Environmental Management Plan

August 2018

Viet Nam: Secondary Green Cities Development Project

Ha Giang City Subproject

Prepared by Provincial Peoples Committee of Ha Giang, for the Asian Development Bank. This is an updated version of the document originally posted in April 2017 available on https://www.adb.org/projects/47274-003/main#project-documents.

ABBREVIATIONS

ADB	-	Asian Development Bank
PAH	-	Project Affected Household
BOD	-	Biological Oxygen Demand
COD	-	Chemical Oxygen Demand
CPC	-	City Peoples Committee
DOC	-	Department of Construction
DOLISA	-	Department of Labour, Invalids, and Social Assistance
DONRE	-	Department of Environment and Natural Resources
DPI	-	Department of Planning and Investment
EA	-	Executing Agency
EIA	-	Environment Impact Assessment
EMP	-	Environment Management Plan
EO	-	Environmental Officer
IA	-	Implementing Agency
IEE	-	Initial Environmental Examination
IES	-	International Environment Specialist
NES	-	National Environment Specialist
PMU	-	Project Implementation Unit
GOV	-	Government of Viet Nam
PMCS	-	Project Management & Consultant Supervision Consultant
PPC	-	Provincial Peoples Committee
SO	-	Safeguards Officer
UXO	-	Unexploded Ordnance

WEIGHTS AND MEASURES

km	Kilometre
kg	Kilogram
ha	Hectare
mm	Millimeter

NOTE

In this report, "$" refers to US dollars.

TABLE OF CONTENTS

I. INTRODUCTION

1. An Environmental Management Plan (EMP) was prepared for the Ha Giang City subproject of the Secondary Cities Development Program (SCDP). Ha Giang is one of the three subprojects of the SCDP. Two other EMPs have been prepared for the cities of Hue and Vinh Yen.

2. The original EMP was prepared for the subproject based on review missions conducted in January-February 2017. The EMP was disclosed on the ADB public website (www.adb.org) and included in the Project Administration Manual (PAM). The EMP drew on the findings of the separate IEE, the Project Preparation Technical Assistance (PPTA) report, and government Feasibility Study and environmental impact assessment.

3. The updates to the original EMP stem from the updating of the parent IEE which reflects the changes from the completed detailed design. In addition, the updates include a review of the implementation of measures which were required in the original EMP for the phase of detailed design.

4. The updated EMP (uEMP) identifies potential environmental impacts of the subproject, and defines mitigation measures and monitoring requirements for the pre-construction, construction, and operational stages of the subproject. Also provided are the institutional arrangements and mechanisms, the roles and responsibilities of different institutions, procedures and budgets for implementation of the uEMP. The uEMP seeks to ensure environmental protection during preconstruction, construction, and operation continuously to prevent, reduce, or mitigate adverse environmental impacts and risks.

5. Based on the updated EMP, contract-specific EMPs will be prepared to be included in the bidding documents for works contracts. Through the contract-specific EMPs, the contractors will be informed of their obligations to implement the EMP, and to include EMP implementation costs in their bids for project works.

6. The uEMP includes an environmental monitoring program. The results of monitoring will be used to evaluate: (i) the extent and severity of actual environmental impacts against predicted impacts; (ii) the performance of environmental protection measures and compliance with relevant Vietnamese laws and regulations as well as compliance with internationally accepted standards as defined in the IFC Environment, Health and Safety General Guidelines; (iii) trends of impacts; and (iv) overall effectiveness of the uEMP.

7. The bidding documents for construction contracts will be derived from standard ADB documents for international competitive bidding, and will include contract clauses requiring the contractor to implement the relevant clauses of the EMP. These standard Contractor Specifications will be included in the Bidding Documents for works contracts.

II. OVERVIEW OF HA GIANG SUBPROJECT

8. From the IEE the Ha Giang subproject of the SCDP consists of twelve (12) components (Table 1) which are grouped into the subproject themes of greenifying & improving urban climate change resilience, and urban road networks and tourism improvements. The 12 subproject components were further aggregated into three component types of similar activities and potential impacts (Table 2).

Table 1. Ha Giang City subproject components

Green and Climate Resilient Urban Development	
Drainage Channel Improvement and Environmental Rehabilitation	• Rehabilitation of Main Drainage Lines in Minh Khai Ward • Rehabilitation of Main Drainage Lines in Tran Phu Ward • Rehabilitation of Main Drainage Lines in Quang Trung Ward • Rehabilitation of Main Drainage Lines in Nguyen Trai Ward • Rehabilitation of Street Lighting System of Ha Giang City[1]
River Embankment Protection and Ecological Upgrading	• Western Embankment of Lo River • Embankment on each side of Mien River • Southern Embankment of Me Stream
Integrated Urban Road Network Development	
Urban Road Connectivity Improvement	• New Road on the East bank of Mien River (Phung Hung Road) • Southern Ring Road • New Bridge from National Road No. 2 to Southern Ring Road • Upgrading of National Road No. 2

Table 2. Ha Giang subproject component types

Three Component Types
1) Stream-drainage and street lighting Rehabilitation • Rehabilitation of Main Drainage Lines in Minh Khai Ward • Rehabilitation of Main Drainage Lines in Tran Phu Ward • Rehabilitation of Main Drainage Lines in Quang Trung Ward • Rehabilitation of Main Drainage Lines in Nguyen Trai Ward • Rehabilitation of Street Lighting System of Ha Giang City
2) Embankment Developments • Western Embankment of Lo River • Embankment on each side of Mien River • Southern Embankment of Me Stream
3) New and Upgraded Roads and Bridges • New Road on the east bank of Mien River (Phung Hung Road) • Southern Ring Road • New Bridge from National Road No. 2 to Southern Ring Road • Upgrading of National Road No. 2

[1] *The street lighting component is added to Ha Giang subproject by the decision No.450 dated 23 March 2017 of Ha Giang Province People Committee*

III. INSTITUTIONAL ARRANGEMENTS & RESPONSIBILITIES

9. The Ha Giang Provincial Peoples Committee (PPC) is the **Executing Agency (EA**) of the subproject who will be responsible for the overall implementation and compliance with loan assurances including the successful implementation of the EMP. The PPC assigned the Ha Giang City Peoples Committee (CPC) as the subproject **Implementation Agency (IA)** who on behalf of the EA will, *inter alia,* supervise all communications with the ADB for EMP implementation, and reporting on EMP implementation progress including environmental compliance monitoring.

10. The IA assigned a **Project Management Unit (PMU)** who will be responsible for day-to-day management of the EMP. The PMU will be responsible to supervise the implementation of environment mitigation and monitoring measures of the EMP, ensure contractors' compliance with environmental management requirements, and coordinate the Grievance Redress Mechanism (GRM), and reporting to ADB. The PMU will engage and work with the Project Management and Construction Supervision consultants (see below) to ensure bidding documents include the EMP, and detailed instructions to bidders on required impact mitigation and monitoring requirements for construction package-specific contractor EMPs (CEMP). The PMU will appoint one full-time **Safeguards Officer (SO)** to coordinate the daily activities of EMP and to manage the implementation of the EMP.

11. The SO with logistical support from the PMU will: **(i)** supervise and provide guidance to contractors with compliance with the EMP and their own CEMPs; **(ii)** conduct regular site inspections; **(iii)** assist the PMU with their local entry point for the subproject GRM; **(iv)** lead disclosure activities & coordinate additional public consultation activities; **(v)** coordinate implementation of the capacity building and training program related to environment; **(vi)** prepare inputs to the quarterly project progress reports; **(vii)** coordinate the preparation and submission of semi-annual environment monitoring reports to ADB, and **(viii)** coordinate regulatory environmental monitoring activities of DONRE as needed.

12. The **Project Management and Construction Supervision** consultant **(PMCS)** will be recruited by the IA who will be responsible for advising the PMU and contractors on all aspects of environmental management and monitoring for the subproject. The PMCS will include an **international (IES) and a national environment specialist (NES)** who will: **(i)** lead updating of environmental mitigation & monitoring programs of the EMP as needed to meet the detailed designs of the subproject; **(ii)** assist the SO to ensure that the EMP provisions are included in the tender documents and civil works contracts; **(iii)** prior to implementation, review and clear the CEMPs prepared by contractors to ensure that these are consistent with the provisions of the updated EMP; **(iv)** supervise implementation of the mitigation measures specified in the EMP and the CEMPs through regular site visits and review of monthly reports of the contractors; **(v)** coordinate environmental monitoring in accordance with the monitoring plan[2]; **(vi)** in conjunction with SO prepare semi-annual environment monitoring reports in English and Vietnamese and submit them to ADB for review and disclosure; **(vii)** provide training to SO and contractors on ADB SPS 2009, the IFC Environmental, Health and Safety (EHS) Guideline, EMP implementation, and GRM in accordance with the training plan defined in the EMP; **(viii)** identify any environment-related issues and identify necessary corrective actions; **(ix)** if required, update the EMP to identify changes to subproject scope during implementation that would result in adverse environmental impacts not addressed within the approved EMP; **(x)** assist SO finalize Grievance Redress Mechanism (GRM) proposed in IEE and this EMP, and provide orientation

[2] The PMSC may contract a licensed entity to conduct the environmental effect monitoring as defined in the EMP.

training for PMU, contractors, and other GRM access points; **(xi)** provide support to SO with organizing public meetings in subproject areas as needed to address any concerns of APs; and **(xii)** prior to project completion assist SO gather information on EMP implementation performance for input to project completion report (PCR).

13. The **contractors** will be required to develop site-specific construction EMPs (CEMP) in accordance with the IEE/EMP, the contract-specific EMP included in the biding document and environment safeguards requirements.[3] These shall be reviewed, cleared and monitored by the project implementation consultants and submitted to ADB for appraisal and disclosure. The contractors will be responsible for implementing the impact mitigation measures of their respective CEMPs during the construction phase of the subproject under the supervision of the SO and the PMSC. In their bids, contractors will be required to develop site specific construction EMPs (CEMP) from the contract-specific EMP, and will assign an **environmental officer (EO)** responsible for CEMP implementation supervision and monitoring, and one qualified person responsible for construction and **occupational health and safety officer (OHS)**. The OHS will ensure worker and public safety regulations prescribed by the department of Labour, Invalids, and Social Assistance (DOLISA). Contractors involved within or nearby the Hue Citadel or other cultural sites listed in the Hue Complex of Monuments will also assign a cultural heritage conservation specialist to ensure that no works will encroach on or affect any legally protected site. Contractors will conduct noise, air and surface water quality monitoring at construction site boundaries and nearby sensitive receptors to confirm compliance with relevant Vietnamese ambient quality standards as well as the IFC (2007) standard for noise and air quality. Each works contractor will submit monthly progress reports to the PMSC. These reports will include reporting on EMP implementation performance.

14. The **Ha Giang Department of Natural Resources and Environment (DONRE)** will implement their following mandated duties during project implementation: (i) periodically monitor (compliance) the implementation of mitigation measures identified in the domestic EIA and IEE to ensure subproject impacts during the construction and operation phases are minimized; (ii) investigate environmental incidents (e.g., pollution and damages to natural resources); (iii) resolve environmental issues generated by the subproject as part of the GRM established for the project.

