Environmental Assessment and Review Framework

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Philippines: Bataan-Cavite Interlink Bridge Project

Prepared by Department of Public Works and Highways for the Asian Development Bank (ADB).

CURRENCY EQUIVALENTS

(as of 27 September 2023)

Currency Unit	–	Philippines peso (₱)
₱1.00	=	$0.018
$1.00	=	₱55.39

ABBREVIATIONS

ADB	Asian Development Bank
BAP	Biodiversity Action Plan
BCIB	Bataan–Cavite Interlink Bridge Project
BCIB-PMT	BCIB Project Management Team
CARI	Contractors' All-Risk Insurance
CEMMAP	Contractor Environmental Management and Monitoring Action Plan
CENRO	Community Environment and Natural Resources Office
CER	Compliance Evaluation Report
CGRC	Central Grievance Redress Committee
CIMP	Corregidor Islands Marine Park
CMR	ECC Compliance Report
CMVR	Compliance Monitoring and Validation Report
CSC	Construction Supervision Consultant
DAO	Departmental Administrative Order
DENR	Department of Environment and Natural Resources
DENR-EMB	DENR Environmental Management Bureau
DENR-EMB CO	DENR-EMB Central Office
DENR-EMB RO	DENR-EMB Regional Office
DPWH	Department of Public Works and Highways
DPWH-BMU	DPWH Bridge Management Unit
DPWH-EHSO	DPWH Environment, Health and Safety Officer
DPWH-ESSD	DPWH Environmental and Social Safeguards Division
DPWH-EU	DPWH BCIB Environment Unit
DPWH-FMS	DPWH Field Monitoring Supervisor
ECC	Environmental Compliance Certificate
EIA	Environmental Impact Assessment
EMA	External Monitoring Agent
EMF	Environmental Monitoring Fund
EMP	Environmental Management Plan
EQPL	Environmental Quality Performance Level
ESARD	DPWH Environmental & Social Assessment/Right-of-Way Division
GAP	Gender Action Plan
GRM	Grievance Redress Mechanism
GRO	Grievance Redress Officer
GRP	Grievance Reception Point
KBA	Key Biodiversity Area
LARP	Land Acquisition and Resettlement Plan
LGRC	Local Grievance Redress Committee
LGRO	Local Grievance Redress Officer
LGU	Local Government Unit

MAO	Municipal Agriculture Office
MENRO	Municipal Environment and Natural Resources Office
MMT	Multi-Partite Monitoring Team
MPDO	Municipal Planning and Development Office
PC	Primary Contractor
PC-EHSO	Primary Contractor Environment, Health and Safety Officer
PC-EHSR	Primary Contractor Environment, Health and Safety Representative
PENRO	Provincial Environment and Natural Resources Office
PEO	Project Environment Officer
SEMR	Semi-Annual Environmental Monitoring Report
SMR	Self-Monitoring Report
UPMO	Unified Project Management Office
UPMO RMC II	UPMO Roads Management Cluster II
UXO	Unexploded Ordnance

Notes

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I. INTRODUCTION

1. **Project description.** The Bataan-Cavite Interlink Bridge (BCIB) project will support the construction of a 32 km-long climate-resilient marine bridge as a land connection between Bataan Province and Cavite Province in the Philippines that will transform economy of the Manila Bay subregion through improved connectivity, provide opportunity for improvement and upgrade of the Port of Mariveles, and serve as an evacuation route during disasters including those induced by natural hazards. The project also includes a capacity building program to ensure adequate capacity of the government in operation and maintenance of large and complex bridge structures and a tourist support system to enhance tourism in Bataan Province and Corregidor Island which will create jobs and economic opportunities for women and other vulnerable groups.

2. The proposed BCIB will be a four-lane, median-separated roadway with a total length of 32 km, of which 26 km will be over the waters of Manila Bay. The BCIB will connect to the Roman Superhighway at an interchange in Mariveles, Bataan, and to the Antero Soriano Highway at an interchange in Naic, Cavite. The dominant features are the North Channel Bridge, which will provide for a 300-meter navigation channel, and the South Channel Bridge, which will span a 650-meter channel accommodating two-way passing for even the largest ocean-going vessels. Near the Cavite shore, the marine viaduct will include a third navigation bridge for smaller commercial and service vessels to use. The high-clearance viaducts between these bridges permit easy passage of local fishing and recreational boats. The BCIB roadway will provide a vehicular turnaround in a shallow portion of the Manila Bay near Corregidor Island, which is between the north and south channel bridges. This vehicular turnaround has been designed to accommodate a potential future access road to the island.

3. The BCIB access from Bataan is proposed as a trumpet interchange with the Roman Highway. At the south end of the BCIB, the on-land roadway will extend just 1.3 km from the shore to where it will join with the Antero Soriano Highway (Route 1), which in turn links to the Manila–Cavite Expressway (Expressway 3) near Cavite City.

4. The BCIB roadway is planned to consist of four travel lanes, two in each direction, with shoulders to the outside and a barrier or separation in the median, for a total width of 20.9 m. The on-land portion will be mostly built upon embankments to provide resilience to projected sea level rise over the project's 100-year design life. The embankment will be composed of both cut and compacted engineered soil, upon which aggregate subbase will be laid, followed by crushed aggregate subbase, and topped with concrete as the final roadbed. The concrete roadbed will be reinforced with rebar grid to withstand expansion and contraction as well as seismic events. The majority of the overwater bridge roadway deck is designed to use concrete box girders. For safety purposes, DPWH will enforce a weight limit on commercial trucks, and tricycles, bicycles, and pedestrians will not be allowed.

5. **Financing modality.** The project’s outputs are best financed by a multi-tranche financing facility (MFF) to achieve its outcome, considering the magnitude of the investment and complexity of the civil works, which will comprise 7 contract packages. The project is proposed to be financed by an MFF with three tranches, adopting the time-slicing approach for large-scale stand-alone projects, with each tranche financing a group of contracts per indicative tranche schedule based on disbursement projections. The MFF modality allows the government to utilize ADB financing for mega-size civil works projects with relatively simple financing structure and approval process, and the sequential processing and approval of tranches help the government to optimize the

financial cost on commitment fees. At the time of the MFF processing, the project design, procurement, environment and social safeguards, and gender aspects will be appraised for the entire scope of the MFF.

Table 1: Project Description by Project Feature

BCIB Project Feature	Description
Land Approach - Bataan	5.4-km roadway supported primarily on embankment from Roman Highway to marine viaduct, with five structures to maintain local circulation, including: • Interchange bridge at Roman Highway • Alas-Asin Undercrossing • Alas-Asin Overpass Bridge • Mt. View Overpass Bridge • On-land viaduct from road to marine viaduct, consisting of five 40-meter spans
Land Approach – Cavite	1.4-km roadway supported primarily on embankment from south marine viaduct to the interchange with Antero Soriano Highway, with four structures to maintain current circulation, including: • Antero Soriano Interchange Bridge raising the highway over the BCIB, consisting of two 25-m spans supported on steel I-beams straddling the roadway from abutments on either side • Tramo Underpass – reinforced box culvert • Timalan-Balsahan Underpass – reinforced box culvert • On-land viaduct from road to marine viaduct, consisting of three 40-m spans
Marine Viaduct	Proposed as a series of 100-m spans over an approximate distance of 20 km, and in shallow water areas using 60-m spans over 2 km. The height of the deck above the sea surface will vary from approximately 21 m for most of the marine viaduct length, to over 60 m at the highest bridge deck transition. 100-m spans will be balanced at their midpoints on support piers and stitched together at mid-span.
Vehicle Turnaround	Four ramps will descend to a roundabout for vehicles to turn around and return, proposed as a reinforced fill island located northeast of Corregidor Island. Shoulder areas beyond the roundabout lanes will allow emergency pullouts.
North Channel Bridge	A 736 m-long bridge structure consisting of: • 300 m-wide navigation channel • 400-m bridge center span and two 168-m back spans • 40.5 m vertical clearance beneath the bridge deck • Two 136-m above-water monopole towers with 128 cable stays to support the bridge deck • Two anchor piers
South Channel Bridge	An 1,800 m-long bridge structure consisting of: • 900 m-wide navigation channel • 900-m bridge center span and two 168-m long back spans • 72.3-m vertical clearance beneath the bridge deck • Two 306-m above mean water monopole towers with 216 cable stays to support the bridge deck • Four anchor piers
Nearshore Navigation Bridge	A 90 m-long navigation bridge consisting of: • 150-m span using two custom cantilevered concrete box girders

	• 23-m vertical clearance beneath the bridge deck
Associated Facilities	Bridge Monitoring and Maintenance Compound (BMMC) on a 0.5-hectare site on the Bataan side, featuring a 2-story, 475-m2 maintenance building; electrical service building; technical shelter; emergency response office; guard outposts; utilities, fuel pump shed, water tank, portable sewage treatment plant; and fenced open areas for parking and yard. Other associated facilities may include a substation on either side of the bridge, although solar energy is proposed to supply most lighting needs. The project anticipates enlarging the BMMC by another 0.5 hectare at a later date for future maintenance and operation purposes, and establishing a border control point and weigh stations on either side of the BCIB.

Source: Draft environmental impact assessment (July, 2023).

6. **Environmental category.** The project was classified as environment category A by the ADB in accordance with the ADB Safeguard Policy Statement (i.e., anticipated to have potentially significant adverse environmental impacts) and an environmental impact assessment was prepared for the entire BCIB project and disclosed as draft in July 2023.[1]

7. The **purpose of this environmental assessment and review framework (EARF)** is to: (i) describe the BCIB project as well as additional components that may be identified during project implementation; (ii) explain the general anticipated environmental and/or social impacts of the components or subprojects to be financed under the proposed project; (iii) specify the requirements that will be followed in relation to subproject screening and categorization, assessment, and planning, including arrangements for meaningful consultation with affected people and other stakeholders and information disclosure requirements and, where applicable, safeguard criteria that are to be used in selecting subprojects and/or components; (iv) assess the adequacy of the borrower's/client's capacity to implement national laws and ADB's requirements and identify needs for capacity building; (v) specify implementation procedures, including the budget, institutional arrangements, and capacity development requirements; (vi) specify monitoring and reporting requirements; and (vii) describe the responsibilities of the borrower/client and of ADB in relation to the preparation, implementation, and progress review of safeguard documents of newly proposed project components.

II. ASSESSMENT OF LEGAL FRAMEWORK AND INSTITUTIONAL CAPACITY

A. ADB Safeguard Policy Statement 2009

8. All projects supported by ADB must comply with ADB's Safeguard Policy Statement (2009).[2] ADB's SPS (2009) sets out the policy objectives, scope and triggers, and principles for environmental safeguard areas to be followed across all aspects of its operations. ADB adopts a set of specific safeguard requirements that borrowers/clients are required to meet in addressing environmental impacts and risks. Borrowers/clients must comply with these requirements during the project preparation and implementation phases. ADB's environmental safeguard requirements are defined in ADB's SPS, Appendix 1 (Safeguard Requirements 1: Environment. Pages 30-40). All environmental safeguard principles and requirements of ADB's SPS are reflected in this EARF.

[1] Environmental Impact Assessment (draft, accessible here).
[2] ADB. 2009. Safeguard Policy Statement. Manila.

9. **Categorization.** Per ADB's SPS (2009), the nature and significance of the environmental impacts determine the level of environmental assessment needed. The level of environmental impacts will depend on the type and location of a project component, the sensitivity, scale, nature and magnitude of its potential impacts, and the availability of cost-effective mitigation measures. All project activities must be screened for their impacts significance and classified into one of the 3 categories defined in Table 2.

Table 2: ADB Environment Safeguards Categorization System

Category A: A proposed project is classified as category A if it is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works. An environmental impact assessment is required
Category B: A proposed project is classified as category B if its potential adverse environmental impacts are less adverse than those of category A projects. These impacts are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects. An initial environmental examination is required.
Category C: A proposed project is classified as category C if it is likely to have minimal or no adverse environmental impacts. No environmental assessment is required although environmental implications need to be reviewed.

