems and approaches for responding to changing conditions, with the goal of avoiding adverse effects by taking action before these occur or, at minimum, responding quickly and meaningfully to observed changes that may be partially to wholly attributable to the Project.

88. The Project-wide adaptive management process begins with a planning phase, followed by iterative phases of implementing and monitoring the actions included in the plan(s), evaluating the effectiveness of actions included in the plans based on results of monitoring and other feedback mechanisms, and adjusting management strategies and actions and responses based on monitoring. Figure A2-1 is an illustration of this cyclical, phased process, and identifies the key steps involved in each phase.

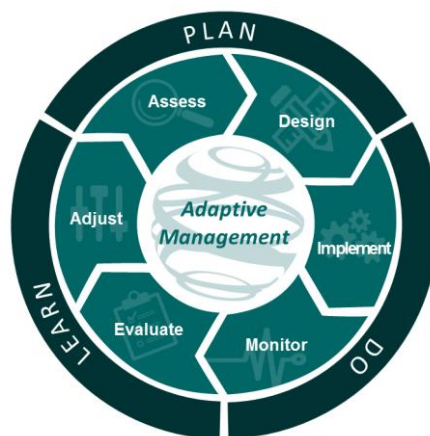


Figure A2-1 AMP Process

Sample

Adaptive Management Phases	Proposed Adaptive Management Mechanisms
Assess	

Design	
Implement	
Monitor	
Evaluate	
Adjust	

Section (3.11) Emergency Preparedness and Response Plan (EPRP)

89. Any large construction works may involve small to major accidents as well as cause small to major injury to contractor’s workers and staff, local residents, and/or general public. For the Project, these risks are quite high since there are school, temple and the provincial hospital nearby the construction sites. Thus, as part of C-ESMP, the contractor will be required to prepare an EPRP as well as provide training, routine maintenance, monitoring, and implementation of all aspects of all staff and workers. This is to minimise the residual impacts to an acceptable level. With robust management, OHS risks and anticipated residual impacts remain moderate – high, particularly for vehicular accidents.

90. The Contractor to set up specific measures for prevention of fire and spill of toxic/hazardous chemicals and provide appropriate facilities and equipment that could help fighting fire at the construction site, which has its own working regulations on its specific duties and powers. A subplan on to prevent fire and toxic/hazardous chemical spill will be prepared and approved under regulations including preparation of emergency response. This will include assignment of specific staff and/or team to be responsible for ensuring safety and organizes training on these procedures. In/near urban area, at the construction site, local fire-fighting equipment are arranged (if possible). At fire-prone places, inflammable signboards and fire-fighting and alarm equipment are installed to promptly detect fires and take remedies.

91. The most significant potential impact requiring diligent management is the potential for the company/contractor vehicle to strike of a pedestrian or other vehicle. With a well-developed driver training program, and staff adherence to local traffic regulations, the risks for impact to pedestrians/occupants of other vehicles in the subproject area may be considered substantial if not effectively managed. The risk for accident is significant, as other drivers may be at fault while there are many community activities near roads, and/or illegal used of local road users. Design controls, induction and routine training, and consistent management to provide for a culture of OHS will be critical for contractor’s staff/drivers throughout subproject construction.

Section (3.12) Monitoring and Reporting Plan (MRP)

92. *This plan aims to ensure that the mitigation measures are conducted timely and effectively.* The Contractor will be required to submit the Contractor ESS monitoring report to DPWT and PONRE (with a copy to EDPD/PTI) on every 25th of each month. The report can be submitted electronically as agreed. Key monitoring subplan and/or indicators (also see Annex 1 Table A1-1).

(a) Site Management and Monitoring

93. Following approval of the C-ESMP, the Contractor will be required to attend a series of meetings with the ISMC and/or Field Engineers to ensure that all compliance conditions and procedures are clearly understood and actions can be implemented on the ground. As part of the day-to-day supervision of works, the ISMC/FE are also responsible for day-to-day supervision and monitoring of compliance of the C-ESMP and report the results in the progress report. The Contractor will be responsible for ensuring that all sub-contractors abide by the conditions of the Project-ESMP.

(b) M&E Plan

94. During construction, the Contractor will specifically take serious actions on the following:

- To control dust by using water or through other means and the construction site will be cleaned on a daily basis;
- To work with local authority and management local traffic effectively and ensure traffic access of road safety of local residents and road users during the works. Speed limit at work sites and community area will be applied to all vehicles and cars. All vehicles and their drivers must be identified and registered, and the drivers are properly trained;
- To respect the cultural sites, ensure security and privacy of women and households in close proximity to the camps and the use of asbestos containing materials is not allowed;
- To conduct daily monitoring and inspection of construction activities to ensure environmental and social impacts are managed and mitigated appropriately in local communities. These potential impacts include wastes, discharge, dust, community health and safety, OCHS, construction waste contaminated on private land, social issues and social security, etc.;
- To implement and maintain a good community-relations in comply with requirements in the section on Community Relation below; and
- To comply with Non-compliance Reporting Procedures as specified in Part 1 of the ESCOP.

(c) Contractors Reporting

72. Contractors Reporting - The Contractor will prepare two levels of environmental and social reports:

- Weekly Environmental and Social Checklists – These will be prepared weekly by the Contractor’s ES team and the checklist will be submitted to the ISMC/Engineer on a weekly basis.

- Monthly Environmental and Social Summary Report - in respect of compliance with C-ESMP will be submitted to the PMU/DOR through ISMC/Engineer. The report will be in line with the ESHS requirements as described in the BD Part II Section IX - Particular Conditions of Contract.
- Contractor will report any incidents/accidents that may have impacts on the safety, health, environment or community, or any activity resulting in regulatory non-compliance or breach of GoL or AIIB's policies, standards or commitments. ISMC/Engineer will need to develop an incident/accident reporting system to document any reportable events such as injury, hazardous spills, or community incidents (e.g. private property damage). The reporting system should record the following events:
 - Injury, illness or accident;
 - Near miss (with serious or major potential for loss);
 - Non-contained fires within or near operational areas;
 - Chemical spills;
 - Uncontrolled gas emissions;
 - Spills of fuel or oil greater than 50 L within bunded workshop or other operational areas (safety and environmental incident);
 - Spills of fuel or oil outside of bunded areas greater than 10 liters (environment incident);
 - Community incidents (e.g. private property damage, injury to livestock);
 - Any other environmental and social incident involving damage to the environment and grievance from the workers and communities or road user's during construction.
- Accidents / incidents will be classified according to their actual and potential safety, environmental or social impacts using a standard consequence matrix to ensure consistency. The system will need to record the following types of auditable information into a report:
 - Description of the incident / accident/event and its causes;
 - Risk rating of the event (according to a standard rating system / consequence matrix);
 - Root cause analysis
 - Description of appropriate corrective and preventative actions and their proposed timeline for implementation;
 - Status of corrective actions (to be updated once closed out); and
 - Actual or estimated costs of repair, clean-up or other remedial measures.

