

Consultancy Services for the Due Diligence and Options Analysis for the proposed Mindanao Transport Connectivity Improvement Project

Environment and Social Management Framework (ESMF)

Main Report

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Abbreviation and Acronyms

CDO	Cagayan de Oro City
C-ESMP	Construction Environmental and Social Management Plan
CFP	Chance Find Procedure
CNC	Certificate of non-coverage
dB	decibels
DAO	DENR Administrative Order
DED	Detailed Engineering Design
DENR	Department of Environment and Natural Resources
DEO	District Engineering Office
DOLE	Department of Labor and Employment
DPWH	Department of Public Works and Highways
ECC	Environmental Compliance Certificate
EHS	Environment, Health, and Safety
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMB	Environmental Management Bureau
EMP	Environmental Management Plan
EPRMP	Environmental Performance Report and Management Plan
ES	Environmental and Social
ESA	Environmental and Social Assessment
ESF	World Bank's Environment and Social Framework
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standard
GenSan	General Santos City
GoP	Government of the Philippines
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
IEE	Initial Environmental Examination
10	Implementing Office (Regional or District Engineering Office)
IPPF	Indigenous Peoples Policy Framework
IRAP	International Road Assessment Programmed
Km	Kilometer
LARRIPP	Land Acquisition, Resettlement, Rehabilitation, and Indigenous Peoples' Policy
LGU	Local Government Unit
LMP	Labor Management Plan
µg/Ncm	Microgram per normal cubic meter
MinDA	Mindanao Development Authority
MOA	Memorandum of Agreement
NCCA	National Commission for Culture and the Arts
NCIP	National Commission on Indigenous People
NEDA-ICC	National Economic Development Authority – Investment Coordination Committee
NGO	Non-Government Organization
NO ₂	Nitrogen dioxide

PCMA	DPWH's online monitoring through Project Contract Management Application
PCO	Pollution Control Officer
PD	Presidential Decree
PDP	Philippine Development Plan
PEISS	Philippine Environmental Impact Statement System (Presidential Decree 1586)
PHIVOLCS	Philippine Institute of Volcanology and Seismology
PIU	Project Implementation Unit
PM	Particulate Matter
PPE	Personal Protective Equipment
RA	Republic Act
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
SEF	Stakeholder Engagement Framework
SO ₂	Sulfur Dioxide
TOR	Terms Of Reference
UPMO - RMC II	Unified Project Management Office – Road Management Cluster II
WB	World Bank

1. Introduction

This document presents the Environmental and Social Management Framework (ESMF) for the Mindanao Transport Connectivity Improvement Project (MTCIP), which supports a program of the Government of the Philippines (GoP), specifically that of the DPWH's Mindanao Road Development Network Program. The Program centers on improving the logistics network in growth corridors, some of which may be in conflict-affected areas, through the construction, rehabilitation, and improvement of the road network in Mindanao, particularly in Regions 10, 11, and 12.

The Government of the Philippines (GoP) requested for World Bank financing for the proposed MTCIP to improve road connectivity, climate resilience and safety of selected roads in the Mindanao Region. Thus, the proposed MTCIP is aimed to support (a) climate resiliency, and road safety improvement followed by maintenance of the Cagayan de Oro (CDO)- Davao-General Santos (GenSan) corridor, hereinafter referred to as the Main Corridor, and the (b) upgrading of three (3) local road sections connecting to the Main Corridor to standards of national roads, hereinafter referred to as Link Roads 1 to 3.

Components of MTCIP will be undertaken in a variety of ecological, social, and conflict contexts in a number of local government units (LGUs), which are the political and quasi-autonomous administrative units of the aforementioned regions in Mindanao.

A Due Diligence and Options Analysis (DDOA) Study was carried out for MTCIP, which included the preparation of this ESMF. Other environmental and social instruments such as Environmental and Social Impact Assessment (ESIA) and a corresponding Environmental and Social Management Plan (ESMP), Labor Management Procedures (LMP), Chance Find Procedure (CFP), Resettlement Policy Framework (RPF), Indigenous People's Policy Framework (IPPF), and Stakeholder Engagement Framework (SEF), were also formulated as part of the environmental and social safeguards for MTCIP implementation. Public consultations carried out as part of the project preparation contributed to the finalization of this ESMF.

1.1 Purpose of the Environmental and Social Management Framework (ESMF)

Since the project consists of subprojects, the risks and impacts of which cannot be determined until the subproject details have been identified, an ESMF is required under the World Bank ESF. The purpose of the ESMF is to set out the principles, guidelines, and procedures for assessing E&S risks and impacts of the MTCIP components/subprojects for which specific details will be known only in the detailed design phase of the subprojects (civil work packages) during the implementation stage. The ESMF provides the flexibility to address environmental and social risks and impacts from new elements that may potentially be introduced in the Link Roads and the Main Corridor due to the upgrading of roads. It also provides flexibility for social aspects which are difficult to detail given the tight project preparation timeline (e.g., survey of PAPs and inventory of losses, screening, and consultations with Indigenous Peoples).

An Environmental and Social Impact Assessment (ESIA) was carried out for MTCIP, the results and findings of which were used to draft this ESMF to guide the preparation of safeguards instruments for the subprojects. In addition, a Resettlement Policy Framework (RPF), Indigenous Peoples Policy Framework (IPPF), and Stakeholder Engagement Framework (SEF) were also drafted as components of the ESMF.

Pending the determination of project details such as the exact number of structures and project affected persons, trees and vegetation to be cleared, etc., this ESMF shall provide guidance in the development, implementation, and operation of the MTCIP.

As such, the ESMF plays a very important role in the context of infrastructure development of the GoP particularly with respect to major roads and highways. The purpose of the ESMF is to ensure that such projects align with sustainable development principles and environmental protection safeguards of both the GoP and that of the World Bank with the end view of minimizing negative impacts at all the stages of development.

