



Lao People's Democratic Republic
Peace Independence Democracy Unity Prosperity

**SOUTH EAST ASIA DISASTER RISK MANAGEMENT
(SEA DRM) PROJECT FOR LAO PDR**

Project ID No: P170945

**Component 1: Integrated Urban Flood Risk Management
In Muang Xay, Oudomxay (ODX) Province**

**Updated Environmental and Social Management Plan for
Additional Works (ESMP-AW)**

Volume II – Attachments

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ACRONYMS AND ABBREVIATIONS

AF	Additional Financing
AW	Additional Works
BOQ	Bill of Quantities
C-ESMP	Contractor Environmental and Social Management Plan
COC	Code of Conduct on GBV and VAC
CSC	Construction Supervision Consultant
DOW	Department of Waterways
DPWT	Department of Public Works and Transport
DRM	Disaster Risk Management
EIA	Environmental Impacts Assessment
ECC	Environmental Compliance Certificate
EDPD	Environmental Research and Disaster Prevention Division (of PTI)
EGEF	Ethnic Group Engagement Framework
EGEP	Ethnic Group Engagement Plan
ESHS	Environmental, Social, Health, and Safety
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
GBV	Gender-Based Violence
GOL	Government of Lao PDR
GRM	Grievance Redress Mechanism
Lao PDR	Lao People's Democratic Republic
LDRM-AF	Lao Disaster Risk Management Additional Financing
MONRE	Ministry of Natural Resources and Environment
MPWT	Ministry of Public Works and Transport
ODX	Oudomxay Province
O&M	Operation and Maintenance
PDR	People's Democratic Public
PIU	Project Implementation Unit
PMU	Project Management Unit
PTI	Public Works and Transport Institute
RAP	Resettlement Action Plan
ROW	Right of Way
SEA	Sexual Exploitation and Abuse
TOR	Terms of Reference
UXO	Unexploded Ordinance
VAC	Violence against children
VEG	Vulnerable Ethnic Groups
WB	World Bank
WCMP	Worker Camp Management Plan

ATTACHEMNT 1: DETAILS ON ADDITION WORKS (AW)

This Attachment presents additional details/design on the proposed additional works (AW) for Oudomxay (ODX) subproject based on scope and the description proposed by the Department of Waterways (DOW) of the Ministry of Public Works and Transport (MPWT), as the Project Management Unit (PMU), and agreement with the Department of Public Works and Transport (DPWT, as the Project Implementation Unit PIU), responsible for implementation of the ODX subproject. Key AWs include (i) river bank protection along the left side of Nam Mao River, (ii) pavement on the walk path along the crest (right side), (iii) scouring protection at the 2 bridges (railways bridge and Nam Kor bridge #4), (iv) construction of access road on Nam Moa River, and (v) improve street light in Park 1.

A1.1. Bank protection along left side of the Nam Mao River

As per the agreement between PMU and PIU, slope protection will be installed along the left side of Nam Mao riverbank from Nam Mao Bridge to the junction of 3 rivers with a total length of 2.7km including 5 Pipe Culverts (see Figures A1-1, A1-2, and A1-3 below).

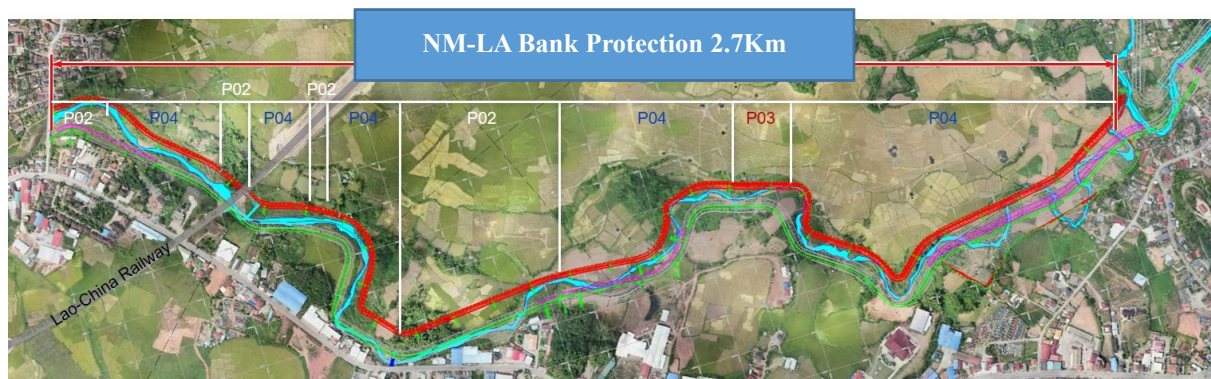


Figure A1-1 Location and Sectional Map of the Bank Protection for the Proposed AW



Figure A1-2 Excavated Riverbank Condition at the Left Side of the Nam Mao River

As presented in the feasibility study report, left side of the Nam Mao River were planned with the retention pond to reduce the flood damage in the downtown of Muangxay, embankment and bank protection works and these retention pond should be constructed during the next phase

when enough budget is allocated. Nevertheless, temporary slope protection will be needed at the moment to prevent the riverbank from serious erosion risk as Figure A1-2 above.

Figure A1-3 presents the typical design recommended along the left side riverbank of the Nam Mao River.

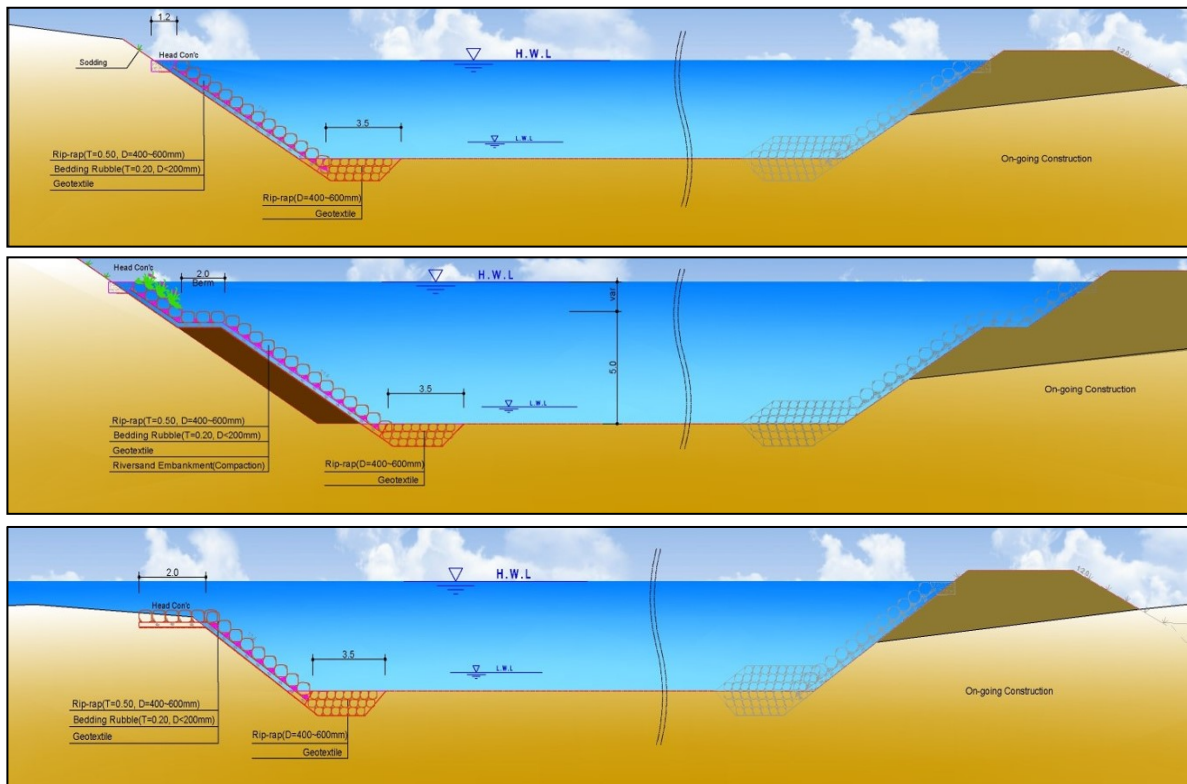
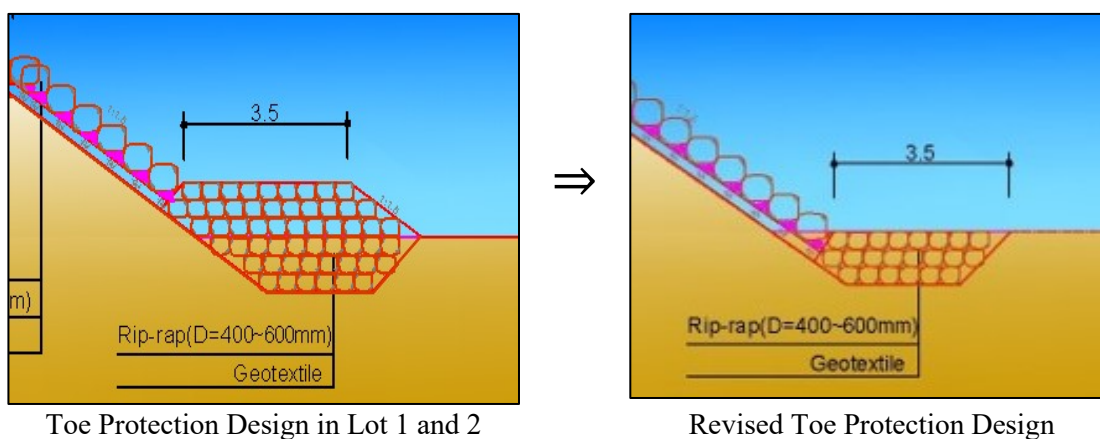


Figure A1-3 Proposed Typical Cross Sections by Each Section

It is noted that toe protection design will be changed to reduce the cost of toe protection comparing to Lot 1 and 2 (see Figure A1-4 below) as requested by DOW in the meeting on 15 January 2024. In this case, workability and accessibility of equipment could be poor during embankment and slope protection works.



