Lao People's Democratic Republic

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

Project ID No: P170945

Component 1: Integrated Urban Flood Risk Management In in Pakxan City, Bolikhamxay Province (BKX Subproject)

Addendum to the Environmental and Social Management Plan (A-ESMP) for Additional Works (AW)

Volume II - Attachments

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DEPARTMENT OF WATERWAYS

MINISTRY OF PUBLIC WORKS AND TRANSPORT

LANXANG AVENUE, VIENTIANE, LAO PDR

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ACRONYMS AND ABBREVIATIONS

A-ESMP	Addendum to the Environmental and Social Management Plan for Additional Works
AF	Additional Financing
AW	Additional Works
BD/CD	Bidding Document/ Contract Document
BOQ	Bill of Quantities
C-ESMP	Contractor Environmental and Social Management Plan
COC	Code of Conduct on GBA and VAC
CSC/FE	Construction Supervision Consultant/CEGIS
DONRE	Department of Natural Resources and Environment
DOW	Department of Waterways
DPWT	Department of Public Works and Transport
DRM	Disaster Risk Management
ECC	Environmental Compliance Certificate
EDPD	Environmental Research and Disaster Prevention Division (of PTI)
CEGIS	Center for Environmental and Geographic Information Service consulting Bangladesh LTD. and its partner
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
IEE	Initial Environmental Examination
Lao PDR	Lao People’s Democratic Republic
LDRM-AF	Lao Disaster Risk Management Additional Financing
MPWT	Ministry of Public Works and Transport
O&M	Operation and Maintenance
PDR	People's Democratic Public
PIU	Project Implementation Unit
PMU	Project Management Unit
PTI	Public Works and Transport Institute
ARAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
SEA	Sexual Exploitation and Abuse
TOR	Terms of Reference
UXO	Unexploded Ordinance
VAC	Violence against children
VEG	Vulnerable Ethnic Groups

VAWG	Violence against Women and Girls
WB	World Bank
WCMP	Worker Camp Management Plan

ATTACHMENT 1: DETAILS ON THE PROPOSED ADDITIONAL WORKS (AW)

This Attachment presents the embankment condition and proposed design for the AW based on the stability analaysis conducted during the feasibility study as well as the Bill of Quantities (BOQ) for the proposed additional works (costing about $0.8M).

A1.1 Present Condition and Evaluation of Previous Embankment

As per site visit in Pakxan city along the Mekong River in 2021, 2022 and 2023, there is an ongoing crack on the existing riverside road as well as sliding of embankment because of the differential settlement as shown in figure.

Site Visit in January 2021	Site Visit in November 2023

Figure A1-1 Ongoing Crack on the Riverside Road

A1.2 Detail Design of Embankment and Bank Protection

The proposed AW for BKX subproject is located in Bolikhamxay Province on the Mekong River bank upstream and in connection with the subproject Section 2. Following the request from the Bolikhamxay government, more additional work items than work scope in TOR were proposed. However, additional detailed design has been performed for Embankment and Bank Protection along the Mekong River with its length 101 meters, walk path 404 meters, side ditch 79 meters, and 1 pipe culvert based on the negotiation with DPWT in Borikhamxay Province. More details are provided in Figure A1-2 and A1-2 and the BOQ is provided in Section A1-3.