Table 1. Organization of the ESMF			
Section	Description		
Part I: Introduction and Purpose of ESMF	Context, purpose, structure of the ESMF; a description of the project and its components; project area of influence; and environmental and social safeguard issues		
Part II: Regulatory Requirements, Safeguards Policy Principles and Objectives	Review of the GoP and WB policies on environmental and social safeguards, gap analysis and the response measures to gaps, as applicable.		
Part III: Safeguards Procedures	Detailed guidance on the implementation of environmental and social safeguards within the project, per project phase, including screening, preparation of safeguard instruments, disclosure and public consultation, and grievance redress.		

At the onset of project E&S assessment, the MTCIP project components have been subjected to project E&S screening, i.e., based on the WB ESF four E&S risk classifications: High Risk, Substantial Risk, Moderate Risk or Low Risk. In determining the appropriate risk classification, relevant issues are taken into consideration, such as the type, location, sensitivity, and scale of the project; the nature and magnitude of the potential environmental and social risks and impacts; and the capacity and commitment of the Borrower (in this case, the DPWH) to manage the environmental and social risks and impacts of the project in a manner consistent with the Environmental and Social Policies and Standards.

According to the review of the environmental and social risks and impacts conducted by the World Bank based on the project design at concept stage, the Project risks were assessed to be 'Substantial' for both the environment and social aspects. Thus, in conformance with the relevant Environmental and Social Standards of the World Bank ESF, the following E&S instruments were prepared:

ESF Environmental and Social Standard	ESF Instrument
ESS1: Assessment and Management of ES	The ESMF, ESIA and the ESMP outlines the responsibilities for
Risks and Impacts	assessing, managing, and monitoring environmental and social risks
	and impacts associated with each stage of the project and its
	subprojects.
ESS2: Labor and Working Conditions	This standard recognizes the importance of employment creation and
	income generation. A Labor Management Procedure has been
	prepared to ensure that all workers involved in the project are
	protected and are working in safe environments. At the same time, it
	sets out expected behaviors from workers to ensure harmony in the
	communities where the project operates.
ESS3: Resource Efficiency and Pollution	The mitigation measures to address resource efficiency and pollution
Prevention and Management	prevention and management throughout the project life cycle is
	integrated as part of the project's ESMP and will be elaborated further
	in the site-specific Construction ESMP (C-ESMP) of the subprojects.

Table 2. ESF instruments prepared for MTCIP.

ESS4: Community Health and Safety ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Measures to address the health and safety and security risks and impacts on project affected communities will be further detailed in the site-specific C-ESMP. This will be based on the E&S risk screening of the subprojects guided by the ESMF and the road safety assessment for each phase of the project to be undertaken by DPWH. The DPWH will regularly monitor traffic incidents and accidents, and prepare regular reports of such monitoring, to be detailed in the Project Operations Manual. A Resettlement Policy Framework (RPF) will guide the development of individual subproject Resettlement Action Plans (RAPs) as specific subproject impacts will still be confirmed during detailed engineering
	design. The RPF refers to the Indigenous Peoples Policy Framework (IPPF) which includes relevant provisions under ESS since the project runs through ancestral domains and some Indigenous Peoples may need to be relocated. In addition, a social audit will be conducted during subproject preparation to ascertain legacy issues in subproject resettlement.
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	The ESMF specifically includes criteria and procedures to ensure that the subprojects (civil works packages) are designed and implemented in ways that avoid damage to protected areas or critical habitats. Management measures following the mitigation hierarchy and Good International Industry Practices (GIIP) will be further elaborated in the site-specific C-ESMP of the Link Roads and the road sections of the Main Corridor. Such measures will be applicable for any associated facilities (AF), as defined under ESS 1, as may be identified during the E&S screening. The ESMF includes exclusion criteria and a screening checklist not to finance any works in critical natural habitats or protected areas that will have potential significant or irreversible impacts on ecosystems and its biodiversity
ESS7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	An Indigenous Peoples Planning Framework (IPPF) has been prepared for the project to ensure proper screening of Indigenous Peoples, their meaningful consultation/participation during subproject planning and implementation, and full respect for their rights and views. The IPPF also includes provisions on free, prior, and informed consent (FPIC) as required under ESS7 since the project traverses through ancestral domains and some Indigenous Peoples may need to be relocated.
ESS8: Cultural Heritage	The ESMF includes a chance finds procedure that sets the procedure that will be followed if previously unknown cultural heritage is encountered during project activities. The chance finds procedure will be included in all civil work contracts of the project.
ESS10: Stakeholder Engagement and Information Disclosure	A Stakeholder Engagement Framework (SEF) has been developed with two levels of stakeholder engagement: first at the project level which was done during project preparation and second at the subproject-level during project implementation. The SEF considers the conflict context in Mindanao and subproject-level Stakeholder Engagement Plans (SEPs) will be prepared at project implementation to help identify and guide engagement with actors or entities in a conflict-sensitive manner to ensure that project activities do not exacerbate the conflict in the project areas. A grievance redress mechanism (GRM) for stakeholders is included in the SEF which is different from the GRM for workers and ensures a survivor-centered approach for dealing with cases involving SEA/SH.

On the other hand, as required by the Philippine Environmental Impact Statement System (PEISS), project screening based on the Environmental Management Bureau (EMB) Memorandum Circular 2014-05 classifies the roads under the project (existing with modifications) as Category B Projects, i.e., Non-Environmentally Critical Projects (Non-ECP), located within Environmentally Critical Areas (ECA), and required to secure Environmental Compliance Certificate (ECC) or Certificate of Non-Coverage (CNC) prior to project implementation. Those sections of the MTCIP Main Corridor that fall under Environmental Enhancement Projects e.g., climate adaptation measures, or intended to directly address existing environmental problems, e.g., steep slopes/landslips, are classified as Category C per national legislation, which necessitates securing of CNC only and the application of which is justified by the scope of activities as described in the Project Description that is submitted

as a supporting document. A more detailed discussion on the ECC /CNC application is covered under Section 3.2 on Subproject Preparation.