Toe Protection Design in Lot 1 and 2

Revised Toe Protection Design

Figure A1-4 Toe Protection Design in Lot 1+2 and Revised Toe Protection Design

A1.2. Pavement for the Walk Path on the Levee Crest

For installation of a continuous walk path from Riverside Park 1 to Nam Mao Bridge, PIU of Oudomxay has requested crest pavement on the right-side levee which is being constructed by Lot 2 as below (see Figure A1-5 below):

- Location: Crest on the right side levee of the Nam Mao river
- Pavement Type: DBST
- Length: L=2.00 km
- Width: 3.0 m

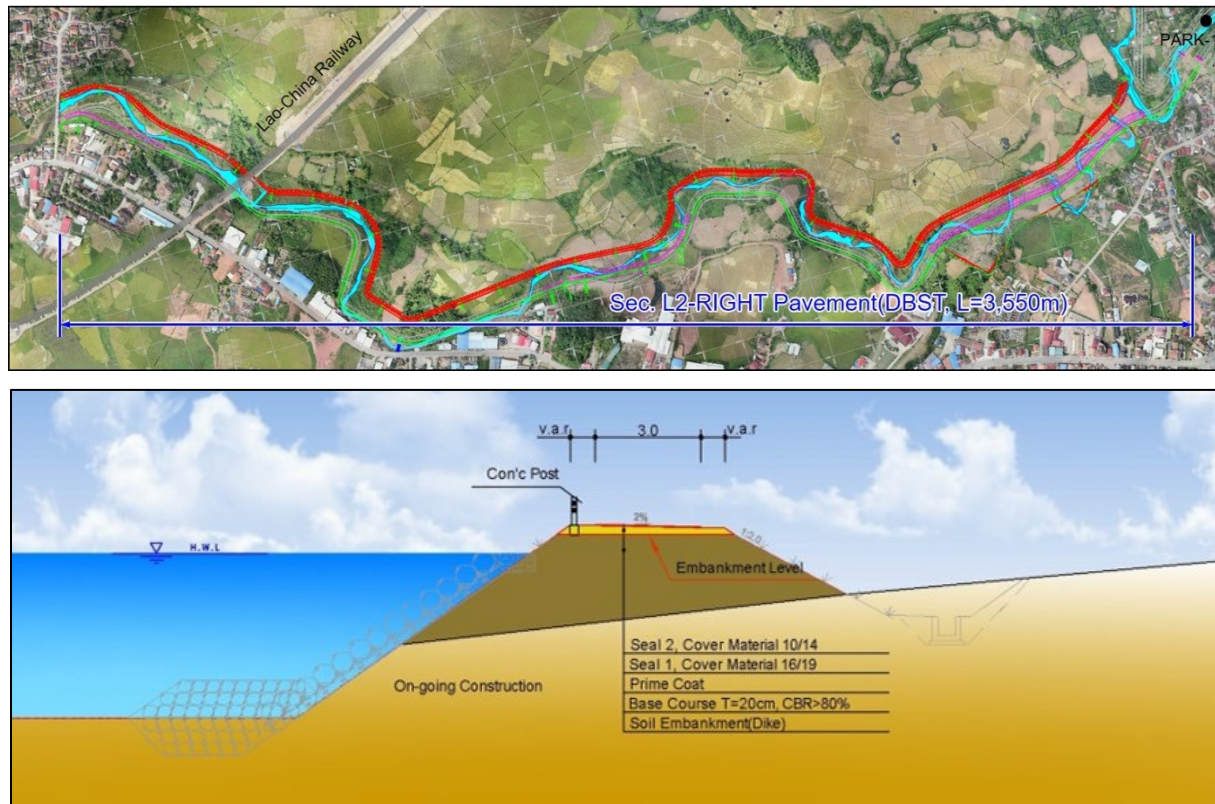


Figure A1-5 Location and Typical Cross Section for the Crest Pavement

A1.3. Scouring Protection on the Riverbed at the 2 Bridges

Based on suggestion by the Construction Supervision Consultant (CSC) team, the pier of railway bridge located in the Nam Mao River should be protected from scouring by the rip-rap material during the additional works (Figures A1-6 to A1-7 below).

In addition to that, the pier of Nam Kor Bridge 4 should be protected from scouring by the flow due to the channel improvement, refer to “2.5 Channel Improvement on the Riverbed from Nam Kor Bridge No. 4 to downstream “. To analyze the scouring at the bridge, CSU and Froehlich equations were applied in this study and the theory and detailed design of scouring protection work are shown in Figures A1-8 and A1-9 below.

The theory, and case of scouring protection at the bridge are shown in the following figures



Railway Bridge at the Nam Mao River



Nam Kor Bridge 4

Figure A1-6 Present Condition of Two Bridges

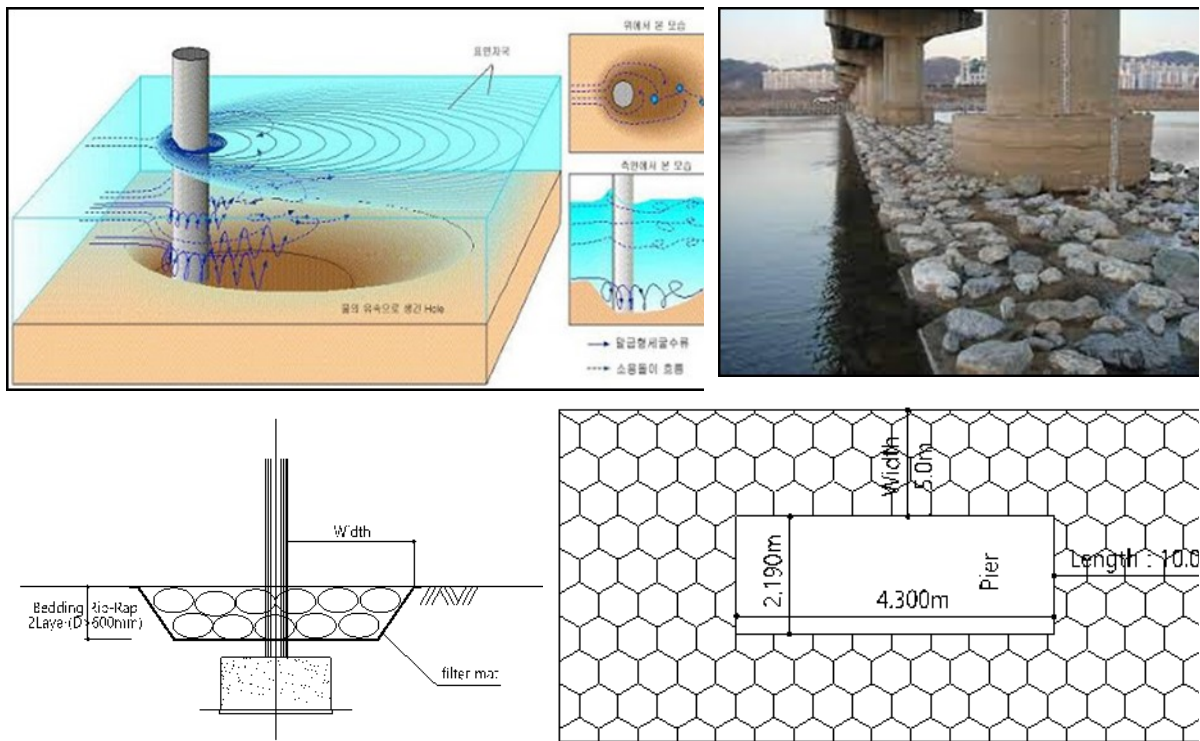


Figure A1-7 Theory and Case of the Scouring Protection

Scour Protection(National Railway Bridge)

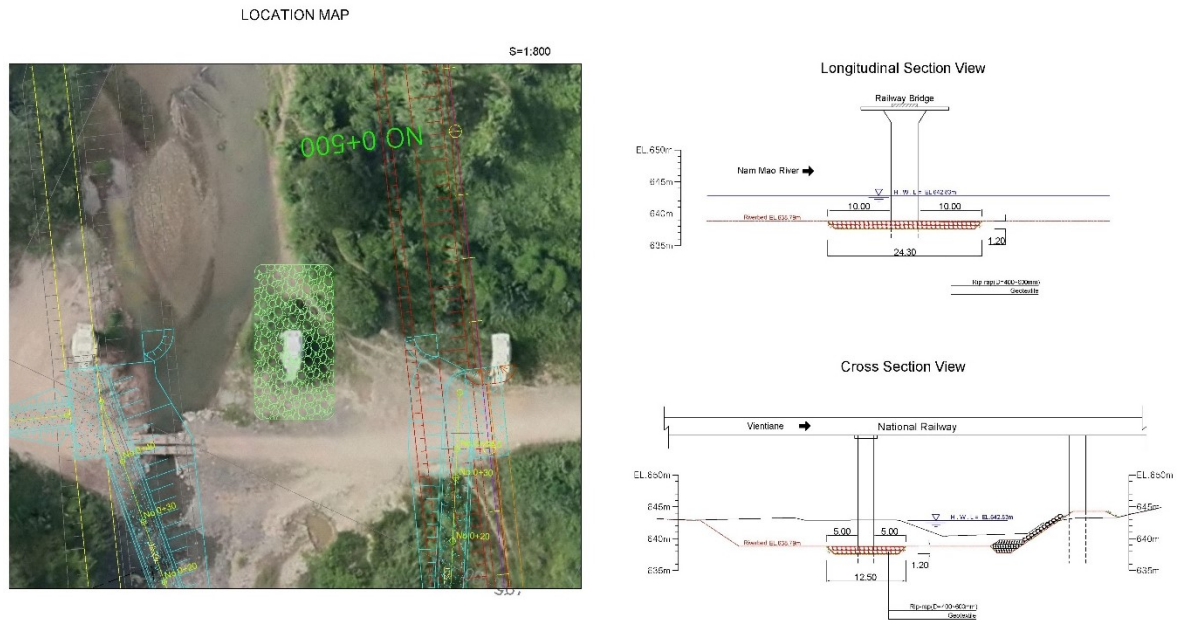


Figure A1-8 Detail Design of the Scouring Protection at Railway Bridge

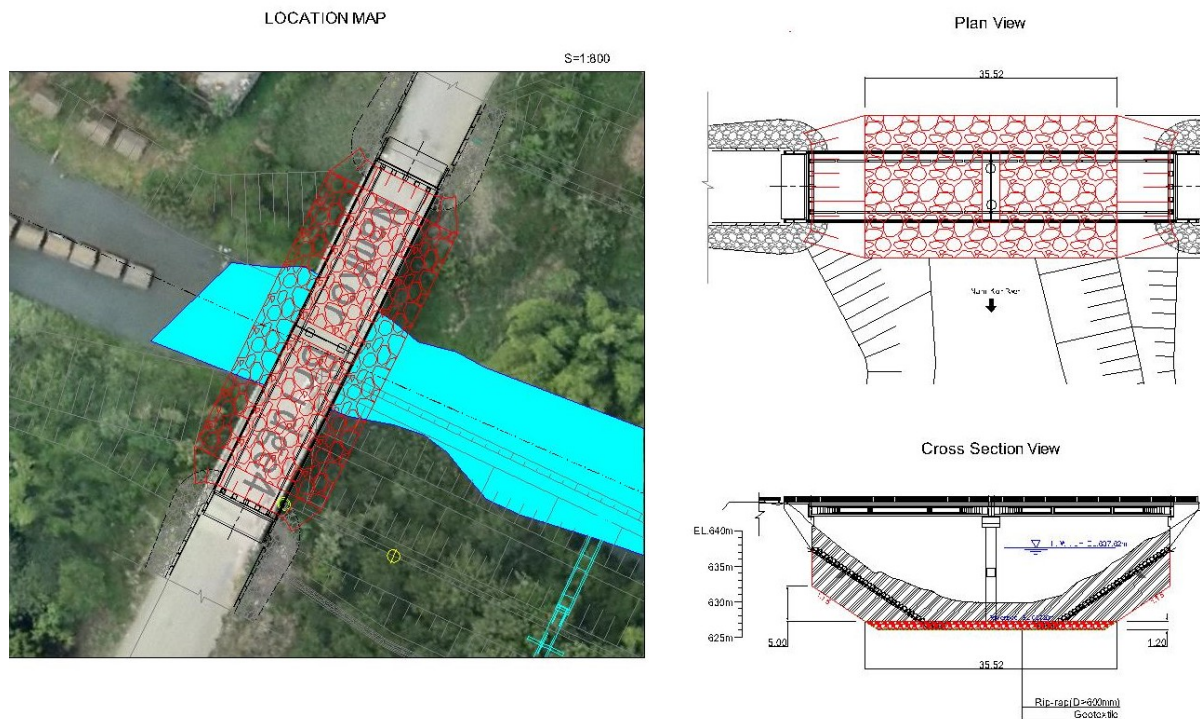


Figure A1-9 Detail Design of the Scouring Protection at Nam Kor Bridge No. 4

A1.4. Access Road on the Nam Mao River

PIU of Oudomxay and DOW have agreed for the construction of the across road from the right side to the left side of the Nam Mao River, and an access road work with a levee passage to be constructed are as below (see Figure A1-10):