Source: ADB SPS (2009)

10. **Environmental Standards Application.** In general, ADB and other multilateral donors support the application of national environment, health and safety standards in environmental impact assessment, where these are found to be sufficiently developed to address the particular areas of risk presented by an undertaking, and of at least equivalent stringency to standards specified or commonly referred to by relevant international entities. Where a national standard applicable to project risks does not exist, is insufficiently comprehensive to address the full range of relevant parameters, or is significantly less stringent than standards operational elsewhere, an appropriate stand-in is identified from the selection of known international standards. Standards referenced in the World Bank Group's IFC Performance Standards and Environmental, Health and Safety (EHS) Guidelines are a preferred source of guidance, although in some cases standards developed by agencies in jurisdictions with advanced regulatory frameworks such as those applied in the United States and European Union may be most useful.

B. Philippines Environmental Legislative System

1. Philippines Environmental Impact Statement System (PEISS)

11. The Philippines Environmental Impact Statement System (PEISS) is a well-defined set of procedural requirements established to guide the consistent, thorough and defensible conduct of environmental assessments in relation to public-sector and private-sector development projects. The foundation of the PEISS is elaborated by the following key instruments:

- Presidential Decree No. 1586: Establishing an Environmental Impact Statement 41 System Including Other Environmental Management Related Measures and for 42 Other Purposes (issued 1978);
- DENR Administrative Order 2003-30: Implementing Rules and Regulations (IRR) for the Philippine Environmental Impact Statement System (issued 2003); and
- Revised Procedural Manual for DENR Administrative Order No. 30 Series of 2003 (issued 2007).

12. A key element of the PEISS is the categorization of proposed undertakings, such that assessment procedures appropriate to the scale, complexity, probability, and severity of negative environmental and social impacts can be identified. Proposed projects are considered in terms of both the project characteristics (scale, industrial sector, class of infrastructure) and the characteristics of the environment (interpreted broadly to include both biophysical and social parameters) in which the project will be implemented.

- **Category A** – Projects or undertakings which are classified as Environmentally Critical Projects (ECPs) under Presidential Proclamation No. 2146 (1981), Proclamation No. 803 (1996), and any projects that may later be declared as such by the President of the Philippines.
- **Category B** – Projects or undertakings which are not classified as ECPs under Category A, but which are likewise deemed to significantly affect the quality of the environment by virtue of being in an Environmentally Critical Area (ECA) as declared under Proclamation 2146.
- **Category C** – Projects or undertakings not falling under Category A or B which are intended to directly enhance the quality of the environment or directly address existing environmental problems.
- **Category D** – Projects or undertakings that are deemed unlikely to cause significant adverse impacts on the quality of the environment according to parameters set forth in the Screening Guidelines.

13. The definition of Environmentally Critical Projects (ECPs) and Environmentally Critical Areas (ECAs) is central to categorization of undertakings for environmental assessment purposes.

- **Environmentally Critical Projects.** Five broad classes of undertakings, each comprising at least several sub-classes, have been defined under EMB Memorandum Circular 2014-005, as summarized in the succeeding Table. Projects falling within these classes are further delineated based on specific scalar thresholds. Any project that surpasses the highest threshold for its sub-class is considered an Environmentally Critical Project (ECP) for assessment purposes. *For bridges, projects of length 10.0 km or more are automatically classified as ECPs, and are therefore assigned to Category A. The BCIB project exceeds the 10 km threshold by a large margin. Because the project will consist of new construction as opposed to upgrading existing infrastructure, it is further classified as Category A-1.*

Table 3: Environmentally Critical Projects

Class	Types of Proposed Undertaking
1	Heavy Industries – Non-ferrous metal industries; iron and steel mills; smelting plants; chemical industries; agri-food processing industries; other processing and manufacturing industries
2	Resource Extractive Industries – Mining and quarrying projects including oil and gas extraction; forestry and agricultural projects; and fisheries and aquaculture projects
3	Infrastructure Projects – Dams, water supply and flood control projects; power plants of all types; reclamation and other land restoration projects; roads and bridges; other transport facilities including airports and ports; buildings including housing, storage facilities and other structures; pipeline and cable projects; waste management projects

4	Golf Course and Other Tourism Projects – Golf course projects; resorts and other tourism/leisure projects (all)
5	Other Projects – Cut flower industry projects; telecommunication projects; energy exploration projects; small business development project facilities; array of cottage industries and service industries

Source: DENR-EMB. 2014. Revised Guidelines for Coverage Screening and Standardized Requirements Under the Philippine EIS System. EMB Memorandum Circular 005, July 2014.

14. **Environmentally Critical Areas**. Twelve categories of sensitive settings and features, or Environmentally Critical Areas (ECAs), have been delineated to guide application of the PEISS. Projects whose footprints will impinge upon, or whose activities will significantly affect, an area or feature in one of the ECA categories are assigned to Category B (unless they are also classified as ECPs, in which case they will be in Category A). If there is any significant doubt as to whether an ECA category is applicable to an undertaking, the category is deemed to apply unless the project proponent can present credible evidence (based on field study, desktop research or formal confirmation by the 14 relevant government agency) to support an argument that the category should be ruled out.

15. The BCIB project falls within, or has significant potential to affect, landscape elements in five of the ECA categories, including Category 2 (Corregidor Island is an aesthetically endowed potential tourist spot, as are the northern beaches of Cavite Province); Category 3 (Manila Bay is known to be used by a number of endangered marine species); Category 4 (Corregidor Island is a protected historic site); Category 10 (given the project's placement 2 in Manila Bay); and Category 12 (there are known coral reefs in the vicinity of Corregidor and Caballo Islands, as well as the nearshore zone of southern Bataan).

Table 4: Categories of Environmentally Critical Projects

Category	Type of Sensitive are or feature
1	Areas declared by law as national parks, watershed reserves, wildlife preserves and sanctuaries
2	Areas set aside as aesthetic and potential tourist spots, including certain classes of caves
3	Areas which constitute the habitat of any endangered or threatened species of Philippine wildlife (flora or fauna)
4	Areas of unique historic, archaeological, geological or scientific interest
5	Areas which are traditionally occupied by cultural communities or tribes
6	Areas frequently visited and/or hard-hit by natural calamities (geologic hazards, floods, typhoons, volcanic and seismic activity, etc.)
7	Areas with critical slopes
8	Areas classified as prime agricultural lands
9	Recharge areas of aquifers
10	Water bodies (all natural water bodies regardless of classification)
11	Mangrove areas as mapped or identified by DENR
12	Coral reefs as mapped or identified by DENR and/or Department of Agriculture-Bureau of Fisheries and Aquatic Resources (DA-BFA)

Source: DENR-EMB Memorandum Circular No. 2014-005. Revised Guidelines for Coverage Screening and Standardized Requirements Under the Philippine EIS System. July 2014.

16. **Coverage under PEISS.** A proposed project's assigned category determines whether it is covered under the PEISS. Category A and Category B projects are automatically covered, and Category D projects are automatically not covered. Undertakings initially assigned to Category C are evaluated by DENR-EMB on the basis of project information provided by the proponent on a standard screening form, and then assigned to one of the other categories. The proponent of any project deemed covered under the PEISS is required to apply to DENR-EMB for an Environmental Compliance Certificate (ECC). Proponents of projects judged not to be covered under the PEISS are not required to apply for an ECC, but may optionally apply for a Certificate of Non-Coverage (CNC), should such proof of non-coverage be needed for any purpose, such as due diligence for financing or risk management. As a Category A undertaking, the BCIB is covered under the PEISS, and DPWH, as the proponent, has been required to apply for an ECC.

a. Environmental Impact Statement (EIS)

17. The EIS is a comprehensive study of the significant impacts of a subproject on the environment. It includes an EMP/Program that the proponent will fund and implement to protect the environment. The EIS is a document, prepared and submitted by the subproject proponent and/or EIA consultant that serves as an application for an ECC.

b. Initial Environmental Examination Report (IEER)

18. An IEER is a document like an EIS, but with reduced details and depth of assessment and discussion.

c. Initial Environmental Examination Checklist Report (IEEC Report)

19. An IEEC Report is a simplified checklist version of the IEER, prescribed by the DENR to be filled up by the proponent to identify and assess a subproject’s environmental impacts and the mitigation/enhancement measures to address such impacts.

20. The IEEC Report forms have been designed to simplify and standardize EIA reports so that minimal technical expertise is required to fill up of the form, which shall serve as the EIS submission for ECC applications. The checklist contains a series of questions that deal with issues and concerns about the proposed subproject and its environment. The checklist also provides information on the proposed subproject’s environmental impact, both positive and negative. The information contained in the checklist will serve as a basis for the review and assessment of EMB’s Regional Office for the issuance or denial of an ECC application.

21. The IEEC Report is applicable for the following types of subprojects that are covered under the provisions of existing guidelines on the PEISS:

- Batching and Crushing Plants
- Fisheries/aquaculture Projects
- Food & Food By-product and Beverages Manufacturing Plants
- Non-Food Manufacturing (textile, rubber, chemical) Plants
- Subdivisions/Housing Projects
- Building Projects (commercial, institutional, land transportation terminal,
- Motels, hotels, condominiums/apartelles and storage facilities)
- Cemetery and other Funeral Facility Projects
- Livestock /Poultry Projects

- Resorts and other Tourism/Leisure Projects
- Roads and Bridges
- Water Supply Projects
- Irrigation & Flood Control Projects
- Waste Management Projects

d. Environmental Compliance Documents

22. **Environmental Compliance Certificate (ECC)**. The ECC is a document issued by the EMB certifying that the proponent has complied with all the requirements of the PEISS and has committed to implement its approved EMP. The ECC also provides guidance to other agencies and to LGUs on EIA findings and recommendations, which need to be considered in their respective decision-making process.

23. **Certificate of Non-Coverage.** The Certificate of Non-Coverage (CNC) is a document issued by the EMB certifying that a project or undertaking is not covered by the PEISS and is not required to secure an ECC.

e. Stakeholder Participation in the Environmental Assessment Process

24. Stakeholder participation in the environmental assessment process is one of the main criteria against which ECC applications are considered. There are several mechanisms for participation, deployed at different points in the process where the involvement of stakeholders is appropriate and desirable. These are as follows for projects requiring an EIS:

- **Information, Education and Communication (IEC) activities –** The proponent is required to carry out a systematic effort to disclose the project's preparation to leaders and members of the public in the LGUs that will be affected by the project. The IEC is an opportunity for preliminary identification of institutional stakeholders and stakeholder groups. IEC methods may include small- and large-format meetings, publicly distributed materials and other methods.
- **Public Scoping –** Public meetings with invited stakeholders, DENR-EMB and members of the EIARC are required to define the substantive and spatial scope of the environmental assessment study. The key output of public scoping is typically a list of concerns and issues that the participants have indicated should be given particular attention in the environmental assessment study.
- **Environmental Assessment Study –** Stakeholders can and should be given the opportunity to provide local knowledge and expertise to the study, as key informants, focus group participants, guides, and so on. Local knowledge is often critical to baseline development and impact analysis.
- **Public Hearings –** The findings of the environmental assessment study must be publicly presented in a format accessible to all interested people, with the study report disclosed in advance to the relevant municipalities, so participants can prepare statements about issues of concern for presentation in the hearings. The key output of public hearings in each affected municipality is typically a list of concerns that may be reflected in revisions to the EMP, as appropriate.
- **Monitoring of EMP Implementation –** A Multi-Partite Monitoring Team (MMT) will be set up to provide oversight of the proponent's self-monitoring with respect to implementation of the project's EMP. Local stakeholders are entitled to participate through their LGU

representatives on the MMT, and through community members appointed to the MMT to represent vulnerable sectors of the local population.

2. Permitting and Clearance Requirements

25. Infrastructure projects, especially large ones like the BCIB, typically trigger a need for clearances by relevant government agencies and local government units (LGUs), as well as environmental permits which have to be applied for in advance of the commencement of works and kept current for the duration of construction activity. An indicative list of clearances and permits expected to be required for the BCIB is presented below.