The ESIA and ESMF are the precursor to the other E&S instruments, i.e., the LMP, CFP, RPF, IPPF, and the SEF that were prepared consistent with the WB ESSs.

Part of the ESMF is the implementation of the E&S procedures, such as securing of the required permits and clearances, compliance to the prescribed conditions on said permits/clearances, and the Conduct of Disclosure and Public consultation activities. To complete the process, and to ensure MTCIP compliance to E&S policies/regulations/permits and clearances, a monitoring and reporting plan/procedure shall be implemented by concerned DPWH offices and/or by the contracted party. **Figure 1** presents the ESMF Schematic Diagram.



Figure 1. ESMF Schematic Diagram

1.2 Project Description

1.2.1 Project Background

The Mindanao Transport Connectivity Improvement Project (MTCIP) is a comprehensive initiative aimed at enhancing road infrastructure in the Main Corridor, a vital national highway network linking the cities of Cagayan De Oro, Davao, and General Santos. This project, with a total project cost of \$661.17 million jointly financed by the World Bank and the Government of the Philippines will be implemented over a span of seven years. The Department of Public Works and Highways (DPWH) is the implementing agency for this project. MTCIP seeks to bolster transportation connectivity, particularly benefiting the agricultural sector by facilitating product movement and enhancing access to rural areas.

Growth and poverty reduction in Mindanao will require making agriculture more productive, particularly smallholder farmers. Furthermore, because Mindanao is the food basket of the country, enhancing food production and reducing food and input prices in this region will support the overall improvement welfare and the country's competitiveness. The potential impact of agriculture development in Mindanao is widely recognized as one-third of Mindanao's land area is devoted to agriculture, contributing about 23 percent of the region's economy and employing about four million people. Unfortunately, even though Mindanao's comparative advantage is agriculture, many of its farmers and fisherfolks still live in or are vulnerable to poverty. Connecting rural, remote areas to urban areas where there is demand for agricultural produce is one of the key interventions to support growth in the agricultural sector particularly the smallholder farmers. Better rural roads would reduce transportation costs and product losses for poor farmers and could make a major contribution to reducing poverty. Many roads are either non-existent, deteriorated or congested; as a result, the quality of agricultural produce at the point of sale is reduced and are often rejected, especially perishable commodities. Aside from the lack of farm-to-market roads (FMRs), there is a need to relieve congestion on roads accessing ports to improve connectivity beyond Mindanao.

The region's underdevelopment is largely due to civil conflict and low economic growth. The country's main peacebuilding challenges involve a limited geographic area in Western Mindanao that has spillover effects on the broader Mindanao region and the Philippines overall. While the core conflict in Mindanao has been between Muslim armed groups and the government, this is not primarily religious. The broad drivers of endemic violence in the region include: (i) social injustice, alienation, and exclusion of Muslims and indigenous people (IPs); (ii) displacement of Indigenous Peoples from their ancestral domains (ADs); (iii) inter-ethnic conflicts; (iv) rido (clan war and revenge killing); (v) land tenure and ownership disputes; (vi) competition for scarce natural and mineral resources; (vii) local election disputes; (viii) ineffective governance and the lack of rule of law and service delivery; and (ix) widespread poverty and scarcity of job opportunities.¹ Protracted land disputes and conflict in particular have deterred investments in agriculture thereby slowing job creation, growth, and poverty reduction. Aside from addressing the causes of conflict, providing jobs and access to economic opportunities are central to stabilization and normalization in conflict areas as they present alternatives to violence.² Addressing transport connectivity bottlenecks is crucial in the strategy to promote jobs and access to economic opportunities in the Mindanao region.

¹ Sources: World Bank Group. 2019. Systematic Country Diagnostic of the Philippines: Realizing the Filipino Dream for 2040. World Bank, Washington, DC., and the Mindanao Peace Lens Handbook, and the Mindanao Inclusive Agriculture Development Project PAD.

² World Bank. 2017. Mindanao Jobs Report.

The MTCIP is fully aligned with the Philippine Development Plan 2023-2028 as it supports the agricultural sector and contributes to the goal of expanding and upgrading infrastructure through the improvement of transport connectivity. The MTCIP aims to embed climate resilience in road design and asset management and strengthen road safety measures along one of the important transport corridors in Mindanao.

1.2.2 Project Objectives

The Project supports the agriculture sector of Mindanao by providing and enabling a more efficient movement of agriculture products from hinterlands to markets, and to make the mountainous and isolated rural areas more accessible so that these can be reached with ease, convenience, and safety.

MTCIP aims to implement better-quality maintenance practices through the Long-Term Performance-Based Maintenance (LTPBM) Concept in improving and preserving the overall condition and value of road assets during the contract period, resulting in a more economical approach to routine and periodic maintenance in succeeding years.

1.2.3 Project Components

The Project intends to support (a) climate resiliency, road safety improvement followed by maintenance of the **Cagayan De Oro (CDO) - Davao - General Santos (GenSan) corridor** and (b) upgrading of **three local road sections** connecting to the CDO-Davao-GenSan corridor to National Roads.

The MTCIP Project consists of two major components, further defined here as the "Main Corridor" and the "Link Roads".

Component 1: Improvements of selected local roads ("Link Roads") (Total: \$187 million; of which IBRD loan \$114 million, GOP \$73 million). This component will support upgrade (e.g., road widening and paving) of three local roads with a total length of 130 km to national road standards with climate resilience and road safety measures, connecting to the main corridor and thereby improving all-season road access for remote communities and farmers. The roads were jointly selected by DPWH, MinDA and LGUs based on multiple criteria: poverty index, proximity to agricultural productions points and markets, and service facilities, e.g., schools, health facilities and government facilities. The government counterpart will fully fund the land acquisition and resettlement. All local roads upgraded under MTCIP will be converted to national roads and DPWH will be responsible for operation and maintenance.