- Location: Near Railway Bridge at the Nam Mao River
- Length: 155.0 m
- Width: 4.0 m
- Type: Concrete Pavement with Wiremesh

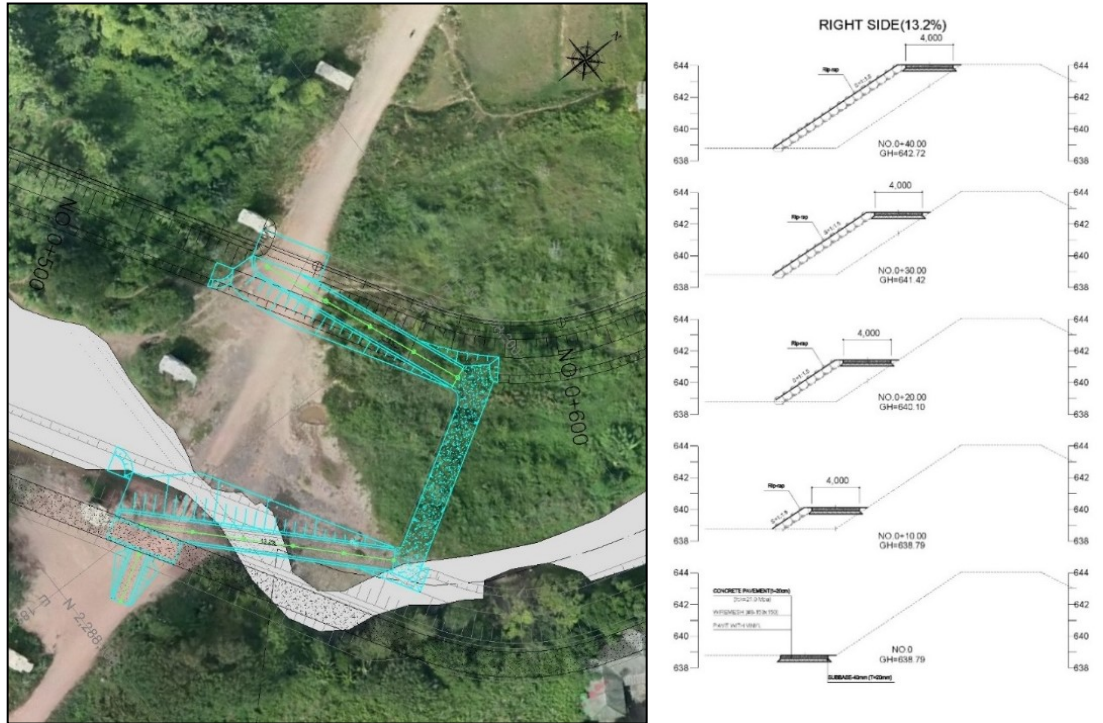


Figure A1-10 Detail Design of the Access Road

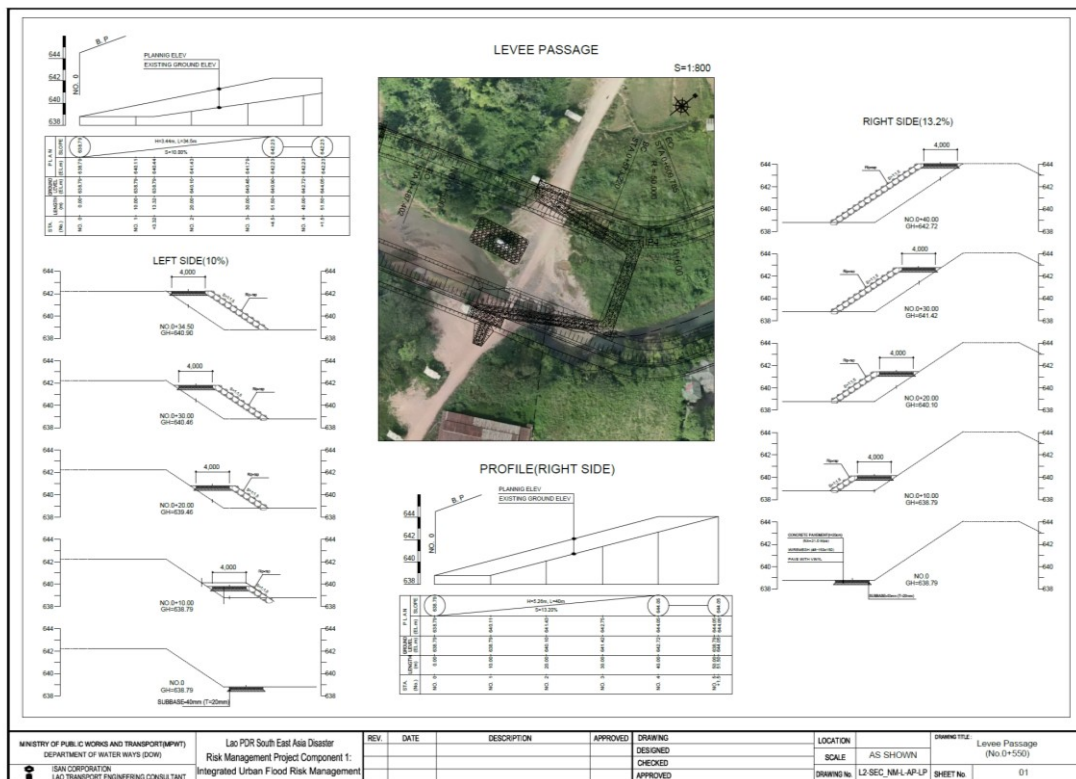


Figure A1-11 Detail Design of Levee Passage

A1.5. Street Light at the Riverside Park 1

Per PIU's request, the street light at the Riverside Park 1 will be installed at a 30 m interval using the available budget. Total 15 Street Lights will be installed along Riverside Park 1.

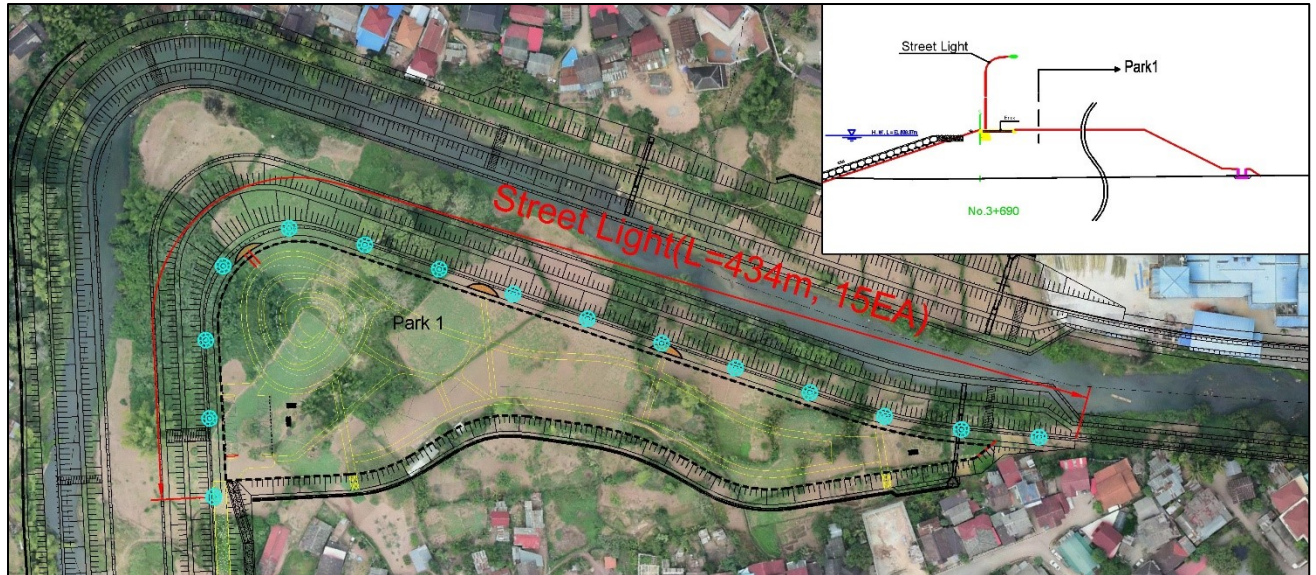


Figure A1-12 Location of the Proposed Street Light along the Riverside Park 1



A1.6. Budget of AW

Description	Original Contract Amount Signed Dated 7th Oct.2022 (US\$)	Cost of Additional civil work (US\$)	Cost Variation (Amendment #1) (US\$)
A. Competitive Components			
Bill No.100: General Provisions	213,840.00	-	213,840.00
Bill No.200: Earthworks	3,356,192.01	174,712.61	3,530,904.62
Bill No.300: Riverbank Protection Works	3,483,400.34	664,791.28	4,148,191.62
Bill No.400: Drainage	306,335.57	35,126.03	341,461.60
Bill No.500: Structures (not applicable)	N/A	N/A	N/A
Bill No.600: Riverbank Appurtenances	634,564.96	21,269.50	655,834.46
Bill No.700: Riverside Park Works	208,803.98	18,750.00	227,553.98
Bill No.800: LEVEE CREST PAVEMENT (New Work items)	-	97,933.56	97,933.56
Bill Day work	14,450.00	-	14,450.00
Sub-total A	8,217,586.86	1,012,582.98	9,230,169.84
B. Non-competitive Components			
Provisional Sum	190,000.00	-	190,000.00
Physical Contingencies (5% of Sub-total A)	410,879.00	-	410,879.00
Sub-total B	600,879.00	-	600,879.00
Total (A+B)	8,818,465.86	1,012,582.98	9,831,048.84



ATTACHMENT 2: IMPACTS AND MITIGATION MEASURES FOR AW

This Attachment presents results from the safeguard screening for the proposed additional works (AW) (A2-1); ECC Conditions issued by MONRE (A2-2) for the ODX subproject; the impacts and mitigation measures for the ODX subproject including the proposed AW (A2.3); and steps to implement “Chance Find Procedures” (A2.4). Table A2-1 identifies the nature and level of impacts including results from the safeguard screening; the key issues and mitigation measures to be conducted during detailed design, preconstruction, and operations which are responsible by PMU and/or PIU assisted by EDPD/PTI and DPWT (Table A2-2); and those to be conducted during construction by contractor (Table A2-3). These safeguard measures are being implemented and monitoring by the Construction Supervision Consultant (CSC) i.e. ISAN and LTEC (ISAN) and implementation progress report has been submitted to PMU (copied to PTI) on a monthly basis while, starting 2024, the safeguard monitoring report is submitted to PMU on a quarterly basis. These measures will also be applied to the proposed AWs.