15. The provincial **Department of Labour, Invalids and Social Assistance (DOLISA)** prescribes regulations and guidelines governing worker and public safety in the workplace[4]. The directives of DOLISA must be implemented by the contractor OHS throughout the construction and operational phases of the subproject. To supplement the DoLISA the IFC/World Bank Environment, Health, and Safety Guidelines (2007) should be consulted when necessary.

16. **ADB** will review and supervise project performance against the commitments of the EA, as described in the legal agreements. Project review missions will visit project sites to ascertain the status of implementing the EMP. ADB will review periodic environment monitoring reports submitted by the EA/IA. If any of the safeguard requirements that are covenanted in the legal agreements are found not to be satisfactorily met, ADB will require the EA/IA to develop and implement an appropriate corrective action plan (CAP) agreed upon with ADB to rectify unsatisfactory safeguard compliance. ADB may also consider exercising its legal remedies, including suspension, cancellation, or acceleration of maturity, specified in the legal agreements. If any unanticipated environmental impacts become apparent during project implementation, ADB

[3] The need to comply with the EMP and to develop a construction EMP shall be defined in the bidding documents for all works packages.

will advise and require the EA and IA to (i) assess the significance of such unanticipated impacts; (ii) evaluate the options available to address them; and (iii) prepare or update the IEE and EMP.

Table 3. Summary of key roles and responsibilities for EMP

Party	Role	Responsibilities
Provincial Peoples Committee (PPC)	Executing agency	Ultimate successful implementation of uEMP, & liaison with ADB
City Peoples Committee (CPC)	Implementing agency	Implement subproject for EA, including communicate & report on subproject to EA
Project Management Unit (PMU)	management	Day to day management of subproject, and coordinating office for GRM for subproject
Safeguards Officer (SO) of PMU	safeguards	Manage implementation of uEMP, coordinate with PMCS and contractors
Project Management & Consultant Supervisor (PMCS)	management support	Support PMU for implementation of uEMP, conduct environmental effects monitoring, and training plan
International (IES) & national (NES) environment consultants of PMCS	Safeguards support to PMCS	Lead PMSC role in effects monitoring, training plan implementation, and implementation and monitoring of uEMP
Contractors	CEMP implementation	Implement and report on contractor CEMP derived from uEMP
Environment officers (EO) of Contractors	Safeguards support to contractors	Lead implementation of all mitigation and monitoring contractor responsibilities for uEMP
Department of Natural Resources & Environment (DONRE)	regulatory	Periodically verify that subproject is meeting government environmental protection regulations & standards, provide technical expertise for GRM when necessary
Department Labour, Invalids, and Social Assistance (DOLISA)	regulatory	Ensure worker and public safety regulations are not violated during subproject construction

IV. SUMMARY OF POTENTIAL IMPACTS

17. The potential impacts of the construction and operation of the Ha Giang subproject components from the IEE that are summarized in Table 3 are caused primarily from the civil works during the construction phase of the subproject. The short-term construction disturbances concern noise, dust, soil erosion & surface water sedimentation, reduced access, increased traffic and risk of traffic accidents, worker and public safety, and construction solid and liquid waste. These short-term impacts can be managed and mitigated with measures defined in the Mitigation Plan provided below.

18. Mitigation measures that will permanently become part of the infrastructure such as landscape planting and re-vegetation, bioswales, culverts, road signage and markings are included in the main civil work contract costs. Temporary mitigation measures during the construction stage (e.g. dust suppression by watering, use of quiet / well maintained mechanical equipment, provision of soil erosion berms to prevent surface water sedimentation, provision of sanitary facilities for construction workers, etc) will be included in the tender documents to ensure that contractors include them in their budgets.

Table 4. Summary of potential impacts of Ha Giang subproject component types

Pre-construction Phase
• Some resettlement, land acquisition, and asset loss (see separate RP) • Design to address climate risks identified for the project, and to ensure that measures to climate proof project components as defined in the IEE, Chapter VI.F are incorporated in the detailed design.
Construction Phase
• **Stream-drainage Rehabilitation** • The rehabilitation **and** improvements to the mountain stream drains in the different Wards will result in loss of some natural streambank vegetation, and generation of short-term suspended sediment (TSS) and turbidity in the streams. Civil works required for the culvert placements will create local dust, noise, reduced and/or blocked public access, and increase traffic & risk of traffic accidents from presence and movement of construction vehicles. Sort-term local drainage and flooding problems may arise, and solid and domestic waste may be generated from workers and temporary worker camps. Social issues and community problems could be caused by migrant workers.
Embankment Developments • Disturbances and impacts caused by the rehabilitation and development of new embankment protection structures along the Lo river, Mien river, and Me streams the effects of civil works activities on dust, noise, reduced and/or blocked public access, increased traffic & risk of traffic accidents, soil and surface water pollution caused by equipment operation and maintenance, public and worker accidents, temporary local drainage and flooding problems, solid and domestic waste from worker camps, social issues and community problems caused by migrant workers.
New and Upgraded Roads and Bridges • The upgrading and construction of new sections of Phung Hung road along the Mien river, the construction of the new south Ring Road along the Lo river, the upgrades to National Road #2, and construction of the new bridge between National Road #2 and the new Ring Road will create typical civil works-related impacts and disturbances such as such as soil erosion and potential sedimentation and turbidity of the adjacent rivers, dust, noise, reduced and/or blocked public access, increased traffic & risk of traffic accidents, potential disruption of fishing, aquaculture & boat traffic, soil and surface water pollution caused by equipment operation and maintenance, public and worker accidents, local drainage and flooding problems, solid and domestic waste from worker camps, social issues and community problems caused by migrant workers.
Operation Phase
New and upgraded roads and bridges • Reduced city core traffic from Ring Road bypass, increased traffic congestion & risk of traffic accidents along Phung Hung road and along new Ring Road. Increased noise along road alignments.

19. As indicated above the mitigation measures defined in the EMP will be reviewed and updated where necessary to meet the detailed designs of the subproject. The EMP will be

incorporated into tender documents, and where appropriate, into construction contracts, and operational management plans to be implemented by contractors under supervision of the PMU and PMCS. The effectiveness of these measures will be evaluated based on the results of the environmental effect monitoring conducted by the PMU and PMCS.

20. Each contractor will be required to prepare a site-specific Construction Environmental Management Plan (CEMP) prior to commencement of any site works. The CEMP shall specify the responsibilities, location, associated costs, schedule/timeframe and other relevant information for implementing its provisions which will include the following:

- Selection of sites for material exploitation and storing, as well as sites for crushing and any batch asphalt plants;
- Plans for material transportation routes and timing;
- Identification of specific disposal sites for dredgate and excavate;
- Soil erosion control measures including soil stabilization measures at disposal sites;
- Wastewater collection and treatment,
- Construction camp management,
- Quarry/aggregate/borrow site management and restoration,
- Temporary traffic management,
- Noise reduction measures including construction of temporary noise barriers,
- Dust suppression measures,
- Handling and storage of hazardous substances such as fuel, etc.
- Solid waste collection and disposal,
- Site clearance and re-vegetation plan,
- Occupational and community health and safety,
- Public communication and information plan,
- Repair of damaged community facilities such as irrigation canals, etc.
- Emergency response plan in case of spills and other accidents involving workers and the community,
- Chance-find procedures measures; and
- Other applicable mitigation measures indicated in the subproject EMP included in the EIA approved by ADB.

21. The CEMP should be fully consistent with the subproject EMP. Before civil works begin, the CEMP shall be reviewed and endorsed by the PMU and PMCS, and shared with ADB.

V. MITIGATION PLAN

22. The mitigation measures were presented in a comprehensive mitigation plan for the subproject in the original EMP. For the uEMP, the implementation of measures was reviewed and reported through Table 5. The original mitigation plan was updated by removing measures which were already due at DD stage, and re-arranging responsibility to measures which have not been done yet as shown in Table 6.

23. Similar to the uIEE, the updated mitigation plan was structured by the three development phases of the subproject defined by the pre-construction; construction; and post construction operational phase. The mitigation plan addresses the environmental issues and concerns raised at the stakeholder meetings.

24. The mitigation plan combines construction phase impacts common to the four

subproject component types for which single mitigation measures are prescribed. In this way common mitigation measures are not re-stated numerous times. However, impacts and required mitigations that are specific to a component type, or to one of the 15 individual components are also identified. Or, common mitigations that are particularly important to a subproject component are highlighted.

25. The mitigation plan identifies potential impacts, required mitigations, responsible parties, location, timing, and indicative costs. The mitigation plan by design is comprehensive in order for the plan to be updated easily to meet the final detailed designs of the subproject.

Table 5. Implementation status of the measures during detailed design phase

Proposed Mitigation measures in the original EMP	Responsibility		Status of Implementation		Definition of Implementation/ Proposed corrective actions
	Supervision	Implementation	Done	Not Done Yet	
Detailed design of subproject					
1. Work with PPMU and detailed design consultants of the individual subproject components to update the status of implementation of measures					
a) identification of spill management prevention plans, and emergency response plans for all construction sites;	PPMU/ADB	PPMU		**Not Done Yet**	The responsibility of this measure will be reassigned to construction contractors by integrating contract specific EMPs in the construction bidding documents (Refer to Preparation of CEMP & sub-plans; Implement Construction materials acquisition, transport, and storage sub-plan) PPMU will be responsible for supervising and reviewing the CEMP including the spill management prevention and emergency response plans for all construction sites
b) no disturbance or damage to culture property and values;	PPMU/ADB	PPMU	**Done**		No culture property and values are close to the subproject works
c) no cutting of trees if possible;	PPMU/ADB	PPMU		**Not done yet**	Before site clearance for subproject works, the PPMU will conduct an inventory of cutting trees and share it with ADB for review.
d) locate any required new aggregate borrow pits away from human settlements with fencing and access barriers;	PPMU/ADB	PPMU	**Done**		Based on the detailed designs, construction material such as sand, soil, gravel will be bought from existing quarries within the area of Thua Thien Hue Province. Some quarries with adequate licenses and environmental certificates were identified in the detailed designs.
e) no, or minimal disruption to town water supplies, utilities, and electricity with contingency plans for unavoidable disruptions;	PPMU/ADB	PPMU		**Not Done Yet**	The responsibility of this measure will be reassigned to construction contractors by integrating contract specific EMPs in the construction bidding documents (Refer to Public disclosure and consultation; Implement Utility and Power disruption sub-plan of Table 6) PPMU will be responsible for supervising and reviewing the CEMP including the public consultation and information disclosure plan
f) no, or minimal disruption to normal pedestrian and vehicle traffic along all construction roads with contingency alternate routes;	PPMU/ADB	PPMU		**Not Done Yet**	The responsibility of this measure will be reassigned to construction contractors by integrating contract specific EMPs in the construction bidding documents (Refer to Implement Construction and Urban Traffic Sub-plan of Table 6)