The MTCIP encompasses three Link Roads which will connect the Main Corridor to support the agriculture sector of Mindanao by providing and enabling more efficient movement of agriculture products from hinterlands to markets, and to make the mountainous and rural areas that are difficult to reach, be reachable with ease, convenience, and safety. These link roads will provide better connectivity to communities and serve as routes for transporting agricultural products to markets.

Link Road 1: Sayre Highway (Patulangan) – Cawayan – Kibenton Road (25 km). The road starts from Sayre Highway Junction at Barangay Capitan Bayong towards Barangay Cawayan in Bukidnon Region X. It terminates at Barangay Kibenton, near the northern section of the Main Corridor. The road is a single-lane gravel track with a paved section of concrete surface at the end. The surface with potholes and ruttings causes the path to become muddy and unpassable during the rainy season. The actual road width is about 5.0 meters, the sides of which are higher than the road, hence, rainwater accumulates along the road surface. The length of the gravel road is 9.0 km with 16 km of existing concrete paved road.

Total length is 25.43km which loops back to Sayre highway. The Scope of Work includes 9.0 km length to be paved with 28 cm thick PCCP, earthworks/embankment formation, asphalt overlay (4.9km), road strip widening (4.9km), and bridge upgrading of existing spillway across Atugan River (leading to Intavas) to bridge.

- Estimated Cost: PHP 1,277.52 million
- NPV: PHP 2,131.1 million
- EIRR: 27.4%

Link Road 2: Fatima – Malabog Road – Saloy – Bantol – Davao-Bukidnon Road to Panabo City (59 km). The road begins at the junction of Maharlika Highway in Barangay Grido, Poblacion in Panabo City, Davao del Norte, Region X, XI. It passes through Barangay Malativas up to Barangay Malabog, crossing the Davao River. It then passes through Barangay Bantol and exits at Barangay Malamba in Marilog District Junction Davao-Bukidnon Road. has a 17.0 km-long two-lane road from the starting point in Panabo City with two bridges and approaches ongoing construction that connect to a four-lane road with ongoing widening and slope protection works up to Malabog District. The road then connects to a gravel road with two inaccessible sections and intermittent concrete pavement and gravel road that passes through three locations of bridges to be constructed up to Barangay Bantol. This road continues to a gravel road then, to a two-lane concrete paved road up to the exit at Davao-Bukidnon Road in Barangay Malamba, Marilog District. The skewed road at the exit would need to be modified to be perpendicular for safety reasons.

Scope of Work will include construction of PCCP in unpaved sections (11.94km) and new alignments (KM 42 to KM 56), construction of 3 bridges, 1 box culvert, reblocking of distressed pavements (1.5km), construction of paved shoulders and concrete-lined ditches and Slope protection works (2.1km) A combination of cut and fill will be involved during civil works construction. Construction of six (6) bridges/box culverts is also proposed for the 6 river crossings along this project.

- Estimated Cost: PHP 2,426.69 million
- NPV: PHP 16,628.2 million
- EIRR: 45.7%

Link Road 3: Poblacion Sta. Maria-Malungon Road, Davao Occidental (46 km). The road will connect the province of Sarangani and Davao Occidental through the municipalities of Malungo. It starts at Sta. Maria municipality on a three-kilometer concrete paved road and continues to an ongoing construction of concrete pavement. There is a section of the concrete road beside the riverbank in a flood-prone section. Another section of the gravel road is eroded due to flooding during heavy rains The alignment is rolling to mountainous with river crossings and waterways that will need construction of bridges, box culverts and pipe culverts. One existing bridge may be retained and two are to be replaced. The road would need lined ditches along the route

at side cut sections, guardrails, and side barriers. The road exits in Malungon Junction/Digos – Makar Road.

Scope of Work will include construction of PCCP in unpaved sections of 45.03km following the DPWH-XII alignment with modifications, 12 bridges, and additional cross drains, rehabilitation of 1 bridge, Drainage concrete-lined ditches, paved shoulder, and slope protection works.

- Estimated Cost: PHP 2,309.07 million
- NPV: PHP 3,038.0 million
- EIRR: 21.8%

Component 2: Capacity, climate resilience and road safety enhancement of the CDO-Davao-GenSan Corridor ("Main Corridor") (Total: \$424 million; of which IBRD loan \$309 million, GOP \$115 million). The Main Corridor has a total length of 421.12 km with four parts: the Sayre Highway, the Bukidnon-Davao, the Digos-Makar and the Davao-Cotabato Rd (Davao City-Jct Digos Sect). The project scope includes rehabilitation of selected road sections categorized as 'bad or poor' according to DPWH's Road and Bridges Asset Inventory Application, which will include repair of damaged sections, upgrading to uniform cross section of carriageway, climate resilience and road safety enhancements. Following the improvement works, a new Road Asset Management (Asset Preservation and Preventive Maintenance) regime will be introduced for the whole stretch of the Main Corridor, such as Output & Performance-Based Road Contract (OPRC) to ensure a year-round satisfactory level of service.

The CDO - Davao- General Santos Corridor is categorized as a National Road and is comprised of four highways including Sayre Highway, Bukidnon-Davao Highway, Digos-Makar Highway and Davao-Cotabato Road (Davao City- Junction Digos Section). The Main Corridor stretches 421.12km from the northern coast of Mindanao until the southern coastal area. It traverses a total of 6 provinces, 14 municipalities, 7 cities and 168 barangays located in Regions X, XI and XII in Mindanao.

Geography & Climate. The terrain along the route varies from rolling, to flat and mountainous. Due to numerous mountainous sections along the route, some sharp horizontal curves, crest and sag vertical curves are present in the alignment. Owing to the expanse of the area covered and the complex geological and geomorphological conditions of Mindanao, the Main Corridor is subject to several types of geohazards, especially rainfall-induced landslides. This is mostly found in road sections that are cut through steep and mountainous terrains that are overlain by thick soil cover or fractured-unstable rock units. Flooding also affects portions of the Main Corridor, although most of the floods are confined outside of the road subgrade because of the elevated nature of the highway, limited sections with some aggravating conditions, such as blocked drainages and insufficient cross-drains, may experience inundation. The fault systems that are crossed by the alignment also pose some degree of risk in relation to ground shaking, ground rupture and other seismic hazards. Storm surge and tsunamis may also affect the alignment in the limited sections found proximal to the coastlines between Davao and Digos.