Table 5: Clearances and Permits Required

Clearance/Permit	Issuing Authority
Municipal endorsement/Certificate of No Objection	LGU of each directly affected municipality
Endorsement/Certificate of No Objection from barangays	Leadership of each directly affected barangay
Dumping permit	Directly affected LGUs
Building permits	LGU Office of the Building Official
Fire safety evaluation clearance	Bureau of Fire Protection
Occupancy permit	LGU Office of the Building Official
Electrical connection agreement	LGUs
Certificate of zoning compliance	LGU Zoning Divisions
Land use conversion/reclassification, if relevant	LGU Planning Divisions
Tree-cutting permit	DENR (Biodiversity Management Bureau)
Water use permit	National Water Resources Board
Navigational clearance	Philippine Coast Guard
Coast Guard clearance	Philippine Coast Guard
Certificate of Non-Overlap	National Commission on Indigenous Peoples
Civil aviation clearance	Civil Aviation Authority of the Philippines
Fisheries clearance	Bureau of Fisheries and Aquatic Resources (Department of Agriculture)
Registration of Safety Officer	DOLE (Bureau of Workforce Conditions)
Environmental registration of project managers	DENR (Environmental Management Bureau)
Registration of Pollution Control Officer	DENR (Environmental Management Bureau)
Hazardous waste generator ID	DENR (Environmental Management Bureau)
Permit to transport hazardous waste	DENR (Environmental Management Bureau)
Wastewater discharge permit	DENR (Environmental Management Bureau)
Permit to operate generator sets	DENR (Environmental Management Bureau)

3. Applicable Environmental Standards

26. The ADB policy requires adherence to national standards for infrastructure development projects. However, in cases where there are no national standards or when existing ones fall short in addressing project risks compared to international standards, ADB necessitates the utilization of international standards. The following table provides an assessment of the national standards applicable to the BCIB project, along with corresponding international standards to substitute for areas where national standards are absent or considered inadequate to mitigate project risks.

Table 6: Determination of Applicable National and International Standards

Substantive Area	Relevant National Standard	Applicable Standard/Benchmarks for BCIB
Ambient air quality	• National Ambient Air Quality Guideline Values (specified in RA-8749-IRR-DAO-2000-81) • Provisional National Ambient Air Quality Guideline for PM2.5 (specified in RA-8749-IRR-DAO-2013-13) • Evaluation: Less stringent than applicable international standards	• World Bank Group Environmental, Health and Safety Guidelines: Air Emissions and Ambient Air Quality (2007)
Water quality (surface water, ground water, effluent)	• Water Quality Guidelines and General Effluent Standards of 2016 (specified in RA-9275-DAO-2016-08 and updated by DAO-2021-19) • Evaluation: Comparable to international standards and most appropriate to national context	• Water Quality Guidelines and General Effluent Standards of 2016 (specified in RA-9275-DAO-2016-08 and updated by DAO-2021-19)
Water quality (drinking water)	• Philippine National Standards for Drinking Water of 2017 (specified in Department of Health Administrative Order No. 2017-10) • Evaluation: Comparable to World Health Organization standards	• Philippine National Standards for Drinking Water of 2017 (specified in Department of Health Administrative Order No. 2017-10)
Noise	• Amendments to Article 1 (Noise Control Regulations), Chapter IV (Miscellaneous Regulations), Rules and Regulations of the National Pollution Control Commission,1978 (in NCCC Memorandum Circular N0. 002 , Series of 1980) • Evaluation: Less stringent than similar international standards	• World Bank Group Environmental, Health and Safety Guidelines: Environmental Noise Management (2007)
Underwater noise	• No national standards for underwater noise	• US National Marine Fisheries Service (National Oceanic and Atmospheric Administration) Underwater Acoustic Thresholds. NOAA Technical Memorandum NMFS-OPR-55 (2016)
Vibration	• No national standards for vibration	• US Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06, May 2006)
Soil quality	• No national standards for soil contamination	• Dutch Target and Intervention Values, 2000. Circular on Target Values and Intervention Values for Soil Remediation, February 4, 2000. Ministry of Housing, Spatial Planning and Environmental Management.

Sediment quality	• No national standards for freshwater or marine sediment quality	• United States National Oceanic and Atmospheric Administration (NOAA) Sediment Quality Guideline screening benchmark values
Occupational safety and health	• Occupational Safety and Health Standards (as amended 1989). Department of Labor and Employment, Bureau of Working Conditions. • Evaluation: Comparable to World Bank Group Environmental Health and Safety Guidelines, and familiar to Philippine regulators, contractors and workers. Do not cover worker accommodations.	• Occupational Safety and Health Standards (as amended 1989). Department of Labor and Employment, Bureau of Working Conditions. • International Finance Corporation/European Bank for Reconstruction and Development Workers' Accommodation Processes and Standards (2009)

Source: Draft environmental impact assessment (July 2023)

III. ANTICIPATED ENVIRONMENTAL IMPACTS

Topic of Concern	**Potential Impacts and Issues**
Pre-construction Phase	
I. Implementation Readiness	
Permits and licenses	Project not in compliance with all requirements under ECC and relevant national and local-level regulations
Tree-cutting permit	Project not in compliance with ECC requirement for tree-cutting permits
Pre-construction IEC activities	Works begin without local stakeholders having been informed and prepared for what to expect, leading to confusion and resentment
Contractor compliance	Works begin without prescribed mitigation and monitoring measures having been reflected in PCs' planned work methods and procedures, leading to failed EMP implementation
Land acquisition and resettlement	Works begin without all land acquisition and resettlement measures having been undertaken and outstanding issues resolved
Capacity building for DPWH-EU	DPWH-EU cannot adequately manage all supervision and reporting responsibilities, leading to lax enforcement and poor EHS performance
Provision of training to support EMP implementation	Entities responsible for aspects of EMP implementation lack the requisite knowledge, leading to poor EHS performance
Coordination with Manila Bay Rehabilitation Program	Possible lack of coordination and consistency between project EMP implementation and municipal
Establishment of functional MMTs	Works begin before MMTs become operational, leading to ineffective monitoring
Grievance Redress Mechanisms set up	People who feel that have been wronged by some aspect of the project's implementation lack a fair and transparent means of seeking redress, leading to resentment towards the project
Primary Contractor insurance	Works begin without PCs having secured insurance adequate to cover costs of environmental damage, response and repair arising from non-compliance with EMP and CEMMAP or other negligence
Carbon Sink Program formulated and funded	Condition of ECC not met; net emissions from project contribute to global climate crisis
Biodiversity Action Plan	Residual impacts on critical habitat and natural habitat that require offsets and/or long-term monitoring and partnerships for adaptive management that are not appropriately addressed through the EMP

Fund created for implementation of Biodiversity Action Plan	Residual impacts on critical habitat and natural habitat that require offsets and/or long-term monitoring and partnerships for adaptive management that are not appropriately addressed through the Emp
DPWH Emergency Coordination and Communication Plan	DPWH unprepared to serve vital coordination and communication role in event of an emergency
II. LAND	
Terrestrial biodiversity impacts	• 12.3 ha of natural grassland habitat to be permanently lost to approach road right-of-way in Mariveles • Loss of trees in ROWs
Terrestrial biodiversity impacts	Enhanced exploitation risk to forest/grassland habitat in Mariveles Mountains KBA and Mariveles Watershed Preserve due to bridge-induced development and lower price to-market for commodities
Terrestrial biodiversity impacts	Avian mortality from collisions with cable-stayed bridge components (night migrants)
II. WATER	
Marine biodiversity impacts	• Ecological effects on coral habitat from artificial light at night (ALAN) • Ecological effects on coral habitat from shading by bridge and viaduct decks
Marine biodiversity impacts	• Reduced viability of marine turtle nesting habitat on 2,400 m2 of beach at BCIB landing point in Naic • Disturbance and likely prevention of nesting on several beaches due to pile driving noise over period of 41 months and vessel noise over a longer period
IV. AIR	
Contribution to global climate crisis	Loss of carbon sequestration capacity due to tree removal in ROWs
V. PEOPLE	
Livelihoods	Potential enhancement of land-based livelihoods
Fisherfolk livelihoods	Potential enhancement of fisherfolk livelihoods by creation of fish sanctuaries along BCIB alignment
Public safety impacts	Elevated risk of accidents on roads receiving increased traffic volume due to BCIB development in Mariveles (EPZA Bypass Road and Roman Highway segments through Alas Asin, Mt. View and Cabcaben)
Public safety impacts	Elevated risk of accidents on roads receiving increased traffic volume due to BCIB development in Naic (Antero Soriano Highway in Naic and Tanza, Governor's Drive in Naic)
B. Construction Phase	
I. LAND	
Terrestrial biodiversity impacts	Degradation or destruction of wildlife habitat in ROWs and due to use of land for construction staging areas
Terrestrial biodiversity impacts	Habitat degradation outside works areas due to spillover of construction activity and hunting and gathering by workers
Terrestrial biodiversity impacts	Dust deposition on vegetation in habitat outside work areas
Terrestrial biodiversity impacts	• Potential disturbance of habitat along the Timalan River subject to occasional use by individuals of critical habitat qualifying species *Anas luzonica* (Philippine Duck) • Potential disturbance of mangrove habitat along Timalan River by construction staging activity on Uniwide site
Terrestrial biodiversity impacts	Depletion of wildlife in Mariveles Mountains KBA due to hunting and gathering by construction workers in their time off
Terrestrial biodiversity risks	Proliferation of invasive species

Soil contamination	Soil contamination from leaks and spills of fuels, lubricants, coolants, hydraulic fluid and other noxious substances used in construction
Soil contamination	Soil contamination risks associated with demolition of existing structures
Soil contamination	Hazardous releases from pre-existing contaminated sites
Land contamination	Contamination from improper management of construction-associated solid waste
Physical cultural heritage	Loss of hitherto unknown culturally significant features and artifacts
II. WATER	
Impacts on freshwater ecology	Siltation and sedimentation
Impacts on freshwater ecology	Contamination, siltation and water chemistry change from emissions of concrete washout
Impacts on freshwater ecology	Siltation and sedimentation from improper spoils management
Impacts on freshwater ecology	Enrichment of watercourses from improper management of human waste
Impacts on freshwater ecology	Contamination of watercourses from leaks and spills
Impacts on freshwater ecology	Direct physical degradation of watercourses from bridge and diversion works on Mariveles approach road
Impacts on freshwater ecology	Direct physical degradation of watercourses from bridge works on Antero Soriano Highway interchange west of interchange (Timalan River west branch)
Impacts on freshwater ecology	Direct physical degradation of watercourses from staging area setup and us
Impacts on groundwater	Contamination of groundwater from leaks and spills
Impacts on groundwater	Local groundwater scarcity worsened by withdrawals for casting works (Uniwide site)
Marine biodiversity impacts	Destruction of coral habitat (critical habitat) by dredging
Marine biodiversity impacts	• Siltation and sedimentation of coral habitat (critical habitat) in Mariveles and Corregidor Island nearshore zones • Siltation and sedimentation of fish habitat in Naic Fish Sanctuary (critical habitat) nearby project alignment
Marine biodiversity impacts	Siltation and water chemistry change from release of concrete washout from floating batch plants
Marine water quality impacts	Contamination of marine biota from spills and leaks of fuels, lubricants, hydraulic fluids, coolants and other noxious fluids
Marine water quality impacts	Contamination of marine biota from spillage of loose asphalt and sprayed oil during paving operations
Marine biodiversity impacts	Localized eutrophic effects from human waste emitted from marine works sites and vessels
Marine biodiversity impacts	Deleterious effects on marine organisms from solid waste discarded from marine works sites and vessels
Marine biodiversity impacts	Ecological effects of construction lighting used on marine works sites
Marine biodiversity impacts	Injury and mortality of threatened marine species due to vessel strikes
Marine biodiversity impacts	Disturbance, injury and mortality of threatened and protected marine species due to underwater noise emissions from marine works
Marine biodiversity impacts	Medium-term hydrodynamic modification leading to ecological change in vicinity of temporary jetties
III. AIR	
Greenhouse gas emissions during construction	Unduly elevated GHG emissions due to use of outdated, poorly maintained construction equipment and vehicles
Air quality impacts	Localized degradation of air quality from concentrated diesel engine emissions