To update the mitigation measures in response to the fatality incident of one 8-years boy drowning in the Nam Kor River (Lot 2 construction area) on 17 June 2023 around 13:00. The Contractor together with the CSC/ISAN and PIU prepared an action plan on improvement of safety measures to avoid and prevent future incident as highlighted in Attachment 3. The C-ESMP will be amended to ensure that the ODX subproject and its C-ESMP will be effectively implemented and closely monitored by the CSC/ISAN.

A2.1. Safeguard Screening

This Attachment presents the results of safeguard screening for ODX subproject Additional Work (AW) based on the Environmental and Social Management Framework (ESMF) safeguard screening forms provided in Appendix A2 (*General Environmental Assessment Policy Instrument: Screening Form*)” and Appendix A3 (*Site-Specific Environmental and Social Screening Form*). The impact assessment (positive and negative) was made based on the baseline conditions for physical, biological, socio-economic, cultural and visual observation of the proposed AW’s area taking into account the risks during the ODX subproject implementation, include the proposed plan to strengthen road and site safety and other mitigation measures being conducted to address issues during operation phase of the subproject.

Table A2-1 (a) identifies the criteria used for assessing the significance of potential negative impacts which was applied during the preparation of the ODX subproject submitted and cleared by WB. The results (Tables A2-1 (b) to (d) below) confirm that the proposed ODX project can be classified according to WB safeguard policies as EA category B.

Table A2-1 (a) Screening Matrix for Impacts Significance

Receptor / Resource Sensitivity	Impact Magnitude			
	Negligible	Low	Medium	High
Low	Negligible	Minor	Minor	Moderate
Medium	Negligible	Minor	Moderate	Major
High	Negligible	Moderate	Major	Major



Table A2-1 (b) the Results of Environmental Assessment Category Screening

No.	Environmental Impact	Impacts Significance			Mitigation Measures
		MA	MO	MI	
1	Will the proposed AW generate dust or noise? YES		✓		Spray water 2-3 times a day and implement the construction during day time; Develop and implement Dust and Noise Control Plan. During construction, impacts and mitigation measures for the AW will follow the C-ESMP of ODX subproject and its follow-up actions aiming to strengthen road safety and subproject site safety.
2	Will the proposed AW require borrow and quarry sites (cuts, fills, quarries or extraction of material (stone, gravel, aggregate, sand)? YES		✓		Obtain the approval and stabilize and rehabilitate the site after use; Develop and implement Borrow and Quarry Management Plan. During construction, impacts and mitigation measures for the AW will follow the C-ESMP of ODX subproject and its follow-up actions aiming to strengthen road safety and subproject site safety.
3	Will the proposed AW impact on fish and other aquatic life in the river, terrestrial biodiversity? YES, but the impacts are not expected to be significant since the area is subject to major flooding every year and there are no critical aquatic resources located within the project area; there, significant adverse impacts on aquatic life and biodiversity is not expected during construction. Also, there are no critical habitats, wildlife corridors and wetlands as the project site located in urban area.			✓	However, the weir and dike works may disturb the natural flow, however, the design has been made to minimize the negative impacts. River work will require a diversion to allow the water flow. During construction, impacts and mitigation measures for the AW will follow the C-ESMP of ODX subproject and its follow-up actions aiming to strengthen road safety and subproject site safety. During operations, the subproject ESMP have identified measures to mitigate potential negative impacts of the subproject and they will be applied to the proposed AW. Key measures include (a) preparation and implementation of waste (solid and liquid) management plan in the rivers, (b) monitoring of the river bank profile upstream and downstream of the subproject facilities, and (c) ensure effective and safe operations of the small movable weir to local community downstream.
4	Will the proposed AW require the creation of material		✓		Obtain the approval of local authorities and stabilize and



No.	Environmental Impact	Impacts Significance			Mitigation Measures
		MA	MO	MI	
	<p>stockpiles and disposal of excavated materials? YES. The river improvement activities will involve excavation and proper disposal of excavated materials from the Nam Mao and Nam Kor Rivers. Good quality of dredged materials will be used for diking while those unsuitable materials will be disposed off at the designate sites. The disposal sites identified are located on private lands with no sensitive environmental and social resources and the final areas are not expected to have negative impacts on future land use of the areas. However, there will be more disposal sites that will be identified by the PMU.</p>				<p>rehabilitate the sites after use; Develop and implement Spoil/Unusable Excavated Disposal Plan. Impacts and Mitigation Measures for AW will follow the C-ESMP of ODX subproject and its follow-up actions aiming to strengthen road safety and subproject site safety.</p>
5	<p>Will the proposed AW alter surface water hydrology of waterways or streams? YES. The river improvement activities have been designed to increase water flow in Nam Mao and Nam Kor. This is the main objective of the subproject and its AW.</p>		✓		<p>However, the weir and dike works may disturb the natural flow, however, the design has been made to minimize the negative impacts. River work will require a diversion to allow the water flow. Mitigation measures during construction and operations identified in items 4 will be applied</p>



No.	Environmental Impact	Impacts Significance			Mitigation Measures
		MA	MO	MI	
6	<p>Will the proposed AW impact on water quality and possible water users?</p> <p>YES. Excavation or earth works will increase turbidity of water and possible disturbance of bottom sediment. Earth works/ excavation will be made during dry season when very low water existing with limit water use while river bank gardens may be affected in some areas.</p>		✓		<p>Make efforts to mitigate potential impacts on water quality and water users through consultation with local communities and provide compensation to those that may be affected adversely as agreed for the project. To mitigate impacts during operations, agreement will be developed with local communities to ensure that waste discharge into the rivers will be strictly prohibited and local communities will ensure that this agreement will be complied with.</p> <p>To mitigate impacts during construction, impacts and mitigation measures for the AW will follow the C-ESMP of ODX subproject and its follow-up actions aiming to strengthen road safety and subproject site safety.</p> <p>See item 4 above.</p>
7	<p>Will the proposed AW require the establishment of a camp for construction workers?</p> <p>YES. But it is expected that the current camp for construction lot 2 will be used to accommodate more workers, as needed.</p>		✓		<p>The C-ESMP for Lot 2 will be applied. If an expansion and/or new camp site is needed, the following factor will be considered:</p> <p>Consultation with DPWT and local community on the location of the worker camps. In principle, a worker camp should not be located within 500 meters of any sensitive receptors in the project area and/or at least 200 meters from any surface water course and not within 2 kilometers of a protected area.</p> <p>Develop and implement Labor Influx Management Plan which could cover Worker Camp Management Plan; More details are presented in Attachment 2: Impacts and Measures for AW and Guidance for Preparation of C-ESMP and Attachment 3: CoC on SEA/SH and VAC.</p>
8	<p>Will the proposed AW increase soil erosion?</p> <p>YES. In effective control and management of construction sites during construction as well as during wet season will increase soil erosion and</p>		✓		<p>Develop and implement Runoff/Erosion and Sedimentation Control Plan, Site Clearance and Restoration Management Plan, Borrow and Quarry Management Plan, Spoil/excavated Disposal Plan as parts of C-ESMP.</p> <p>Impacts and Mitigation Measures for</p>



No.	Environmental Impact	Impacts Significance			Mitigation Measures
		MA	MO	MI	
	sediment in the river due to runoff.				AW will follow the C-ESMP of ODX subproject and its follow-up actions aiming to strengthen road safety and subproject site safety.
9	<p>Will there be an impact on community health and safety?</p> <p>YES. As mentioned above under the Worker Camp, efforts will be made to mitigate potential impacts on staff and workers as well as on local communities on prevention of Covid19 pandemic.</p>		✓		<p>Develop and implement measures to manage impacts on Occupational and Community Health and Safety and Traffic Management and Road Safety; Install safety, warning and speed limited signs at all risk points and community areas. Regularly consultation with communities about the construction activities and schedule to be carried in the community area.</p> <p>Impacts and Mitigation Measures for AW will follow the C-ESMP of ODX subproject and its follow-up actions aiming to strengthen road safety and subproject site safety.</p>
10	<p>Will the proposed AW require the creation of temporary access or haul roads?</p> <p>YES. The proposed AW will not create the new access road but will involve surfacing of the embankment and may the access to the subproject activities including quarry and borrow pits will use the existing local access roads.</p>		✓		<ul style="list-style-type: none"> • Develop and implement Traffic Management Plan. • Regularly consultation with communities about the construction activities and schedule to be carried in the community area. • Impacts and Mitigation Measures for AW will follow the C-ESMP of ODX subproject and its follow-up actions aiming to strengthen road safety and subproject site safety.
11	<p>Will there be an impact on cultural heritage site?</p> <p>Yes. There are 32 local stupas located near the subproject area and more can be identified during the planning of the proposed AW.</p>			✓	<ul style="list-style-type: none"> • After consultation with local authorities and communities, the project design was revised to avoid the impact on these stupas by installing the walk path as a detour line across the local temple for connectivity. • Impacts and Mitigation Measures for AW will follow the C-ESMP of ODX subproject and its follow-up actions aiming to strengthen road safety and subproject site safety.
NE=Negligible, MI=Minor, MO=Moderate, MA=Major					



Table A2-1 (c) the Result of Ethnic Groups (EG) Screening

No.	Impact on Ethnic Groups	Impacts Significance			Mitigation Measures
		MA	MO	MI	
1	Are there ethnic minority groups present in the proposed AW of the ODX sub-project area? YES		✓		<p>The proposed AW will not require land acquisition and resettlement of private land and structures and will not involve more ethnic group, thus, preparation of any resettlement plan (RAP) and/or ethnic group engagement plan (EGEP) will not be required as the existing EGDP covers the village where the proposed AW will take place.</p> <p>Consultations with EG have been conducted throughout the subproject development, construction and operation. An EGEP in line with the EGEF for the DRM Project and the ODX subproject Lot 1 and Lot 2 activities have been prepared, approved by WB, and effectively implemented with community broad support established in the affected villages. The RAP and EGEP for the proposed AW have been included in the RAP/EGDP for the construction Lot 2 which were submitted to and cleared by the WB.</p> <p>The new EGEP will not be required as the existing EGDP covers the village where the proposed AW will take place.</p>
2	Do they maintain distinctive customs or economic activities? YES		✓		Same as item 1 above.
3	Will the proposed AW disrupt their community life? YES		✓		Same as item 1 above.
4	Will the proposed AW positively affect their health, education, social activity, livelihoods or security? YES.		✓		Same as item 1 above.
5	Will the proposed AW negatively affect their health, education, social activity, livelihoods or security? YES.		✓		Same as item 1 above.



No.	Impact on Ethnic Groups	Impacts Significance			Mitigation Measures
		MA	MO	MI	
6	Will there be loss of housing, land, crops, trees or access to resources owned, controlled or used by ethnic minority households? YES.		✓		Same as item 1 above.
NE=Negligible, MI=Minor, MO=Moderate, MA=Major					

Table A2-1 (d) The Result of Land Acquisition & Resettlement (LAR) Screening - Not Applicable as the AW will not require acquisition of private land.