					PPMU will be responsible for supervising and reviewing the CEMP including the traffic management plan
g) for public areas include specific plan to notify & provide residents and merchants of construction activities & schedule to minimize disruption to normal commercial and residential activities.	PPMU/ADB	PPMU		**Not Done Yet**	The responsibility of this measure will be reassigned to construction contractors by integrating contract specific EMPs in the construction bidding documents (Refer to Public disclosure and consultation; Implement Utility and Power disruption sub-plan of Table 6) PPMU will be responsible for supervising and reviewing the CEMP including the public consultation and information disclosure plan
h) review measures to prevent or minimize disturbances to households business along affected areas of roadways and rivers;	PPMU/ADB	PPMU		**Not Done Yet**	PPMU will be responsible for reviewing these measures when contractors submit the CEMPs (Refer to Preparation of CEMP & Sub-plans of Table 6)
i) review potential for Lo river bridge design without in-river support columns;	PPMU/ADB	PPMU		**Not Done Yet**	In accordance with the detailed designs, the subproject bridge both have in-river support columns. However, the detailed designs calculated the erosion at these in-river columns and proposed appropriate technical measures to prevent the erosion. In addition, PPMU will request the detailed design consultants calculating the erosion to the downstream river embankment causing by new in-river columns
j) PMU and DoT to inventory condition of all existing roads that will be used by construction vehicles.	PPMU/ADB	PPMU		**Not Done Yet**	PPMU will carried out this measure when contractors submit their construction method including a plan for access roads (Refer to Inventory of Condition of all existing roads that will be used by construction contractors of Table 6)
k) Detailed Design accounts for projected climate change (precipitation, peak discharge) and facilities are climate proof in accordance with requirements defined in Section VI.F of the IEE.	PPMU/ADB	PPMU		**Not Done Yet**	Detailed designs have not accounted for projected climate change (precipitation, peak discharge). The technical consultants only used historical database for precipitation and peak discharge following national standards (Refer to Resilience to Climate Change of Table 6) PPMU will request the technical consultants to refer the Climate Change and Sea Level Rise Scenarios for Viet Nam version 2016 and update the detailed designs in accordance with requirements defined in Section VI.F of the IEE.
l) Consult local fisher communities and shoreline residents to determine whether information exists that indicates when fish populations are in the area for feeding or spawning. Plan dredging and embankment works operations out of these periods.	PPMU/ADB	PPMU	**Done**		No official information exists that indicates when fish populations are in the area for feeding or spawning.

Update EMP					
Review finalized alignment for new southern Ring Road to minimize impact on existing production forest and agriculture lands	ADB	PPMU	**Done**		The finalized alignment for new southern Ring Road is not different to the alignment proposed in FS. The impact of losing existing production forest and agriculture lands will be calculated in detail in an other document (updated Resettlement Plan)
Review measures (e.g., construction berms and placement of silt curtains) that will ensure minimal to no erosion and sedimentation in the Lo and Mien rivers, and Me stream	ADB	PPMU		**Not Done Yet**	These measures (e.g construction berms and placement of slit curtains) have not been proposed in the detailed designs. The responsibility of this measure will be reassigned to construction contractors by integrating contract specific EMPs in the construction bidding documents (refer to Implement Erosion control sub-plan of Table 6) PPMU will be responsible for supervising and reviewing the CEMP including the Construction drainage plan.
Finalize plan for managing continuous boat traffic in Lo and Mien rivers during embankment works	ADB	PPMU	**Done**		PPMU confirmed that boat traffic in rivers is almost zero, no fishing by boat or tourist boat in the dredged rivers. There is no need to prepare this plan.
Identify any new potential impacts of subproject and include in EMP	ADB	PPMU	**Done**		No new potential impact was identified given there is not any significant changes between the FS and the detailed design.
Confirm solid waste, and excavate disposal site(s) with DoNRE according to regulations	ADB	PPMU	**Done**		PPMU has identified three sites for spoil disposal which are: (i) Group 1, Minh Khai Ward, an idle area for production forest and long-term trees. In accordance with the Master Plan of Ha Giang City to 2025, a part of this area is for resident and the other is not indicated in the Master Plan. (ii) Group 7,8 Quang Trung Ward, idle areas for long-term trees and ponds which are planned for residents, traffic and public land in accordance with the Master Plan of Ha Giang City to 2025 (iii) Group 16, Nguyen Trai Ward, strips of land along Lo river which are planned for river corridor in accordance with the Master Plan of Ha Giang City to 2025
Update mitigation measures and monitoring requirements of EMP where necessary to meet detailed designs, and to protect affected	ADB	PPMU	**Done**		Mitigation measures and monitoring requirements of EMP were updated in Table 6

environments.					
Submit updated EMP with new potential impacts to ADB to review			**Done**		The uEMP has been submitted to ADB for review and clearance in August 2018
Develop individual management sub-plans for CEMP: a) Construction drainage; b) Soil erosion; c) Noise and dust; d) Contaminated spoil disposal; e) Solid and liquid waste disposal; f) Construction & urban traffic congestion; g) Utility and power disruption; h) Worker and public safety; i) Tree and vegetation removal and site restoration; j) Construction materials acquisition, transport, & storage, k) Cultural heritage risk and management plan, chance finds, l) spill management prevention plan, and m) emergency response plan	ADB	PPMU		**Not Done Yet**	The responsibility of developing individual management sub-plans for CEMP will be reassigned to construction contractors by integrating contract specific EMPs in the construction bidding documents. PPMU will be responsible for supervising and reviewing the preparation of CEMP including the said sub-plans
Update environmental baseline at all component sites as per monitoring plan	ADB	PPMU		**Not Done Yet**	PPMU will carry out the mission once before starting construction

Table 6. Environmental Impact Mitigation Plan

Subproject Activity	Potential Environmental Impacts	Proposed Mitigation Measures	Location	Timing	Activity Reporting	Estimated Cost[5] (USD)	Responsibility	
							Supervision	Implementation
Pre-Construction, Detailed Design Phase the Subproject Component Types in Table 2								
Confirmation of required resettlement, relocations, & compensation	No negative environmental impacts	1. Affected persons well informed well ahead of subproject implementation, including information leaflets on all project activities distributed to all affected persons.	All affected persons in subproject areas	Before project implemented	See resettlement plans	See resettlement plan	EA/PMU/SO	Resettlement/ compensation committees
Disclosure, &	No community	2. Initiate Information Disclosure and Grievance	For all	Beginning of	Quarterly	No marginal	PMU/SO	SO/PMU

Subproject Activity	Potential Environmental Impacts	Proposed Mitigation Measures	Location	Timing	Activity Reporting	Estimated Cost[5] (USD)	Responsibility	
							Supervision	Implementation
engagement of community	impacts	process of IEE	construction sites.	project		cost[6]		
GoV approvals	No negative impact	3. Notify DoNRE of subproject initiation to complete EA requirements, and obtain required project permits and certificates.	Entire subproject	Before construction	As required	No marginal cost	PMU/DoNRE	DoNRE
UXO survey, & removal	Injured worker or public	4. Ensure GoV military is consulted and clears subproject areas where necessary	All construction sites.	Beginning of subproject	Once	See Monitoring Plan below	SO/PMU	GoV military
Develop bid documents	No negative environmental impact	5. Ensure updated EMP/contract specific EMP are included in contractor tender documents, and that tender documents specify requirements of EMP must be budgeted. 6. Specify in bid documents that contractor must prepare CEMP and have experience with implementing EMPs, and must provide staff with experience.	All subproject areas	Before construction begins	Once for all tenders	No marginal cost	PMCS	PMU
Create awareness of physical cultural resources in area	No negative environmental impact	7. SO/PMU to review potential locations of all physical cultural resources including valued urban pagodas, and explain possible PCR to contractors 8. Contractors to be educated about cultural sensitivities of Tay peoples to protect them during construction	All subproject areas	Before construction begins	Once	No marginal cost	PMCS/PMU	PMU
Obtain & activate permits and licenses	Prevent or minimize impacts	9. Contractors to comply with all statutory requirements set out by GoV for use of construction equipment, and operation construction plants such as concrete batching.	For all construction sites	Beginning of construction	Once	No marginal cost	PMCS	PMU & contractors
Capacity development	No negative environmental impact	10. Develop and schedule training plan for PMU/SO/EO to be able to fully implement EMP, and to manage implementation of mitigation measures by contractors.	All subproject areas	Before construction begins	Initially, refresher later if	No marginal cost	PMCS/PMU	SO/PMU

Subproject Activity	Potential Environmental Impacts	Proposed Mitigation Measures	Location	Timing	Activity Reporting	Estimated Cost[5] (USD)	Responsibility	
							Supervision	Implementation
		11. Create awareness and training plan for contractor environment officer (EO) whom will implement mitigation measures.			needed			
Recruitment of workers	Spread of sexually transmitted disease	12. Use local workers as much as possible thereby reducing #s of migrant worker	All work forces.	Throughout construction phase	Worker hiring stages	No marginal cost	SO/PMU	Contractor's bid documents
Baseline survey	No negative environmental impacts	13. Update environmental baseline at all component sites as per monitoring plan	For all construction sites	Before construction begins	Once	Refer to Table 7	PPMU	PMCS
Resilience to Climate Change	Positive environmental impact	14. Detailed design accounts for projected climate change (precipitation, peak discharge) and facilities are climate proof in accordance with requirements defined in Section VI.F of the IEE	For all component works	Before approval of detailed design	Once	No marginal cost	PPMU	ADB
Inventory of condition of all existing roads that will be used by construction vehicles	No negative environmental impacts	15. Update condition of all existing roads including drainage system, trees that will be used by construction vehicle	For all existing roads used by construction vehicles	After receiving construction methods by contractors	Once	No marginal cost	PMCS/PPMU	contractors
Preparation of CEMP & sub- plans,	Prevent or minimize impacts	16. Initiate preparation of CEMPs including individual management sub-plans for different potential impact areas that are completed in pre-construction phase (see sub-plan guidance below) and an emergency response plan or entire construction sites	For all construction sites	Beginning of construction	Once	No marginal cost	PMCS/PPMU	contractors
Public disclosure and consultation	Prevent or minimize impacts	17. Notify & Provide local authorities, residents and merchants of construction activities & schedule to minimize disruption to normal commercial and residential activities	For all construction sites	During construction phase	Once beginning of construction and very month during construction time	No marginal cost	PMCS/PPMU	contractors

Subproject Activity	Potential Environmental Impacts	Proposed Mitigation Measures	Location	Timing	Activity Reporting	Estimated Cost[5] (USD)	Responsibility	
							Supervision	Implementation
Construction Phase of Subproject Component Types								
Worker camps	Pollution and social problems	18. Locate worker camps away from human settlements. 19. Ensure adequate housing and waste disposal facilities including pit latrines and garbage cans. 20. A solid waste collection program must be established and implemented that maintains a clean worker camps 21. Locate separate pit latrines for male and female workers away from worker living and eating areas. 22. A clean-out or infill schedule for pit latrines must be established and implemented to ensure working latrines are available at all times. 23. Worker camps must have adequate drainage. 24. Local food should be provided to worker camps. Guns and weapons not allowed in camps. Workers are prohibited from setting animal traps, hunting, or fishing during the project implementation. 25. Transient workers should not be allowed to interact with the local community. HIV Aids education should be given to workers. 26. Camp areas must be restored to original condition after construction completed.	All worker camps	Throughout construction phase	Monthly	No marginal cost	PMCS/PMU	contractor
Training & capacity	Prevent of impacts through education	27. Implement training and awareness plan for PMU/SO/EO and contractors.	PMU office, construction sites	Beginning of construction	After each event	No marginal cost	PMCS	PMCS/PMU