Annex 3: Project Code of Conduct (CoC) on Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH), AND Violence Against Children (VAC)

1. This section provides guidance on sample of requirements to be included in contract to address the issues related to Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH) and Violence against Children (VAC) which is a new requirement to be applied to all projects with AIIB financing. These samples are used in road projects in Cambodia (RAMP-II) and Lao PDR (LRSP2 and NR13N) starting 2018. Sections A3-1, A3-2, A3-3, A3-4, A3-5, and A3-6 presents (i) Table of contents, objectives, scope, and definitions; (ii) Samples code of conduct; (iii) Action plan; (iv) GRM; (v) Services providers; (vi) SEA/SH and VAC Focal Point; and (vii) Appendix 1 - Potential Procedures for Addressing SEA/SH and VAC.

2. Table of Content, Objective, Scope, and Definitions are as follows:

1. Background
2. Scope
3. Definitions
4. Sample Codes of Conduct
 - (a) Company Code of Conduct
 - (b) Preventing Gender Based Violence and Violence Against Children
 - (c) Manager's Code of Conduct
 - (d) Preventing Gender Based Violence and Violence Against Children
 - (e) Individual Code of Conduct
 - (f) Preventing Gender Based Violence and Violence Against Children
5. Action Plan
 - (a) The SEA/SH and VAC Compliance Team
 - (b) Making Complaints: SEA/SH and VAC Allegation Procedures
 - (c) Addressing Complaints about SEA/SH or VAC
6. GRM
7. Service Provider
8. SEA/SH and VAC Focal Point
 - (a) Accountability Measures
 - (b) Monitoring and Evaluation
 - (c) Awareness-raising Strategy
 - (d) Response Protocol
 - (e) Survivor Support Measures
 - (f) Perpetrator Policy and Response
 - (g) Administrative Sanctions

Attachment 1 - Potential Procedures for Addressing SEA/SH and VAC

A3-1. Background

3. The purpose of these *Codes of Conduct and Action Plan to prevent Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH) and Violence against Children (VAC)* is to introduce a set of key definitions, minimum standard sample Codes of Conduct, and guidelines that establish mechanisms for preventing, reporting and addressing SEA/SH and VAC within the work site and in its immediate surrounding communities. The application of the SEA/SH and VAC Codes of Conduct will help prevent and/or mitigate the risks of SEA/SH and VAC on the project.

4. Mutual respect and fair treatment between those working on the project and local communities is critical to a safe, respectful, and productive workplace and operating environment. SEA/SH and VAC can be one of the most serious violations of respect and fair treatment which can harm the local community, and significantly damage trust and cooperation between parties.

5. These Codes of Conduct are to be adopted by those working on the project and are meant to: (i) create common awareness about SEA/SH and VAC; (ii) ensure a shared understanding; and, (iii) create a clear system for identifying, responding to, and sanctioning SEA/SH and VAC incidents.

6. Ensuring that all project staff understand the values of the project, understand expectations for all employees, and acknowledge the consequences for violations of these values, will help to create a smoother, more respectful and productive project implementation thereby helping ensure that the project's objectives will be achieved.

A3-2. Scope

7. [use what is in draft bidding documents]

A3-3. Definitions

8. The following definitions apply:

- *Gender-Based Violence (GBV)*: is an umbrella term for any harmful act that is perpetrated against a person's will and that is based on socially ascribed (i.e. gender) differences between males and females. It includes acts that inflict physical, sexual or mental harm or suffering, threats of such acts, coercion, and other deprivations of liberty. These acts can occur in public or in private.
- *Violence against Children (VAC)*: is defined as physical, sexual or psychological harm of minor children (i.e. under the age of 18) including using for profit, labor, sexual gratification, or some other personal or financial advantage.
- *Accountability Measures* are the measures put in place to ensure the confidentiality of survivors and to hold contractors, consultants and the client responsible for instituting a fair system of addressing cases of SEA/SH and VAC.

- *Child* is used interchangeably with the term ‘minor’ and refers to a person under the age of 18.⁹ This is in accordance with Article 1 of the United Nations Convention on the Rights of the Child.
- *Child Protection (CP)*: is an activity or initiative designed to protect children from any form of harm, particularly arising from VAC.
- *Consent*: is the informed choice underlying an individual’s free and voluntary intention, acceptance or agreement to do something. No consent can be found when such acceptance or agreement is obtained through the use of threats, force or other forms of coercion, abduction, fraud, deception, or misrepresentation. In accordance with the United Nations Convention on the Rights of the Child, the AIIB considers that consent cannot be given by children under the age of 18¹⁰, even in the event that national legislation of the country into which the Code of Conduct is introduced has a lower age. Mistaken belief regarding the age of the child and consent from the child is not a defense.
- *Consultant*: is as any firm, company, organization or other institution that has been awarded a contract to provide consulting services in the context of the RAMP-II, to the project, and has hired managers and/or employees to conduct this work.
- *Contractor*: is any firm, company, organization or other institution that has been awarded a contract to conduct infrastructure development works in the context of the RAMP-II project and has hired managers and/or employees to conduct this work. This also includes sub-contractors hired to undertake activities on behalf of the contractor.
- *Employee*: is as any individual offering labor to the contractor or consultant within country on or off the work site, under a formal or informal employment contract or arrangement, typically but not necessarily in exchange for a salary (e.g. including unpaid interns and volunteers), with no responsibility to manage or supervise other employees.
- *Employer*: Ministry of Public Works and Transport
- *SEA/SH and VAC Allegation Procedure*: is the prescribed procedure to be followed when reporting incidents of SEA/SH or VAC.

⁹ The Kingdom of Cambodia is party to this convention. <http://www.pseataaskforce.org/uploads/tools/1478613357.pdf>

¹⁰ See UN Resolution 62/214. United Nations Comprehensive Strategy on Assistance and Support to Victims of Sexual Exploitation and Abuse by United Nations Staff and Related Personnel; UN Secretariat (2003) ST/SGB/2003/13 Special measures for protection from sexual exploitation and sexual abuse; IOM (2016) Policy and Procedures for Preventing and Responding to Sexual Exploitation and Abuse.

- *SEA/SH and VAC Codes of Conduct*: The Codes of Conduct adopted for the project covering the commitment of the company, and the responsibilities of managers and individuals with regards to SEA/SH and VAC.
- *SEA/SH and VAC Compliance Team (GCCT)*: a team established by the project to address SEA/SH and VAC issues.
- *Grievance Redress Mechanism (GRM)*: is the process established by the RAMP-II project to receive and address complaints.
- *Grooming*: are behaviors that make it easier for a perpetrator to procure a child for sexual activity. For example, an offender might build a relationship of trust with the child, and then seek to sexualize that relationship (for example by encouraging romantic feelings or exposing the child to sexual concepts through pornography).
- *Manager*: is any individual offering labor to the contractor or consultant, on or off the work site, under a formal employment contract and in exchange for a salary, with responsibility to control or direct the activities of a contractor's or consultant's team, unit, division or similar, and to supervise and manage a pre-defined number of employees.
- *Online Grooming*: is the act of sending an electronic message with indecent content to a recipient who the sender believes to be a minor, with the intention of procuring the recipient to engage in or submit to sexual activity with another person, including but not necessarily the sender¹¹.
- *Perpetrator*: is the person(s) who commit(s) or threaten(s) to commit an act or acts of SEA/SH or VAC.
- *Response Protocol*: is the mechanisms set in place to respond to cases of SEA/SH and VAC.
- *Survivor/Survivors*: is the person(s) adversely affected by SEA/SH or VAC. Women, men and children can be survivors of GBV; children can be survivors of VAC.
- *Work Site*: is the area in which infrastructure development works are being conducted, as part of the project.
- *Work Site Surroundings*: is the 'Project Area of Influence' which are any area, urban or rural, directly affected by the project, including all human settlements found on it.