Air quality impacts	Air quality degradation due to fugitive dust
Air quality impacts	Air quality degradation due to operation of asphalt batch plants
Noise impacts	Effects on quality of life and health in nearby community areas from high-intensity, long duration noise from works, staging activity and hauling
III. PEOPLE	
Community impact	Social conflict due to influx of outside construction workers
Community impacts	Disruption of access to private and public property due to construction in public rights of-way
Community impacts	Inadvertent disruptions of utility service
Livelihoods	• Potential enhancement of livelihoods due to employment in construction and other types of jobs on the project • Potential enhancement of local livelihoods due to provision of goods and services to project contractors and workers by local enterprises
Livelihoods	Impacts on land-based livelihoods from poor construction site management, e.g., property damage from boundary transgressions, impacts on property value and business viability due to excessive dust
Livelihoods	Impacts on fisherfolk livelihoods from restrictions on access to fishing grounds within construction zone
Livelihoods	• Impacts on fisherfolk livelihoods from siltation and sedimentation caused by marine works • Impacts on fisherfolk livelihoods from underwater noise generated by marine works
Livelihoods	Lost revenue for Naic beachfront resorts due to degradation of amenity values by siltation of inshore waters from marine works
Public safety impacts	Increased risk of accidents due to works in public rights-of way and heavy haul traffic
Public safety impacts	Elevated risk of marine accidents due to marine construction activity
Public health risks	Increased incidence of infectious disease associated with influx of outside workers
Public health risks	Increased incidence of water-borne illness due to poor human waste management
Occupational health and safety risks	Injuries and deaths from physical hazards on construction sites
Occupational health and safety risks	Elevated accident risks during works in public rights-ofway (interchange and underpass sites)
Occupational health and safety risks	Risk of serious injury and death from disturbance of unexploded ordnance (UXO) during marine work
Occupational health and safety risks	Injury and death from geophysical hazards occurring during construction
Occupational health and safety risks	• Worker injury, illness, and death due to hazards in poorly designed and managed construction camps • Elevated risk of infectious disease and infestations due to poor conditions in construction camps and on construction sites
Occupational health and safety risks	Exposure to harmful levels of noxious and hazardous dust
Occupational health and safety risks	Dehydration and heat exhaustion
Visual impacts	Impairment of amenity values due to light leakage from nighttime construction activity (near Naic beachfront)
C. Operation Phase	
I. LAND	
Terrestrial biodiversity impacts	Avian mortality on bridges and viaducts due to perching and roosting on railings

Soil contamination	Leaks and spills associated with maintenance and repair works
Soil contamination	Contamination due to spills from road accidents
Land contamination	Contamination from buildup of roadside litter
II. WATER	
Marine water quality impacts	Contamination of marine waters from direct drainage of bridge deck runoff
Marine water quality impacts	Contamination of marine waters from accident-derived spills of hazardous materials on bridge and viaduct decks
Marine water quality impacts	Contamination of marine waters from spills and leaks during maintenance works
Marine water quality and biodiversity impacts	Contamination of marine biota by litter emanating from bridges and viaducts
III. AIR	
Air quality impacts	Air quality impacts from major road repair and replacement works (approach roads)
IV. PEOPLE	
Livelihood enhancement	Employment and business opportunities accrue to local people from BCIB operation
Livelihood enhancement	Potential enhancement of fisherfolk livelihood prospects by long-term protection of fisheries resources along alignment in proposed municipal fish sanctuaries and no-dredge zone
Public safety	• Road safety risks due to driver behavior and unsafe vehicles • Road safety risks related to wind and heavy precipitation
Occupational health and safety risks	Physical hazards during maintenance works
Visual impacts	Aesthetic degradation from solid waste build-up

Source: draft environmental impact assessment (July 2023)

IV. ENVIRONMENTAL ASSESSMENT PROCEDURE

27. The following procedure is to be followed in the environmental screening, assessment, and implementation of future tranches, components or changes in scope not identified at project appraisal stage. Environmental screening will be undertaken following both ADB's SPS 2009, as well as the PEISS.

A. Subproject Eligibility Criteria

28. The following criteria shall be followed for the selection of new components and projects for inclusion in the future tranches of the MFF, or in case of major changes to the project scope:

a) The BCIB will not finance any activity or project listed on the Prohibited Investment Activities List of SPS (Appendix 1).
b) Only activities included in the MFF will be considered;
c) Activities that are within a legally protected area or critical habitat area,[3] that will have direct adverse impacts on cultural heritage sites (e.g., Corregidor Island), or will affect

[3] The Draft Critical Habitat Assessment conducted in the framework of the EIA (footnote 1) indicated that several terrestrial conservation areas (protected areas and KBAs) and two habitat types (mangroves and mudflats) within the Area of Analysis may qualify as critical habitat elements under Criterion 4 (Highly Threatened and/or Unique Ecosystems), based on their meeting of the second threshold under this criterion (Other areas not yet assessed by IUCN but determined to be a high priority for regional or national systematic conservation planning). The identified

critically endangered or endangered species[4] including coral reefs and sea grass, will be avoided to the extent possible. If these activities are unavoidable, necessary biodiversity assessments and biodiversity action plans will be carried by the DPWH consistent with the ADB requirements including stakeholder engagement and public disclosure; and

d) Activities or new components will demonstrate alignment to the Paris Agreement and conduct climate risk assessment to ensure necessary adaptation measures and decarbonization opportunities are integrated.

B. Screening, Categorization and Assessment

1. Screening and Environmental Categorization

29. DPWH will propose the categorization of future new components by filling up project specific information in the Rapid Environmental Assessment (REA) Checklist (Appendix 2). The REA Checklist which also includes a checklist for preliminary climate risk screening, and environmental categorization form will be accomplished by DOTr for review and approval of ADB for each proposed component or activity.

2. Preparation of Initial Environmental Examination (IEE) and/or Environmental Impact Assessment (EIA)

30. DPWH will ensure that environmental assessment documents prepared for all new components to be funded under the BCIB project will meet both ADB and Philippine government requirements, to streamline the environmental procedures required by both ADB and the government.

31. The environmental assessment report will be based on ADB SPS 2009 as well as the PEISS. The report shall detail the new components scope, the baseline environmental conditions in the covered under new components project area, the legal framework applicable to the new components, the activities that will generate potential impacts, analysis of alternatives, the anticipated potential impacts, the environmental management plan to address the environmental impacts, the institutional arrangement to implement EMP and environmental monitoring plan (EMoP), the grievance redress mechanism to address complaints and concerns about the project, and the disclosure policy to be implemented. Further guidance on the environmental assessment and related aspects are found in Appendix 1 (Safeguards Requirements 1: Environment) of the ADB SPS 2009.

3. Due Diligence of Existing Tranches

32. As required under SPS 2009, DPWH will carry out environmental due diligence of existing tranches while preparing the next tranche or processing changes in scope. The due diligence report will be submitted to ADB as part of documentation for approval of the next tranche.

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terrestrial critical habitat elements of relevance to the BCIB project area are the Mariveles Mountains Key Biodiversity Area (KBA) on the Bataan side, and the Mts. Palay-Palay Mataas-na-Gulod National Protected Landscape on the Cavite side; the critical habitat category of mangroves is also relevant to the BCIB project area.

[4] Seven avian species were provisionally found to meet relevant thresholds for IFC GN6 Criteria 1–3 at the area-wide level of analysis, based on the percentages of their global populations documented in recent bird counts in Manila Bay. The endemic Philippine Duck (*Anas luzonica*) was considered a probable qualifying species under Criterion 1 (Critically Endangered and Endangered Species), while six migratory waterbird species were considered to found likely to qualify under Criterion 3 (Migratory and Congregatory Species); these are the Red-Necked Stint (*Calidris ruficollis*), Long-Toed Stint (*Calidris subminuta*), Kentish Plover (*Charadrius alexandrinus*), Whiskered Tern (*Chlidonius hybrida*), Black-Winged Stilt (*Himantopus himantopus*) and Pacific Golden Plover (*Pluvialis fulva*).

4. Review of IEEs/EIAs

33. DPWH will submit to ADB the draft IEE/EIA for review, clearance and posting on ADB website before implementation of each tranche or approval of a new component or major scope change. In case an ECC is required based on Government requirements, DPWH will ensure that EIAs/IEEs will be submitted to the Environmental Management Bureau (DENR-EMB). The ECC application will follow the Philippine EIA process. It is the responsibility of the DPWH to ensure that new components or major scope change comply with the environment- related legal framework, whether at the national or local level.

5. Project Implementation

34. No works contract for a new component with environmental impacts shall be awarded before: (i) the IEE or EIA has been endorsed by DPWH; (ii) the IEE or EIA has received the final approval from DENR-EMB and clearance from ADB; (iii) the IEE or EIA is cleared by ADB's Office of Safeguards and disclosed on the ADB website per ADB SPS requirement, and 120 days (for draft EIA) prior to ADB Board approval; (iv) the provisions of the EMP have been reflected in bidding documents and the contracts.

V. CONSULTATION, INFORMATION DISCLOSURE, AND GRIEVANCE REDRESS MECHANISM

A. Public Consultation

35. Meaningful stakeholder consultation and participation is part of the project preparation and implementation strategy. Meaningful consultation pertains to a process that (i) begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle; (ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) is undertaken in an atmosphere free of intimidation or coercion; (iv) is gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and (v) enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues.

36. Comprehensive public consultation was conducted during preparation of the EIA for the BCIB project, as documented in Chapter 9 of the draft EIA in compliance to the PEISS and SPS 2009 (footnote 1). Stakeholders were systematically identified (see succeeding table). Potentially affected people and key stakeholders were consulted through perception surveys, meetings, public hearings, public scoping, and focus group discussions, confirming the public's general support for the project.

Table 7: List of Stakeholders Identified for BCIB Project

Stakeholder Class	Stakeholders
GOVERNMENTAL AND QUASI-GOVERNMENTAL STAKEHOLDERS	
Proponent	Department of Public Works and Highways (DPWH)
Relevant national government agencies	Department of Environment and Natural Resources (DENR) Bureau of Fisheries and Aquatic Resources (BFAR) Philippine Coast Guard Philippine Navy
Provincial government agencies	Bataan Provincial DENR (PENRO)

	Cavite Provincial DENR (PENRO)
Local governments	Municipality of Mariveles - Barangay Alas Asin - Barangay Mt. View - Other nearby barangays Municipality of Naic - Barangay Timalan Balsahan - Barangay Timalan Concepcion - Other nearby barangays Municipality of Ternate
Governmental research institutes	National Fisheries Research and Development Institute (NFRDI) Marine Science Institute
Economic development entities	Authority of the Freeport Area of Bataan (AFAB) Tourism Infrastructure and Enterprise Zone Authority (TIEZA)
CIVIL SOCIETY ENTITIES	
Local representative entities	Fisherfolk associations Faith-based groups Youth groups Homeowners' associations Women's groups Overseas Filipino workers associations
Quasi-governmental local councils	Fisheries and aquatic resources management councils (FARMCs) Municipal-level community forestry programs
Non-governmental organizations	Corregidor Foundation, Inc. El Gancho (Naic) Haribon Foundation Philippine Marine Mammal Stranding Network Marine Wildlife Watch Pawikan Conservation Society Wild Bird Club of the Philippines World Wildlife Fund-Philippines Conservation International-Philippines
PRIVATE SECTOR ENTITIES	
Maritime entities	Association of International Shipping Lines MBHPP Marine Services, Inc. Ferry operators Tour boat operators Tourism associations
Land transport-related entities	Trucking companies Bus companies Taxi companies Tourist resorts
Other business entities	Industrial site operators in project area in Bataan Industrial site operators in project area in Cavite Private contractors
INDIVIDUAL STAKEHOLDERS	
Local people in project area	Landowners Small business owners Independent taxi and tricycle operators Fisherfolk Farmers Residents of project area

Source: Draft environmental impact assessment (July 2023)

37. **Future public consultation.** During IEE/EIA preparation for new components or changes in scope proposed after approval of the MMF, additional stakeholder engagements will be conducted involving local government officials, residents, affected people and groups from communities traversed or potentially affected by the new scope to: (i) inform them of the proposed component and potential environmental impacts, and (ii) to document concerns/issues that people may have on the project. Consultations will have the following indicative agenda:

- Presentation of the proposed works under the new component/subproject;
- Presentation of subproject objectives and expected positive and negative environmental impacts, covering the construction phase and operational impacts;
- Invitation for feedback in respect of environment-related concerns that the public may have, and suggested means to resolve issues;
- Disclosure of and feedback on the Grievance Redress Mechanism (GRM)

38. For the consultations, the dates, venues, attendance sheets, topics covered, issues raised, project's response to issues concerns raised will be documented and included in the IEE/EIA.