No.	Social Impact	Impacts Significance			Mitigation Measures
		MA	MO	MI	
1	Is the site for land acquisition known? Is the ownership status and current usage of the land known? No, land acquisition for the proposed AW is not required				RAP is not required
2	Will there be loss of housing, agricultural plots, crops, trees, and fixed assets, businesses or enterprises and incomes and livelihoods? If involuntary resettlement impacts are expected? NO?				RAP is not required
3	Will any social or economic activities be affected by land use-related changes? NO?				RAP is not required
4	Will coordination between government agencies be required to deal with land acquisition? Are there sufficient skilled staffs in the Executing Agency for resettlement planning and implementation? Are training and capacity-building interventions required				RAP is not required



No.	Social Impact	Impacts Significance			Mitigation Measures
		MA	MO	MI	
	prior to resettlement planning and implementation? NO?				
5	Social issues from worker and labor influx. NO.				RAP is not required
NE=Negligible, MI=Minor, MO=Moderate, MA=Major					

A2.2. ECC Conditions issued by MONRE

Figure A2-1 below provides confirmation on the Environmental Compliance Certificate (ECC) issuance by Ministry of Natural Resources and Environment (MONRE) in July 2021 for ODX subproject approving the EIA report submitted, which remains valid throughout the project implementation. DPWT of ODX has established a Safeguard Monitoring Working Group (SMWG) to be responsible for monitoring of the ECC compliance in consultation with PMU of DOW and EDPD of PTI. Since the proposed AW is located within the Lot 2 area, and as per consultation with MONRE, it has been agreed that the following ECC conditions will also be applied for AW:

- Project Owner shall strictly comply with all the measures to mitigate the environmental and social impact as defined under the approved Environmental Impact Assessment Report (EIA) and the Environmental and Social Management and Monitoring Plan (ESMMP) and shall fully bear and financial responsible in full for all the impacts and mitigation measures including any remedies and compensations caused by the project in any cases that were not identified in the EIA Report including mistakes or adverse impacts of the Project caused by the Project Owner, the contractor, sub-contractor, employees, representatives, agents, experts or consultants or other persons authorized to perform on behalf of the Project Owner.
- Project Owner shall fully bear and financial responsible for all information and data provided in the approved EIA and ESMP Reports and provide all the assistance and facilitation to the Ministry of Natural Resources and Environment (MONRE) and line sectors at central and local levels in the monitoring of ESMMP implementation.
- Project Owner shall assure not to discharge pollutants to water sources, air and soil during the project implementation including general waste, hazardous waste and other chemical waste or nuisance (from the Project construction and operation) and shall control the pollution to be strictly compliance with the National Environmental Standard of Laos.
- Project Owner shall monitor the implementation of the environmental and social mitigation measures by themselves by complying with the conditions set in the Environmental and Social Management and Monitoring Plan. Project Owner shall submit the report to the relevance government agencies and the MONRE on quarterly, basis (3 months). In case of any occurrence of emergency events and violations that may cause material adverse effect on the environment and social and other unexpected impacts, the Project Owner shall immediately report and submit a written report within 24 hours including immediately provide corrective actions in a good time manner. Project Owner will receive a warning and/or penalty for not submitting the report as required.

- Project Owner shall provide monitoring budget to MONRE at central and local levels for monitoring of the ESMMP implementation.

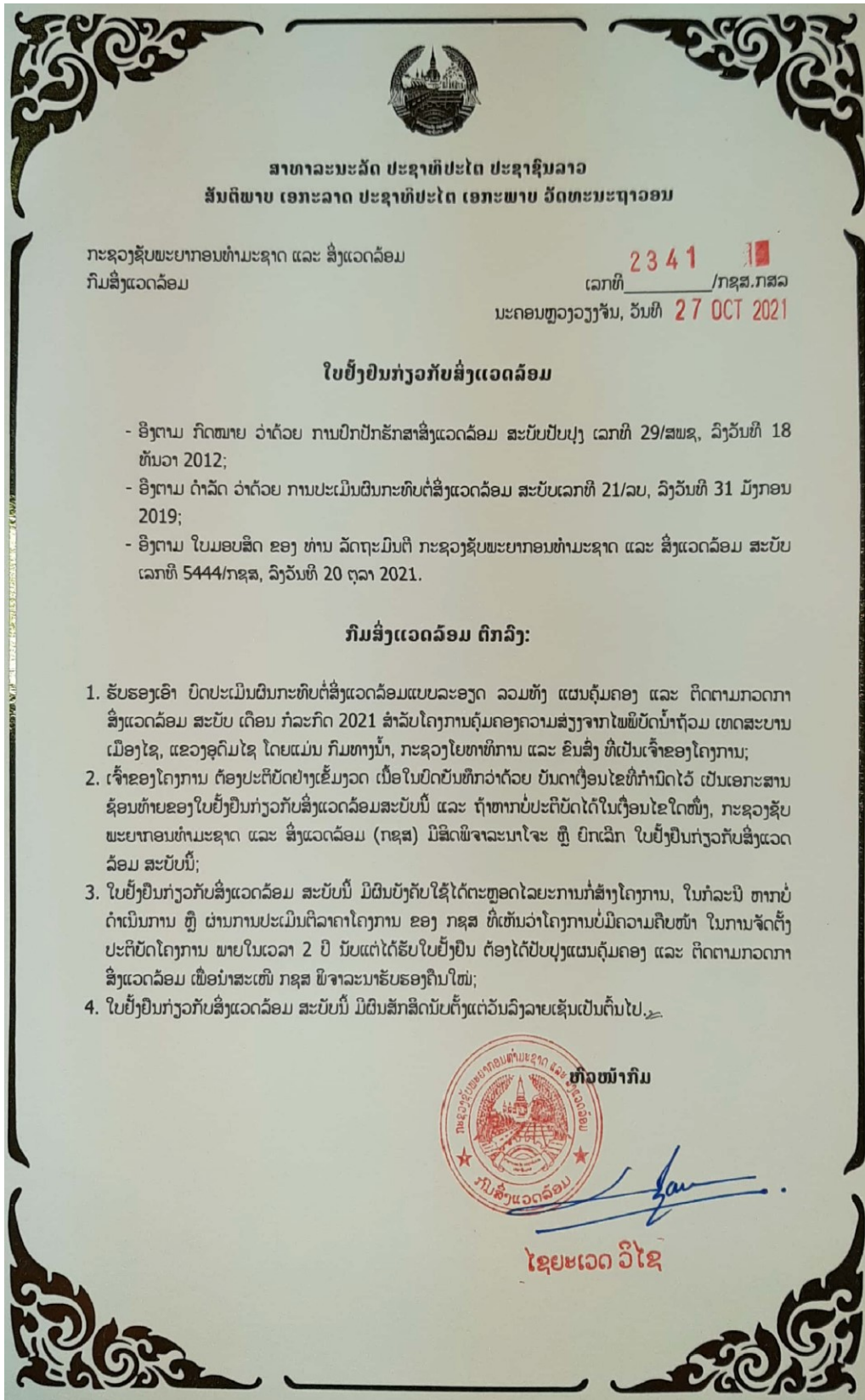


Figure A2-1 ECC issued by MONRE



A2.3. Impacts and Mitigation Measures for AW

The key issues and mitigation measures to be conducted during detailed design, preconstruction, and operations (Tables A2-1) which are responsible by PMU and/or PIU assisted by EDPD/PTI and DPWT; and those to be conducted during construction by contractor and to be included in the C-ESMP (Table A2-2).

Table A2-2 Key Issues and Mitigation Measures during Details Design, Preconstruction, and Operational Phases

#	Activities Causing Impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
	Detailed Design Phase				
1	Construction and operations of the proposed access road and river bank protection of Nam Kor and Nam Mao may affect on local businesses and livelihood activities and along the downstream area.	This event is considered low however effort has been made during the detailed design to minimize impacts from flood hazard and to deal with emergency cases. This includes a simple assessment to assess the risk and identify communities and important area that may be affected in case of emergency.	DPWT of ODX assisted by EDPD of PTI is responsible for the planning and implementation of the action plan while PMU of DOW will ensure that adequate budget is allocated for the preparation and implementation of the action plan.	Design reviewed and approved by PMU and WB	See Attachment 1
	Preconstruction Phase				
1	Works execution can increase dust, noise, vibration, and other impacts on local environment and local community	Prepare and implement specific plans that can reduce the negative impacts be applied to the proposed AW through the amendment of C-ESMP in compliance with Section A2-3 of this Attachment 2.	<ul style="list-style-type: none"> Contractor to prepare and implement the C-ESMP and its sub plans and submit to CSC/FE for review and approval CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/ DOW and DPWT 	See indicators under construction (Table A2-3) below	See Table A2-2 below and Section A2.3.
2	Physical displacement of residences and other physical assets may cause adverse impacts on local land user and/or local people, especially the vulnerable ethnic groups (VEG)	<ul style="list-style-type: none"> The AW will not require land acquisition and resettlement of private land and structures 	<ul style="list-style-type: none"> Not required 		
3	Relocation of public utilities	<ul style="list-style-type: none"> The AW will not affect public utilities 			



#	Activities Causing Impacts	Mitigation Measures	Responsible Entities	Monitoring Indicators	Remarks
	During Operations. DPWT of ODX is responsible for operations of project facilities. During project implementation, efforts will be made to ensure that DPWT of ODX will have adequate capacity to implement the mitigation measures designed to minimize potential impacts of the project during operations				
1	The improved infrastructure will reduce flooding and bank erosion and enhance local socio-economic conditions of Muang Xay. There is a possibility of increased income and more livelihood resilience due to lower risk to annual floods	Ensure capacity and resources to ensure effective operations and maintenance of the project infrastructure and effective engagement with local communities.	<ul style="list-style-type: none"> DPWT Local communities 	Positive impacts	
2	<i>Operations of the Access Road on the Nam Mao River and the Walk Path on the Levee Crest:</i> This may increase negative impacts on road safety and accidents.	<ul style="list-style-type: none"> Carefully consider these impacts during the planning and design of the investment to avoid/minimize the potential negative impacts such as safety fence or pole and street light. Conduct road safety awareness to local communities and road users. 	<ul style="list-style-type: none"> PMU/DOW and DPWT. 	Zero of accident	
3	<i>Operations of the river bank improvement, Channel Improvement and Protection on the Riverbed at the 2 Bridges.</i> This may affect the erosion and/or sedimentation pattern of the river bank upstream and downstream of the project sites.	<ul style="list-style-type: none"> Plan and implement an effective monitoring program for the riverbank erosion upstream and downstream of the project sites. The monitoring program should be able to track change of water flow as well as water level using a simple method and local observation. This should be a joint effort between DPWT and local community. 	<ul style="list-style-type: none"> PMU/DOW, PTI, and DPWT. A Safeguard Monitoring Working Group (SMWG) or task force will be established to assist DPWT ensure effective monitoring and reporting of contractor performance on the ground. DOW and DPWT will ensure that funding support for monitoring is timely and effectively made. 	This will be established by the SMWG	

Table A2-3 Key Issues and Mitigation Measures during Construction Phase (to be included as part of the C-ESMP)

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
Construction phase					
1	Establishment and operation of worker camps could increase waste generation, water pollution, and disturbance and other direct and indirect social impacts to local community	<ul style="list-style-type: none"> • Ensure that the sites for campsite are approved by the Project and local authority; Selection of the camp sites should be made through tripartite consultation including community, Contractor, and the subproject representative. • Ensure that basic camp facilities are provided including security, septic tanks, latrines, safe water supply, mosquito net, blanket, safe paths, fire prevention equipment, etc. • Ensure that (a) washing areas, demarcated and water from washing areas and kitchen is released in sumps, (b) septic tanks of appropriate design have been used for sewage treatment and outlets are released into sumps and must not create a pond of stagnant water, and (c) the latrines, septic tanks, and sumps are built at a safe distance from water body, stream, or dry streambed, and the sump bottom is above the groundwater level. • Details will be included in the C-ESMP under the Worker Camp Management Plan 	<ul style="list-style-type: none"> • Contractor prepares and implements plan to management worker camp as part of the C-ESMP to be reviewed and approved by CSC/FE • CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/ DOW and DPWT 	<ul style="list-style-type: none"> • Location of the work camp should be shown in the C-ESMP. • No complaints from local authorities and local residents due to location and activities of the worker camps. <p>*Safe and comfortable living of staff and workers</p>	The measures/plan will be implemented as part of C-ESMP.