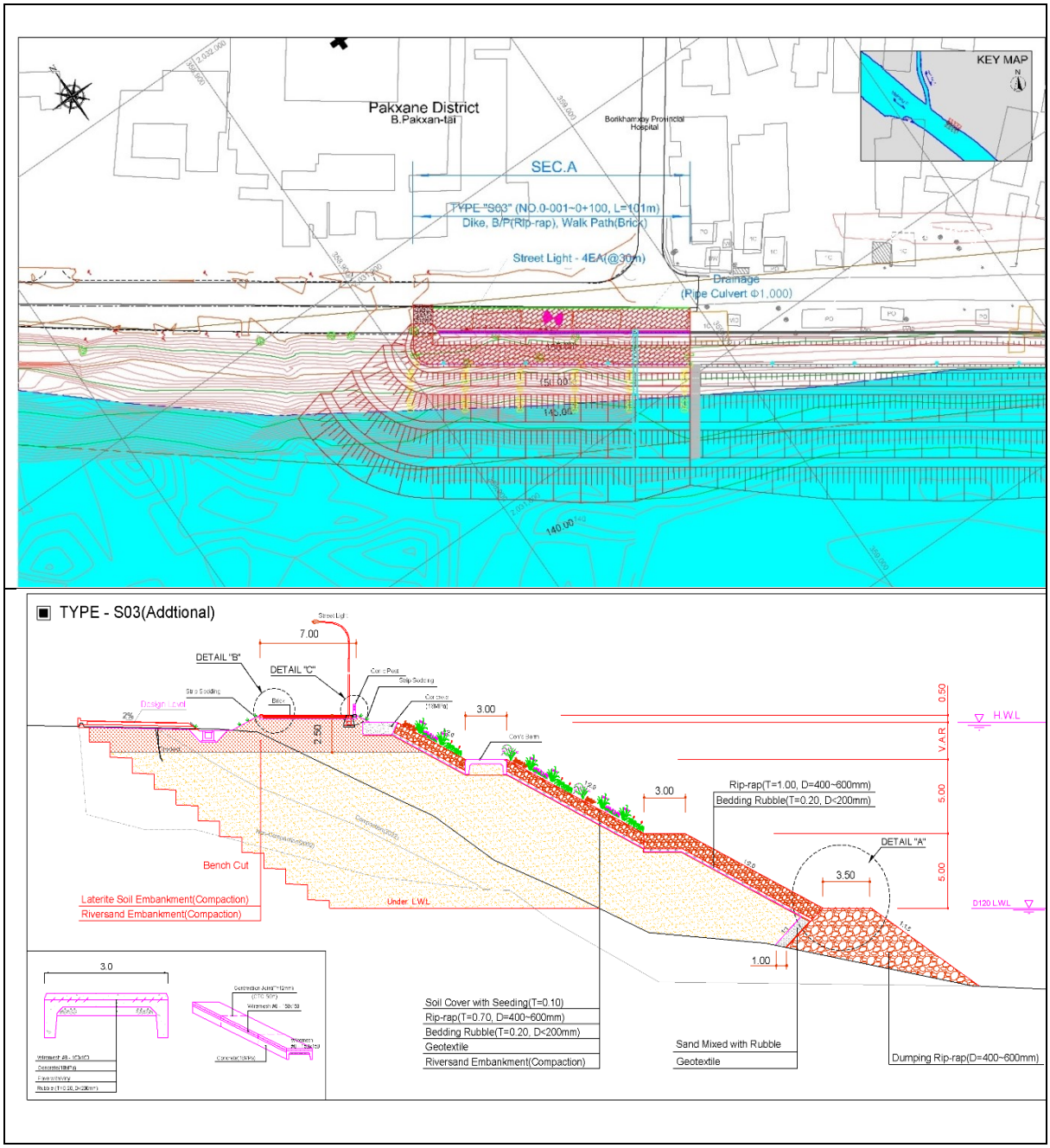

Figure A1-2 Plan Design and Typical Cross Section

A1-3 BOQ for Existing and Proposed AW

Table below presents Bill of Quantities (BOQ) on the proposed additional works (AW).

Table A1-1: Bill of Quantities (BOQ) for Existing and AW

Work Items	Unit	Quantities	
		Original Contract	Additional Works
1. Earthworks			
1) Embankment from Borrow Material (Compaction)	M^3	23,977	5,227
2) Embankment from the River Sand (Compaction)	M^3	173,310	39,420

Work Items	Unit	Quantities	
		Original Contract	Additional Works
3) Excavation	M^3	4,858	0
2. Riverbank Protection Works			
1) Geotextile	M^2	40,392	4,454
2) Toe Protection (Dumping Rip-rap)	M^3	51,380	14,671
3) Slope Protection (Bedding Rip-rap)	M^3	27,308	2,973
4) Soil Cover with Seeding	M^2	13,531	1,723
5) Stair	No.	6	0
3. Riverworks Appurtenances			
1) Levee Berm Pavement (Concrete 18 MPa)	M^3	720	196
2) Walk Path (Concrete Brick)	M^2	3,630	1,461
3) Concrete Post	No.	454	41

A1-4 Project Cost

Total Project Cost has been estimated at US$ 4.551 million including Direct Construction Cost, Contingencies, VAT and Income Tax as shown in Table below.

Table A1-2: Project Cost for Existing and AW

Classification	Cost (1,000 US$)	
	Original Contract	Additional Works
A. Competitive Components	**3,525**	**800**
1. General Provisions	372	87
2. Earthworks	1,496	433
3. Riverbank Protection Works	1,401	202
4. Structure	N/A	N/A
5. Riverworks Appurtenance	229	59
6. Drainage	-	19
7. Daywork	27	-
B. Non-competitive Components	**226**	**-**
Provisional Sum	50	-
Physical Contingencies (5% of Sub-total A)	176	-
Total	**3,751**	**800**

ATTACHMENT 2: IMPACTS AND MITIGATION MEASURES FOR THE PROPOSED AW

This Attachment presents 2 sections. Section A2-1 and Table A2-1 (a, b, c, and d) present results of the environment and social safeguard screening conducted for the proposed AW covering key criteria identified in the ESMF of the Project and the ESMP of the BKX subproject. Section A2-2 identifies the impacts and mitigation measures for the AW during preconstruction and operations phase (Table A2-2) and construction phase (Table A2-3) which are expected to be similar to those identified for the BKX subproject, except those related to ARAP and the UXO clearance which will not be required. Section A2.3. presents the steps to implement "Chance Find Procedures".