Alignment. Starting with Sayre Highway which runs within the Province of Bukidnon, the widest sections are 6-lanes with a total length of 20.36km and the longest type is 4-lanes with

a total length of 110.94km. In Davao-Bukidnon Highway, the widest is also 6-lanes with a length of 13.53km and the longest is 4-lanes with 118.34km length. The Davao-Cotabato Road has 6-lanes as the widest and longest road segments. And the Digos-Makar Highway has the widest road at 8-lanes running for 3.52km with the longest sections at 42.66km for 6-lane roads. Traffic volumes range from 4,100 vehicles per day to more than 67,000 vehicles per day, and motorcycles account for about a quarter of all traffic. Heavy vehicles account from 7% to 10% of traffic, with many trucks carrying heavy loads of agricultural products, construction materials and raw materials.

Bridges & Culverts. The bridge inventory starts at Brgy. Puerto of Cagayan de Oro City, passing through Davao City, and ends at General Santos City. Based on the bridge inventories conducted along the Main Corridor, there were 59 bridge locations spanning a combined bridge length of 2,802.45 meters, excluding the ongoing construction of flyover project at Junction Ulas, Davao City. The bridges within the Main Corridor consists of the following:

- 6-lane bridge = 17 bridge locations with total bridge length of 626.80 meters
- 4-lane bridge = 29 bridge locations with total bridge length of 1,296.61 meters
- Single 2-lane bridge = 3 bridge locations with total bridge length of 293.04 meters
- Twin 2-lane bridge = 10 bridge locations with total twin bridge length of 586 meters

The inventory of reinforced concrete culverts indicates 114 existing Reinforced Concrete Pipe Culverts (RCPCs) and 67 existing Reinforced Concrete Box Culverts (RCBCs).

Pavement. The Main Corridor is composed of concrete pavement with asphalt overlay in some sections. The design standard used for the pavement is assumed to be in accordance to the DPWH Design Guidelines, Criteria and Standards. There are ongoing road rehabilitation works for Portland Cement Concrete (PCC) Pavement with 30 cm and 33 cm thickness and 3.35 m standard lane width. Visual inspection during the field surveys shows that at least four (4) major types of pavement distress are present in the Main Corridor. These are:

- Cracking (longitudinal, transversal, corner breaks, durability cracks, alligator cracks)- a total of eighty-seven (87) road sections affected having a total area of 91,077 sq, m.
- Joint deficiency (spalling longitudinal joint, spalling transverse joint, joint seal damage)- nine (9) road sections affected by joint deficiency with a total length of 4.4 km.
- Surface defects for PCCP and AC (map cracking, scaling, pop-outs, polished aggregate, potholes, major scaling shoving, and corrugations, rutting, raveling) seventy-nine (79) road sections affected by surface defects having a total area of 164,070 square meters.
- Miscellaneous defects (blow-ups, faulting of transverse joints and cracks, laneto-shoulder drop- off, lane-to-shoulder separation, patch deterioration, water bleeding, pumping and depressions). Eight (8) road sections affected with a total area of 29,601 square meters.

Road Roughness Survey was conducted over the whole road length of the Main Corridor. From Sta 1425+072 to Sta 1701+970 (276.8KM), out of the 276.8 KM road length, 81.5KM has >1-3(Good) IRI values, 52.4 KM has >3-5(Fair) IRI values, 102.3 has .5-7(poor) IRI values and 40.6 has >7(bad) IRI values. The average International Roughness Index (IRI) of the whole road length is 4.75. from Sta 1511+000 to Sta 1654+911 (143.9km), out of the 143.9km road length, 26.3km has >1-3(Good) IRI values, 41.5km has >3-5(Fair) IRI values, 50.3 km has 5-7(poor) IRI values and 25.8km has >7(bad) IRI values. The average International Roughness Index (IRI) of the whole road length is 5.16. Based on the given criteria, its road surface condition was rated as "fair to poor" (DPWH Atlas 2022).

Drainage. The roadside drainage of the Main Corridor is comprised of a combination of concrete trapezoidal or rectangular ditches which are be uncovered or covered and earth ditches. It was also noted that several sections do not have any longitudinal drainages. In Region X, city centers and urban areas usually have concrete covered and uncovered ditches which extend a little further from the main commercial and residential areas. However, traveling further shows that these will be intermittently connected to earth ditches and other uncovered ditches. Most of these ditches are clear and working properly although some portions may have some issues primarily due to blockage by debris, garbage, and soil. In these cases, the hydraulic capacity of the ditches is severely diminished which results to overflow and low-level flooding within the highway.

Most of the ditches in this region are open concrete ditches with an approximate length of 98.53km followed by covered concrete ditches at 60.67km. Earth canals that were identified consist of about 21.56km. The different types of ditches are often discontinuous, and it is commonly encountered that concrete ditches eventually grade to earth canals. In Link Road 1, the only concrete ditch identified was towards the end of the alignment while most of the ditches were shallow earth ditches frequently filled with sediment and rubble carried from higher elevations.

Road Safety. Based on the Department of Public Works and Highways Central Office supplied Crash Data by severity type and according to DPWH's data from 2016 to 2020, there were a total of 553 fatal road crashes over five years, averaging 110.6 fatal road crashes per year, and 2,044 serious injuries, averaging 408.8 serious injuries annually. This information highlights the pressing need for safety improvements on this critical highway. Below Figure summarizes five (5) year bar chart for road crashes per region. The Main Corridor is currently described as being in a fair state of repair for the majority of its length, however a recent iRAP study (2019, and updated in 2023) identified a significant number of safety deficiencies that need to be addressed along the route.