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
		(WCMP) and shall be complied with the project ESMP especially Section 5.7.2.			
2	Hiring skilled workers from outside of the locality can create social conflicts with local peoples	<ul style="list-style-type: none"> Hiring of workers from the local communities as much as possible. 	<ul style="list-style-type: none"> Contractor prepares and implements plan on labor management as part of the C-ESMP to be reviewed and approved by CSC/FE CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/DOW and DPWT 	Number of local workers at the worksite.	The measures/plan will be implemented as part of the C-ESMP
3	Poor workers safety and hygienic conditions may cause accidents and illness of workers and/or create poor health and other social issues to local peoples	<ul style="list-style-type: none"> Provide protective clothing and equipment for workers especially those handling hazardous materials, (helmets, adequate footwear) for concrete works (long boots, gloves), for welders (protective screen, gloves dungaree), etc. 	<ul style="list-style-type: none"> Contractor prepares and implements plan on occupational and community health and safety as part of the C-ESMP to be reviewed and approved by CSC/FE CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/DOW and DPWT 	Safe working conditions	The measures/plan will be implemented as part of the C-ESMP
4	Water for staff and workers consumption and construction	<ul style="list-style-type: none"> Provide adequate and safe water for consumption at sites and work camp. 	<ul style="list-style-type: none"> Contractor prepares and implements plan on work yard/camp as part of the C- 	Water tanker and pump provided by the Contractor	The measures/plan will be implemented as part of the C-ESMP

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
			<p>ESMP to be reviewed and approved by CSC/FE</p> <ul style="list-style-type: none"> CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/DOW and DPWT 		
5	<p>Community health and safety:</p> <ul style="list-style-type: none"> Traffic, road safety and river access safety: Haul truck drivers and other staff driving to and from the Project sites may be exposed to traffic conditions, unsafe drivers, poor quality road conditions, pedestrians and other obstacles, etc. that may lead to accidents and injury; Noise and dust pose risks for impacts ranging from nuisance level to serious health impacts; Injury / death to local people, road user, 	<ul style="list-style-type: none"> Implement measures provided under Item #6, 11, 16 and 18 below; Issuance of warning/prohibition notification letter by Office of Xay District to the public to prohibit unauthorized persons to enter or access to construction site/area; Risk mapping and assessment: CSC, PIU and Contractor to carry out assessment to identify locations with high CHS risk (“hot spots”) along the length of the construction area and will come up with proposed improvement measures including: site barricade with site patrolling, guardsmen during day time, warning signs, access prohibition to waterway, flag man, etc. Installation and maintenance of site barricade and warning signs and guarding/patrolling: <ul style="list-style-type: none"> High risk sites: Barricades with flagmen/guardsmen in 4 critical spots (where 	<ul style="list-style-type: none"> Contractor prepares and implements plan on community health and safety as part of the C-ESMP to be reviewed and approved by CSC/FE CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/DOW and DPWT 	Zero accident/incident and loss of life	The measures/plan will be implemented as part of the C-ESMP

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
	<p>pedestrians or bicycle rider in settlements, project sites and between settlements along the hauling route for construction materials / disposal of construction wastes; As a result of the fatality incident of one 8-years boy drowning in the Nam Kor River (Lot 2 construction area) on 17 June 2023 around 13:00, the contractor together with CSC and PIU is ongoing improvement of safety measures to avoid and prevent future incident. The same safety measures will also be applied for the AW.</p> <ul style="list-style-type: none"> Potential for introduction or increased incidences of communicable and infectious diseases resulting from the influx 	<p>vehicles and local people used to frequently pass or get in to the river e.g for fishing and swimming). One guardsman is present for 24/7 for 1 spot and the other 3 spots for a period, 8am-10pm.</p> <ul style="list-style-type: none"> Low- to moderate risk sites: warning signs with vinyl tape installed along the worksite and the river with site patrolling at least 2-3 times/per day until 5pm by the contractor and by assistance from village authorities or village police after 5pm. Enhance role of SMWG: It is important to strengthen the role of the existing Safeguards Monitoring Working Group (SMWG) in engaging with local authorities and local communities and ensuring community health and safety. Conduct additional awareness raising with all 10 village heads and request them to announce on the local speaker system and local radio at least 1-2 times per week to request community and the public for ownership and good collaboration such as educating and taking care of their kids on safe driving, do not damage the projects sign board, warning signs and safety facilities and 			

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
	of construction workers into the region.	<p>do not enter to the construction sites (rivers) and etc.</p> <ul style="list-style-type: none"> • Conduct additional awareness raising with nearest schools and market; • Work and partnership with local authorities to conduct weekly announcement to the public via local/village speakers regarding safety risks, access prohibition, no fishing and swimming in the construction area. 			
6	<i>Extraction and transportation of construction and excavated materials (stone, sand, laterite, soil, etc.) will damage local resources and environment as well as increase local traffic and damage local road conditions</i>	<ul style="list-style-type: none"> • Restriction on work load on the vehicles and on movement of contractor’s vehicles on designation routes; deploy traffic man at the village to control the traffic as needed and ensure that the access tracks, which are prone to dust emissions and disturbance to local resident are managed by water spraying daily and the areas sensitive to noise and vibration are managed through enforcement of speed limit control. • After completion of construction work all the damaged roads / tracks will have to be restored by the contractor, as it is contractor’s obligations. • Ensure that surface run-off controls are installed and maintained to minimize erosion. 	<ul style="list-style-type: none"> • Contractor prepares and implements plan on construction waste management as part of the C-ESMP to be reviewed and approved by CSC/FE • CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/ DOW and DPWT 	<ul style="list-style-type: none"> • Proper management of the site and no complaints from local authorities and residents 	Also see the measures/plan will be implemented as part of the C-ESMP



#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
		<ul style="list-style-type: none"> Ensure that the natural resources use and/or extraction are legally permitted by GOL and that as part of the C-ESMP, a sub plan on transportation of construction materials and transportation route will be prepared. If new quarry sites are opened a rehabilitation plan should also be prepared. 			
7	<p><u>Sedimentation, runoff and erosion from construction areas</u>: The removal of vegetation and earthworks on the river banks and in-stream works will detach sand, silt, and clay which will be suspended in the water column for eventual deposition downstream.</p>	<ul style="list-style-type: none"> Prepare and implement Spoil/dredge Material Disposal Plan, Sedimentation and Erosion Control Plan, and Water Quality Management Plan as part of C-ESMP. Ensure that surface run-off and sedimentation control measures such as sedimentation ponds and silt fences are installed and maintained to minimize erosion. After completion of construction work all the damaged roads / tracks will have to be restored by the contractor, as it is contractor's obligations. 	<ul style="list-style-type: none"> Contractor prepares and implement sub-plans as part of the C-ESMP to be reviewed and approved by CSC/FE CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/DOW and DPWT 	<ul style="list-style-type: none"> Proper management of the site and no complaints from local authorities and residents 	The measures/plan will be implemented as part of the C-ESMP
8	Establishment and operation of construction materials and equipment stockyards and access roads would increase dust, noise, vibration, safety, and disturbance to local people	<ul style="list-style-type: none"> Ensure that the locations are far away from residential areas and take actions to mitigate dust, noise, vibration, water pollution, waste, etc. Implement measures indicated in related sub plans described in ECOP 	<ul style="list-style-type: none"> Contractor prepares and implements plan on waste management as part of the C-ESMP to be reviewed and approved by CSC/FE CSC/FE will regularly monitor safeguards 	Proper management of the site and no complaints from local authorities and residents	The measures/plan will be implemented as part of the ECOP

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
			compliance of contractor and report results to PMU/DOW and DPWT		
9	Disposal of waste generated from project sites and workers camp may increase health issues to local people and unclean environment	<ul style="list-style-type: none"> Recycle metallic, glass waste; bury organic waste in impervious pit covered with soil. Solid waste will be properly segregated and collected by private sector licensed by the provincial authority to be disposed at the government landfill. 	<ul style="list-style-type: none"> Contractor prepares and implements plan on waste management as part of the C-ESMP to be reviewed and approved by CSC/FE CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/DOW and DPWT 	<ul style="list-style-type: none"> No health issue occurred. Clean work sites and worker camp 	The measures/plan will be implemented as part of the C-ESMP
10	<i>Construction wastes, garbage and refuse</i>	<ul style="list-style-type: none"> Procedures for on-site management and off-site disposal need to be addressed in the C-ESMP. A source of fill (borrow) materials as well as spoil disposal area will need to be established in the area where the civil works will be implemented. It is expected that in area where excavation and diking will be conducted site-specific sub plan on the construction materials (quarry and borrow) and dredge material disposal plan should be prepared as part of the C-ESMP. A sub plan on construction waste management and/or recycles as well as a sub 	<ul style="list-style-type: none"> Contractor prepares and implements plan on traffic and transport management as part of the C-ESMP to be reviewed and approved by CSC/FE CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/DOW and DPWT 	<ul style="list-style-type: none"> No complaints from local residents regarding dust, noise, vibration, road safety, and the usage of the tracks/access roads 	The measures/plan will be implemented as part of the C-ESMP



#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
		plan for management of hazardous waste to be generated should also be prepared.			
11	Access tracks/ haulage routs (if needed)	<ul style="list-style-type: none"> The moving machinery should remain within the project boundary. Ensure that the access tracks, which are prone to dust emissions and disturbance to local resident, are managed by water spraying daily and the areas sensitive to noise and vibration are managed through enforcement of speed limit control. Training, routine maintenance, monitoring, and implementation of all aspects of the contractor's Emergency Preparedness and Response Plan are required to minimise the residual impacts to an acceptable level After completion of construction work all the damaged roads / tracks will be restored by the Contractor, as it is Contractor's obligations. Ensure that surface run-off controls are installed and maintained to minimize erosion. Restriction on movement of Contractor's vehicles on designation routes; deploy traffic man at the village to control the traffic as needed. 	<ul style="list-style-type: none"> Contractor prepares and implements plan on traffic and transport management as part of the C-ESMP to be reviewed and approved by CSC/FE CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/ DOW and DPWT 	No complaints from local residents regarding dust, noise, vibration, road safety, and the usage of the tracks/access roads	The measures/plan will be implemented as part of the C-ESMP
12	Interruption of water supply	<ul style="list-style-type: none"> Inform residents and provide water supply as needed. 	<ul style="list-style-type: none"> Contractor take action 	No complaint from residents	The measures/plan will be implemented