A3-4. Sample Codes of Conduct

9. This section presents three sample Codes of Conduct as the minimum standard for use under civil works contracts for the Project (RAMP-II). These codes will be confirmed and agreed upon prior commencement of works and cleared by the Supervision Consultant.

- *Company Code of Conduct*: Commits the company to addressing SEA/SH and VAC issues;
- *Manager's Code of Conduct*: Commits managers to implementing the Company Code of Conduct, as well as those signed by individuals; and,
- *Individual Code of Conduct*: Code of Conduct for everyone working on the project, including managers.

(a) Company Code of Conduct: Preventing Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH) and Violence against Children (VAC)

10. In the context of the Project, the company is committed to creating and maintaining an environment in which gender-based violence (GBV) and violence against children (VAC) have no place, and where they will not be tolerated by any employee, associate, or representative of the company. Therefore, in order to ensure that all those engaged in the project are aware of this commitment, and in order to prevent, be aware of, and respond to any allegations of SEA/SH and VAC, the company commits to the following core principles and minimum standards of behavior that will apply to all company employees, associates, and representatives including sub-contractors, without exception:

1. The company—and therefore all employees, associates, and representatives—commit to treating women, children (persons under the age of 18), and men with respect regardless of race, color, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status. Acts of SEA/SH and VAC are in violation of this commitment.
2. Demeaning, threatening, harassing, abusive, culturally inappropriate, or sexually provocative language and behavior are prohibited among all company employees, associates, and its representatives.
3. Acts of SEA/SH or VAC constitute gross misconduct and are therefore grounds for administrative sanctions, which may include penalties and/or termination of employment. All forms of SEA/SH and VAC, including grooming are unacceptable, regardless of whether they take place on the work site, the work site surroundings, at worker's camps or at worker's homes.
4. In addition to company sanctions, legal prosecution of those who commit acts of SEA/SH or VAC will be pursued if appropriate.
5. Sexual contact or activity with children under 18—including through digital media—is prohibited. Mistaken belief regarding the age of a child is not a defense. Consent from the child is also not a defense or excuse.

6. Sexual favors—for instance, making promises or favorable treatment dependent on sexual acts—or other forms of humiliating, degrading or exploitative behavior are prohibited.
7. Unless there is full consent¹² by all parties involved in the sexual act, sexual interactions between the company’s employees (at any level) and members of the communities surrounding the work place are prohibited. This includes relationships involving the withholding/promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex—such sexual activity is considered “non-consensual” within the scope of this Code.
8. All employees, including volunteers and sub-contractors are highly encouraged to report suspected or actual acts of GBV and/or VAC by a fellow worker, whether in the same company or not. Reports must be made in accordance with SEA/SH and VAC Allegation Procedures.
9. Managers are required to report suspected or actual acts of GBV and/or VAC as they have a responsibility to uphold company commitments and hold their direct reports responsible.
10. Comply with all relevant local legislation, including labor laws in relation to child labor.
11. To ensure that the above principles are implemented effectively the company commits to ensuring that:
12. All managers sign the ‘Manager’s Code of Conduct’ detailing their responsibilities for implementing the company’s commitments and enforcing the responsibilities in the ‘Individual Code of Conduct’.
13. All employees sign the project’s ‘Individual Code of Conduct’ confirming their agreement not to engage in activities resulting in SEA/SH or VAC.
14. Displaying the Company and Individual Codes of Conduct prominently and in clear view at workers’ camps, offices, and in public areas of the work space. Examples of areas include waiting, rest and lobby areas of sites, canteen areas, health clinics.
15. Ensure that posted and distributed copies of the Company and Individual Codes of Conduct are translated into the appropriate language of use in the work site areas as well as for any international staff in their native language.

¹²**Consent** is defined as the informed choice underlying an individual’s free and voluntary intention, acceptance or agreement to do something. No consent can be found when such acceptance or agreement is obtained through the use of threats, force or other forms of coercion, abduction, fraud, deception, or misrepresentation. In accordance with the United Nations Convention on the Rights of the Child, the AIIB considers that consent cannot be given by children under the age of 18, even in the event that national legislation of the country into which the Code of Conduct is introduced has a lower age. Mistaken belief regarding the age of the child and consent from the child is not a defense.

16. An appropriate person is nominated as the company's 'Focal Point' for addressing SEA/SH and VAC issues, including representing the company on the SEA/SH and VAC Compliance Team (GCCT) which is comprised of representatives from the client, contractor(s), the supervision consultant, and local service provider(s).
17. Ensuring that an effective Action Plan is developed in consultation with the supervision consultant and which includes as a minimum:
 - a. *SEA/SH and VAC Allegation Procedure* to report SEA/SH and VAC issues through the project Grievance Redress Mechanism (GRM);
 - b. *Accountability Measures* to protect confidentiality of all involved; and,
 - c. *Response Protocol* applicable to SEA/SH and VAC survivors and perpetrators.
18. That the company effectively implements the Action Plan, providing feedback to the GCCT for improvements and updates as appropriate.
19. All employees attend an induction training course prior to commencing work on site to ensure they are familiar with the company's commitments and the project's SEA/SH and VAC Codes of Conduct.
20. All employees attend two mandatory training courses per year for the duration of the contract starting from the first induction training prior to commencement of work to reinforce the understanding of the project's SEA/SH and VAC Code of Conduct.

Company name: _____

Signature of Company's Representative: _____

Printed Name: _____

Title: _____

Date: _____

(b) Manager's Code of Conduct: Preventing Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH) and Violence against Children (VAC)

11. Managers at all levels have particular responsibilities to uphold the company's commitment to preventing and addressing SEA/SH and VAC. This means that managers have an acute responsibility to create and maintain an environment that prevents SEA/SH and VAC. Managers need to support and promote the implementation of the Company Code of Conduct. To that end, managers must adhere this Manager's Code of Conduct and also sign the Individual Code of Conduct. This commits them to supporting and developing systems that facilitate the implementation of the Action Plan and maintain a GBV-free and VAC-free

environment at the workplace and in the local community. These responsibilities include but are not limited to:

Implementation

1. To ensure maximum effectiveness of the Company and Individual Codes of Conduct:
 - a. Prominently displaying the Company and Individual Codes of Conduct in clear view at workers' camps, offices, and in public areas of the work space. Examples of areas include waiting, rest and lobby areas of sites, canteen areas, health clinics.
 - b. Ensuring all posted and distributed copies of the Company and Individual Codes of Conduct are translated into the appropriate language of use in the work site areas as well as for any international staff in their native language.
2. Verbally and in writing explain the Company and Individual Codes of Conduct to all staff.
3. Ensure that:
 - a. All staff members sign the 'Individual Code of Conduct', including acknowledgment that they have read and agree with the Code of Conduct.
 - b. Staff lists and signed copies of the Individual Code of Conduct are provided to the GCCT and the client.
 - c. Participate in training and ensure that staff also participate as outlined below.
 - d. Staff are familiar with the Grievance Redress Mechanism (GRM) and that they can use it to anonymously report concerns of SEA/SH or VAC incidents.
 - e. Staff are encouraged to report suspected or actual SEA/SH or VAC through the GRM by raising awareness about SEA/SH and VAC issues, emphasizing the staff's responsibility to the Company and the country hosting their employment, and emphasizing the respect for confidentiality.
4. In compliance with applicable laws and to the best of your abilities, prevent perpetrators of sexual exploitation and abuse from being hired, re-hired or deployed.
5. Ensure that when engaging in partnership, sub-contractor or similar agreements, these agreements:

- a. Incorporate the SEA/SH and VAC Codes of Conduct as an attachment.
 - b. Include the appropriate language requiring such contracting entities and individuals, and their employees and volunteers, to comply with the Individual Codes of Conduct.
 - c. expressly state that the failure of those entities or individuals, as appropriate, to take preventive measures against SEA/SH and VAC, to investigate allegations thereof, or to take corrective actions when SEA/SH or VAC has occurred, shall constitute grounds for sanctions and penalties in accordance with the Individual Codes of Conduct.
6. Provide resources to the GCCT to create and disseminate internal sensitization initiatives through the awareness-raising strategy under the Action Plan.
 7. Ensure that any SEA/SH or VAC issue warranting police action is reported to the client and the AIIB immediately.

Training

8. All managers are required to attend an induction manager training course prior to commencing work on site to ensure that they are familiar with their roles and responsibilities in upholding the SEA/SH and VAC Codes of Conduct. This training will be separate from the induction training course required of all employees and will provide managers with the necessary understanding and technical support needed to begin to develop the Action Plan for addressing SEA/SH and VAC issues.
9. Ensure that time is provided during work hours and that staff attend the mandatory project facilitated induction training on SEA/SH and VAC required of all employees prior to commencing work on site.
10. Ensure that staff attend the mandatory refresher training course required of all employees. Ensure satisfaction surveys to evaluate training are conducted by the service provider.

Response

11. Managers will be provided input to the SEA/SH and VAC Allegation Procedures and Response Protocol developed by the GCCT, as needed as part of the final cleared Action Plan.
12. Once adopted by the Company, managers will uphold the Accountability Measures set forth in the Action Plan to maintain the confidentiality of all employees who report or (allegedly) perpetrate incidences of SEA/SH and VAC (unless a breach of confidentiality is required to protect persons or property from serious harm or where required by law).

13. If a manager develops concerns or suspicions regarding any form of SEA/SH or VAC by an employee, or by an employee working for another contractor on the same work site, s/he is required to report the case.
14. Once a sanction has been determined, the relevant manager(s) is/are expected to be personally responsible for ensuring that the measure is effectively enforced, within a maximum timeframe of 14 days from the date on which the decision to sanction was made.
15. Managers failing to report or comply with such provision can in turn be subject to disciplinary measures, to be determined and enacted by the company's CEO, Managing Director or equivalent highest-ranking manager. Those measures may include:
 - a. Informal warning.
 - b. Formal warning.
 - c. Loss of up to one week's salary.
 - d. Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.
 - e. Termination of employment.
16. Ultimately, failure to effectively respond to SEA/SH and VAC cases on the work site by the company's managers or CEO may provide grounds for legal actions by authorities.

I do hereby acknowledge that I have read the foregoing Manager's Code of Conduct, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to SEA/SH and VAC. I understand that any action inconsistent with this Manager's Code of Conduct or failure to take action mandated by this Manager's Code of Conduct may result in disciplinary action.

Signature: _____

Printed Name: _____

Title: _____

Date: _____

(c) Individual Code of Conduct: Preventing Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH) and Violence against Children (VAC)

I, _____, acknowledge that preventing gender-based violence (GBV) and violence against children (VAC) is important. The company considers that SEA/SH or VAC activities constitute acts of gross misconduct and are therefore grounds for sanctions, penalties or potential termination of employment. All forms of SEA/SH or VAC are

unacceptable be it on the work site, the work site surroundings, or at worker's camps. Prosecution of those who commit SEA/SH or VAC may be pursued if appropriate.

I agree that while working on the project I will:

- Treat women, children (persons under the age of 18), and men with respect regardless of race, color, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status.
- Not use language or behavior towards women, children or men that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.
- Not participate in sexual contact or activity with children—including grooming, or contact through digital media. Mistaken belief regarding the age of a child is not a defense. Consent from the child is also not a defense or excuse.
- Not engage in sexual favors—for instance, making promises or favorable treatment dependent on sexual acts—or other forms of humiliating, degrading or exploitative behavior.
- Unless there is the full consent¹³ by all parties involved, I will not have sexual interactions with members of the surrounding communities. This includes relationships involving the withholding or promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex—such sexual activity is considered “non-consensual” within the scope of this Code.
- Attend and actively partake in training courses related to HIV/AIDS, SEA/SH and VAC as requested by my employer.
- Consider reporting through the grievance redress mechanism or to my manager any suspected or actual SEA/SH or VAC by a fellow worker, whether employed by my company or not, or any breaches of this Code of Conduct.

With regard to children under the age of 18:

- Wherever possible, ensure that another adult is present when working in the proximity of children.
- Not invite unaccompanied children unrelated to my family into my home, unless they are at immediate risk of injury or in physical danger.

¹³**Consent** is defined as the informed choice underlying an individual's free and voluntary intention, acceptance or agreement to do something. No consent can be found when such acceptance or agreement is obtained through the use of threats, force or other forms of coercion, abduction, fraud, deception, or misrepresentation. In accordance with the United Nations Convention on the Rights of the Child, the AIIB considers that consent cannot be given by children under the age of 18, even in the event that national legislation of the country into which the Code of Conduct is introduced has a lower age. Mistaken belief regarding the age of the child and consent from the child is not a defense.

- Not sleep close to unsupervised children unless absolutely necessary, in which case I must obtain my supervisor's permission, and ensure that another adult is present if possible.
- Use any computers, mobile phones, or video and digital cameras appropriately, and never to exploit or harass children or to access child pornography through any medium (see also "Use of children's images for work related purposes" below).
- Refrain from physical punishment or discipline of children.
- Refrain from hiring children for domestic or other labor which is inappropriate given their age or developmental stage, which interferes with their time available for education and recreational activities, or which places them at significant risk of injury.

Use of children's images for work related purposes

12. When photographing or filming a child for work related purposes, I must:

- Before photographing or filming a child, assess and endeavor to comply with local traditions or restrictions for reproducing personal images.
- Before photographing or filming a child, obtain informed consent from the child and a parent or guardian of the child. As part of this I must explain how the photograph or film will be used.
- Ensure photographs, films, videos and DVDs present children in a dignified and respectful manner and not in a vulnerable or submissive manner.
- Ensure images are honest representations of the context and the facts.
- Ensure file labels do not reveal identifying information about a child when sending images electronically.

Sanctions

13. I understand that if I breach this Individual Code of Conduct, my employer will take disciplinary action which could include:

- Informal warning.
- Formal warning.
- Loss of up to one week's salary.
- Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.
- Termination of employment.
- Report to the police if warranted.