Under MTCIP, the scope includes rehabilitation of 124 km (exact scope to be confirmed) of road sections categorized as 'bad or poor' according to DPWH's Road and Bridges Asset Inventory Application (as of October 2022) and Road Asset Management (Asset Preservation and Preventive Maintenance) for the whole stretch of the CDO - Davao- General Santos Corridor. Works on the Main Corridor will include widening works from 2-lane to 4-lane carriageway, road safety improvements, which should include safety measures to ensure motorcyclists safety, including but not limited to speed management and proper barriers installation, as well as the implementation of the recommendations to address the findings of the International Road Assessment Program (iRAP) road safety study and climate resilience improvements. The designs will conform to the relevant international standards, codes, and

manuals of the DPWH and incorporate features and measures to enhance climate resilience and road safety.

- Climate change adaptation measures include hard and soft measures. Hard measures include: (a) paving of roads with durable and resilient materials (longer lifetime, higher load carrying capacity, lower need for maintenance), (b) geometric adjustments: longitudinal and cross fall for efficient drainage/ water runoff, prevent water accumulation, (c) realigning the road network to reduce exposure to natural hazards, raising road formation levels with due consideration to maximum flood levels, (d) enhanced hydraulic design for drains & culverts to accommodate higher projected water volumes, cross drainage structures such as cascades, check walls, pipe culverts, causeways, introducing debris deflectors, (e) slope stabilization employing techniques such as terracing, retaining walls, and geotextiles, (d) bioengineering approaches such as jute bag, gabion, and dry-stone, using subsurface drains, (f) planting vegetation along roads to protect the roads from direct sunlight, improved dust control, and reduced soil erosion. Soft measures include: (a) improving monitoring conditions, (b) conducting periodic Inspections, regular scour checks and preventive interventions, (c) establishing early warning systems.
- Road safety interventions were assessed via Road Safety Screening and Appraisal Tool (RSSAT) which has been executed for all road sections as per the new World Bank requirement for improvement of road safety. The assessment indicates that most of the road sections in their current condition which do not meet the safety threshold requirement of Project Safety Impact (PSI) of 1.0 will be improved. The recommended safety enhancement to the designs include, but are not limited to, reducing the speed limit at urban and village centers, not only through traffic or road signals but also by implementing traffic calming measures, the provision of segregated non-motorized transport (NMT) facilities (i.e., pedestrians and cyclists, with special attention around schools. markets, hospitals/medical centers and any other social infrastructure), as well as adequate road design and containment barriers for motorcyclists' safety; as well as speed reduction measures to all villages and built-up areas (following the 'Roads-for-Life' framework from the Guide for Safe Speeds), widening of shoulders, provision of well signaled and marked (and raised -when adequate) pedestrian crossings as well as provision of streetlights in selected areas to enhance public safety. Road Safety will also be improved by the creation of safe roadside environments for informal market trading along the main corridor and the link roads as needed (following the principles of "Movement and Place").
- Construction and maintenance works are to be delivered by an Output and Performance Based Road Contract (OPRC)³ or similar type of contract model. These are performance-based contracts, designed to mobilize the private sector to deliver road maintenance more efficiently. OPRCs should ensure that

³ <u>https://blogs.worldbank.org/transport/performance-based-contracts-promoting-quality-road-</u> maintenance-and-economic-efficiency

the physical condition of the roads under contract is adequate for the need of road users, over the entire period of the contract. The contract also helps ensure that variation orders are minimized, and that the contractor is generally paid in equal monthly instalments throughout the contract period. The risk for cost overruns is thereby transferred to the contractor. The contractor is responsible for designing and carrying out the works, services, and actions he believes are necessary in order to achieve and maintain the Service Levels stated in the contract. With such models, provided that there are qualified road maintenance contractors with adequate competition, cost savings of between 30% to 50% have been realized in some regions (Frost and Lithgow 1996; and Zietlow 2015).

Component 3: Capacity building and Institutional Development (Total: \$22 million; of which IBRD loan \$18 million, GOP \$4 million). The implementation of post-Mandanas ruling will provide LGUs with more resources for infrastructure development and maintenance. Given the weak capacity of LGUs in terms of transport network planning and asset management, this component will support capacity enhancement of DPWH and select LGUs. Specific activities under this component will include: (a) set up transport asset management systems in selected LGUs building on what has been achieved under the WB PRDP project and DILG initiatives under its provincial roads program, and through cross-learning between LGUs and relevant government agencies, (b) study on institutional strengthening initiatives to enhance coordination and planning arrangements between DPWH and LGUs to improve transport connectivity, (c) implementation of the recommended actions by the on-going WB TA to mainstream climate resilience in road asset management process of DPWH, which will include mapping/digitalization of primary, secondary and tertiary road network in Regions X, XI and XII, (d) training key stakeholders on the OPRC concept including on their respective role in the enforcement or supervision of the contract, (e) training local communities including female residents of road maintenance practice, and (f) technical, pre-feasibility or feasibility studies (to be identified) for priority interventions to improve local road connectivity and access to major ports in Cagayan de Oro, Davao, and General Santos, and options of involving private sectors in ports improvement.

Component 4: Project Management (Total: \$29 million; of which IBRD Ioan \$14 million, GOP \$15 million). DPWH will be leading the project implementation. This component will support DPWH's Unified Project Management Office (UPMO) - Roads Management Cluster- II, the Project Implementing Unit (PIU) in project implementation. It will finance trainings and technical advisors on key project implementation issues including OPRC contract design and management, road safety interventions, climate resilience improvement. The Detailed Engineering Design Consultants for project roads will be financed, and in addition, the component will provide support to the PIU for WB technical, fiduciary and safeguards compliance through Technical Support Consultants, Results Monitoring Consultants and External Monitoring Agent (EMA); other operational support including office equipment, vehicles to facilitate the PIU to manage project implementation will be included.