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
					as part of the C-ESMP
13	Social issues	<ul style="list-style-type: none"> • Ensure that conflicts with local authorities and local communities are avoided. • Ensure that focus group meetings are conducted with both men and women to identify any water related and other issues related to the subproject implementation. • To mitigate the potential social impacts during construction, Code of Conduct (COC) on Sexual Exploitation and Abuse (SEA), Gender-based Violence (GBV) or Violence Against Children (VAC) is provided in <u>Attachment 3</u>. 	<ul style="list-style-type: none"> • Contractor prepares and implements plan on labor management as part of the C-ESMP to be reviewed and approved by CSC/FE • CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/DOW and DPWT 	No social conflicts due to the subproject activities and/or workers.	The measures/plan will be implemented as part of the C-ESMP
14	Storage of hazardous material (including wastes)	<ul style="list-style-type: none"> • Provide hard compacted, impervious and bounded flooring to hazardous material storage areas; Label each container indicating what is stored within. Training in safe handling techniques, routine maintenance, monitoring, and implementation of all aspects of the contractor's Emergency Preparedness and Response Plan 	<ul style="list-style-type: none"> • Contractor prepares and implements plan on construction site management as part of the C-ESMP to be reviewed and approved by CSC/FE • CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/DOW and DPWT 	No health hazard and water contamination occurred.	The measures/plan will be implemented as part of the C-ESMP

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
15	Construction activities; handling of fuels, oil spill and lubricants	<ul style="list-style-type: none"> • Ensure that no contaminated effluent is released in to the environment. • Ensure that fuels, oils, and other hazardous substances handled and stored according to standard safety practices such as secondary containment. • Fuel tanks should be labeled and stored in impervious lining and dykes etc • Ensure that vehicle refueling to be planned on need basis to minimize travel and chance spills. • Ensure that operating vehicles are checked regularly for any fuel, oil, or battery fluid leakage. • Training, routine maintenance, monitoring, and implementation of all aspects of the contractor's Emergency Preparedness and Response Plan 	<ul style="list-style-type: none"> • Contractor prepares and implements plan on construction site management as part of the C-ESMP to be reviewed and approved by CSC/FE • CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/DOW and DPWT 	No oil spill observed	The measures/plan will be implemented as part of the C-ESMP
16	Disposal of unusable excavated materials from river improvement works	<ul style="list-style-type: none"> • Information on impacts on spoil disposal sites on environmental and social aspects, relevant measures and consultation with nearby household will be prepared by DOW/PMU with support from CSC/ISWS and advice from EDPD/PTI and provided for WB Task Team review prior to disposal. • Reuse excavated materials as much as possible. 	<ul style="list-style-type: none"> • Contractor prepares and implements spoil disposal plan as part of the C-ESMP to be reviewed and approved by CSC/FE • CSC/FE will regularly monitor safeguards compliance of contractor 	Minimum impacts on the environment including removal of tree and on future land use	The measures/plan will be implemented as part of the C-ESMP



#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
		<ul style="list-style-type: none">• Stockpile the excavated materials to non-agriculture and protected area and in a minimum area and away from storm water.• Consultation with local authorities and local people including nearby households will be conducted. Agreements with land owners were obtained and provided in the Lot 2 ESMP.• For disposal sites: the following areas should be avoided: mountainous or high slope areas prone to erosion, environmentally sensitive areas such as water sources, wetland, and sensitive forests.• Removal of tree should be avoid and minimize.• The surplus soil to be disposed in the private land as per the agreements with land owners shall be free of shrubs or clumps of shrubs with stems.• Quality of spoil to be disposed should be tested and proper measures provided to mitigate impacts from disposal.• The excavation will be carried during the dry season by using backhoe and will be directly placed in the dump trucks with a capacity vary from 15m³ to 20m³.	and report results to PMU/ DOW and DPWT		



#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
		<ul style="list-style-type: none">• Due to the short distance from the project site to the disposal sites, it is estimated that one dump truck will make 15-20 trips per day and the transportation will be not carried during peak hours (commuting times to work or school).• All dump trucks carrying out surplus soils will have to be fully covered while the drivers will be required to respect driving speed and avoid using horns in area sensitive to noise and vibration such as hospitals, schools, and temples.• The vehicle speed not to be exceeded from 30Km/h. Vehicles will be tuned regularly to minimize the smoke emissions.• Watering of disposal sites and/or transportation routes to minimize dust emissions.• Additional consultations with nearby households will be conducted by PMU and site specific impacts and mitigation measures will be submitted to at the WB Task Team before the disposal takes place.• In addition, the disposal site will be implemented and stabilized for a safe use and verified by the land owner before handover the site to the land owner.			

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
		<ul style="list-style-type: none"> DOW/PMU and CSC/FE will conduct regular compliance monitoring of disposal sites. The contractor is required to prepare a site closure report for each site with verified signature of the land owner and submit to DOW/PMU via CSC/FE 			
17	Loss of fertile soil and vegetation; impacts on natural vegetation and embankment erosion along the watercourse.	<ul style="list-style-type: none"> Remove surface soil of the location, stocked in a proper place and once the construction is finished, put the soil back on that place. The leftover spoil soil should be collected and kept aside for rehabilitation of the site at later stage of the work; re-vegetate the embankments with indigenous plant species 	<ul style="list-style-type: none"> Contractor prepares and implements plan for site clearance/restoration as part of the C-ESMP to be reviewed and approved by CSC/FE CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/DOW and DPWT 	Riverbanks stabilized and re-vegetated	
18	Noise, vibration, and air quality (mostly dust)	<ul style="list-style-type: none"> All truckloads of loose materials are covered during transportation. Water spraying or any other methods are used by the Contractor to maintain the works areas, adjacent areas, and roads, in a dustless condition, as well the vehicle speed not to be exceeded from 30Km/h. Vehicles will be tuned regularly to minimize the smoke emissions. Watering of active construction work areas and/or transportation routes to minimize dust emissions, regular and effective 	<ul style="list-style-type: none"> Contractor prepares and implements plan for environmental quality management as part of the C-ESMP to be reviewed and approved by CSC/FE CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/DOW and DPWT 	Excessive dust and noise generation controlled	The measures/plan will be implemented as part of the C-ESMP



#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
		<p>maintenance of equipment will mitigate emissions and noise;</p> <ul style="list-style-type: none"> Covering of construction materials, re-vegetation of disturbed areas immediately following construction also assists in reducing dust emissions; The use of noise barriers in sensitive areas and controlling of vehicle speed and hours of work are effective noise and vibration mitigation measures. Vehicles and equipment used to be fitted, as applicable, and with properly maintained silencers. Restriction on loudly playing radio/tape recorders etc. Effective management of construction activities, equipment, and contractor/workers/drivers. The C-ESMP, occupational and community health and safety plan, a sub plan to control emission of dust, air quality, noise, and vibration during construction and transportation of construction materials should be prepared. 			
19	Excavation of borrow areas	<ul style="list-style-type: none"> Excavate borrow soil up to maximum depth at average of 2m; with slope boundaries 	<ul style="list-style-type: none"> Contractor prepares and implements plan for quarry and borrow pit management plan as part 	Borrow area rehabilitated as per specification	The measures/plan will be implemented as part of the C-ESMP
20	Rehabilitation of borrow pits	<ul style="list-style-type: none"> Proper rehabilitation of borrow pits; Removal and storage of top 15 cm topsoil 			

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
		having organic materials and spreading it back during restoration of borrow area	<ul style="list-style-type: none"> of the C-ESMP to be reviewed and approved by CSC/FE CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/DOW and DPWT 		
21	Encountering archaeological sites during earth works	<ul style="list-style-type: none"> The project field supervisor (CSC or filed engineer) will halt the work at the site and inform to the regional team leader and Archaeological Department immediately. 	<ul style="list-style-type: none"> Contractor to follow “chance finds procedure” in ECOP CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/DOW and DPWT 	The report from the CSC/FE, community, and contractor	See “chance find procedures” in Section A2.3.
22	Aesthetic/ scenic quality	<ul style="list-style-type: none"> Carry out complete restoration of the construction sites. Remove all waste, debris, unused construction material, and spoil from the worksites. 	<ul style="list-style-type: none"> Contractor to follow all ESS requirements in ECOP CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/DOW and DPWT 	Cleanliness and tidiness of works sites and work camp	See all relevant plans in Section A2.3.
23	Excavation in Nam Mao and Nam Kor will increase turbidity in the river and/or increase river bank erosion.	<ul style="list-style-type: none"> Prepare and implement Spoil/dredge Material Disposal Plan, Sedimentation and 	<ul style="list-style-type: none"> Contractor prepares and implement sub-plans as part of the C-ESMP to be 	Proper management of the site and no complaints on water	The measures/plan will be implemented



#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
		<p>Erosion Control Plan, and Water Quality Management Plan as part of C-ESMP.</p> <ul style="list-style-type: none">• Ensure that surface run-off and sedimentation control measures such as sedimentation ponds and silt fences are installed and maintained to minimize erosion.• After completion of construction work all the damaged roads / tracks will have to be restored by the contractor, as it is contractor's obligations.	<p>reviewed and approved by CSC/FE</p> <ul style="list-style-type: none">• CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/DOW and DPWT	<p>uses (water turbidity) from local authorities and residents.</p>	<p>as part of the C-ESMP</p>
24	Possible safety risk due to UXO during construction	Include responsibility on UXO clearance in the bidding document and ensure that the contractor is aware of this application	<ul style="list-style-type: none">• PMU/DOW and DPWT	No accident due to UXO during construction	UXO risk is considered low.

A2.4. Implementation of “Chance Find Procedures”

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

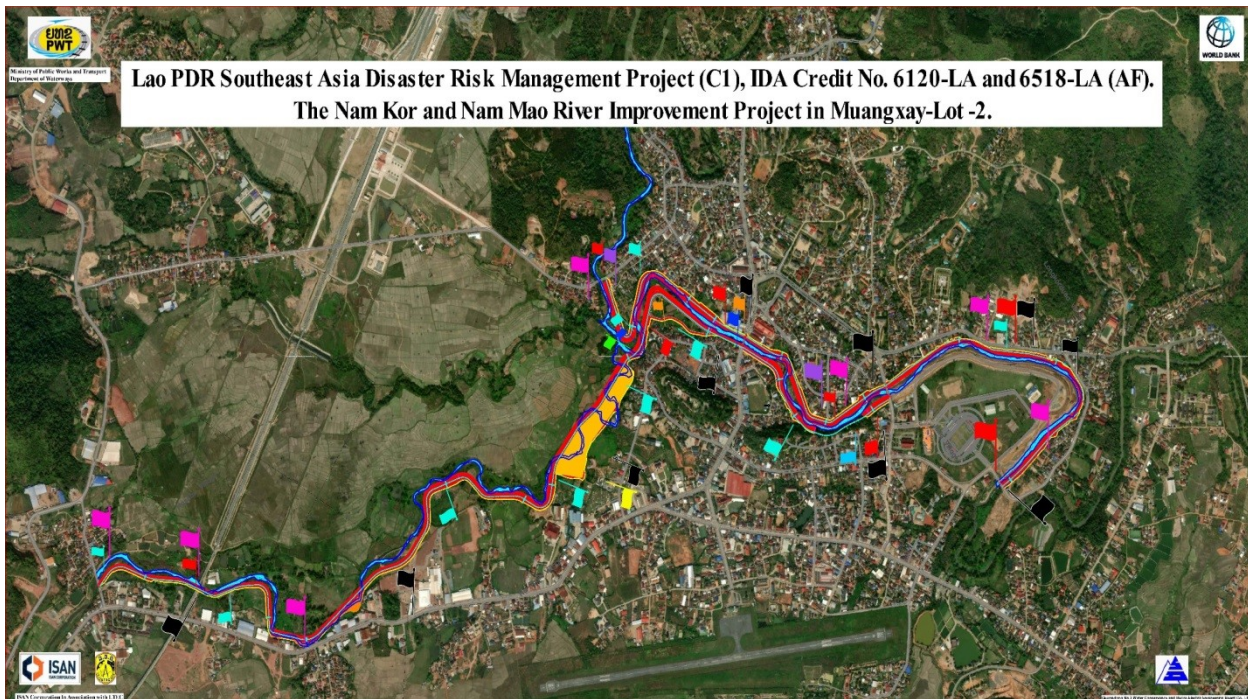
- Stop the construction activities in the area of the chance finds;
- Delineate the discovered site or area;
- Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities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