Department of Waterways (DOW) of the Ministry of Public Works and Transport (MPWT), as the Project Management Unit (PMU) is responsible for ensuring effective and timely implementation of the proposed mitigation measures that are identified in Table A2-2 for operation phase and Table A2-3 for construction phase. It is noted that the Department of Public Works and Transport (DPWT) of BKX (as the Project Implementation Unit or PIU, is responsible for planning and supervision of the subproject and the proposed AW on the ground including planning and implementation of the proposed migration measures during operations of the subproject facilities (Table A2-2) and the Public Works and Transport Institute (PIT) of MPWT provides technical support to DOW and capacity building of PIU, especially those related to consultation with local authorities and local communities. The DOW and PTI will also ensure that the subproject Environmental Compliance Certificate (ECC) for the proposed AW are covered under the ECC issued by the Provincial Office of Natural Resources and Environment (PONRE) for Site 2 and ensure that PONRE agreed to this condition before construction of the proposed AW.

During construction of the AW, the contractor and the construction supervision consultant/field engineer (CSC) of the proposed AW will be the same (i.e CEGIS) while (in mid 2024) the CSC also prepared an action plan aiming to strengthen effectiveness of safety and other key safeguard measures (see brief summary in Table 2-3 and Attachment 3), therefore this A-ESMP and the action plan included in Attachment 3 will be considered as an addendum to the current Contractor's Environmental and Social Management Plan (C-ESMP) to be signed between DOW and the contractor. The CSC will supervise and monitor the implementation of the proposed AW as part of the BKX subproject and submit the monitoring report to DOW (copy to PTI) per the agreed schedule.

A2.1. Safeguard Screening

Bolikhamxay (BKX) Province is located in the south of Vientiane in central Lao PDR. The province is a center for ecotourism activities with its two national protected areas and an extensive system of wetlands. The province borders with Xiengkouang province to the northwest, Vietnam to the east, Khammoune province to the south and Thailand to the west. The province also includes the Annamite range, stretching east to Vietnam, while to the west are the Mekong River and Thailand. The province consists of seven districts and covers an area of 14,863 km2,

Pakxan is a capital town of BKX province and connected to the south of Lao PDR by the national road number 13 south (NR13S). The Nam Xan River joins the Mekong River at Pakxan on the border with Thailand.

This section presents the results of safeguard screening for BKX subproject Additional Work (AW) based on the Environment and Social Management Framework (ESMF) safeguard screening form 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 BKX 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 identifies the criteria used for assessing the significance of potential negative impacts which was applied during the preparation of the BKX subproject submitted and cleared by WB. The results (Tables A2-1 (a), (b), (c), and (d) below) confirm that the proposed AW of the BKX subproject 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 (Note: NE=Negligible, MI=Minor, MO=Moderate, MA=Major)

No.	**Environmental Impact**	**Impacts Significance**			**Mitigation Measures**
		MA	**MO**	**MI**	
1	Will the proposed AW generate dust or noise? YES		✓		Spray water 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 BKX 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 BKX subproject and its follow-up actions aiming to strengthen road safety and

No.	Environmental Impact	Impacts Significance			Mitigation Measures
		MA	MO	MI	
					subproject site safety.
3	Will the proposed AW impact on fish and other aquatic life in the river, terrestrial biodiversity? YES, but the impact is not expected to be significant since the area is located in urban area and there are no critical aquatic habitats, wildlife corridors and wetlands located within the project area; therefore, significant adverse impacts on aquatic life and biodiversity is not expected during construction.			✓	However, the subproject activities may disturb the natural flow. The construction of toe will be carried out during the dry season and at the low water level. During construction, impacts and mitigation measures for the AW will follow the C-ESMP of BKX 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, and (b) monitoring of the river bank profile upstream and downstream of the subproject facilities.
4	Will the proposed AW require the creation of material stockpiles and disposal of excavated materials? YES. The riverbank protection activities will involve excavation and proper disposal of excavated materials from the Mekong River. The disposal site identified is located in the private land (the same site used for the existing contract) with no sensitive environmental and social resources and does not expect to have impacts on future land use of the areas.			✓	Obtain the approval of local authorities and stabilize and rehabilitate the sites after use; Develop and implement Spoil/Unusable Excavated Disposal Plan as per During construction, impacts and mitigation measures for the AW will follow the C-ESMP of BKX subproject and its follow-up actions aiming to strengthen road safety and subproject site safety.
5	Will the proposed AW alter surface water hydrology of waterways or streams? Yes.		✓		The embankment and bank protection will result in moderate disturbance of the natural flow; however, the design has been made to minimize the negative impacts. The construction of toe will be carried out during the dry season and at the low water level. Mitigation measures during