Subproject Activity	Potential Environmental Impacts	Proposed Mitigation Measures	Location	Timing	Activity Reporting	Estimated Cost[5] (USD)	Responsibility	
							Supervision	Implementation
Implement Construction materials acquisition, transport, and storage sub-plan	Pollution, injury, increased construction traffic congestion	28. All borrow pits should be reviewed by DoNRE. 29. Select pits in areas with low gradient and as close as possible to construction sites. 30. Required aggregate volumes must be carefully calculated prior to extraction to prevent wastage. 31. Pits and quarries should not be located near surface waters, houses, or cultural property or values. 32. All topsoil and overburden removed should be stockpiled for later restoration. 33. All borrow pits and quarries should have a fence perimeter with signage to keep public away. 34. After use pits and quarries should be dewatered and permanent fences installed with signage to keep public out, and restored as much as possible using original overburden and topsoil. 35. Unstable slope conditions in/adjacent to the quarry or pit caused by the extractions should be rectified with tree planting. 36. Define & schedule how materials are extracted from borrow pits and rock quarries, transported, and handled & stored at sites. 37. Define and schedule how fabricated materials such as steel, wood structures, and scaffolding will transported and handled. 38. All aggregate loads on trucks should be covered.	For all construction areas.	Throughout construction phase	Monthly	No marginal cost	PMCS/PMU	contractor
DBST (pavement) production, and application	Air pollution, land and water contamination, and traffic & access problems,	39. Piles of aggregates at sites should be used/or removed promptly, or covered and placed in non-traffic areas 40. Stored DBST materials well away from all human activity and settlements, and cultural (e.g., schools, hospitals), and ecological receptors. Bitumen	For all construction areas.	Throughout construction phase	Monthly	No marginal cost	PMCS & PMU	contractor

Subproject Activity	Potential Environmental Impacts	Proposed Mitigation Measures	Location	Timing	Activity Reporting	Estimated Cost[5] (USD)	Responsibility	
							Supervision	Implementation
		production and handling areas should be isolated. 41. Contractors must be well trained and experienced with the production, handling, and application of bitumen. 42. All spills should be cleaned immediately and handled as per hazardous waste management plan, and according to GoV regulations. 43. Bitumen should only be spread on designated road beds, not on other land, near or in any surface waters, or near any human activities. 44. Bitumen should not be used as a fuel.						
Implement Spoil (excavate) management sub-plan	Sedimentation of land and surface waters from excavated spoil, and construction waste	45. Uncontaminated spoil to be disposed of in GoV-designated sites, which must never be in or adjacent surface waters. Designated sites must be clearly marked and identified. 46. Spoil must not be disposed of on sloped land, near cultural property or values, ecologically important areas, or on/near any other culturally or ecologically sensitive feature. 47. Where possible spoil should be used at other construction sites, or disposed in spent quarries or borrow pits. 48. A record of type, estimated volume, and source of disposed spoil must be recorded. 49. Any contaminated spoil disposal must follow GoV regulations including handling, transport, treatment (if necessary), and disposal. 50. Suspected contaminated soil must be tested, and disposed of in designated sites identified as per GoV regulations. 51. Before treatment or disposal contaminated spoil must be covered with plastic and isolated from all human	All excavation areas	Throughout construction phase	Monthly	See Monitoring Plan for contaminated soil analyses	PMCS & PMU & DoNRE	contractor

Subproject Activity	Potential Environmental Impacts	Proposed Mitigation Measures	Location	Timing	Activity Reporting	Estimated Cost[5] (USD)	Responsibility	
							Supervision	Implementation
		activity.						
Implement Solid and liquid construction waste sub-plan	Contamination of land and surface waters from construction waste	52. Management of general solid and liquid waste of construction will follow GoV regulations, and will cover, collection, handling, transport, recycling, and disposal of waste created from construction activities and worker force. 53. Areas of disposal of solid and liquid waste to be determined by GoV away from all watercourses. 54. Disposed of waste should be catalogued for type, estimated weigh, and source. 55. Construction sites should have large garbage bins. 56. A schedule of solid and liquid waste pickup and disposal must be established and followed that ensures construction sites are as clean as possible. 57. Solid waste should be separated and recyclables sold to buyers in community. <u>Hazardous Waste</u> 58. Collection, storage, transport, and disposal of hazardous waste such as used oils, gasoline, paint, and other toxics must follow GoV regulations. 59. Wastes should be separated (e.g., hydrocarbons, batteries, paints, organic solvents) 60. Wastes must be stored above ground in closed, well labeled, ventilated plastic bins in good condition well away from construction activity areas, all surface water, water supplies, and cultural and ecological sensitive receptors. 61. All spills must be cleaned up completely with all contaminated soil removed and handled with by contaminated spoil sub-plan.	All construction sites and worker camps	Throughout construction phase	Monthly	No marginal cost	PMCS & PMU & DoNRE	contractor
Implement Noise	Dust	62. Regularly apply wetting agents to exposed soil and	All construction sites.	Fulltime	Monthly	No marginal cost	PMCS & PMU	contractor

Subproject Activity	Potential Environmental Impacts	Proposed Mitigation Measures	Location	Timing	Activity Reporting	Estimated Cost[5] (USD)	Responsibility	
							Supervision	Implementation
and dust sub-plan	Noise	construction roads. 63. Cover or keep moist all stockpiles of construction aggregates, and all truck loads of aggregates. 64. Minimize time that excavations and exposed soil are left open/exposed. Backfill immediately after work completed. 65. As much as possible restrict working time between 07:00 and 17:00. In particular are activities such as pile driving. 66. Maintain equipment in proper working order 67. Replace unnecessarily noisy vehicles and machinery. 68. Vehicles and machinery to be turned off when not in use. 69. Construct temporary noise barriers around excessively noisy activity areas where possible.						
Implement Utility and power disruption sub-plan	Loss or disruption of utilities and services such as water supply and electricity	70. Develop carefully a plan of days and locations where outages in utilities and services will occur, or are expected. 71. Contact local utilities and services with schedule, and identify possible contingency back-up plans for outages. 72. Contact affected community to inform them of planned outages. 73. Try to schedule all outages during low use time such between 24:00 and 06:00.	All construction sites.	Fulltime	Monthly	No marginal cost	PMCS & PMU & Utility company	contractor
Implement Tree and vegetation removal, and site restoration sub-plan	Damage or loss of trees, vegetation, and landscape	74. Contact DARD for advice on how to minimize damage to trees and vegetation. 75. Prevent tree and vegetation removals, and install protective physical barriers around trees that do not need to be removed. 76. All areas to be re-vegetated and landscaped after	All construction sites.	Beginning and end of subproject	Monthly	No marginal cost	PMCS & PMU	contractor

Subproject Activity	Potential Environmental Impacts	Proposed Mitigation Measures	Location	Timing	Activity Reporting	Estimated Cost[5] (USD)	Responsibility	
							Supervision	Implementation
		construction completed. Consult DARD to determine the most successful restoration strategy and techniques. Aim to replant three trees for each tree removed.						
Implement Erosion control sub-plan	Land erosion	77. Berms, and plastic sheet fencing should be placed around all excavations and earthwork areas. 78. Earthworks should be conducted during dry periods. 79. Maintain a stockpile of topsoil for immediate site restoration following backfilling. 80. Protect exposed or cut slopes with planted vegetation, and have a slope stabilization protocol ready. 81. Re-vegetate all soil exposure areas immediately after work completed.	All construction sites	Throughout construction phase	Monthly	No marginal cost	PMCS & PMU	contractor
Implement worker and public safety sub-plan	Public and worker injury, and health	82. Proper fencing, protective barriers, and buffer zones should be provided around all construction sites. 83. Sufficient signage and information disclosure, and site supervisors and night guards should be placed at all sites. 84. Worker and public safety guidelines GoV should be followed (DoLISA regulations & guidelines). 85. Speed limits suitable for the size and type of construction vehicles, and current traffic patterns should be developed, posted, and enforced on all roads used by construction vehicles. 86. Standing water suitable for disease vector breeding should be filled in. 87. Worker education and awareness seminars for construction hazards should be given at beginning of construction phase, and at ideal frequency of monthly. A construction site safety program should be developed and distributed to workers.	All construction sites.	Fulltime	Monthly	No marginal cost	PMCS & PMU	contractor

Subproject Activity	Potential Environmental Impacts	Proposed Mitigation Measures	Location	Timing	Activity Reporting	Estimated Cost[5] (USD)	Responsibility	
							Supervision	Implementation
		88. Appropriate safety clothing and footwear should be mandatory for all construction workers. 89. Adequate medical services must be on site or nearby all construction sites. 90. Drinking water must be provided at all construction sites. 91. Sufficient lighting be used during necessary night work. 92. All construction sites should be examined daily to ensure unsafe conditions are removed.						
Civil works / dredging	Degradation of water quality & aquatic resources	93. Protective berms, plastic sheet fencing, or silt curtains should be placed between all earthworks and all lakes and rivers to be dredged, and around dredging operations, and all construction vehicles kept out of water courses. 94. Erosion channels must be built around aggregate stockpile areas to contain rain-induced erosion. 95. Earthworks should be conducted during dry periods. 96. All construction fluids such as oils, and fuels should be stored and handled well away from all surface waters 97. No waste of any kind is to be thrown into affected rivers and lakes 98. No washing or repair of machinery near surface waters. 99. Pit latrines to be located well away from all surface water	All construction sites	Throughout construction phase	Monthly	No marginal cost	PMCS & PMU	contractor
Civil works	Degradation of terrestrial resources	100. All construction fluids such as oils, and fuels should be stored and handled well away from all surface waters	All construction sites	Throughout construction phase	Monthly	No marginal cost	PMCS & PMU	contractor

Subproject Activity	Potential Environmental Impacts	Proposed Mitigation Measures	Location	Timing	Activity Reporting	Estimated Cost[5] (USD)	Responsibility	
							Supervision	Implementation
Implement Construction and urban traffic sub-plan	Traffic disruption, accidents, public injury	101. Schedule construction vehicle activity during light traffic periods. Create adequate traffic detours, and sufficient signage & warning lights. 102. Post speed limits, create dedicated construction vehicle roads or lanes, and assign flag men and traffic police at congested areas and intersections. 103. Inform community of location of construction traffic areas, and provide them with directions on how to best co-exist with construction vehicles on their roads. 104. Demarcate additional locations where pedestrians can develop road crossings away from construction areas. 105. Provide construction road and walkway lighting.	All construction sites	Fulltime	Monthly	No marginal cost	PMCS & PMU	contractor
Implement Construction Drainage sub-plan	Loss of drainage & flood storage	106. Provide adequate short-term drainage away from construction sites to prevent ponding and flooding. 107. Manage to not allow borrow pits and quarries to fill with water. Pump periodically to land infiltration or nearby water courses. 108. Install temporary storm drains or ditches for construction sites 109. Ensure connections among surface waters (ponds, streams) are maintained or enhanced to sustain existing stormwater storage capacity.	All areas near stream	Design & construction phases	Monthly	No marginal cost	PMCS & PMU	contractor
Civil works & Chance finds sub-plan	Damage to cultural property or values, and chance finds	110. As per detailed designs all civil works should be located away from all cultural property and values. SO identified potential sites and types of PCR in pre-con phase. 111. Chance finds of valued relics and cultural values should be anticipated by contractors. Site supervisors should be on the watch for finds. 112. Upon a chance find all work stops immediately, find left untouched, and PMU notified to determine if find	All construction sites	At the start , and throughout	Monthly	No marginal cost	PMCS & PMU	contractor