B. Information Disclosure

39. For each new component or proposed change in scope, DPWH will endorse and submit the following documents to ADB for disclosure on its website:

- final IEE;
- draft and final EIA (i.e. at least 120-days prior to board consideration of the new component or PRF);
- a new or updated IEE/EIA and corrective action plan prepared during project implementation;
- semi-annual environmental monitoring reports; and
- annual external environmental monitoring reports (for Category A).

40. The draft EIA will need to be publicly disclosed at least 120 days before the new component or proposed change in scope is approved and implemented. The final IEE/EIA needs to be cleared by ADB before a new component is implemented.

C. Grievance Redress Mechanism

1. Objectives

41. The Grievance Redress Mechanism (GRM) is an effective tool for early identification, assessment, and resolution of complaints on projects. The design of a GRM aims for simplicity and consistency, so the process of filing a complaint is understandable to all and is the same for everyone, no matter their education, social status, or political affiliation. The GRM should be:

- Physically accessible (complainants should be able to submit grievances locally);
- Functionally accessible (verbal complaints should be accepted and responded to just as for written ones so even people of limited literacy can lodge a complaint);

- Free to use (no complainant should be required to make payment of any kind for grievance submission or resolution);
- Gender-responsive (complainants should have the opportunity to have their grievances heard and responded to by a person or persons of their gender if desired);
- Culturally appropriate (complainants should be heard and responded to in their own language whenever possible); and
- Time-bound (timelines for responses should be publicized and strictly observed so complaints are never left languishing, unresolved).

2. Institutional Seat of the GRM

42. The GRM for the BCIB project is defined in the draft EIA (July 2023). DPWH will be responsible for establishing and operating the GRM. The GRM will be set up within the DPWH-UMPO RMC II, under the supervision of the DPWH-EU. A Grievance Redress Officer (GRO) will be appointed to manage the GRM for the whole BCIB project, with responsibilities to include establishment and operational support of local level mechanisms for receiving and resolving grievances, supervision and support of local-level counterparts, maintenance of a central grievance register, and managing a centralized GRM function to address higher-order, non-local and intractable grievances.

43. Because the BCIB project area is fundamentally divided by Manila Bay, there are effectively two separate project areas populated by separate groups of communities and stakeholders; this circumstance requires that a dedicated branch of the GRM be implemented for each of Bataan and Cavite. A Local Grievance Redress Officer (LGRO) will be appointed by the DPWH-UPMO RMC II to manage each of the Bataan and Cavite branch GRMs. Responsibilities of the LGROs will include establishment and operational support of a Local Grievance Redress Committee (LGRC), maintenance of a local grievance register, and communication with complainants and their representatives regarding grievance resolution matters.

44. Although most grievances are likely to be local in nature, it is foreseeable that some will be raised by parties not based in either Bataan or Cavite, by complainants acting in the general public interest, or by those who perceive that their grievance is not appropriately addressed by either local GRM because of the scale or location of the originating effect (e.g., a shipping or ferry company whose operations have been unduly hindered by some aspect of the bridge works, or a public interest group objecting to incomplete implementation of mitigation measures all along the marine alignment). Such grievances—as well as grievances that prove unresolvable by one of the local GRMs—will appropriately be managed by the GRO and a Central Grievance Redress Committee (CGRC).

3. Grievance Reception Points (GRPs)

45. The Manila offices of the DPWH-UPMO RMC II are not favorably located for submission of complaints by people most likely to be directly affected by construction of the BCIB project. Accordingly, arrangements must be made for grievance reception points (GRPs) at the local level. The local office of the construction supervision consultant (CSC) can normally host the GRP, provided the office is in a location easily known and accessible to the general population. In the case of the BCIB project, it is expected that the CSC will maintain site offices in each of Mariveles and Naic, and that the DPWH-UPMO RMC II will be provided with office space within each of these offices. The LGROs will manage the Bataan and Cavite GRMs out of the local DPWH-UPMO RNC II offices.

4. Grievance and Redress Committees (GRCs)

a. Local Grievance Redress Committees (LGRC)

46. An LGRC will be required for each of Mariveles and Naic to adjudicate and resolve complaints that cannot be resolved directly by the contractor implicated in the complaint or by the LGRO. Each LGRC will be convened and chaired by the UPMO-appointed LGRO, and its membership should include:

- the highest site-level official of each PC fulfilling one of the construction packages pertaining to project activities within the municipality, such as the Project Manager or Construction Superintendent;
- the Project Environment Officer (PEO) or their designated representative;
- the most senior Environment, Health and Safety (EHS) specialist employed by the CSC overseeing the construction site or activity in question;
- the Mayor of the relevant municipality, or their representative;
- the Barangay Captain of each barangay in which the project works are being implemented within the municipality;
- a representative of the relevant regional office of DENR-EMB; and
- a representative of the relevant PENRO.

47. Other members, such as representatives of relevant public interest advocacy organizations, may be added to the LGRC at the discretion of the LGRO, as may be warranted by the nature of the grievance or circumstances of the complainant. The LGRCs must be constituted prior to the beginning of land acquisition and site clearing but will convene only when needed.

b. Central Grievance Redress Committee (CGRC)

48. A CGRC will be required to address grievances that have proved unresolvable at the local level, or which transcend the local scale (affecting people in both Bataan and Cavite and perhaps elsewhere as well). The CGRC will be convened by the GRO only when needed, and will be chaired by the Project Director. The membership of the CGRC should include:

- the GRO;
- the PEO;
- the most senior Project Manager of each of the Primary Contractors (PCs) holding one of the main works packages;
- the Team Leader of the CSC;
- a senior officer of the DPWH Environment and Social Safeguards Division (under the Planning Service);
- a senior representative of the DENR-EMB Regional Office (Region III);
- a senior representative of the DENR-EMB Regional Office (Region IV-A);
- the Mayor of the Municipality of Mariveles;
- the Mayor of the Municipality of Naic; and
- the Mayor of Cavite City LGU.
- Other members, such as representatives of relevant public interest advocacy organizations and governmental entities with remits pertinent to the grievance issue at hand, may be added to the CGRC at the discretion of the Project Director or GRO.

5. Grievance Redress Process

49. The Bataan and Cavite GRMs will follow a three-tiered process to ensure that grievances are dealt with at the most appropriate level of capability and authority. Grievances will normally first enter the GRM process at the first level, and proceed further only if acceptable resolution is not possible there. The three layers of the local GRMs, and the procedures to be followed within each, are explained below, and shown in the succeeding Figure.

- **GRM Level 1.** Complaints received by the LGRO will first be referred to the PC implicated in the complaint, for resolution by the PC's EHS Representative, in cooperation with the relevant sub-contractor(s). The PEO and CSC shall be informed by the LGRO that a complaint has been received. Each complaint shall be investigated immediately upon receipt by the PC, and a resolution implemented by the PC within 5 working days. Investigation of grievances will normally involve in-person consultation with the complainant, as well as witnesses, other affected people, sub-contractors and their employees, and such other parties as may be relevant and appropriate (e.g., barangay officials or local community organization representatives). If the complainant is a woman, arrangements shall be made for a female mediator to be involved in the interaction. If the complainant cannot communicate in Tagalog or English, arrangements shall be made for an interpreter. All documentation related to the attempted resolution shall be promptly transmitted by the PC EHS Representative to the LGRO for compilation in the grievance register. If the grievance has not been resolved or been mutually acknowledged to be on its way to being resolved after 5 working days, it will be referred by the PC EHS Representative back to the LGRO for consideration as a Level 2 grievance.

- **GRM Level 2.** Unresolved grievances referred to Level 2 will be investigated by the LGRO directly within 3 working days of the referral. The LGRO will review the documentation from the Level 1 attempted resolution, discuss the situation with the complainant and the implicated PC, and conduct any site visits and interviews that may be necessary to understand the situation. The LGRO may also discuss the matter with the CSC and PEO as needed. The LGRO will propose a course of action—to be implemented by the PC within 7 working days—to resolve the grievance to the satisfaction of the complainant. If the proposed resolution is acceptable to the complainant and successfully implemented, a closure statement signed by the complainant will be completed and added to the case records in the grievance register. If the resolution proposed by the LGRO is unacceptable to the complainant, the grievance will be referred to Level 3.

- **GRM Level 3.** When a grievance is referred to Level 3, the LGRO shall convene a meeting of the LGRC within 5 working days of the referral. The GRC will review the documentation from the Level 1 and Level 2 processes, and hold a hearing to give the complainant the opportunity to present his or her concerns and proposal for resolution, through a representative if desired. If the complainant is a woman, arrangements shall be made for a female mediator to be involved in the interaction. If the complainant cannot communicate in Tagalog or English, arrangements shall be made for an interpreter. The hearing process will aim to facilitate resolution through mediation and consensus. If consensus proves impossible to achieve, a simple majority vote of the LGRC members will decide the proposed resolution. The LGRO, as Chair, will break any tie votes. The LGRC will indicate corrective measures at the field level and assign clear responsibilities for implementation of its decision, which must take place within 15 working days. The outcome of the hearing will be communicated to the complainant by the LGRO in writing, or verbally with a written

transcript kept if the complainant has limited literacy. Minutes of the hearing and copies of all communication will be preserved in the grievance redress database.

50. If the grievance is resolved, a closure statement signed by the complainant will be completed and added to the register. If the resolution proposed by the GRC is unacceptable to the complainant, the grievance will be recorded as unresolvable at the local level, and referred to the GRO for consideration by the CGRC.

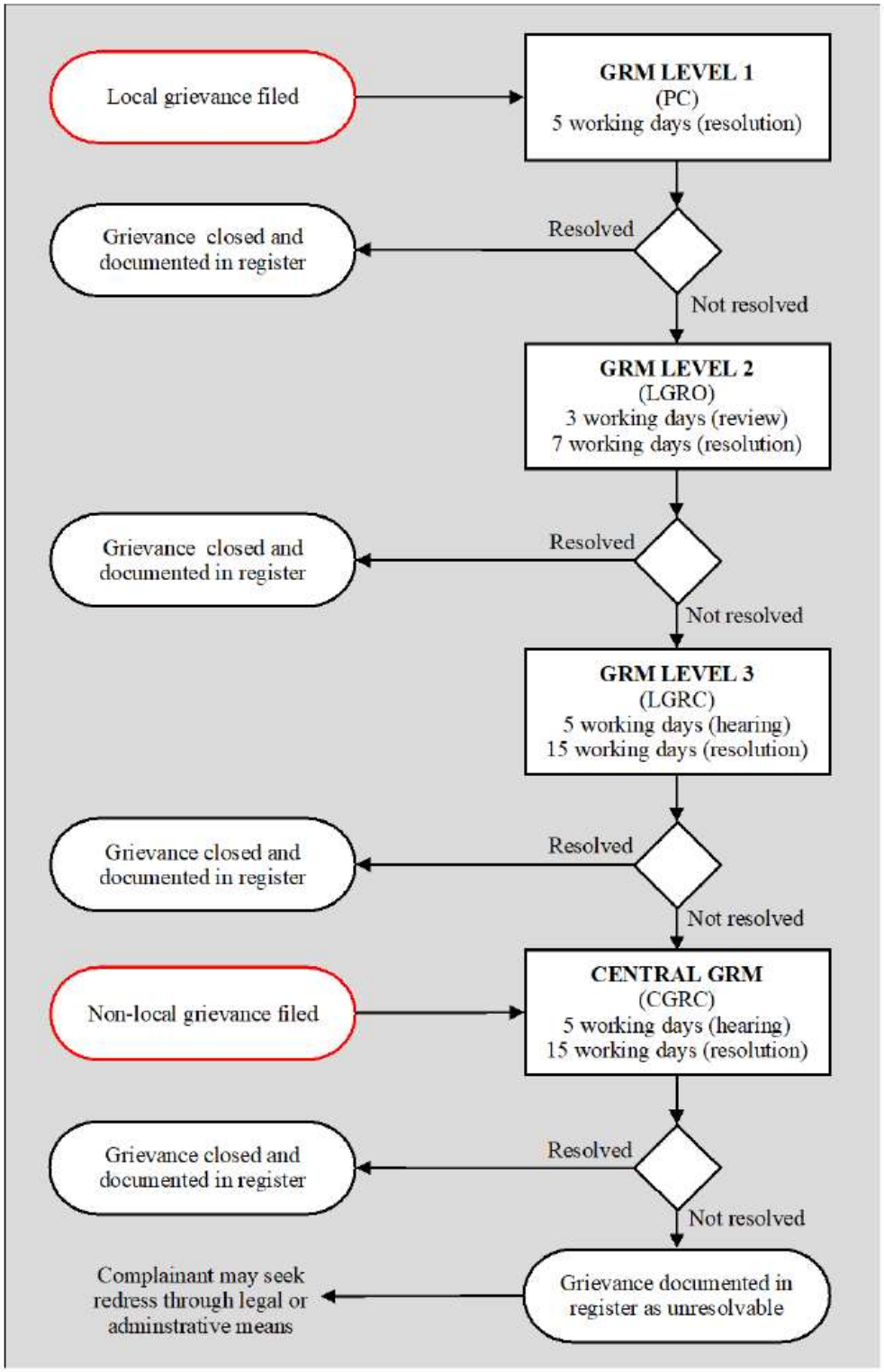

Figure 1:Grievance Redress Process

Source: Draft environmental impact assessment (July 2023)