No.	Environmental Impact	Impacts Significance			Mitigation Measures
		MA	MO	MI	
					construction and operations identified in items 4 will be applied
6	Will the proposed AW impact on water quality and possible water users (Mekong River)? YES. Excavation or earth works will increase turbidity of water and possible disturbance of bottom sediment. Earth works/ excavation and construction of toe will be carried out during the dry season and at the low water level.			✓	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. To mitigate impacts during construction, impacts and mitigation measures for the AW will follow the C-ESMP of BKX subproject and its follow-up actions aiming to strengthen road safety and subproject site safety. See item 4 above.
7	Will the proposed AW require the establishment of a camp for construction workers? No. But the existing camp at Site 1 will be continued until the end of the contract closing and the risk and impacts will be moderate.		✓		The existing camp that has been established for the BXK subproject will be used. If an expansion and/or new camp site is needed, the following factor will be considered: • Consultation with DPWT and local community on the location of the worker camps. In principle, a worker camp should not be located within 100 meters of any sensitive receptors in the project area and/or at least 100 meters from any surface water course and not within 2 kilometers of a protected area. • Develop and implement Labor Influx Management Plan which could cover Worker Camp Management Plan as per guidance provided in Attachment 2: Impacts and Measures for AW and Guidance for Preparation of C-ESMP and Attachment 3: CoC on SEA/SH and VAC.

No.	Environmental Impact	Impacts Significance			Mitigation Measures
		MA	MO	MI	
8	Will the proposed AW increase soil erosion? YES. In effective control and management of construction sites, borrow pits, quarries, spoil disposal site during construction as well as during wet season could increase soil erosion and sediment in the river due to runoff.		✓		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 and its amendment as needed. Impacts and Mitigation Measures for AW will follow the C-ESMP of BKX subproject and its follow-up actions aiming to strengthen road safety and subproject site safety.
9	Will there be an impact on community health and safety? 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 as well as on prevention of accidents within and/or nearby the subproject sites.			✓	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. Impacts and Mitigation Measures for AW will follow the C-ESMP of BKX subproject and its follow-up actions aiming to strengthen road safety and subproject site safety.
10	Will the proposed AW require the creation of temporary access or haul roads? No. The proposed AW will not create the new access road, but the access to project activities including quarry and borrow pits will use the existing local access roads. The moderate impacts and mitigations are for existing roads and can be maintained.		✓		• 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 BKX subproject and its follow-up actions aiming to strengthen road safety and subproject site safety
11	Will there be an impact on cultural heritage site for the proposed AW? Yes, but the temple will be the same as that for the BXX			✓	There is one temple with few local stupas located about 250m to the project site. During the consultation with local communities, the project was recommended to conduct traditional ceremony asking

No.	Environmental Impact	Impacts Significance			Mitigation Measures
		MA	MO	MI	
	subproject				permission from the land and water spiritual before starting construction activities and working on the big Buddha day is not allowed. Impacts and Mitigation Measures for AW will follow the C-ESMP of BKX subproject and its follow-up actions aiming to strengthen road safety and subproject site safety.
12	Social issues from worker and labor influx. Yes.		✓		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 ESMP and C-ESMP of the BKX subproject.

Table A2-1 (c) The Result of Ethnic Groups (EG) Screening – Not Applicable as neither Hmong nor Khmu ethnic groups expect to be affected by this project (Note: NE=Negligible, MI=Minor, MO=Moderate, MA=Major)

No.	Impact on Ethnic Groups	Impacts Significance			Mitigation Measures
		MA	MO	MI	
1	Are there ethnic minority groups present in the proposed AW sub-project area? No.				The proposed AW project will not involve the acquisition of private land or the resettlement of any structures. It will also not affect any vulnerable ethnic groups, as there will be no direct adverse impacts or disruptions to the local community. Since no villages or households are situated along or near the riverbank where the work is planned, the preparation of an Abbreviated Resettlement Action Plan (ARAP) and an Ethnic Group Development Plan (EGDP) will not be necessary.
2	Do they maintain distinctive customs or economic activities? No.				EGDP is not required
3	Will the proposed AW disrupt their community life? No, since the AW will not disrupt the community life since no villages or households are located along or nearby the riverbank where the				EGDP is not required