I understand that it is my responsibility to avoid actions or behaviors that could be regarded as SEA/SH or VAC or breach this Individual Code of Conduct. I do hereby acknowledge that I have read the foregoing Individual Code of Conduct, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to SEA/SH and VAC. I understand that any action inconsistent with this Individual Code of Conduct or failure to take action mandated by this Individual Code of Conduct may result in disciplinary action and may affect my ongoing employment.

Signature: _____

Printed Name: _____

Title: _____

Date: _____

A3-5. Action Plan

(a) The SEA/SH and VAC Compliance Team

14. The project shall establish a 'SEA/SH and VAC Compliance Team' (GCCT). The GCCT will include, as appropriate to the project, at least four representatives ('Focal Points') as follows:

- a. A safeguards specialist from the client;
- b. The occupational health and safety manager from the contractor¹⁴, or someone else tasked with the responsibility for addressing SEA/SH and VAC with the time and seniority to devote to the position;
- c. The supervision consultant; and,
- d. A representative from a local service provider with experience in SEA/SH and VAC (the 'Service Provider').

15. It will be the duty of the GCCT with support from the management to inform workers about the activities and responsibilities of the GCCT. To effectively serve on the GCCT, members must undergo training by the local service provider prior to the commencement of their assignment to ensure that they are sensitized on GBV and Child Protection.

16. The GCCT will be required to:

- a. Approve any changes to the SEA/SH and VAC Codes of Conduct contained in this document, with clearances from the Supervision Consultant for any such changes.
- b. Prepare the Action Plan reflecting the Codes of Conduct which includes:
 - i. SEA/SH and VAC Allegation Procedures (See 4.3)

¹⁴ Where there are multiple contractors working on the project each shall nominate a representative as appropriate.

- ii. Accountability Measures (See 4.4)
 - iii. An Awareness raising Strategy (See 4.5)
 - iv. A Response Protocol (See 4.6)
- c. Obtain approval of the Action Plan by company management;
 - d. Obtain client clearances for the Action Plan prior to full mobilization;
 - e. Receive and monitor resolutions and sanctions with regard to complaints received related to SEA/SH and VAC associated with the project; and,
 - f. Ensure that SEA/SH and VAC statistics in the GRM are up to date and included in the regular project reports.

17. The GCCT shall hold quarterly update meetings to discuss ways to strengthen resources and SEA/SH and VAC support for employees and community members.

18. The Action Plan and Code of Conduct shall be submitted for review to the ISWS Consultant within 90 days from the contract signature date. Works will not commence unless the Engineer is satisfied with measures in place, including plan and codes. Failure to comply with such obligation should provide ground for contract suspension cancellation – this shall be determined at the sole discretion of the contracting entity, whilst intention to cancel the contract shall be notified to the AIBB team within 60 days from the proposed cancellation date.

(b) Making Complaints: SEA/SH and VAC Allegation Procedures

19. All staff, volunteers, consultants and sub-contractors are encouraged to report suspected or actual SEA/SH or VAC cases. Managers are required to report suspected or actual GBV and/or VAC cases as they have responsibilities to uphold company commitments and they hold their direct reports accountable for complying with the Individual Code of Conduct.

20. The project will provide information to employees and the community on how to report cases of SEA/SH and VAC Code of Conduct breaches through the Grievance Redress Mechanism (GRM). The GCCT will follow up on cases of GBV, VAC and Code of Conduct breaches reported through the GRM.

(c) Addressing Complaints about SEA/SH or VAC

21. The figure below shows the process for addressing complaints.

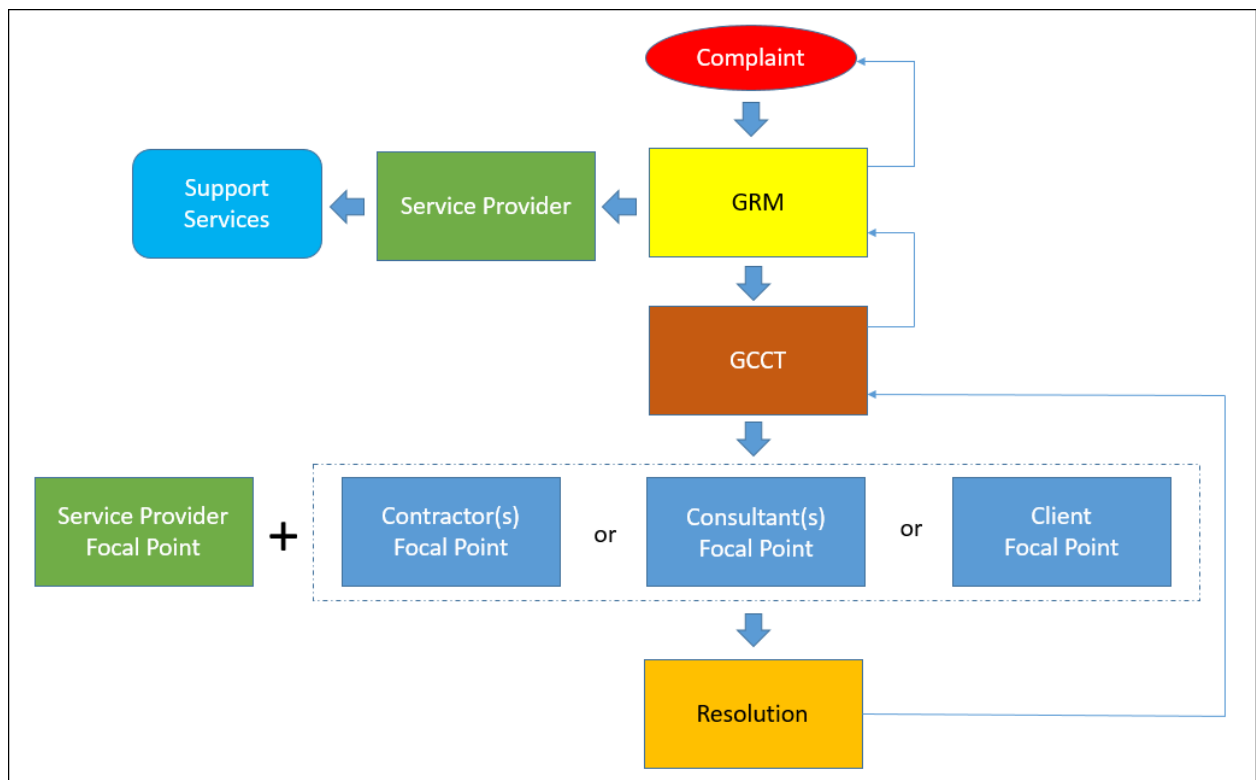
A3-6. GRM

22. The project operates a grievance redress mechanism (GRM). Reports of SEA/SH or VAC, other complaints, or other concerns may be submitted online, via telephone or mail, or in person.

23. The GRM operator will refer complaints related to SEA/SH or VAC to the GCCT to resolve them. In accordance with the Action Plan, the GCCT through the Service Provider

and Focal Point(s) will investigate the complaint and ultimately provide the GRM operator with a resolution to the complaint, or the police if necessary. The GRM operator will, upon resolution, advise the complainant of the outcome, unless it was made anonymously. Complaints made to managers or the Service Provider will be referred by them to the GRM for processing.