Component 5: Contingent Emergency Response Component (CERC) to support postdisaster recovery. (Total: \$0). The CERC is designed to mitigate situations of urgent need or capacity constraints and allows for the rapid reallocation of funding in the event of a natural disaster or crisis that has caused, or is likely to imminently cause, a major adverse economic and/or social impact. A CERC Annex in the POM will consider risks from climate change mitigation and adaptation to demonstrate alignment.

1.2.4 Implementation Arrangements

The Department of Public Works and Highways (DPWH) is the main Implementing Agency for this project. The DPWH is the executive department of the Philippine government solely vested with the mandate to "be the State's engineering and construction arm." The DPWH's Unified Project Management Office UPMO Roads Management Cluster-II (UPMO RMC-II) will be the Project Implementation Unit (PIU). The RMC-II UPMO will be responsible for the daily management of project. The fiduciary function will be carried out by respective procurement and financial management related units in DPWH, while the RMC-II will be responsible for contracts management including preparing all the needed procurement documents. RMC II shall also provide support in terms of initial processing/review of billings from contractors and preparation and submission of Statement of Expenditures and Withdrawal Applications to the World Bank. RMC-II shall ensure that the necessary permits applicable to the MTCIP sub-projects are secured; monitor MTCIP subprojects implementation of ES mitigation measures; and submit to World Bank periodic reports on contractor compliances to ESMP commitments.

The DPWH Regional Offices (RO) or District Engineering Offices (DEO) shall serve as the Implementing Office (IO) for the project components. The IO (Regional or concerned District Engineering Office) with assistance of a third-party construction quality assurance firm, referred to as the Construction Supervision Consultant (as may be required by WB) shall routinely monitor subproject components activities to check the progress of works, ensure that the works are in accordance with plans and specifications, and if environment, health and safety measures as embodied in the ESMP are being properly implemented. The IO and PIU will also evaluate onsite conditions and inspect work camps, materials yard, and waste storage and disposal site, including the workers' health and safety and the overall sanitation and housekeeping practices at the worksites and meet with the adjacent community to inquire on any issues that they may have about the project component activities. Other responsibilities of the IO, including documentation of monitoring activities are described in detail in Section 3.2 Subproject Implementation Phase.

The Mindanao Development Authority (MinDA), as the lead agency for Mindanao's development, is the key government office that the DPWH will be coordinating in the approval of the proposed MTCIP. MinDa endorses MTCIP subprojects to RDC/NEDA and is also involved in Stakeholder Engagement among PAPs and affected IPs. MinDa also ensures that the MTCIP subproject components are aligned with the development plans of the agency. Other concerned government agencies and the LGUs in the project area will be supporting the RMC-II during project implementation.

The role of LGUs (barangay, municipal/city, provincial) is critical in the engagement of their constituencies particularly the PAPs. The concerned LGUs are mandated to do consultations in collaboration with the MTCIP/PMO in the preparation and implementation of subproject E&S plans. They shall provide the necessary endorsements to the RDC and review and approve the permits applicable to the MTCIP subprojects. The concerned LGUs, as necessary, shall also participate in the multi-partite monitoring on the contractor compliance to ECC/EMP/EMOP conditions and activities.

1.3 Project Location

The proposed MTCIP will improve the Main Corridor, connecting key areas across Mindanao, including six cities and thirteen municipalities in eight provinces: Misamis Oriental, Bukidnon, Davao del Sur, Davao Occidental, Davao del Norte, Cotabato, Sarangani, and South Cotabato. These regions fall under the jurisdiction of Northern Mindanao (Region X), Davao Region (Region XI), and SOCCSKSARGEN (Region XII).

Starting from Cagayan de Oro in the north and ending in General Santos City in the south, the Main Corridor passes through various municipalities and cities, including Manolo Fortich, Sumilao, Impasug-ong, Malaybalay City, Valencia City, Maramag, Quezon, and Kitaotao in Bukidnon. It then moves through Arakan in North Cotabato before entering Davao City, and continues through Sta. Cruz, Digos City, Hagonoy, Padada, Sulop, and Malalag in Davao del Sur, finally reaching Malungon and General Santos City in South Cotabato Province.

Additionally, the three Link Roads branch off from the Main Corridor, located in the northern, central, and southern regions. Link Road 1 is entirely within Impasug-ong, Bukidnon in Region X. Link Road 2 starts at Panabo City, Davao del Norte, and extends into Davao City in Region XI and terminates at the intersection with the MC of Bantol Road. Link Road 3 in the south connects Malungon, Sarangani of Region XII to Sta. Maria, Davao Occidental of Region XI. The entire MTCIP route, including the Main Corridor and three Link Roads, passes through a total of 189 barangays as seen in **Figure 2**. The Main Corridor is accessible to private and passenger cars, motorcycle, tricycle, buses, goods utility vehicles, agricultural and construction vehicles, and specialized vehicles like rigid trucks and truck trailer. The Link Roads is accessed mainly via passenger cars, motorcycle, tricycle, tricycle, tricycle, tricycle, gepneys, agricultural vehicles, rigid and trailer trucks, and goods utility vehicles.



Figure 2. MTCIP Location Map

The location map for the proposed Mindanao Transport Connectivity Improvement Project is shown in **Figure 2.** An Options Analysis was conducted to consider the various alternatives and determine the proposed location and type/method of upgrading/rehabilitation activities for the Project. With further study, the road alignments and the final number of bridges shall be finalized during the detailed engineering design stage.

To strike a balance between administrative efficiency and the benefits of smaller contracts, such as local participation and competition, the Project is divided into 13 civil work packages (i.e., five packages for the link roads 1, 2, and 3; and eight packages of approximately 50 km each for the Main Corridor.

1.4 Work Program

Summary of the construction methodology with the equipment and manpower is provided on the table below for the road and bridge construction. Environmental and social risk assessment based on the DPWH SEMS and the World Bank ESF will cover the preconstruction, construction, operations, and decommissioning phases of the MTCIP, thus, any additional/new impact that might incur at any of the project phases can be corrected/addressed. The Project Contractor, under the supervision/monitoring of DPWH, and/or its construction consultant / supervisor (as may be required by WB) shall implement all roads, bridges, and box culverts construction activities.