No.	Impact on Ethnic Groups	Impacts Significance			Mitigation Measures
		MA	MO	MI	
	propose work will be undertaken.				
4	Will the proposed AW positively affect their health, education, social activity, livelihoods or security? No.				EGDP is not required
5	Will the proposed AW negatively affect their health, education, social activity, livelihoods or security? No.				EGDP is not required
6	Will there be loss of housing, land, crops, trees or access to resources owned, controlled or used by ethnic minority households? No.				EGDP is not required

Table A2-1 (d) the Result of Land Acquisition & Resettlement (LAR) Screening – Not Applicable as the AW will not require acquisition of private land (Note: NE=Negligible, MI=Minor, MO=Moderate, MA=Major)

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.				The proposed AW project will not involve the acquisition of private land or the resettlement of any structures. It will also not affect any vulnerable ethnic groups, as there will be no direct adverse impacts or disruptions to the local community. Since no villages or households are situated along or near the riverbank where the work is planned, the preparation of an Abbreviated Resettlement Action Plan (ARAP) and an Ethnic Group Development Plan (EGDP) will not be necessary.
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				RAP is not required

No.	Social Impact	Impacts Significance			Mitigation Measures
		MA	MO	MI	
	activities be affected by land use-related changes? No.				
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? No. Are training and capacity-building interventions required prior to resettlement planning and implementation? No				RAP is not required

A2.2. Impacts and mitigation measures for AW

The key issues and mitigation measures to be conducted during detailed design, preconstruction, and operations of the proposed AW will be similar to that of the existing BXK subproject (Tables A2-2), however, with no action related to ARAP and UXO clearance. Implementation of these measures are responsible by PMU and/or PIU assisted by EDPD/PTI and DPWT while those to be conducted during construction by contractor and to be included in the C-ESMP (Table A2-3) will also include the action plan to improve safety and safeguard measures as recently proposed by the CSC and it is provided in Attachment 3.

Table A2-2 Key Issues and Mitigation Measures during Details Design, Preconstruction, and Operational Phases of the BKX subproject including the proposed AW.					
#	**Activities Causing Impacts**	**Mitigation Measures**	**Responsible Entities**	**Monitoring Indicators**	**Remarks**
	Preconstruction Phase				
1	Works execution during site preparation 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 through the implementation of the existing C-ESMP and its amendment to ensure effective implementation of safeguard requirements identified in Table A2-3 below) including signing of the social code of conduct (SCOC) by the contractor staff and workers.	• 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	To be applied to the AW
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)	The AW will not require land acquisition and resettlement of private land and structures and no involvement of any vulnerable ethnic group, thus preparation of an EGDP will not be required	• Not required	•	
3	Relocation of public utilities	• The AW will not affect public ultilities			
	During Operations. DPWT and PONRE of BKX is responsible for operations of the subproject facilities. At present, PIU assisted by PIT and DOW have initiated the planning and implementation of the proposed mitigation measures while additional efforts will be made to ensure that DPWT of BKX will have adequate capacity to implement the mitigation measures designed to minimize potential impacts of the subproject during operations				

Table A2-2 Key Issues and Mitigation Measures during Details Design, Preconstruction, and Operational Phases of the BKX subproject including the proposed AW.					
#	**Activities Causing Impacts**	**Mitigation Measures**	**Responsible Entities**	**Monitoring Indicators**	**Remarks**
1	The improved infrastructure will reduce bank erosion and enhance local socio-economic conditions of Pakxan District. 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.	• DPWT • Local communities	Positive impacts	