24. If the complaint to the GRM is made by a survivor or on behalf of a survivor, the complainant will be directly referred to the service provider to receive support services while the GCCT investigates the complaint in parallel.



A3-7. Service Provider

25. The Service Provider is a local organization (possibly an NGO) which has the technical experience and ability to provide training to staff and to support survivors of SEA/SH or VAC. The contractor(s) will contract the services of a Service Provider, so that SEA/SH and VAC cases can safely be referred to them. The Service Provider will also provide support and guidance to the SEA/SH and VAC Focal Points as necessary. The Service Provider will have a representative on the GCCT and be involved in resolving complaints related to SEA/SH or VAC. The service provider will develop and conduct the mandatory training to employees on SEA/SH and VAC.

A3-8. SEA/SH and VAC Focal Point

26. The GCCT will refer the complaint to the appropriate Focal Points for resolution (i.e. issues with contractor’s staff will be for the contractor to resolve; consultant’s staff the

consultant; and client staff the client) and will advise the GCCT on potential resolutions, including referral to the police if necessary. They will be assisted by the Service Provider as appropriate.

27. All the Focal Points on the GCCT must be trained and empowered to resolve SEA/SH and VAC issues. It is essential that all staff of the GRM and GCCT understand the guiding principles and ethical requirement of dealing with survivors of SEA/SH and VAC. All reports should be kept confidential and referred immediately to the Service Provider represented on the GCCT¹⁵. In SEA/SH and VAC cases warranting police action, the Focal Points must appropriately refer the complaint to: (i) the authorities; (ii) the Service Provider; and, (iii) management for further action. The Employer and the AIIB are to be immediately notified.

(a) Accountability Measures

28. All reports of SEA/SH or VAC shall be handled in a confidential manner in order to protect the rights of all involved. To ensure that survivors feel confident to disclose their experience of SEA/SH or VAC, the client, contractor and consultant must maintain the confidentiality of employees who notify any acts or threats of violence, and of any employees accused of engaging in any acts or threats of violence (unless a breach of confidentiality is required to protect persons or property from serious harm or where required by law). The contractor and consultant must prohibit discrimination or adverse action against an employee on the basis of survivor's disclosure, experience or perceived experience of SEA/SH or VAC (see Attachment 1 for examples of actions to maintain accountability).

(b) Monitoring and Evaluation

29. The GCCT must monitor the follow up of cases that have been reported and maintain all reported cases in a confidential and secure location. Monitoring must collect the number of cases that have been reported and the share of them that are being managed by police, NGOs etc.

30. These statistics shall be reported to the GRM and the Supervision Engineer for inclusion in their reporting.

31. In SEA/SH and VAC cases warranting police action, the client and the AIIB are to be immediately notified.

(c) Awareness-raising Strategy

32. It is important to create an Awareness-raising Strategy with activities aimed to sensitize employees on SEA/SH and VAC on the work site and its related risks, provisions of the SEA/SH and VAC Codes of Conduct, SEA/SH and VAC Allegation Procedures, Accountability Measures and Response Protocol. The strategy will be accompanied by a timeline, indicating the various sensitization activities through which the strategy will be

¹⁵Survivors of SEA/SH and VAC may need access to police, justice, health, psychosocial, safe shelter and livelihood services to begin on a path of healing from their experience of violence.

implemented and also the related (expected) delivery dates. Awareness-raising activities may be linked with trainings provided by Service Provider.

(d) Response Protocol

33. The GCCT will be responsible for developing a written response¹⁶ protocol to meet the project requirements, in accordance to national laws and protocols. The response protocol must include mechanisms to notify and respond to perpetrators in the workplace (See 4.8 for Perpetrator Policy and Response). The response protocol will include the GRM process to ensure competent and confidential response to disclosures of SEA/SH and VAC. An employee who discloses a case of SEA/SH or VAC in the workplace shall be referred to the GRM for further action.

(e) Survivor Support Measures

34. Appropriately respond to the survivor's complaint by respecting the survivor's choices to minimize the potential for re-traumatization and further violence against the survivor. Refer the survivor to the Service Provider to obtain appropriate support services in the community—including medical and psychosocial support, emergency accommodation, security including police protection and livelihood support—by facilitating contact and coordination with these services. The contractor may, where feasible, provide financial and other supports to survivors of SEA/SH or VAC for these services (see Annex 1 for examples of financial support).

35. If the survivor is an employee, in order to ensure the safety of the survivor and the workplace in general, the contractor, in consultation with the survivor, will assess the risk of ongoing abuse, to the survivor and to the workplace, and make reasonable adjustments to the work schedule and work environment as deemed necessary (see Annex 1 for examples of safety measures). The contractor will provide adequate leave to survivors seeking services after experiencing violence (see Annex 1 for details).

(f) Perpetrator Policy and Response

36. Encourage and accept notification through the GRM from employees and community members about perpetrators in the workplace. Through the GCCT and/or the Service Provider, oversee the investigation of these grievances, ensuring procedural fairness for the accused, and within the local laws. If an employee has breached the Code of Conduct, the contractor will take action which could include:

- a. Undertake disciplinary action up in accordance with sanctions in the SEA/SH and VAC Codes of Conduct;
- b. Report the perpetrator to the Police as per local legal paradigms; and/or
- c. If feasible, provide or facilitate counselling for the perpetrator.

¹⁶ Develop appropriate protocol for written recording of SEA/SH issues and VAC raised in case the notes are subpoenaed. Develop processes for record keeping including activities undertaken by the GCCT.

(g) Administrative Sanctions

37. In accordance with the Code of Conduct, any employee identified as a potential SEA/SH or VAC perpetrator shall be considered for disciplinary measures in line with sanctions and practices as agreed in the Individual Code of Conduct (see Annex 1 for examples of sanctions). It is important to note that, for each case, disciplinary sanctions are intended to be part of a process that is entirely internal to the employer, is placed under the full control and responsibility of its managers, and is conducted in accordance with the applicable national labor legislation.

30. Such process is expected to be fully independent from any official investigation that competent authorities (e.g. Police) may decide to conduct in relationship to the same case, and in accordance with the applicable national law. Similarly, internal disciplinary measures that the employer's managers may decide to enact are meant to be separate from any charges or sanctions that the official investigation may result into (e.g. monetary fines, detention etc.).

Appendix 1 - Potential Procedures for Addressing SEA/SH and VAC

Accountability Measures to maintain confidentiality can be achieved through the following actions:

1. Inform all employees that confidentiality of SEA/SH/VAC survivors' personal information is of utmost importance.
2. Provide the GCCT with training on empathetic and non-judgmental listening.
3. Take disciplinary action, including and up to dismissal, against those who breach survivor's confidentiality (this is unless a breach of confidentiality is necessary to protect the survivor or another person from serious harm, or where required by law).

SEA/SH and VAC Allegation Procedures should specify:

1. Who survivors can seek information and assistance from.
2. The process for community members and employees to lodge a complaint through the GRM should there be alleged SEA/SH or VAC.
3. The mechanism for how community members and employees can escalate a request for support or notification of violence if the process for reporting is ineffective due to unavailability or non-responsiveness, or if the employee's concern is not resolved.