51. **Central Grievance Redress Committee (CGRC).** Grievances referred to the CGRC from the local level, as well as grievances received through the Manila GRP and deemed non-local, will be addressed through a single hearing and resolution attempt. The GRO shall convene the CGRC within 15 working days of the referral from the Bataan or Cavite GRM or direct receipt of the legitimately non-local grievance. The members of the CGRC will review all prior documentation related to the grievance before the hearing. In the hearing, they shall have the opportunity to present his or her concerns and proposal for resolution, through a representative if desired. If the complainant is a woman, arrangements shall be made for a female mediator to be involved in the interaction. If the complainant cannot communicate in Tagalog or English, arrangements shall be made for an interpreter. The hearing process will aim to facilitate resolution through mediation and consensus. If consensus proves impossible to achieve, a simple majority vote of the CGRC members will decide the proposed resolution; the Project Director, as CGRC Chair, shall break any tie votes.

52. The CGRC will indicate corrective measures at the field level and assign clear responsibilities for implementation of its decision, which must begin within 15 working days. The outcome of the hearing will be communicated to the complainant by the GRO in writing, or verbally with a written transcript kept if the complainant has limited literacy. Minutes of the hearing and copies of all communication will be preserved in the central grievance redress database. If the resolution proposed by the CRGC is acceptable to the complainant and successfully implemented, a closure statement signed by the complainant will be completed and added to the register. If the resolution proposed by the CGRC is not acceptable to the complainant, the complainant will be advised of his or her right to pursue redress through the legal system or through such administrative remedies as may be available through DENR-EMB or other agencies, if so desired. In such a case, the grievance will be recorded in the central grievance as unresolvable through the duly executed procedures of the project GRM.

VI. INSTITUTIONAL ARRANGEMENTS AND RESPONSIBILITIES

A. EARF Implementation Arrangement

53. **DPWH Unified Project Management Office – Roads Management Cluster II.** DPWH has five Unified Project Management Offices (UPMOs) to develop and implement different classes of infrastructure projects. The BCIB project has been proposed and set up under the auspices of the UPMO for the Roads Management Cluster II (Multilateral Projects), or UPMO-RMC II. As Proponent and Executing Agency, DPWH will have ultimate responsibility for ensuring that the project is implemented in accordance with applicable national laws, in compliance with the project's ECC, and in line with environmental covenants under the ADB loan. DPWH will be responsible for allocating adequate resources for implementing the EARF, and for securing any coordination agreements with other agencies and entities necessary to ensure timely and effective implementation of the EMP, including monitoring and reporting.

54. **DPWH BCIB Project Management Team**. The UPMO-RMC II has assigned a project management team (BCIB-PMT) to direct and oversee implementation of the BCIB project, from early planning and design through to the start of operations. The BCIB-PMT comprises several divisions, including Detailed Engineering Design/Operations; Procurement; Monitoring and Financial; and Environmental and Social Assessment/Right-of-Way. The BCIB-PMT is headed by a Project Director, who reports to the Undersecretary for UPMO Operations and Technical Services. The organizational structure for the BCIB-PMT is shown in the succeeding Figure. The Environmental & Social Assessment/Right-of-Way Division (ESARD) of the BCIB-PMT leads and

oversees implementation of the project's major safeguards plans, including the EARF, EMP, the Land Acquisition and Resettlement Plan (LARP) and the Gender Action Plan.

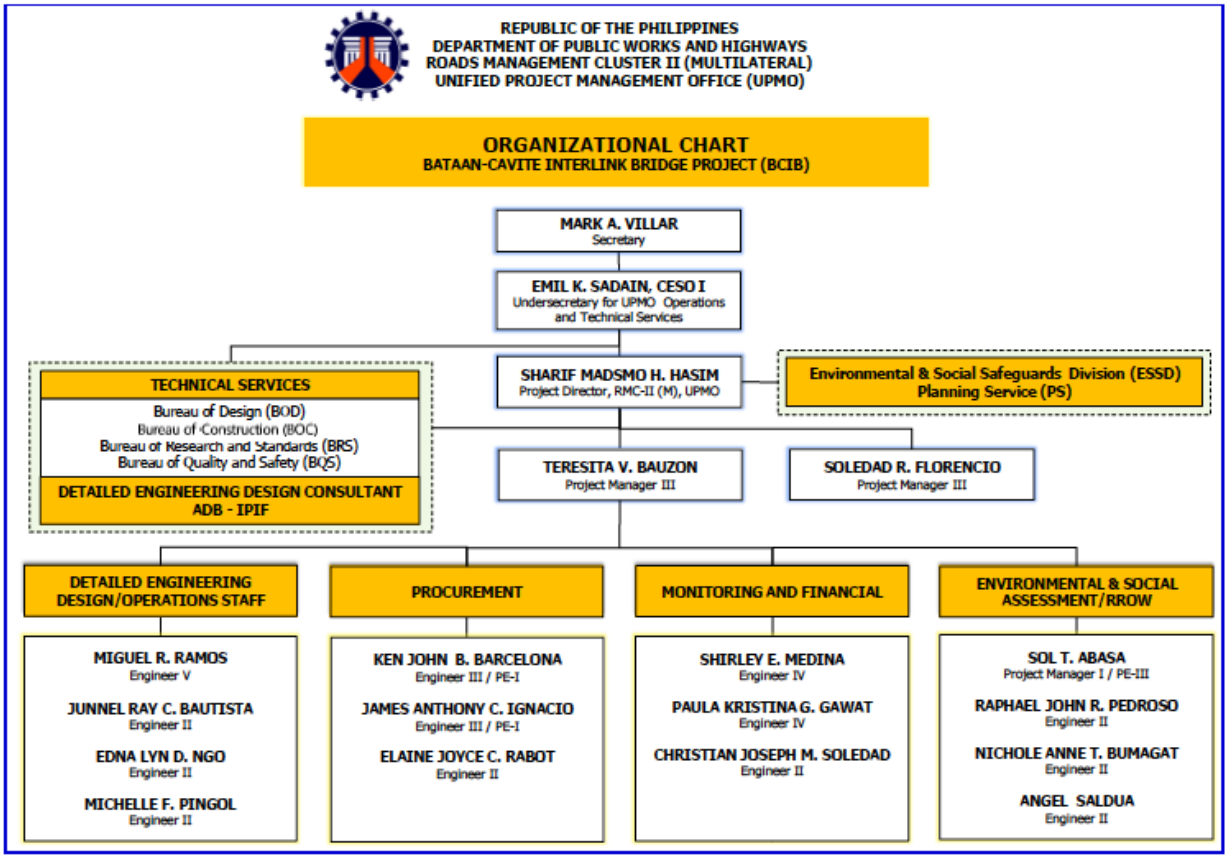

Figure 2: Organizational Chart of Unified Project Management Office for the BCIB Project
Source: Draft environmental impact assessment (July 2023)

55. **The Environmental and Social Safeguards Division (DPWH-ESSD)** is responsible for guidance of safeguards implementation in relation to all DPWH projects. The DPWH-ESSD primarily has a review function and is involved in all stages of the EIA/EMP and LARP processes of each DPWH project, from early scoping and formulation through to oversight of monitoring in the construction phase. During the pre-construction and construction phases, the DPWH-ESSD's main roles will be the review and endorsement of the EIA and other safeguards documents; verification of the procurement of all necessary permits, clearances and agreements; confirmation of the integrity of monitoring activities carried out by contractors and other designated parties; providing operation guidance for the project's Multi-Partite Monitoring Teams; review and approval of the consolidated monitoring reports prepared for submission to DENR-EMB and ADB; and supporting the DPWH-PMT as needed to address emerging safeguards compliance concerns, including major grievances. The DPWH-ESSD will also have a role in helping and advising the DPWH-PMT to manage coordination with DENR-EMB, other regulatory agencies, and ADB.

56. **The DPWH Environment, Health and Safety Officers** (DPWH-EHSOs) will be dedicated full-time positions stationed at the works sites. In some cases, it may be appropriate for a DPWH-EHSO to be assigned to multiple closely grouped minor works sites, but a frequent presence on

each site will be a standard expectation. The DPWH-EHSOs will be trained environmental professionals capable of assessing environmental processes and conditions on-site; performing confirmatory monitoring of contractors' compliance monitoring; verifying performance of appropriate environmental sampling by Primary Contractors; supervising supplementary sampling by an outside sampling contractor when needed for verification or problem investigation; and providing guidance as needed to contractors and sub-contractors regarding implementation of best management practices and corrective action. The DPWH EHSOs will be divided amongst two teams, based in Bataan and Cavite, respectively; each team will be headed by a Field Monitoring Supervisor (DPWH-FMS).

57. **DPWH Bridge Management Unit.** Before the end of the construction phase, DPWH will establish a Bridge Management Unit (DPWH-BMU) to run the infrastructure for its full design life. The DPWH-BMU will be responsible for implementing the EMP provisions applicable to the operation phase, and for monitoring and reporting to DENR-EMB and ADB until such time as these entities may grant relief from reporting requirements.

58. **Primary Contractors (PC).** Each PC will be required to prepare a Contractor Environmental Management and Monitoring Action Plan (CEMMAP) covering all the works and related sites under its control, including all works and sites conducted and set up by its sub-contractors. The CEMMAP shall cover all aspects of the PC's responsibilities under the EMP, including the permits it must obtain; the specialized management plans it must prepare and implement (e.g., Waste Management Plan, Construction Traffic Management Plan, Construction Camp Management Plan, Soil Erosion Prevention Plan, etc.); and responsibilities for self-monitoring and reporting to DPWH. The CEMMAPs must be prepared and approved by the CSC before the PC can begin any works.

59. **Primary Contractor Environment, Health and Safety Representative**. Each PC will be required to appoint an Environment, Health, and Safety Representative (PC-EHSR) to ensure effective implementation of mitigation and best practices prescribed in the EMP. The PC-EHSRs will organize and oversee regular site monitoring and monthly reporting to the DPWH-EU, in conjunction with their respective PCs' monthly work progress reporting. The PC-EHSRs will be key participants in the oversight work of the DPWH-EU and will be charged with ensuring prompt and effective implementation of any corrective actions identified through PC self-monitoring or confirmatory monitoring activities of the DPWH-EU, as well as timely resolution of complaints received through the GRM that are related to contractor activities. Each appointed PC-EHSR will appoint EHS officers (PC-EHSOs) as needed to undertake daily work site 24 monitoring of EHS matters. The PC-EHSOs will be field staff who will be expected to have 25 a daily presence at assigned work sites and staging areas.

60. **Construction Supervision Consultant (CSC).** A CSC will be engaged to guide the project construction process to successful completion. As part of its oversight of the construction works from engineering and project management standpoints, the CSC will be required to devote supervisory attention to ensuring that the PCs' contractual commitments with respect to EARF and EMP implementation as well as ECC compliance are met consistently and completely, through adherence to their CEMMAPs. The CSC should have a constant presence on the sites and will be able to support the DPWH-EU, DPWH-EHSOs and PC-EHSRs in addressing observed compliance issues in a timely and context-informed manner. The CSC will be expected to provide guidance to the DPWH-EU in preparation of the required monitoring reports for submission to DENR and ADB. In addition to supervising the works and EHS compliance, the CSC will have substantial responsibilities with respect to development of training and other capacity-building activities, including training provided to sub-contractors and workers, as well as the DPWH EHSO corps and personnel of the DPWH-EU involved in preparing monitoring reports. The CSC will also assist DPWH-EU in setting up biodiversity monitoring programs to be

developed under the auspices of the project's BAP. The CSC will be required to have qualified international and national EHS specialists on its staff to evaluate and advise in relation to EHS concerns; this should include, at a minimum:

- International EHS Monitoring Specialist;
- National EHS Monitoring Specialist;
- International Biodiversity Monitoring Specialist; and
- National Biodiversity Monitoring Specialist.