2	Operations of the river bank improvement and river bank protection works may create unexpected impacts (erosion and/or deposition) in the upstream and/or downstream of the subproject facilities and may also create safety risks to the small fishing boats and/or other water users in the Mekong River	• Engaging active participation of local authorities and local communities (LA/LC) during the design, implementation and monitoring of the proposed mitigation measures identified below as agreed with the LA/LC. Planning and design of these efforts will be made through extensive consultation with the LA/LC. • To ensure safety of other water uses in the Mekong River, install adequate number of warning signs (visible day and night) around the proposed subproject facilities (all sites). • Need effective management of the river bank. Garbage from small shops and restaurants and/or tourists along the improved river bank sections will need a practical community waste management. *Efforts will be made to engage local authorities and communities (LA/LC) to prevent solid wastes and wastewater into the river.* (Moving towards Green, Clean, and Beautiful (GCB) for Bolikhamxay) • Develop and implement a program for riverbank monitoring upstream and downstream of the proposed site for 3-5 years (PONRE or local community can help identify and collect baseline data (every 50 m for 1 km upstream and 2 km downstream).	• DPWT and PONRE to ensure effective management of river bank (Moving towards GCB for Bolikhamxay) and riverbank monitoring upstream and downstream of the project site	GCB for Bolikhamxay and riverbank monitoring upstream and downstream every 50 m for 1 km upstream and 2 km downstream for 3-5 years	Close coordination with local communities and the results and activities of Component 1.2 with active involvement of women and/or local mass organizations. This will also be applied to the proposed AW of the BKX subproject

Table A2-3 Key Issues and Mitigation Measures during Construction Phase (to be included in the amendment 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	• 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 have been included in the C-ESMP under the Worker Camp Management Plan	• 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	• 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. *Safe and comfortable living of staff and workers	The measures/plan are being implemented as part of C-ESMP, including those related to site/road safety and other key impacts recently proposed by the CSC to improve effectiveness of safety and other safeguard measures being proposed by the CSC for the BKX subproject (see Attachment 3 of this A-ESMP). The measures will also be applied to the proposed AW of the BKX subproject.

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
		(WCMP) and it is being monitored by the CSC.			
2	Hiring additional skilled workers from outside of the locality can create social conflicts with local peoples	• Hiring of workers from the local communities as much as possible.	• 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.	See remarks in Item 1 above
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	• 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.	• 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	See remarks in Item 1 above
4	Water for staff and workers consumption and construction	• Provide adequate and safe water for consumption at sites and work camp.	• Contractor prepares and implements plan on work yard/camp as part of the	Water tanker and pump provided by the Contractor	See remarks in Item 1 above

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
			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		
5	Community health and safety: • Traffic, road safety and river access safety. Haul truck drivers and other staff driving to and from the subproject sites may be exposed to traffic conditions, unsafe drivers, poor quality road conditions, pedestrians and other obstacles, etc. that may lead to accidents and injury; • Noise and dust pose risks for impacts ranging from nuisance level to serious health impacts; • Traffic and road safety risks, Injury / death to	• Implement measures provided under Item #6, 11, 16 and 18 below; • Issuance of warning/prohibition notification letter by the PIU of BKX subproject to prohibit unauthorized persons to enter or access to the subproject construction site/area; • Risk mapping and assessment: CSC, PIU and Contractor carry out an assessment to identify locations with high CHS risk ("hot spots") along the length of the proposed construction area and improvement measures including installation of warning signs (visible day and night) in specific areas/locations, appropriate site barricade with site patrolling, guardsmen, and/or flag man (as needed), etc. • **Enhance role of SMWG:** It is important to strengthen the role of the existing Safeguards Monitoring Working Group (SMWG) in engaging with local authorities	• 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 and/or incident and loss of life	See remarks in Item 1 above

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
	local people, road users, pedestrians or bicycle riders in and/or nearby the subproject sites and along the hauling route for construction materials / disposal of construction wastes plied for the AW. • Potential for introduction or increased incidences of communicable and infectious diseases resulting from the influx of construction workers into the region.	and local communities, and school teachers/head master and ensuring community health and safety during construction and operations phases. If needed, conduct additional awareness raising with all the key villages likely to be affected by the proposed subproject, especially the nearest schools and market. Special attention and effort will be paid to prevent outside people and children from entering, playing around and swimming along the river and river bank.			
6	*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*	• 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.	• 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	• Proper management of the site and no complaints from local authorities and residents	See remarks in Item 1 above

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
		• 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. • 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.	and report results to PMU/ DOW and DPWT		
7	*Sedimentation, runoff and erosion from construction areas:* 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.	• 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.	• 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	• Proper management of the site and no complaints from local authorities and residents	See remarks in Item 1 above

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
8	Establishment and operation of construction materials and equipment stockyards and access roads would increase dust, noise, vibration, safety, and disturbance to local people	• 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	• 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	Proper management of the site and no complaints from local authorities and residents	See remarks in Item 1 above The measures/plan will be implemented as part of the C-ESMP
9	Disposal of waste generated from project sites and workers camp may increase health issues to local people and unclean environment	• Recycle metallic, glass waste; burry 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.	• 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	• No health issue occurred. • Clean work sites and worker camp	
10	*Construction wastes, garbage and refuse*	• 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.	• Contractor prepares and implements plan on traffic and transport management as part of the C-ESMP to be reviewed and approved by CSC/FE	• No complaints from local residents regarding dust, noise, vibration, road safety, and the usage of the	