Financial and Other Supports to survivors can include:

1. No/low interest loans.
2. Salary advances.
3. Direct payment of medical costs.

4. Upfront payments for medical costs to be recouped from the employee's health insurance.
5. Providing or facilitating access to childcare.
6. Providing security upgrades to the employee's home.
7. Providing safe transportation to access support services or to and from accommodation.

Survivor Support measures to ensure the safety of the survivor can include:

1. Changing the employee's span of hours or pattern of hours and/or shift patterns.
2. Redesigning or changing the employee's duties.
3. Changing the employee's telephone number or email address to avoid harassing contact.
4. Relocating the employee to another work site/ alternative premises.
5. Providing safe transportation to and from work for a specified period.
6. Supporting the employee to apply for an Interim Protection Order or referring them to appropriate support.
7. Taking any other appropriate measures including those available under existing provisions for family friendly and flexible work arrangements.

Leave options for survivors that are employees can include:

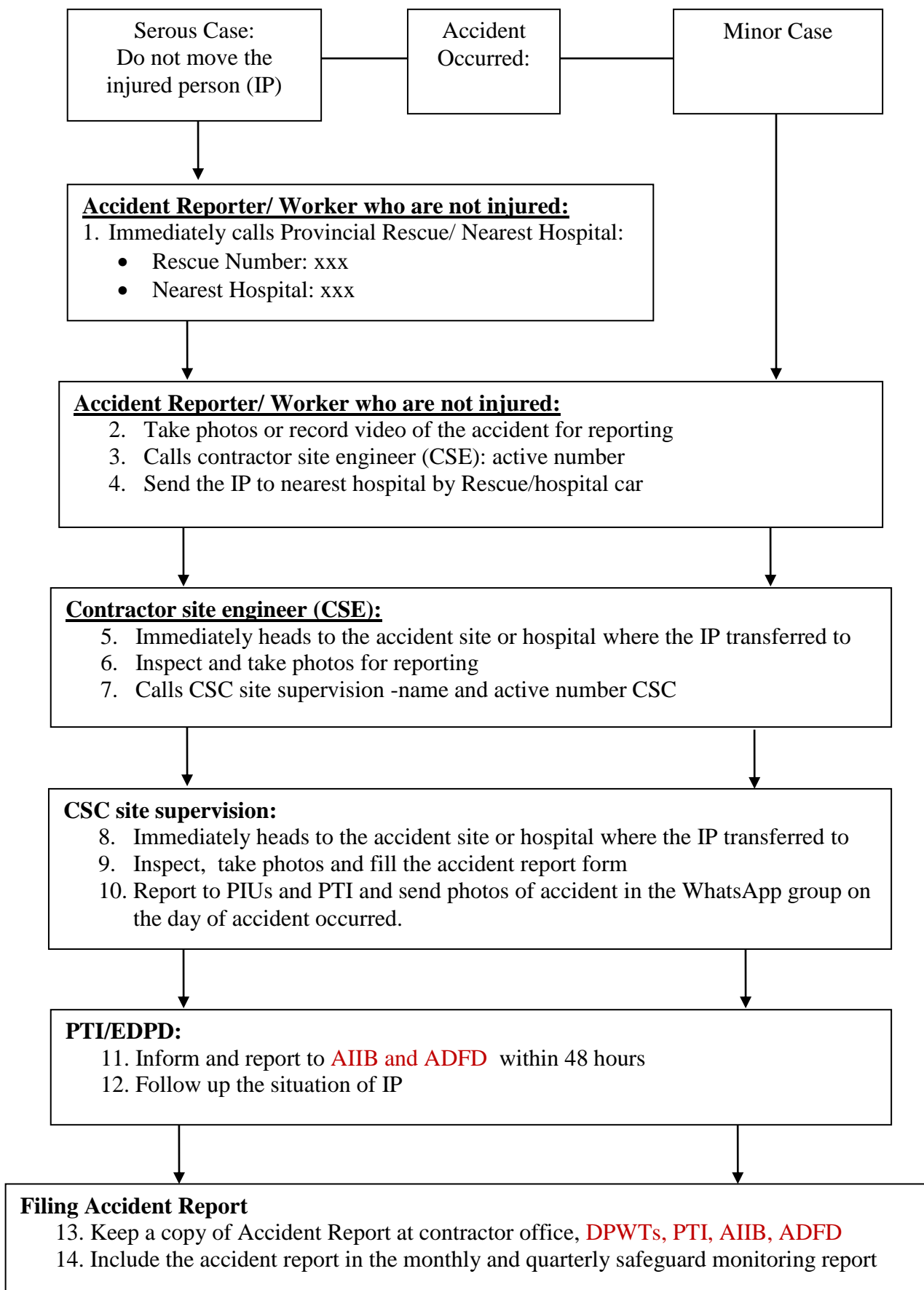
1. An employee experiencing GBV should be able to request paid special leave to attend medical or psychosocial appointments, legal proceedings, relocation to safe accommodation and other activities related to GBV.
2. An employee who supports a person experiencing SEA/SH or VAC may take carer's leave, including but not limited to accompanying them to court or hospital, or to take care of children.
3. Employees who are employed in a casual capacity may request unpaid special leave or unpaid carer's leave to undertake the activities described above.
4. The amount of leave provided will be determined by the individual's situation through consultations with the employee, the management and the GCCT where appropriate.

Potential Sanctions to employees who are perpetrators of SEA/SH and VAC include:

- Informal warning
- Formal warning
- Additional Training

- Loss of up to one week's salary.
- Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.
- Termination of employment.
- Referral to the Police or other authorities as warranted.

Annex 4 Accident Reporting Procedure and Form



ACCIDENT REPORT

Date of the Accident: _____ **Time:** _____

Location: _____

Type of Accident: _____

Detailed Description of the Accident:

Responses / Corrective Actions Taken:

Possible Causes(s) of the Accident:

Suggested Preventive Measures:

Submitted by:		Position:	
Signature:		Date:	

Reviewed by : _____ **Date :** _____

Annex 5: Contingency Planning for Response to COVID-19

1. In a situation when there is a spread of COVID-19, contractor has to apply or comply with the government guidelines launched in line with WHO.

(a) Preparing for Covid-19

- Contractor's senior manager or project manager should inform PMU/DOR and DPWT and/or EDPD/PTI details of the preparations being made on site. PMU/DOR, DPWT and/or EDPD/PTI will, as necessary assist the projects with these preparations. The senior manager should be taking the advice of their healthcare team and their health and safety specialists in preparing the site, although the PMU/DOR, DPWT, and/or EDPD/PTI may also need to assist, for example with coordinating responses and/or connecting project sites with national/local healthcare official and/or specialists.
- Contractor should put in place measures to minimize the chances and contain the spread of the virus as a result of the movement of workers, ensure their sites are prepared for an outbreak, and develop and practice contingency plans so that personnel know what to do if an outbreak occurs and how treatment will be provided. These preparation measures should be communicated not only to the workforce but also the local community, to reassure them that the movement of staff is controlled, and to ensure that stigma or discrimination is reduced in the event of an outbreak.