ATTACHMENT 3. SUMMARY OF SAFEGUARD MEASURES TO STRENGTHEN SAFETY DURING CONSTRUCTION

The objective of this Attachment is to update the mitigation measures in response to the fatality incident of one 8-years boy drowning in the Nam Kor River (Lot 2 construction area) on 17 June 2023 around 13:00. As a result of the fatality incident (Lot 2 construction area) on 17 June 2023, the Contractor together with CSC and PIU and in close consultation with the LA/LC prepared and implemented the following measures to strengthen safety and other measures focusing on improvement of safety measures to avoid and prevent future incident:

- ***Improved Community Relations/Consultation:*** The CSC has advised Contractor to carry out consultations with local communities before starting construction activities. The consultation topics and information that has been/to be shared for all villages will include but not limited to:
 - *GRM:* GRM system are in place including GRM for resettlement and compensation issues; GRM for workers and GRM for SEA/SH and VAC. GRM Boxes are installed. There are no any complaints reported during this reporting period.
 - *GRM Feedback Box.*
 - *Villages Map* with work location points, access roads, work activities and work schedule and working time within the village.
 - *CSC staff.* Inform village authorities on the list of all CSC staffs and engineer working for the ODX subproject.
 - *Contractor staff.* Provide a list of all Contractor staffs, engineer and workers working for this subproject.
 - *Construction schedule.* Inform local community and public regarding construction activities, schedule, working time, transportation trucks, time and frequency including community health and safety risks such as road traffic disturbance, road safety, dust and noise disturbance and accident;
 - *CHS risk.* Inform local community and public regarding community health and safety risks such as road traffic disturbance, road safety, dust and noise disturbance and accident including hazard and danger of entering to the construction site;
 - *CHS measures.* Inform local community and public regarding mitigation measures such as installation of project sign board, warning signs and safety facilities, speed control signs, watering the roads if needed and training for drivers and workers;
 - *Ownership of LA/LC.* Requested community and the public for ownership and good collaboration such as educating and taking care of their kids on safe driving, do not damage the projects sign board, warning signs and safety facilities and do not enter to the construction sites (rivers) and etc. Also, requested them to announce on the local speaker system and local radio at least 1-2 times per week to request community and the public for ownership and good collaboration such as educating and taking care of their kids on safe driving, do not damage the projects sign board, warning signs and safety facilities and do not enter to the construction sites (rivers) and etc.
- ***Conducted safety risk mapping and assessment:*** The CSC, PIU and Contractor carried out risk assessment and mapping to identify locations with high community health and safety (CHS) risk (“hot spots”) along the length of the construction area (See Figure A3-1 below) and the following actions are being carried out by Contractor:

- **High risk sites:** Barricades with flagmen/ guardsmen in 4 critical spots (where vehicles and local people used to frequently pass or get in to the river e.g for fishing and swimming). One guardsman is present for 24/7 for 1 spot and the other 3 spots for a period, 8am-10pm.
 - **Low- to moderate risk sites:** warning signs with vinyl tape installed along the worksite and the river with site patrolling at least 2-3 times/per day until 5pm by the contractor and by assistance from village authorities or village police after 5pm.
 - All workers working on site during the day time also act as site patrolling/guardsmen to not allow local people entering for swimming or fishing to the construction site.
 - Monitor effectiveness of the site safety measures to be monitored/reported by the CSC.
- **Improved the ongoing monitoring, improvement and maintenance of site barricade and warning signs:** By installed and improved more site barricades as per the level of risk assessed (such as multiple red-and-white vinyl tapes tied to a wooden post for lower-risk areas, and wooden fence/concrete barriers for high-risk areas), warning signs, access prohibition to construction sites/areas, flagman and etc. along the riverside construction areas.
 - **Conducted training of SMWG** on safeguards compliance monitoring of contractor's safeguards performance focusing on OHS and CHS.
 - **Weekly monitoring of access roads used for transportation of construction materials.** Watering the roads used for transportation of construction materials at least 3 times per day and more as needed. Wash or clean-up the road one time per week.
 - **All trucks at all the time should comply with District rules and regulations** issued on 27.12.2023 on transportation of construction materials: trucks should not too loading/overflow, cover the truck, travel within the speed limit. Penalties will be applied for non-compliance.
 - **Make Minutes of Agreement** with all households living adjacent to the Project area to record with photos of the existing conditions of their structures.
 - **Conduct safety awareness raising with households** living along the river/project site.
 - **Weekly compliance monitoring and patrolling** of Contractor's ES safeguards performance of all construction sites, worker camps, borrow areas and disposal sites including checking the GRM boxes.
 - **Timely reporting on incident/accident.**



Mitigation Measures

Legend	Number			Area or Point	Mitigation Measures
	Previous	Updated	Total		
	9	1	10	Construction area	- Fence (wooden pole and plastic rope) - Warning Signs
	7	-	7	Community fishing area	- Notice to villagers
	7	1	8	Community fishing / swimming access point	- Barricades - Flagman and Guardman (everyday from 8 a.m. to 10 p.m., 4 spots)
	2	-	2	Community fishing / swimming access point (Fatality incident)	- Fence (wooden pole and plastic rope) - Warning Signs - Gate and Flagman
	1	-	1	Community fishing / swimming access point	- Fence (wooden pole and plastic rope) - Warning Signs
	1	-	1	Community fishing / swimming access point	- Barricades - Flagman and Guardman (24/7, 1 spot)
	2	-	2	Erosion point	- Fence (concrete pole and plastic rope)
	1	-	1	Community sacred/holy area	-
	-	10	10	Construction access road	- Warning and speed control signs
	-	2	2	Road safety (1. Km 0+050 L1 and 2. Km 1+620 L2-1)	- We should be have protection measure safety such as safety fence, guard rail, guide post and warning sign - To be confirmed
Total	30	14	44		

Figure A3-1 Site Safety Map



Figure A3-2 Map of Borrow Pits and Transportation Route

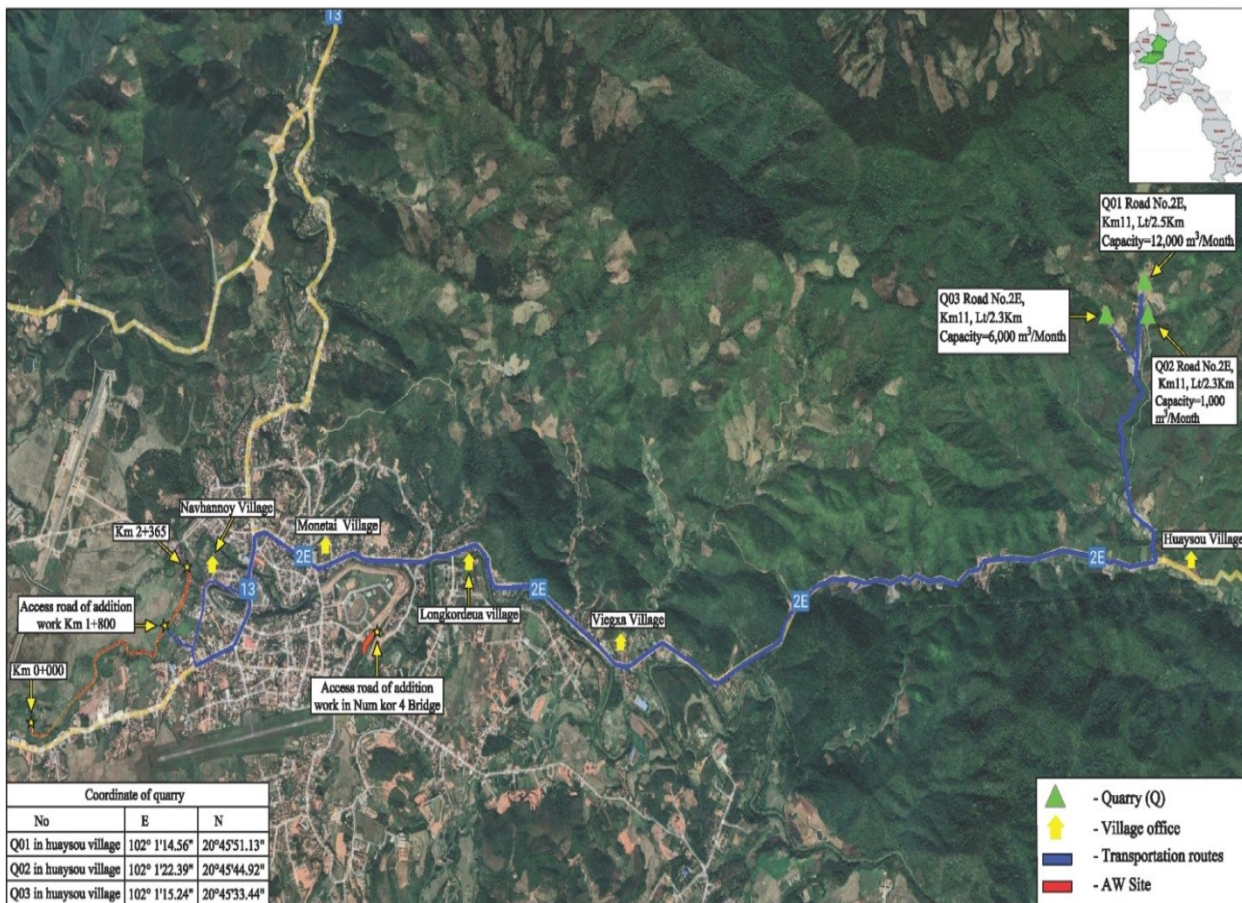


Figure A3-3 Map of Quarry Sites and Transportation Route (Note: The AW site downstream of Nam Kor Bridge #4 will not be included in the proposed AW)



Figure A3-4 Map of Land Filling Sites and Transportation Route



Figure A3-5 Map of Disposal Area and Transportation Route (Note: The AW site downstream of Nam Kor Bridge #4 will not be included in the proposed AW)



Figure A3-6 Map of Access Road (Note: The AW site downstream of Nam Kor Bridge #4 will not be included in the proposed AW)



Figure A3-7 Map of Villages within the AW Area (Note: The AW site downstream of Nam Kor Bridge #4 will not be included in the proposed AW)