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
		• 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 plan for management of hazardous waste to be generated should also be prepared.	• CSC/FE will regularly monitor safeguards compliance of contractor and report results to PMU/ DOW and DPWT	tracks/access roads	
11	Access tracks/ haulage routs (if needed)	• 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	• 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	See remarks in Item 1 above

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
		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.			
12	Interruption of water supply	• Inform residents and provide water supply as needed.	• Contractor take action	No complaint from residents	See remarks in Item 1 above
13	Social issues	• 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 ESMP and CESMP of the BKX subproject.	• 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.	See remarks in Item 1 above
14	Storage of hazardous material (including wastes)	• 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	• Contractor prepares and implements plan on construction site management as part of the	No health hazard and water contamination occurred.	See remarks in Item 1 above

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
		maintenance, monitoring, and implementation of all aspects of the contractor's Emergency Preparedness and Response Plan	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		
15	Construction activities; handling of fuels, oil spell and lubricants	• 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	• 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	See remarks in Item 1 above

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
16	Disposal of unusable excavated materials from river improvement works .	• 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 and advice from EDPD/PTI and provided for WB Task Team review prior to disposal. • Reuse excavated materials as much as possible. • 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 safeguard monitoring report of the BKX subproject. • 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 avoided and minimized. • The surplus soil to be disposed in the private land as per the agreements with land owners	• 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 and report results to PMU/ DOW and DPWT	Minimum impacts on the environment including removal of tree and on future land use	See remarks in Item 1 above

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
		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 15m^3 to 20m^3. • Due to the short distance from the project site to the disposal sites, it is estimated that one dump truck will make 10-15 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.			

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
		• 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. • 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.	• 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	• 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	

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
18	Noise, vibration, and air quality (mostly dust)	• 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 maintenance of equipment will mitigate emissions and noise; • 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.	• 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	See remarks in Item 1 above

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
		• 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	• Excavate borrow soil up to maximum depth at average of 2m; with slope boundaries	• Contractor prepares and implements plan for quarry and borrow pit management plan 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	Borrow area rehabilitated as per specification	See remarks in Item 1 above
20	Rehabilitation of borrow pits	• Proper rehabilitation of borrow pits; Removal and storage of top 15 cm topsoil having organic materials and spreading it back during restoration of borrow area			
21	Encountering archaeological sites during earth works	• 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.	• 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 of the CESMP of the BKX subproject.

#	Activities causing impacts	Mitigation Measures	Action Plan and Responsible Entities	Monitoring Indicators	Remarks
22	Aesthetic/ scenic quality	• Carry out complete restoration of the construction sites. • Remove all waste, debris, unused construction material, and spoil from the worksites.	• 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 of the CESMP of BKX subproject.
23	Excavation of sediment and /or sand in the Mekong River at and near the proposed construction sites (Sections 1, 2) will increase turbidity in the river and/or increase river bank erosion.	• 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.	• 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	Proper management of the site and no complaints on water uses (water turbidity) from local authorities and residents.	See remarks in Item 1 above
24	Possible safety risk due to UXO during construction	• A UXO risk technical survey was conducted for the construction sites of the Section 1 and Section 2 of the BKX subproject and no UXO and any explosive materials found. For the proposed AW, no UXO technical survey will be conducted.	• PMU/DOW and DPWT	No accident due to UXO during construction	

A2.3. 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: SAFEGUARD MEASURES TO STRENGTHEN SAFETY DURING CONSTRUCTION

In early 2024, to address the concerns observed in 2023 on safety aspect of the BKX subproject, the CSC/CEGIS prepared a plan (Plan) to strengthen effectiveness of safety aspect on land (road safety) and in the Mekong River and this Plan will be included as an addendum to the C-ESMP and also applied to the proposed AW. Additional training on safeguard will also take this into account.

Box A3-1 highlighted key requirements to improve site safety while Figures A3-1, A3-2 present locations of warning signs (visible day and night) along the transportation routes. Figure 3-3 presents locations of the subproject boundary and warning signs visible day and nights to be installed in the Mekong River around the AW.