Subproject Activity	Potential Environmental Impacts	Proposed Mitigation Measures	Location	Timing	Activity Reporting	Estimated Cost[5] (USD)	Responsibility	
							Supervision	Implementation
		is valuable. Culture section of DCST notified by telephone if valuable. 113. Work at find site will remain stopped until DCST allows work to continue.		construction phase				
Embankment of rivers	Extensive area of maximum suspended sediment (TSS)	114. Temporary berms should be installed lateral to the sections of embankment works of lakes and rivers to protect embankment sections that will not undergo embankment works from soil erosion. Similarly, silt curtains should be installed just a few meters offshore of embankment works areas to contain and allow settlement of eroded soil close to embankment.	Lo & Mien rivers, and Me stream	At the start, and throughout construction phase	Monthly	No marginal cost	PMCS & PMU	contractor
	Interrupted river transportation, and collisions	115. Warning signs for dredging operations in rivers must be placed at 100 m above and below sites. Dredging barges must be well signed to identify activities 116. In narrow sections of rivers, clearly boomed boat lanes with speed low speed limits must be placed to guide boat traffic past the dredging site.						
Operation of Upgraded and New Roads & Bridges								
Operation of upgraded and new roads	Reduced risk of traffic accidents	117. Enforced, well- marked speed limits and truck routes should be placed along roads. Large fines should be levied for infractions. 118. Maximum truck loads should well-posted and strongly enforced	Along all new and upgraded roads and bridges	Fulltime	Biannual	O&M	Department of Transport / Police	
	Minimal increase in noise and dust	119. Local bylaw should require vehicles to be in good working order. Road surfaces in urban areas should be cleaned or watered regularly.						

VI. ENVIRONMENTAL MONITORING PLAN

26. An environmental monitoring plan has been prepared for the subproject in accordance with the Government of Viet Nam and ADB requirements. The plan focuses on environmental compliance monitoring and environmental effects monitoring (e.g. air, water, noise, and dust) during pre-construction, construction and operation.

27. The monitoring plan consists of environmental compliance monitoring to be conducted by the PMU with support of the PMCS, and environmental effects monitoring to be conducted by the PMCS and potentially sub-contracted to a licensed monitoring entity. Contractors will also be required to conduct frequent noise, air quality and surface water quality monitoring around construction sites, and records of all worker accidents at all sites. Monitoring arrangements defined for this project are described below.

A. Environmental effects monitoring.

28. Table 6 shows the environmental effect monitoring program for the subproject, defining the requirements, including, scope, location, parameter, duration and frequency of monitoring during pre-construction, construction and operational stages. Figure 1 shows the locations of monitoring sites from IEE which were adapted from national EIA. Environmental effect monitoring will include monitoring of air quality, noise, and water quality and will be conducted in compliance with relevant Vietnamese standards and procedures, including but not necessarily limited to:

- Circular No. 28/2011/TT-BTNMT: Regulation of technical procedures of environmental monitoring for ambient air and noise.
- Circular No. 29/2011/TT-BTNMT: Regulation of technical procedures of environmental monitoring for surface water.

29. Quarterly environmental monitoring of air quality, noise and water quality during pre-construction, construction and operation will be conducted by the PMCS. The costs for environmental effect monitoring by the PMCS have been estimated at **USD $13,200.00**. This estimate does not include environmental effects monitoring to be conducted by the contractors, which is estimated at USD **$23,566.00**. Contractors will be required to conduct dust, noise and water quality monitoring during peak construction period around construction sites and nearest sensitive receptors (e.g., Citadel, residential areas, rivers, canals).

30. The environmental monitoring results will be compared with relevant Vietnamese performance standards and the IFC Environment, Health and Safety Guidelines where these are applicable (Table 6). Non-compliance with these standards will be highlighted in the monitoring reports. Monitoring results will be submitted by the PMCS through the PMU to Ha Giang DONRE, and to EA and ADB through the semi-annual environmental monitoring reports (Table 8).

31. During construction, compliance monitoring will be conducted as the works are implemented by the PMCS (Table 7). The compliance monitoring results will be documented in the semi-annual environmental monitoring reports. Compliance monitoring will be done on a weekly basis. Monthly reports will be submitted by the PMCS to the PMU and EA. These reports will be consolidated in the semi-annual environmental monitoring reports to be submitted to the ADB, and DONRE by the EA.

32. Monitoring during operation phase will focus on maintaining the mitigation measures begun for the roads components focusing traffic, traffic accidents, and noise and air quality.

Figure 1. Sites for air & water quality, and noise sampling

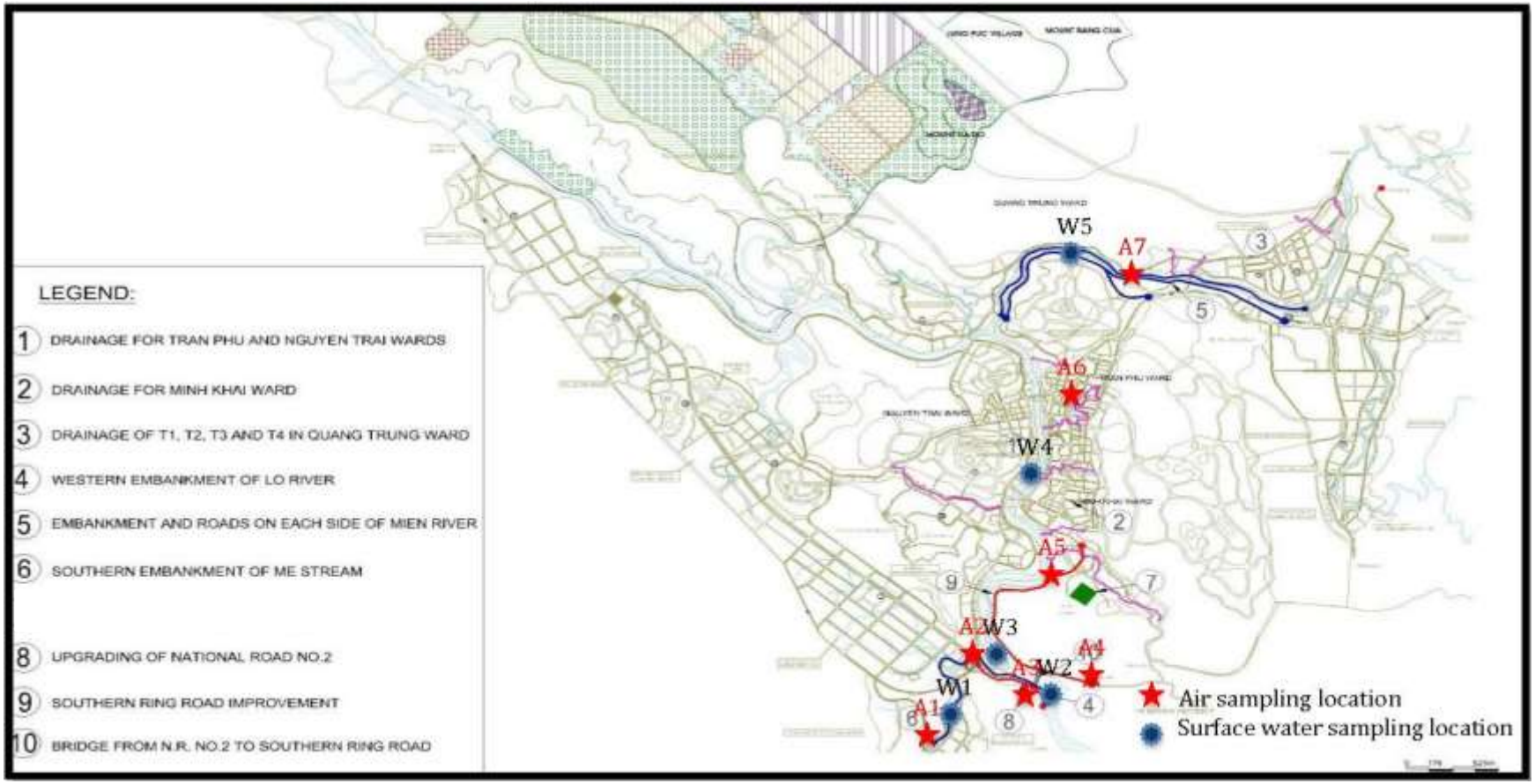


Table 7. Environmental effect monitoring plan

Aspect/Parameters to be Monitored	Location (see Figure 1)	Means of Monitoring, relevant standard	Frequency	Responsibilities		Cost
				Implementation	Compliance Monitoring	
Pre-construction Phase						
Surface water quality: pH, DO, SS, BOD_5, NH_4+, oil & grease, total coliform	River and lakes at, and downstream of component sites	Analytical method: 29/2011/TT-BTNMT Surface water quality standard: QCVN 08:2008/BTNMT	Once prior to construction	PMCS (or subcontracted monitoring institute)	PMU	5 X 3 mio VND = 15 mio VND, or USD $665.00
Noise monitoring (integral noise level): 24-h; Day time (7am-10pm, and night time (10pm-7am) noise levels dB (A)	At construction sites	Analytical method: 28/2011/TT-BTNMT Relevant noise standards: (i) QCVN 26:2010/BTNMT; (ii) QCVN 26:2010/BTNMT – TCVN 5948:1999; (iii) IFC EHS Guidelines (2007)	Once prior to construction	PMCS (or subcontracted monitoring institute)	PMU	7 X 2 mio VND = 14 mio VND, or USD $621.30
Ambient air quality monitoring: SO_2, NO_2, TSP, HC (1 hr average)	At construction sites	Analytical method: 28/2011/TT-BTNMT Air quality standards: (i) QCVN 05:2013/BTNMT; (ii) IFC standard (2007)	Once prior to construction	PMCS (or subcontracted monitoring institute)	PMU	7 X 1.5 mio VND = 17 mio VND, or USD $466.00
Construction Phase						
Effect Monitoring by Contractors (monthly)						
Ambient air quality monitoring: SO_2, NO_2, TSP, HC (1 hr average)	See above and Figure 1	Analytical method: 28/2011/TT-BTNMT Air quality standards: (i) QCVN 05:2013/BTNMT; (ii) IFC standard (2007)	Monthly during construction period	Works contractors (or subcontracted to monitoring entity)	PMCS, PMU	1 (Contract) X 18 X 7 X 1.5 mio VND = 189 mio VND per works contract (assuming 18 months construction period), or USD $8,388.00
Noise monitoring (integral noise level): Day time (7am-10pm, and night time (10pm-7am) noise levels dB	See above and Figure 1	Analytical method: 28/2011/TT-BTNMT Relevant noise standards: (i) QCVN 26:2010/BTNMT; (ii) QCVN 26:2010/BTNMT - TCVN	Monthly during construction period	Works contractors (or subcontracted to monitoring entity)	PMCS, PMU	1 (Contract) X 18 X 7 X 2 mio VND = 252 mio VND per works contract (assuming 18 months construction