(b) Movement of Staff

- Movement of staff can increase the risk of transmission of Covid-19 to a work site and the local community. Overseas, international and transient workers should adhere to government requirements and guidelines with respect to Covid-19 when travelling to or from worksites.
- Workers coming from or passing through countries/regions with cases of the virus¹⁷ (a) Should not return if displaying symptoms and (b) Should self-isolate for 14 days following their return.

Self-Isolation arrangements: For self-isolation, the following actions should be considered (as appropriate):

- Workers should be provided with a single room that is well-ventilated (i.e., with open windows and an open door). If a single room is not available for each worker, adequate space should be provided to maintain a distance of at least 2 meters and a curtain to separate workers sharing a room. Men and women should not share a room. A dedicated bathroom should be provided for the isolation facilities and there should be separate bathroom facilities for men and women.
- Workers in isolation should limit their movements in areas which are also used by unaffected workers (shared areas), and should avoid using these areas when unaffected workers are present. Where workers in isolation need to use shared spaces (such as kitchens/canteens), arrangements should be made for cleaning prior to and after their use of the facilities. The number of staff involved in caring for those in isolation,

¹⁷ WHO also updates information on countries reporting Covid-19 infection.

including providing food and water, should be kept to a minimum and appropriate Personal Protection Equipment (PPE) should be used by those staff.

- At a minimum, isolation areas should be cleaned daily and healthcare professionals should visit workers in the isolation areas daily. Cleaners and healthcare professionals should wear appropriate PPE and ensure good hygiene when visiting workers in isolation. Further information is provided by WHO in [Home care for patients with suspected novel coronavirus \(COVID-19\)](#)
- Visitors should not be allowed until the worker has shown no signs and symptoms for 14 days.

(c) Preparing for an Outbreak

2. Medical staff at the facilities or medical service personal for the facilities should be trained and be kept up to date on Country and WHO advice (<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance>) and recommendations on Covid-19. They should take stock of the equipment and medicines that are present on site and ensure that there are good supplies of any necessary treatments, including paracetamol/acetaminophen and other medicine in line with country and WHO guideline.
3. The following measures should be considered (as appropriate):
 - Ensure medical facilities or camp site are stocked with adequate supplies of medical Personal Protective Equipment (PPE), as a minimum: (a) Gowns, aprons; (b) Medical masks and some respirators (N95 or FFP2); (c) Gloves; and (d) Eye protection (goggles or face screens).
 - Cleaners also need to be provided with PPE and disinfectant. Minimum PPE to be used when cleaning areas that have been or suspected to have been contaminated with Covid-19 are: (a) Gowns, aprons; (b) Medical masks; (c) Gloves; (d) Eye protection (goggles or face screens); and (e) Boots or closed work shoes. Cleaners should be trained in how to safely put on and use PPE by medical staff, in necessary hygiene (including hand washing) prior to, during and post cleaning duties, and in waste control (including for used PPE and cleaning materials).
 - The medical staff should run awareness campaigns, training and arrange for appropriate posters, signs and advisory notices to be posted on site to advise workers on how to minimize the spread of the disease, including: (a) to self-isolate if they feel ill or think they may have had contact with the virus, and to alert medical staff; (b) to regularly wash hands thoroughly with soap and water – many times per day; (c) how to avoid disease spread when coughing/sneezing (cough sneeze in crook of elbow or in a tissue that is immediately thrown away), and not to spit; and (d) to keep at least 2 meters or more away from colleagues.
 - Hand washing stations should be set up at key places throughout site, including at entrances/exits to work areas, wherever there is a toilet, canteen/food and drinking water, or sleeping accommodation, at waste stations, at stores and at communal facilities. Each should have a supply of clean water, liquid soap and paper towels (for

hand drying), with a closed waste bin (for used paper towels) that is regularly emptied and disposed off following government guideline.

- Where wash stations cannot be provided (for example at remote locations), alcohol-based hand rub should be provided.
- Enhanced cleaning arrangements should be put in place, to include regular and deep cleaning using disinfectant of catering facilities/canteens/food/drink facilities, latrines/toilets/showers, communal areas, including door handles, floors and all surfaces that are touched regularly. Worker accommodation will be in good state for keeping clean and hygienic, and for cleaning to minimize spread of infection.
- Working methods should be reviewed and changed as necessary to reduce use of PPE, in case supplies of PPE become scarce or hard to obtain. For example, water sprinkling systems at crushers and stock piles should be in good working order, trucks covered, water suppression on site increased and speed limits on haul roads lowered to reduce the need for respiratory (N95) dust masks.

(d) Contingency Planning for an Outbreak

4. The contingency plan to be developed by contractor should set out what procedures will be put in place in the event of Covid-19 reaching the site and it should be developed in consultation with national and local healthcare facilities and PMU/DOR, DPWT and/or EDPD/PTI, to ensure that arrangements are in place for the effective containment, care and treatment of workers who have contracted Covid-19.
5. The contingency plan should also consider the response if a significant number of the workforce become ill, when it is likely that access to and from a site will be restricted to avoid spread. The following measures should be considered, as appropriate:
 - Contingencies should be developed and communicated to the workforce for: (a) Isolation and testing procedures for workers (and those they have been in contact with) that display symptoms; (b) Care and treatment of workers, including where and how this will be provided; and (c) Getting adequate supplies of water, food, medical supplies and cleaning equipment in the event of an outbreak on site, especially should access to the site become restricted or movements of supplies limited. The contingency plan shall be align with the government guideline.
 - Specifically, the plan should set out what will be done if someone is suspected to become ill with Covid-19 at a worksite. The plan should: (a) Set out arrangements for putting the person in a room or area where they are isolated from others in the workplace, limiting the number of people who have contact with the person and contacting the local health authorities; (b) Consider how to identify persons who may be at risk (e.g. due to a pre-existing condition such as diabetes, heart and lung disease, or as a result of older age), and support them, without inviting stigma and discrimination into your workplace; and (c) Consider contingency and business continuity arrangements if there is an outbreak in neighboring communities.
 - Arrangements for the storage and disposal arrangements for medical waste, which may increase in volume and which can remain infectious for several days (depending upon the material). The support that site medical staff may need, as well as arrangements

for transporting (without risk of cross infection) sick workers to intensive care facilities or into the care of national healthcare facilities should be discussed and agreed.

- How to maintain worker and community safety on site should works be suspended or illness affect significant numbers of the workforce at any point. It is important that worksite safety measures are reviewed by a safety specialist and implemented prior to work areas being suspended.

(e) Communicating the plans

6. In order to reduce the risk of social stigma¹⁸ or discrimination, and to ensure that individuals roles and responsibilities are clear, the preparation measures and contingency plans should be communicated widely. Workers, sub-contractors, suppliers, adjacent communities, and local healthcare authorities should all be made aware of the preparations that have been made.

When communicating to the workforce, their roles and responsibilities should be outlined clearly, and the importance for their colleagues, the local communities and their families that the workers follow the plans should be stressed. Workers may need to be reassured that there will be no retaliation or discrimination if they self-isolate as a result of feeling ill, and also with respect to the compensation or insurance arrangements that are in place. Further guidance on preventing social stigma as a result of Covid-19 is available in WHO guidelines

¹⁸ Social stigma in the context of health is the negative association between a person or group of people who share certain characteristics and a specific disease.