Box A3-1: Key requirements for traffic and transportation plan (as identified in the current C-ESMP)

The key requirements are as follows:

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

For construction that interference with a carriageway or footway, the Contractor will inform the local authorities, responsible agencies, and local residents before commencing the work and proposed measures to minimize the safety risk and inconvenience to the public. All necessary consent and licenses must be obtained in advance. The safety of the public will be ensured. In the case of temporary footways, reasonable access shall be provided for people in accordance with the following requirements:

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

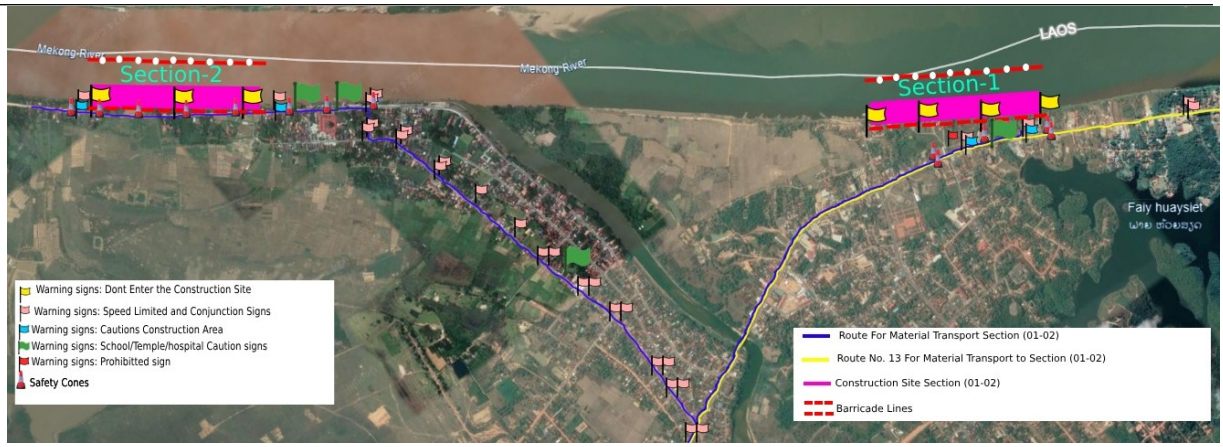

Figure A3-1 Site safety map in the Mekong Riverbank Construction Site 1 and Site 2

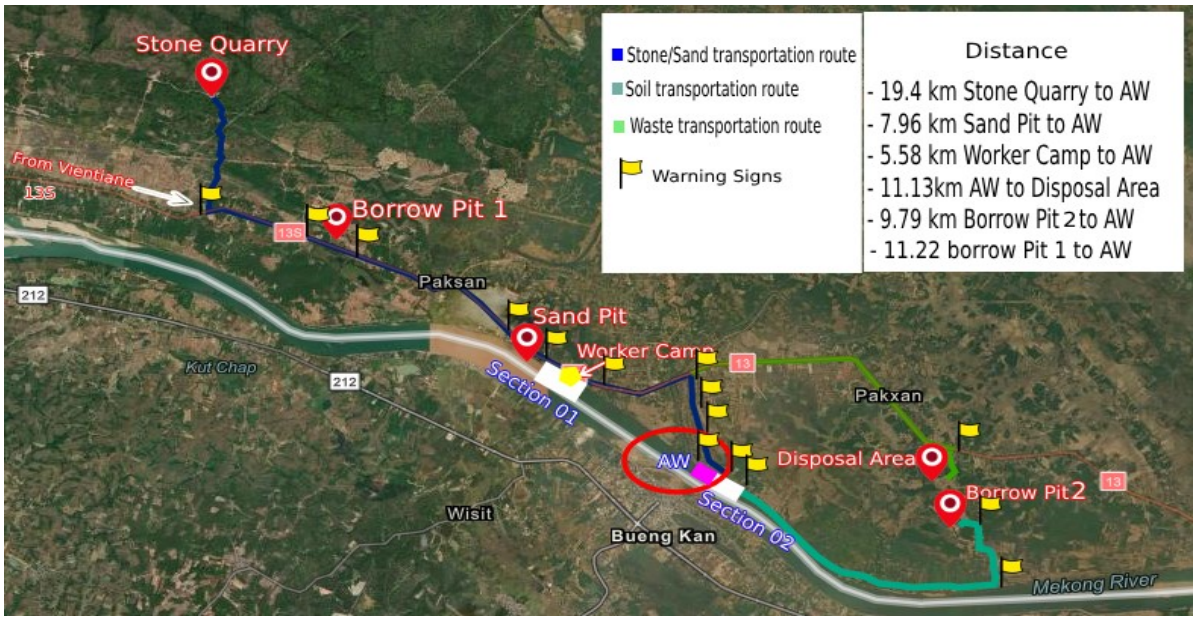

Figure A3-2 Site safety map for transportation from QP to Site 1-2 and AW

Figure 3-3 showing locations/makers/warning signs in the Mekong River around the subproject sites, including the AW