Aspect/Parameters to Responsibilities be Monitored	Location (see Figure 1)	Means of Monitoring, relevant standard	Frequency	Responsibilities		Cost
				Implementation	Compliance Monitoring	
(A) (24 hours measuring)		5948:1999; (iii) IFC EHS Guidelines (2007)				period), or USD $11,184.00
Surface water quality: pH, DO, SS, BOD_5, NH_4+, oil & grease, total coliform	See above and Figure 1	Analytical methods regulated in Vietnam Standards for surface water Quality monitoring Surface water quality standard: QCVN 08:2008/BTNMT	Quarterly during bridge construction activities	Works contractors (or subcontracted to monitoring entity)	PMCS, PMU	5 X 6 X 3 mio VND = 90 mio VND per works contract (assuming 6 quarters within construction period and for 1 work contracts), or USD $3,994.00
Effect Monitoring by PMCS (quarterly)						
Surface water quality: pH, DO, SS, BOD_5, NH_4+, oil & grease, total coliform	As above	Analytical method: 29/2011/TT-BTNMT Surface water quality standard: QCVN 08:2008/BTNMT	Quarterly	PMCS (or subcontracted monitoring entity)	PMU	5 X 6 X 3 mio VND = 90 mio VND (assuming 6 quarters within construction period), or USD $3,994.00
Ambient air quality monitoring: SO_2, NO_2, TSP, HC (1 hr average)	As above	Analytical method: 28/2011/TT-BTNMT Air quality standards: (i) QCVN 05:2013/BTNMT; (ii) IFC standard (2007)	Quarterly	PMCS (or subcontracted monitoring entity)	PMU	7 X 6 X 1.5 mio VND = 63 mio VND (assuming 6 quarters within construction period), or USD $2.796.00
Noise monitoring (integral noise level): Day time (7am-10pm, and night time (10pm-7am) noise levels dB (A) (24 hours measuring)	As above	Analytical method: 28/2011/TT-BTNMT Relevant noise standards: (i) QCVN 26:2010/BTNMT; (ii) QCVN 26:2010/BTNMT - TCVN 5948:1999; (iii) IFC EHS Guidelines (2007)	Quarterly	PMCS (or subcontracted monitoring entity)	PMU	7 X 6 X 2 mio VND = 84 mio VND (assuming 6 quarters within construction period), or USD $3,727.00
Tree Replanting Survival rate, density per hectare, height and diameter.	Adjacent sites where trees removed	Visual check	Annually in accordance with the tree replanting plan	PMCS	PMU	Included in PSC contract

Aspect/Parameters to Responsibilities be Monitored	Location (see Figure 1)	Means of Monitoring, relevant standard	Frequency	Responsibilities		Cost
				Implementation	Compliance Monitoring	
Operation Phase (until PCR issued)						
Ambient air quality monitoring: SO_2, NO_2, TSP, HC (1 hr average), PM_{10} (24h average)	See above	Analytical method: 28/2011/TT-BTNMT Air quality standards: (i) QCVN 05:2013/BTNMT; (ii) IFC standard (2007)	Semi-annual, until PCR is issued.	PMCS (or subcontracted monitoring entity)	PMU	3 X 2 X 1.5 mio VND = 9 mio VND, or USD $399.00
Noise monitoring (integral noise level): Day time (7am-10pm, and night time (10pm-7am) noise levels dB (A) (24 hours measuring)	See above	Analytical method: 28/2011/TT-BTNMT Relevant noise standards: (i) QCVN 26:2010/BTNMT; (ii) QCVN 26:2010/BTNMT - TCVN 5948:1999; (iii) IFC EHS Guidelines (2007)	Semi-annual, until PCR is issued.	PMCS (or subcontracted monitoring entity)	PMU	3 X 2 X 2 mio VND = 12 mio VND, or USD $532.50

Table 8. Compliance Monitoring Plan

Environmental issues	Location	Methodology	Frequency	Monitoring Responsibility	
				Implementation	Supervision
Pre-Construction Phase					
1. Detailed design completed, accounting for requirements defined in the EMP, Table 5.	Throughout subproject area	Review documents	Once	Detailed Design Institute	PMU, EA, ADB
2. EMP updated and submitted to ADB for clearance and disclosure	Throughout subproject area	Review documents	Once	PMU, EA	ADB
3. EMP incorporated into tender documents	Throughout subproject area	Review documents	Once	PMU, EA, Procurement Department	EA, ADB
4. Check for and removal of remaining unexploded ordnance from wars	Throughout subproject area	Using of special equipment	Once	Local military forces	EA
5. Project Management Consultant& Supervision (PMCS) contracted by EA, with adequate resources for EMP implementation coordination support.	EA office	Confirmation by EA	Once	EA	ADB
6. Construction EMPs (CEMPs) prepared by contractors and cleared by PMCS and PMU	All Works contracts	Review documents	Once for each works contract	PMCS	PMU, EA, ADB
7. PMU has assigned full-time environment staff to coordinate EMP implementation	PMU office	Confirmation by PMU	Once	PMU	EA, ADB
8. Contractors have assigned one full-time environment officer (EO) and one full-time construction safety engineer prior to commencement of works	Works contracts	Confirmation by contractors	Once for each contractor	PMCS	PMU, ADB
9. An external monitoring institute is contracted by EA to conduct independent verification of EMP implementation	EA office	Confirmation by EA	Once	EA	ADB
10. Grievance Redress Mechanism is established, with clearly identified entry points, procedures and timeframes. The GRM is disclosed to potentially affected people	PMU office	Confirmation by PMU	Once	PMU	EA, ADB, Monitoring Institute
11. Pre-construction monitoring conducted in accordance with the environmental effect monitoring plan defined in this EMP.	At monitoring sites identified in the monitoring plan	Monitoring results provided by PMCS	Once	PMCS	PMU, Monitoring Institute
Construction Phase					
1. EMP and CEMP implemented properly	Subproject area	Site inspections based on measures defined in the EMP	Weekly	PMCS	PMU, DONRE, Monitoring Institute
2. Grievance Redress Mechanism is operational	PMU office, DONRE,	GRM Register,	Semi-annually	PMCS	PMU, Monitoring

Environmental issues	Location	Methodology	Frequency	Monitoring Responsibility	
				Implementation	Supervision
and functioning, complaints are redressed in accordance with the GRM.	contractors	Discussion with contractors, PMU, DONRE			Institute
3. Relevant permits are secured (batching plants, spoil disposal sites, work camps, others as relevant)	Construction sites, batching plants, spoil disposal sites	Records of Works contractors	Once	PMCS	PMU, Monitoring Institute
4. Sites are secured and well maintained	Construction sites, batching plants, spoil disposal sites	Site observations	Weekly	PMCS	PMU, Monitoring Institute, DOLISA, DONRE
5. Construction safety complies with Vietnamese regulations, accidents are investigated and reported	Construction sites, batching plants, spoil disposal sites	Site observations	Weekly	PMCS	PMU, Monitoring Institute, DOLISA, DONRE
6. Environmental effect monitoring is conducted by contractors in compliance with the monitoring plan	At monitoring sites identified in the monitoring plan	Monthly progress reports of contractors	Monthly	PMCS	PMU, Monitoring Institute
7. Environmental effect monitoring is conducted by PMCS in compliance with the monitoring plan	At monitoring sites identified in the monitoring plan	Semi-annual environmental monitoring reports	Semi-annual	ADB	ADB, EA
8. Information disclosure and public consultation is conducted in accordance with the consultation plan	Construction sites	Site observations, monitoring reports	Weekly, semi-annual	PMCS	PMU, Monitoring Institute
9. Training is conducted in accordance with the training plan	N.A.	PMCS progress reports, semi-annual environmental monitoring reports	Semi-annual	PMU	EA, ADB
10. Environmental and safety personnel are present on site	Construction sites	Site observations	Weekly	PMCS	PMU, Monitoring Institute
11. Spoil disposal sites are clearly delineated and well managed	Spoil disposal sites	Site observations	Monthly	PMCS	PMU, Monitoring Institute
12. Batching plans are well managed	Batching plants	Site observations	Weekly	PMCS	PMU, Monitoring Institute
13. Reporting by contractors is timely and covers CEMP implementation	N.A.	Monthly progress reports by contractors	Monthly	PMCS	PMU, Monitoring Institute
14. Non-compliances (such as excessive noise and dust at construction site boundaries, inappropriate disposal of spoil and waste, etc) are redressed by the contractors.	Construction sites, along transportation routes	Site observations	Weekly	PMCS	PMU, Monitoring Institute
15. Dust suppression (e.g. sprinkling water on	Construction sites, along	Site observations	Weekly	PMCS	PMU, Monitoring

Environmental issues	Location	Methodology	Frequency	Monitoring Responsibility	
				Implementation	Supervision
existing roads and construction sites) is implemented	transportation routes				Institute
16. Temporary noise barriers at sensitive areas are installed.	Sensitive areas	Site observations	Weekly	PMCS	PMU, Monitoring Institute
17. Sanitary conditions at work camps (water supply, toilets, management and treatment of wastes)	Worker-based camps	Site observations	Weekly	PMCS	PMU, Monitoring Institute
18. Health care (e.g. periodic health examinations, communicable diseases, first aid, and medical stations on-site)	Worker-based camps, construction sites	Site observations, informal interviews	Weekly	PMCS	PMU, Monitoring Institute
19. Social problems associated with labor force (e.g. strife, alcohol and drug abuse, gamble, etc.)	Worker-based camps, construction sites	Site observations, informal interviews	Weekly	PMCS	PMU, Monitoring Institute
20. Maintenance of water flows (e.g., rivers, irrigation canals, and drainages)	Along all affected rivers an canals	Observation	Weekly	PMCS	PMU, Monitoring Institute
21. Maintenance of local roads used for transporting wastes and materials	Throughout subproject area	Observation	Weekly	PMCS	PMU, Monitoring Institute
22. Plan for prevention of fire and explosion	Storage areas	Observation	Weekly	PMCS	PMU, Monitoring Institute
23. Emergency response plan is in place	Storage areas	Observation	Weekly	PMCS	PMU, Monitoring Institute
24. Traffic safety (e.g. signboards, lighting systems, speed limits, and instruction manuals)	Intersections	Observation	Weekly	PMCS	PMU, Monitoring Institute
Operation Phase					
1. A follow-up monitoring plan for noise and air quality is in place	Locations identified during construction and operation phases	Observation and interviews	Once every three months	DOT	EA/DONRE/DOT
2. Traffic safety and emergency response system is in place	Along all new and upgraded roads	Observation and interviews	Once every three months	DOT	EA/DONRE/DOT

33. Semi-annual environmental reports during the operating period until the project completion report is issued will be prepared by the PMU/EA, discussed with DONRE, and submitted to ADB for disclosure. These discussions will form the basis for any needed adjustments in the program.