61. **Environmental Units Required in the ECC.** The ECC conditionalities required the DPWH to form the following entities prior to the start of construction:

- *DPWH Environmental Unit*. The ESARD of the BCIB-PMT will serve as the project's Environmental Unit (DPWH-EU) and will coordinate closely with the Primary Contractors implementing the seven construction packages; the other units of the BCIB-PMT; and the safeguards specialists of the construction supervision consultant to discharge the required duties. The senior project manager who heads the ESARD will be the designated Project Environment Officer (PEO).
- *Multi-Partite Monitoring Team (MMT)*. A multi-stakeholder entity to exercise independent verification of the project's compliance with the terms of the ECC. The MMT will review the monitoring reports of the Proponent, conduct their own observational verification monitoring, and follow up on grievances submitted by members of the public or entities in the project area. MMTs are expected to prepare and submit semi-annual verification reports to the DENR EMB ROs.

62. **External Monitoring Agent**. ADB's SPS 2009 requires borrowers to retain qualified and experienced external experts or qualified NGOs to verify monitoring information for projects with significant impacts and risks. External experts are defined in the SPS as experts not involved in day-to-day project implementation or supervision. As the BCIB project will entail significant impacts and risks, an external monitoring agent (EMA) will be required for the BCIB project.

Table 8: Summary of General EARF and EMP Responsibilities

Entity	Responsibilities in EMP Implementation
DPWH Unified Project Management Office-Roads Management Cluster II (DPWH-UPMO RMC II)	• Designate an Environmental Unit and Project Environment Officer for the project • Ensure that all aspects of EMP implementation, including monitoring provisions, are adequately resourced • Facilitate strong coordination between DPWH-EU and other divisions of the DPWH-PMT • Facilitate interaction with DENR-EMB, other regulatory agencies and ADB as needed
DPWH Environmental Unit (DPWH-EU)	• Oversee and manage all environment-related aspects of the project during the pre-construction and construction phases • Ensure that all contractors and subcontractors strictly comply with the relevant conditions of the project ECC and measures prescribed in the EMP • Ensure that all monitoring and reporting are carried out as specified in the EMP • Liaise with DENR-EMB Regional Offices and other regulatory agencies as needed to ensure strong compliance with relevant laws and conditions of the project ECC

Entity	Responsibilities in EMP Implementation
DPWH Project Environment Officer (PEO)	• Lead Environmental Unit (DPWH-EU), providing direction and oversight to management team and site-level personnel • Coordinate with other units of DPWH-PMT as needed • Oversee preparation of quarterly and semi-annual environmental monitoring reports as required under the Philippine Environmental Impact Statement System (PEISS) and ADB loan covenants
DPWH Environment, Health and Safety Officers (DPWH EHSOs)	• Maintain a steady presence on construction sites to monitor activity, detect emerging issues, and liaise with EHS representatives of the primary contractors (PC-EHSRs) • Conduct regular confirmatory monitoring of site conditions and implementation of EMP-prescribed measures • Observe monitoring activity, including environmental sampling) carried out by PC-EHSRs • Enable as-needed problem-focused environmental sampling by outside monitoring contractor • Support CSC in delivery of EHS training at the site level
DPWH Environmental and Social Safeguards Division (DPWH-ESSD)	• Review and endorse EIA and EMP, ensure their approved by DENR-EMB • Verify procurement of all necessary clearances and agreements • Review monitoring reports prepared by DPWH-EU prior to submission to DENR-EMB • Participate in activities of GRCs as needed • Advise and assist DPWH-UPMO RMC II and DPWH-EU in managing relations with DENR-EMB, other regulatory agencies and ADB regarding project environmental issues • Review and approve monitoring reports prepared by the DPWH-BMU during the operation phase, prior to submission to DENR-EMB and ADB • Advise DPWH-BMU on continuing compliance with EMP and ECC during operation phase • Participate in oversight of the project's BAP
Primary Contractors (PCs)	• Prepare and implement Construction Environmental Management and Monitoring Action Plan (CEMMAP) covering all works and staging area sites under their control • Appoint an EHS Representative (PC-EHSR) to drive implementation of CEMMAP on all sites under their control • Conduct regular compliance and effects monitoring of works sites and staging area sites and submit monthly CEMMAP implementation monitoring reports to DPWH-EU • Direct and monitor the activities of all of its sub-contractors to ensure correct implementation of EMP-prescribed mitigation and compliance with all relevant national laws
Primary Contractor EHS Representatives (PC EHSRs)	• Ensure that all aspects of the CEMMAP are implemented effectively • Direct and manage regular site monitoring, and prepare monthly monitoring reports for the DPWH-EU • Cooperate with DPWH-EU, DPWH-EHSOs, CSC and site engineers to resolve compliance issues

Entity	Responsibilities in EMP Implementation
	• Take prompt action to resolve grievances received from stakeholders (directly or through the Grievance Redress Mechanism) regarding activity of the PC and its sub-contractors
Construction Supervision Consultant (CSC)	• Review and approve CEMMAPs and all specialized mitigation sub-plans specified in the EMP, • providing guidance to PCs as needed to achieve high-quality CEMMAPs • Design and deliver EHS training as specified in the EMP Maintain a steady presence on construction sites to verify PC and sub-contractor compliance with the CEMMAPs and EMP • Monitor and guide the works, and proactively address emerging EHS issues in coordination with DPWH-EU, DPWH-EHSOs and PC-EHSRs • Participate in the functioning of the GRM as needed • Develop and implement training programs as specified in the EMP • Provide guidance and assistance to DPWH-EU in development of site-level monitoring protocols and plans
External Monitoring Agent (EMA)	• Conduct independent monitoring and evaluation of the project's environmental performance and • Report to DPWH-UPMO RMC II and ADB, as per Terms of Reference agreed by DPWH and ADB

VII. MONITORING AND REPORTING

A. Monitoring Entities and Processes

63. The environmental monitoring for the BCIB project will involve multiple processes and be carried out by the following entities.

1. Construction Phase Monitoring

64. Five interwoven monitoring process streams can be delineated for the construction phase of the BCIB project. These are described below:

- ***Proponent's Self-Monitoring:*** As the project proponent, DPWH will implement a self-monitoring process to ensure that the implementation activities under the project are in compliance with the EMP and the ECC, and report the results to the DENR-EMB ROs in quarterly Self-Monitoring Reports (SMRs) and semi-annual ECC Compliance Reports (CMRs). DPWH will also prepare Semi-Annual Environmental Monitoring Reports (SEMRs) for submission to ADB. The SMRs, CMRs and SEMRs will be prepared by the DPWH-EU, with guidance and review provided by DPWH-ESSD.

- ***Contractors' Self-Monitoring:*** To support its quarterly reporting, DPWH will require each of the PCs to monitor sites under its control, including those operated by its sub-contractors. Each PC's CEMMAP shall include provisions for preparation of monthly CEMMAP implementation monitoring reports, to be submitted to the DPWH-EU in conjunction with regular monthly progress reporting on implementation of the civil works. The monthly monitoring reports prepared for submission to the DPWH-EU shall include

the findings of both compliance monitoring (i.e., confirmation that prescribed measures are being implemented) and effects monitoring (i.e., confirmation that emissions and effluents generated are not violating relevant environmental quality standards). The PCs will have the option of conducting effects monitoring in-house or out-sourcing it to a qualified monitoring firm, but in either case, associated laboratory analysis must be carried out by a DENR-accredited laboratory.

- ***Proponent's Confirmatory Monitoring of Primary Contractors.*** Contractors may perceive a strong incentive to cut corners on their self-monitoring to cover up lax performance and save resources, and monitoring activity on the part of the Proponent is typically necessary to help counteract this (close scrutiny of received monitoring reports is also critical in this regard). The DPWH-EU, with the guidance of the CSC and DPWH-ESSD, will conduct confirmatory monitoring of each PC's monitoring activity to ensure monitoring integrity. The objective of confirmatory monitoring is not to duplicate the monitoring activity of the PCs. Rather, a more limited sampling approach to monitoring is appropriate, in which monitoring is conducted at lower frequency for most parameters, with the spot check being an important modality. Monitoring at the site level will be carried out by the DPWH-EHSOs. The DPWH-EU will need to develop a refined monitoring protocol for the works of each PC, based on the monitoring plan contained in the PC's CEMMAP; the CSC shall provide guidance and assistance in this regard, including for development of checklists and appropriate frequencies for regular and spot checks. The confirmatory monitoring activity of the DPWH-EHSOs should include observation environmental sampling activity carried out by the PC or its sampling contractor; this can enable effective oversight without expensive duplication of field sampling and laboratory analysis. However, DPWH-EU may find it necessary to conduct independent field sampling on occasion to investigate issues that emerge at times between the PC's sampling scheduled sampling dates (perhaps in response to complaints from people affected by impacts), or to counteract any coordination between construction activity and sampling dates on the part of the PC. For this reason, the DPWH-EU should allocate resources to engage an outside sampling contractor on an occasional as-needed basis. As a rough estimate and basis for a monitoring allocation, such sampling monitoring activity is assumed to amount to about one tenth of the environmental sampling effort and expense of the monitored PC. The DPWH-EHSOs shall facilitate access to project sites by the outside contractor when such spot sampling is arranged.

- ***Monitoring by Multi-Partite Monitoring Teams (MMTs).*** Two MMTs will be set up to conduct verification monitoring of the Proponent's performance and the integrity of its self-monitoring activity, on behalf of project stakeholders in Bataan and Cavite. The MMTs will report their findings to the DENR-EMB ROs for their respective regions in semi-annual Compliance Monitoring and Validation Reports (CMVRs).

- ***Monitoring by DENR-EMB ROs.*** The regional offices of DENR-EMB (Regions III and IV) will conduct field monitoring as they deem appropriate to verify the quality of the proponent's self-monitoring, and to investigate particular concerns brought to light by monitoring results, stakeholder complaints, or other means. The DENR-EMB ROs will submit semi-annual Compliance Evaluation Reports (CERs) to the DENR-EMB CO on the proponent's compliance with the ECC.

- ***Monitoring by External Monitoring Agent (EMA).*** The EMA will conduct monitoring of the overall performance of the project in relation to the EMP and EMoP. The specific

scope, nature and frequency of the EMA's monitoring activity will be determined through discussions between DPWH and ADB prior to preparation of a Terms of Reference and selection of the firm or NGO that will serve as the EMA.