34. The compliance framework, based on the environmental requirements established by the EMP and Environmental Specifications included in bidding documents, will be strictly enforced by the PMCS. Minor and major infringements will be determined according to two primary infringement categories (Table 8).

Table 9. Category of Infringement & Remediation

Category of Infringement	Definition	Remediation
Minor Infringement	Incident which causes temporary but reversible damage to the environment, community property, people.	– Minor clean-up operations – Minor restoration activities – Adjustments to construction practices – Compliance with EMP and CEMP
Major Infringement	Incident where there is long-term or irreversible damage to the environment, community property, and people	– Major clean-up operations – Comprehensive investigation of incident, including reporting – Major restoration requiring engineering measures – Major restoration of community property – Compensation to affected communities or persons.

35. For a minor infringement, which is an incident causing temporary but reversible damage, the contractor will be given a reasonable period of time to remediate the problem and to restore the environment or strengthen safety procedures. If restoration is done satisfactorily during this period, no further actions will be taken. If it is not done during this period, the PMU will immediately arrange for another contractor to do the restoration, and deduct the cost from the offending contractor's next payment.

36. For a major infringement, which is an incident causing long-term or irreversible damage or negligence to construction safety resulting severe injury or death of workers or community members, there will be a thorough internal and independent investigation of the incident by authorities such as Ha Giang DONRE or DOLISA. Financial penalties may apply in addition to the cost for restoration activities.

37. The compliance framework will be applied as follows:

- The PMCS will identify or be notified of an infringement (community member, local government);
- The PMCS in consultation with relevant stakeholders (PMU, DONRE, DOLISA) will assess whether it is a minor or major infringement.

38. For minor infringements:

- The PMCS will establish the required mitigation measures, and issue a notice to correct, defining time period, which is a maximum of five days to remedy the situation.
- The Contractor will review the recommendation and confirm (i) the level of infringement (minor/major); (ii) the mitigation measures; and (iii) the mitigation time period. If they do not agree, they will work with the PMCS and the PMU to reach

mutually acceptable recommendations.

- The Contractor shall remedy the infringement in accordance with the recommendations within the agreed time period.
- The PMCS shall confirm the infringement is satisfactory remedied in the time period.
- If the infringement is not remedied satisfactorily in the time period the PSC shall inform the PMU. The PMU shall immediately arrange for a separate contractor to undertake the necessary works and the cost of this shall be deducted from the next payment to the offending contractor.

39. For major infringements:

- The Contractor and/or PMCS shall immediately inform the PMU of the incident;
- The PMU shall immediately inform the appropriate provincial authorities if appropriate (DONRE, DOLISA);
- The PMU, in consultation with the PMCS and other provincial authorities as appropriate, shall agree upon mitigation and clean-up measures to be undertaken immediately by the contractor or by specialists to be procured at the contractor's expense. To minimize the environmental impacts the restoration activities should be completed within ten days.
- In case of serious accidents incurring severe injury or death of construction workers or community members, the PMU will ensure that an investigation is conducted in accordance with the relevant Vietnamese regulations (i.e., Law on Occupational Health and Safety No. 84/2015/QH13, and the procedures defined in Joint Circular No. 12/2012/TTLT-BLDTBXH-BYT guiding the statement, investigation, statistics and reports on occupational accidents).
- The EA and/or the PMU shall apply a financial penalty, not to exceed 1% of the contract cost, for each major infringement, in addition to any costs associated with the infringement not borne by the contractor.

40. Any conflicts between the Contractor and PMCS shall be resolved by the PMU. ADB expects to receive the following information related to serious project-related infringements or incidents: (i) a written notice of the incident within 24 hours; (ii) the minutes of the investigation issued by relevant authorities (DOLISA or DONRE) within 30 days; and (iii) a full inventory of minor and major infringements and accidents, to be reported in the semi-annual environment monitoring report to ADB.

B. Reporting Plan

41. The following reports related to the implementation of the EMP will be prepared and submitted to relevant agencies. Frequencies and responsibilities are shown in Table 9.

42. *Monthly progress reports by the contractors:* Each contractor will submit monthly progress reports to the PMCS. These reports will include reporting on EMP implementation performance as well as results of the monthly monitoring of noise, air and surface water quality.

43. *Monthly reports by the PMCS:* The PMCS will submit monthly project progress reports to the PMU. These reports shall also include a comprehensive section on EMP and CEMP implementation progress, grievances received, minor and major infringements, occupational accidents, and necessary corrective actions.

44. *Semi-annual environmental monitoring reports by EA/PMU:* The EA will submit semi-

annual environmental monitoring reports in English and Vietnamese to ADB for clearance and disclosure. The reports will follow the template prescribed by ADB. Semi-annual reporting shall continue after construction completion until the project completion report is issued.

45. *Mid-term review report on EMP*: Not later than 1 month prior to the project mid-term review mission, the PMU, with support of the PMCS, will submit a mid-term review report on EMP implementation to EA and ADB.

46. *Draft project completion report on EMP:* Not later than 3 months after the completion of the construction work, the PMCS and PMU will gather compliance monitoring information from all contractors and provide a completion report on construction mitigation to ADB and EA. The report will show the timing, extent, and success of the completed mitigation measures, and the maintenance and monitoring needs during operation.

Table 10. Environmental Reporting Plan

Environment Reports		From	To	Reporting Frequency
Construction Phase				
Progress reports by contractors	Internal project progress report by construction contractors, including progress reporting on CEMP implementation, environmental effect monitoring, public consultation, occupational health and safety, training etc.	Contractors	PMCS, PMU	Monthly
Project progress reports by PMCS	Internal project progress report including EMP and CEMP implementation progress	PMCS	PMU	Monthly
Semi-annual environmental monitoring reports	Internal EMP implementation reports, including compliance with the EMP and CEMPs, training plan and consultation plan, GRM, etc, following the template prescribed by ADB.	PMU, PMCS	EA, ADB, AHs (disclosed)	Semi-annual
Mid-term report on EMP compliance	Internal report on EMP implementation progress and compliance, proposed adjustments to the EMP and EMP implementation arrangements, as input to the mid-term review mission	PMCS	ADB, EA	Before Mid-term review mission
Operational Phase				
Reports to ADB and disclosed to AHs	Semi-annual internal environmental monitoring reports, including results of environmental effect monitoring	PMU, PMCS	ADB	Semi-annual (until PCR is issued)

Notes: ADB = Asian Development Bank; AHs = affected households; PCR = project completion report; PMU = Project Management Unit; EA = Provincial Peoples Committee; PMCS = Project Management Supervision Consultant; DONRE = Department of Natural Resources and Environment

C. Capacity building & Training

47. The capacity of PMU and contractor staff responsible for EMP implementation and supervision will be strengthened. All parties involved in implementing and supervising the EMP must have an understanding of the goals, methods, and practices of project environmental

management. The project will address the lack of capacities and expertise in environmental management through (i) institutional capacity building, and (ii) training.

1. Institutional strengthening

48. The capacities of EA and the PMU to coordinate environmental management will be strengthened through a set of measures:

i. The appointment of a full-time and qualified safeguard officer (SO) within the PMU in charge of EMP coordination, including GRM and coordination of environmental impact monitoring, training, reporting, etc.; and
ii. The contracting of environmental specialists (one international - IES, one national - NES)) and national construction safety engineers under the project supervision consultancy services (PMCS);

2. Training

49. The PMU and contractors will receive training in CEMP preparation, EMP and CEMP implementation, supervision, and reporting, the Grievance Redress Mechanism, and construction safety. Training will be facilitated by the environmental specialists under the project management supervision consultancy services (PMCS). The tentative training plan (Table 10) shall be reviewed by the PMCS based on a training needs assessment and refined in their technical proposal. The cost for this program, estimated at $7,300 will be included in the PMCS contract. In addition, each works contractor will conduct daily box meetings and monthly trainings on construction site safety and environmental protection requirements for all construction staff.

Table 11. Tentative EMP-related Training Program

Training	Attendees	Contents	Times	Period (days)	No. of persons	Cost ($/person /day)	Total Cost
EMP requirements and responsibilities, CEMP preparation, implementation	EA, PMU, contractors	Laws/guidelines of Viet Nam in environmental protection, ADB Safeguard Policy Statement 2009, National Technical Regulations for the Environment, Organization of environmental management in EA/PMU. CEMP preparation requirements and procedures, roles and responsibilities, monitoring, supervision and reporting procedures, review of experience (after 12 months)	Twice - Once prior to, and once after one year of project implementation	2	20	50	$1,000
EMP monitoring and reporting requirements	PMU, contractors	Monitoring methods, data collection and processing, reporting systems,	Once (at beginning of project construction)	1	15	50	$750

Training	Attendees	Contents	Times	Period (days)	No. of persons	Cost ($/person /day)	Total Cost
		occupational health & safety during construction					
Grievance Redress Mechanism, Public consultation	PMU, contractors, DONRE	Roles and responsibilities, procedures, review of experience (after 12 months)	Twice - Once prior to, and once after one year of project implementation	2	20	50	$2,000
Environmental Pollution Control in Ha Giang Subproject Area	PMU, contractors	Control of air pollution, noise, solid waste and wastewater generated by road and bridge construction activities; & dredging activities. Control of noise pollution generated by road and bridge construction activities.	Twice (during project implementation)	2	15	50	$1,400
Occupational and community health and safety	EA, PMU, contractors	Construction safety requirements, procedures and responsibilities; key regulations (Law on Occupational Health and Safety No. 84/2015/QH13, Joint Circular No. 12/2012/TTLT-BLDTBXH-BYT)	Twice - Once prior to, and once after one year of project implementation	2	15	50	$1,400
Protection of ecology and natural habitats during road and bridge construction, and embankment developments	PMU, contractors	Protection of natural habitats and biodiversity in the project area; how to protect forests; compensatory forest replanting plan.	Once (at beginning of project construction)	1	15	50	$750
						Total estimated cost:	**$7,300**
Notes: PMU = Project Management Unit; **DONRE** = Department of Natural Resources and Environment. The daily rate of $50 per person includes costs for course material preparation, rental of training facilities, and food.							

D. Consultation, Participation and Information Disclosure

50. Chapter V of the IEE describes the meaningful public consultation, and information disclosure process conducted during project preparation, as well as the GRM. Though Category B for environment, an indicative plan for the subproject for follow-on public involvement during construction has been developed (Table 11). The PMU, who will be supported by the PMCS, has the main responsibility for public participation during project which begins with the initiation of the GRM. The budget for public consultation is estimated at approximately **USD $3,000.00**

Table 12. Indicative Public Consultation Plan

Organizer	Format	Frequency	Subject	Attendees
Construction Stage				
PMU, PMCS	Public meetings & site visits and informal interviews & leaflets	Once before construction commences (public meetings, leaflet distribution), and as needed (site visits, informal interviews) thereafter during construction phase	Presentation of planned activities and schedule; anticipated impacts and mitigation measures; GRM	Affected households, ward PC representatives
Operational Stage				
PMU, PMCS	Public consultation and site visits	Once in the first year	Effectiveness of mitigation measures, impacts of operation, comments and suggestions	Affected households, ward PC representatives
PMCS, PMU	Public satisfaction survey	Once at PCR stage	Public satisfaction with EMP implementation Comments and suggestions	Affected households, ward PC representatives

1. Information disclosure

51. The project environmental information will be disclosed as follows:

(i) The draft IEE including EMP is disclosed on the project website at www.adb.org.

(ii) All semi-annual environmental monitoring reports during project implementation will be available at www.adb.org.

E. Cost estimates for EMP implementation

52. Costs for EMP implementation have been estimated for the following items: (i) environmental effects monitoring by the PMCS and contractors (USD $36,766.); (ii) environmental training program (USD $7,300.); and (iii) public consultation (USD $3,000.). These aggregated costs for EMP implementation are estimated at **USD $47,066** (Table 11).

1. Effects monitoring by PMCS and Contractors

53. From above (& Table 5), the estimated costs of environmental effects monitoring by the PMCS and contractors are **USD $13,200.00** and **$23,566.00**, respectively. The costs for PMCS include outsourcing monitoring costs to independent Monitoring Institute.

2. EMP supervision, training, and public consultation by PMU, PMCS and Monitoring Institute

54. The PMU will assign a full-time environment specialist to coordinate environmental aspects of the subproject using its own resources, and will conduct public consultation when needed (**USD $3,000.**). The PMCS will conduct training on EMP implementation **($7,300.**). The PMCS contract will include the recruitment of environmental and construction safety specialists (national and international) to supervise construction activities including EMP implementation.

3. EMP implementation costs by contractors.

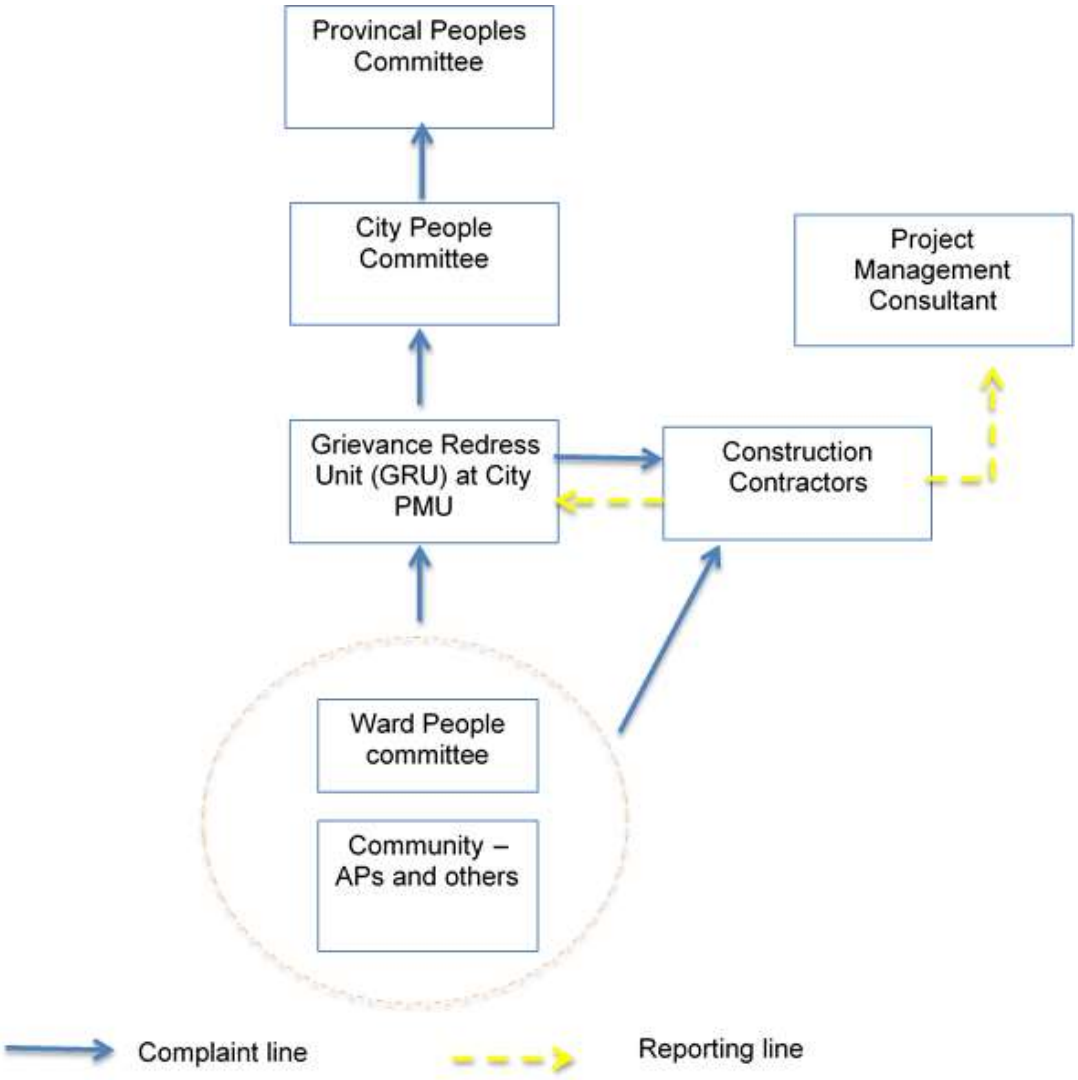
55. Following Vietnamese laws and regulations, Works contractors must ensure abiding with the following four "HSET" criteria: Health for Community (Health); Site Safety (Safety); Environmental Protection (Environment) and Transport Management (Transportation).

56. The costs for works contractors' adherence with the HSET criteria and this EMP, including (but not limited to) recruitment of environmental and safety staff, environmental protection, construction site safety, work camp management, mobile noise control facilities, air pollution control and dust suppression, waste collection and transport, temporary flood control and slope stabilization, landscaping, restoration of borrow areas, fire and explosion prevention, vibration control, etc. during the construction stage are not detailed here, but are estimated at **USD $365,600** or 1% of the civil works costs. These measures will need to be included in the tender documents to ensure that contractors can reflect these in their cost estimates and proposals.

VII. GRIEVANCE REDRESS MECHANISM

57. The Ha Giang PMU will play a central role in the coordination of the city-level GRM. The PMU will establish a central GRM unit composed of relevant PMU project staff, subject to approval by the PPC. Decision making is done by PPC involving relevant stakeholders. With decisions taken at the highest level, there is no need for appeals except if complainants choose to use the court systems should they not agree with the proposed resolutions. A public information booklet (PIB) on the GRM should be readily available from the GRU. The proposed GRM for the SCDP is shown in Figure 2.

Figure 2. Proposed GRM for Ha Giang (City-level)



a. Roles and Responsibilities

58. The GRU will be composed of a GRU head, a resettlement specialist, an environment specialist, and possibly staff from the administration unit.

59. The W/CPC and/or complainants will: (i) draft a written complaint to be signed by the complainant indicating name of complainant, date and address of the complainant, description of complaint and supporting documents, if any; and (ii) send the complaint to the GRU. They also may participate in GRM meetings, and provide relevant information related to the submitted

complaints as required.

60. The GRU will: (i) receive all complaints from people seeking access to the GRM and promptly acknowledge them (within 5 working days); (ii) register the complaints; (iii) determine eligibility of a complaint; (iv) screen and forward the complaint to contractors if required; (v) coordinate and monitor activities by contractors; (vi) track and record all actions taken by the GRC, (vi) provide information and feedback to W/CPC and complainants, (vii) maintain a complaint registration and tracking system.

b. GRM Procedure

Stage 1: Access to the GRM.

61. If a concern arises, the complainant will make his/her complaint known to the Ward/Commune People's Committee (W/CPC) or to the grievance redress unit (GRU). Complaints can also be sent directly to the contractor through the hotline number provided for construction related matters such as noise, dust and other emergency matters which require immediate action. Contractors are required to report back to the GRU as well as the Construction Supervision Consultant on complaints received and resolved. For more complex construction matters, the GRU will forward the complaint to the contractors with recommendations for action.

Stage 2: Submission and Registration.

62. The W/CPC or complainant will submit a written or verbal complaint to the GRU. The GRU will register the complaint. The GRU will register the complaint in the grievance registry and issue an acknowledgement of receipt within 5 working days of the complaint with information on when a decision will be made regarding the complaint. The GRU will handle all questions and queries of project related activities.

Stage 3: Determine Eligibility.

63. The GRU will determine whether the complaint is eligible for the grievance mechanism. A screening procedure based on simple eligibility criteria will be established for the GRU. Criteria include: (i) the complainant is directly affected by the project; (ii) in case of representation, the complainant has a valid representation authorization; (iii) the complaint relates to environmental or social safeguards aspects of the project. If the complaint is deemed ineligible, the complainant is informed of the decision and the reasons for ineligibility. A response on the eligibility shall be given to the complainant within 10 working days after receipt of the complaint.

Stage 4: Assessment and Decision on Action.

64. If the complaint is eligible, the GRU will inform the complainant within 10 working days after receipt of the complaint that his/her complaint is eligible, including indication of the grievance assessment process and timeframe. The GRU, with support of relevant authorities, will conduct an assessment and gather information about the complaint and key issues and concerns to determine how the complaint might be resolved. The W/CPC and community members will participate in the assessment as necessary. If outside experts or technical information is needed, the GRU may seek such guidance and may request all parties concerned to participate in the

GRM process. The decision on the solution will be by the PPC. The GRU will develop an action plan and identify responsibilities for the plan. This action plan will be reported directly to the complainant and/or W/CPC through the GRU. The response shall not be submitted later than 30 days after receipt of the complaint. If this timeframe cannot be ensured, the complainant shall be informed accordingly prior to the deadline of 30 days.

Stage 5: Implementation of Actions.

65. Implementation of the action plan commences with close collaboration of relevant project stakeholders depending on the type of complaint.

Stage 6: Monitoring and Reporting on Implementation.

66. The GRU will monitor the implementation of actions and record. As part of the monitoring process, the GRU will consult the relevant project stakeholders, as needed. The monitoring time frame will be complaint-specific depending on the implementation of the actions.

Stage 7: Closure of the Complaint.

67. When complaint redress and monitoring is completed, the GRU will prepare a final report which is shared with the complainant and W/CPC, and filed. The complainant will confirm completion of the actions and agree to the closure of the complaint. The grievance dossier is closed and filed in the project archive.

2. Complaint Monitoring and Evaluation

68. All grievances, concerns and complaints received will be entered into a complaint tracking system that will allow complaints to be tracked and monitored with sufficient details. Monitoring information will include the following data organized by type and location:

- number and type of complaints received
- number and % of complaints that have reached agreement
- number and % of complaints that have been resolved
- number and % of complaints that are unresolved

69. The GRU will review the data on a quarterly basis to evaluate the functionality of the system, as well as to note the following:

- Failures to follow GRM procedures
- Delays in complaint resolution, particularly those that can affect project construction
- Most frequent types of grievances and complaints

Location(s) producing the most grievances and complaints