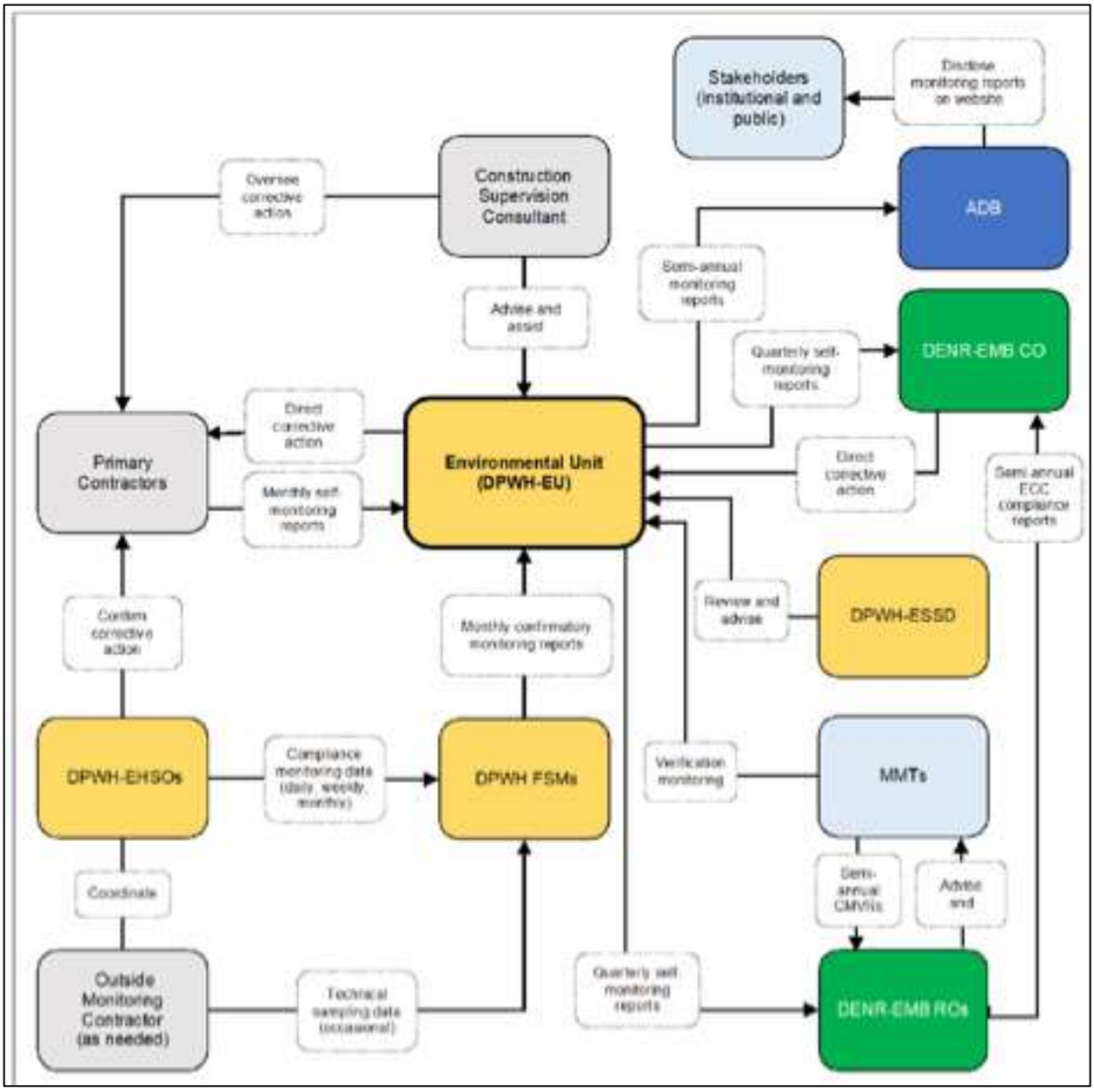

Figure 3: Schematic of Monitoring Processes in Construction Phase

2. Operation Phase Monitoring

65. Project implementation activity—and the scope and scale of impacts—will change dramatically with the end of the construction phase, and monitoring activity will evolve accordingly. The configuration of monitoring activity for the project's operation phase is shown in the succeeding Figure.

- ***Proponent's Self-Monitoring.*** During the operation phase, the DPWH-BMU will replace the DPWH-UPMO RMC II and its BCIB-PMT as the BCIB project's implementing body, and will become responsible for self-monitoring activity and attendant reporting. The DPWH-BMU will submit quarterly SMRs to the DENR-EMB ROs of Regions III and IV, unless the Proponent applies for and is granted relief from the ECC during the operation phase, which is indicated as a possibility in the present ECC. The DPWH-BMU shall submit SEMRs to ADB until ADB assesses that the occurrence and significance of impacts during operations do not warrant continued reporting.

- ***Monitoring by Multi-Partite Monitoring Teams (MMTs).*** The MMTs will continue monitoring project impacts and the Proponent's compliance with the ECC and reporting on a semi-annual basis unless the Proponent applies for and is granted relief from the ECC during the operation phase, or the members of the MMTs and/or the respective DENR-EMB ROs determine that continued monitoring and reporting are not warranted.

- ***Monitoring by DENR-EMB ROs.*** The DENR-EMB ROs of Regions III and IV will continue to monitor the Proponent's compliance with the terms of the ECC until such time as the proponent applies for and is granted relief from the ECC.

- ***Monitoring by External Monitoring Agency (EMA).*** The monitoring activity of the EMA will continue into the operation phase, but the duration of operation-phase monitoring has not been determined. The specific scope, nature and frequency of the EMA's monitoring activity will be determined through discussions between DPWH and ADB prior to preparation of a Terms of Reference and selection of the firm or NGO that will serve as the EMA.

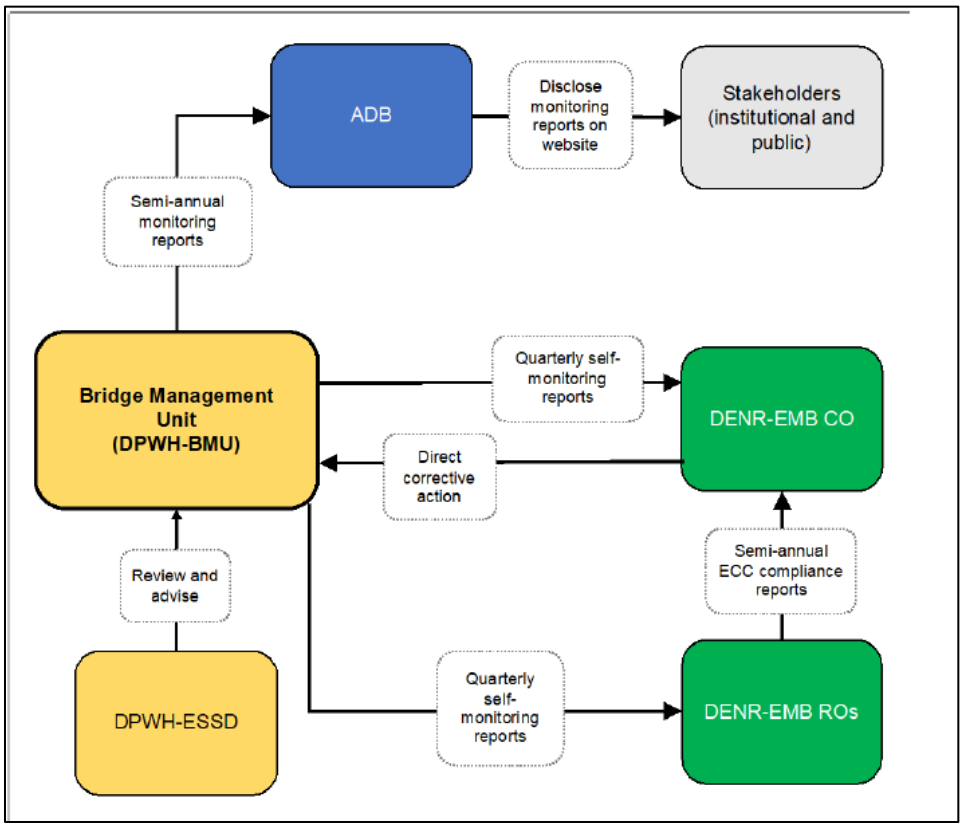

Figure 4: Schematic of Monitoring Activity in Operation Phase

Appendix 1:

ADB Prohibited Investment Activities List

The following activities do not qualify for the Asian Development Bank financing:

(i) Production or activities involving harmful or exploitative forms of forced labor[5] or child labor[6];

(ii) (Production of or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements or subject to international phase-outs or bans, such as (a) pharmaceuticals[7], pesticides, and herbicides[8], (b) ozone-depleting substances[9], (c) polychlorinated biphenyls[10] and other hazardous chemicals[11], (d) wildlife or wildlife products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora[12], and (e) transboundary trade in waste or waste products[13];

(iii) Production of or trade in weapons and munitions, including paramilitary materials;

(iv) Production of or trade in alcoholic beverages, excluding beer and wine[14];

(v) Production of or trade in tobacco;

(vi) Gambling, casinos, and equivalent enterprises;

(vii) Production of or trade in radioactive materials[15], including nuclear reactors and components thereof;

(viii) Production of, trade in, or use of un-bonded asbestos fibers[16];

(ix) Commercial logging operations or the purchase of logging equipment for use in primary tropical moist forests or old-growth forests; and

(x) Marine and coastal fishing practices, such as large-scale pelagic drift net fishing and fine mesh net fishing, harmful to vulnerable and protected species in large numbers and damaging to marine biodiversity and habitats.

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[5] Forced labor means all work or services not voluntarily performed, that is, extracted from individuals under threat of force or penalty

[6] Child labor means the employment of children whose age is below the host country's statutory minimum age of employment or employment of children in contravention of International Labor Organization Convention No. 138 "Minimum Age Convention" (www.ilo.org)

[7] A list of pharmaceutical products subject to phaseouts or bans is available at http://www.who.int.

[8] A list of pesticides and herbicides subject to phaseouts or bans is available at http://www.pic.int.

[9] A list of the chemical compounds that react with and deplete stratospheric ozone resulting in the widely publicized ozone holes is listed in the Montreal Protocol, together with target reduction and phaseout dates. Information is available at http://www.unep.org/ozone/montreal.shtml

[10] A group of highly toxic chemicals, polychlorinated biphenyls are likely to be found in oil-filled electrical transformers, capacitors, and switchgear dating from 1950 to 1985

[11] A list of hazardous chemicals is available at http://www.pic.int.

[12] A list is available at http://www.cites.org.

[13] As defined by the Basel Convention; see http://www.basel.int.

[14] This does not apply to subproject sponsors who are not substantially involved in these activities. Not substantially involved means that the activity concerned is ancillary to a subproject sponsor's primary operations.

[15] This does not apply to the purchase of medical equipment, quality control (measurement) equipment, and any equipment for which ADB considers the radioactive source to be trivial and adequately shielded.

[16] This does not apply to the purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%

Appendix 2

Rapid Environment Assessment (REA) Checklist

Instructions:

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to ADB.

(ii) (This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Subproject/Component Name:

SCREENING QUESTIONS	Yes	No	REMARKS
A. PROJECT SITING IS THE PROJECT AREA ADJACENT TO OR WITHIN ANY OF THE FOLLOWING ENVIRONMENTALLY SENSITIVE AREAS?			
▪ CULTURAL HERITAGE SITE			
▪ PROTECTED AREA			
▪ WETLAND			
▪ MANGROVE			
▪ ESTUARINE			
▪ BUFFER ZONE OF PROTECTED AREA			
▪ SPECIAL AREA FOR PROTECTING BIODIVERSITY			
B. POTENTIAL ENVIRONMENTAL IMPACTS WILL THE PROJECT CAUSE…			
▪ encroachment on historical/cultural areas; disfiguration of landscape by road embankments, cuts, fills, and quarries?			
▪ encroachment on precious ecology (e.g. sensitive or protected areas)?			
▪ degradation of cultural property, and loss of cultural heritage and tourism revenues?			
▪ alteration of surface water hydrology of waterways crossed by the alignment, resulting in increased sediment in streams affected by increased soil erosion at construction site?			

SCREENING QUESTIONS	Yes	No	REMARKS
▪ deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?			
▪ water resource problems (e.g. depletion/ degradation of available water supply, deterioration for surface and ground water quality) and pollution of receiving waters?			
▪ overpaving leading to lowered ground water table, leading to land subsidence, etc.?			
▪ road blocking and temporary flooding due to land excavation during rainy season?			
▪ traffic disturbances due to construction material transport and wastes?			
▪ increased local air pollution due to earth works and other activities during construction?			
▪ Noise and vibration from construction and operation activities?			
▪ noise and vibration due to blasting?			
▪ social conflicts between construction workers from other areas and local workers?			
▪ hazardous driving conditions where construction interferes with pre-existing roads?			
▪ poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases from workers to local populations?			
▪ creation of temporary breeding habitats for mosquito vectors of disease?			
▪ dislocation and involuntary resettlement of people living in right-of-way?			

Preliminary Climate Risk Screening Checklist

Country/Project Name:
Subproject Name:
Location:

Screening Questions		Score	Remarks[1]
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?		
	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea- level, peak river flow, reliable water level, peak wind speed etc)?		
Materials and Maintenance	Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?		
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s) ?		
Performance of project outputs	Would weather/climate conditions, and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?		

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered lowrisk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High):_____
Other Comments:_

Prepared by: ____ Designation/Agency:_____ Date: _____

[1] If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.