Α.	Road construction	
a)	Preparatory Works	The contractor will select the location of the campsite, quarry sites, and disposal sites and shall be approved by the Engineer on site. Permit to cut trees shall also be secured. Quarry sites should have the ECC and the necessary permits from the LGU to operate. As-staked survey will be conducted by the contractor.
b)	Earthworks activities	Trees within the construction limits shall be cut prior to clearing and grubbing activities. For road carriageway, bulldozer shall be used while the backhoe shall be used along the side ditches and/or edges of the construction limit.
c)	Removal of existing structures and any obstructions such as Pavement, Sidewalks, and Curbs	Structures and obstructions shall be broken into pieces, the size of which shall not exceed 300 mm in any dimension.
d)	Excavation Works	During the conduct of as-staked Survey actual elevations are identified. If unsuitable materials are encountered, excavation of the roadway up to the stable soil will be undertaken. All suitable materials removed from the excavation shall be used as materials for embankment, subgrade, bedding, or backfill. Unsuitable materials will be transported to the approved disposal sites.
e)	Installation of cross drains and trenches	On the identified location of cross drains, excavation shall be done to a width provided in the design plans. In the installation of the pipes and storm drains, the bedding of the pipes shall be compacted to allow proper joining of the conduit and shall be provided with grouts for the collars.
f)	Bioengineering	To restore the stability of the exposed earth materials, one of the recommended mitigating measures is bioengineering by the installation of coco net fiber with coco logs or any alternative biomaterial used in construction that may serve to stabilize the exposed soil. The coco fiber will contain seeds of weeds or trees that will sprout once the coco fibers are weathered and decomposed. Other exposed earth areas will be planted with vetiver grass.

Table 3. Work Program for road and bridge construction.

g)	Embankment	During the as-staking, the actual elevations are determined as shown on the Plans. Compaction trials (10m x 50m) shall be carried out by the contractor. Spread the material in horizontal layers not exceeding 200 mm (loose measurement) with appropriate crown/cross slope to ensure proper draining of surface water when it rains. Compaction shall be done by rolling using a vibratory road roller with a minimum weight of 10 tons.
h)	Subgrade Preparation	This activity will follow after the establishment of cross drains, ditches, drains and drainage outlets, including a fully compacted backfill. The succeeding structural layers shall proceed immediately after the preparation of the subgrade. Rolling/ compaction operation shall progress gradually from the sides to the center, parallel to the center of the road and shall continue until the whole surface has been rolled up.
i)	Aggregate Subbase Course	Vertical control references at every 20-meter interval (marked stake) shall be placed along the side of the roadway or permanent structures throughout the length of the road. Road graders shall be utilized in the laying and spreading of materials on the prepared subgrade.
j)	Portland Cement Concrete Pavement (PCCP)	Vibrators inserted vertically into poured concrete will be used to consolidate along faces of all forms. The spillage of concrete materials into nearby water bodies shall be completely avoided.
k)	Guardrails	These will be constructed using vertically set posts imbedded into concrete foundation blocks. Spaces around the posts will be backfilled and each layer moistened and thoroughly compacted.
I)	Drainage Structures	Drainage provisions shall be implemented whenever necessary, especially in areas that are prone to flooding and inundation with several elements at risk such as houses and other structures. Details may be refined during the design phase of the project
	B. Bridge and Reinforced	Concrete Box Culvert Construction
a.	B. Bridge and Reinforced Bored piles	Concrete Box Culvert Construction Bored piles are concrete piles cast on-site as foundations for structures such as bridges, are preferred to be used for the project to minimize noise generation compared to pile driving.
a. b. C	B. Bridge and Reinforced Bored piles apping of the erected piles	Concrete Box Culvert Construction Bored piles are concrete piles cast on-site as foundations for structures such as bridges, are preferred to be used for the project to minimize noise generation compared to pile driving. After the piles are erected, capping of the piles based of the specifications/design plans will be next.
a. b. C c.	B. Bridge and Reinforced Bored piles apping of the erected piles Girders	Concrete Box Culvert Construction Bored piles are concrete piles cast on-site as foundations for structures such as bridges, are preferred to be used for the project to minimize noise generation compared to pile driving. After the piles are erected, capping of the piles based of the specifications/design plans will be next. The girders of the bridge will be precast at the depot of the contractor. These will be launched after the capping of the erected piles is completed.
a. b. C c. d.	B. Bridge and Reinforced Bored piles apping of the erected piles Girders Abutment	Concrete Box Culvert Construction Bored piles are concrete piles cast on-site as foundations for structures such as bridges, are preferred to be used for the project to minimize noise generation compared to pile driving. After the piles are erected, capping of the piles based of the specifications/design plans will be next. The girders of the bridge will be precast at the depot of the contractor. These will be launched after the capping of the erected piles is completed. Bridge abutments are located before the bridge approaches on either side. The piers of the bridges will be anchored in the abutments including the wingwall of the bridge. Construction of these elements will be onsite which includes the fabrication of formworks, rebars and finally fresh cement pouring.
a. b. C c. d.	 B. Bridge and Reinforced Bored piles apping of the erected piles Girders Abutment Flooring of the Bridges 	Concrete Box Culvert Construction Bored piles are concrete piles cast on-site as foundations for structures such as bridges, are preferred to be used for the project to minimize noise generation compared to pile driving. After the piles are erected, capping of the piles based of the specifications/design plans will be next. The girders of the bridge will be precast at the depot of the contractor. These will be launched after the capping of the erected piles is completed. Bridge abutments are located before the bridge approaches on either side. The piers of the bridges will be anchored in the abutments including the wingwall of the bridge. Construction of these elements will be onsite which includes the fabrication of formworks, rebars and finally fresh cement pouring. The contractor may use steel casting on the flooring of the bridge and proceed with the rebars of the flooring of the bridge.
a. b. C c. d. f.	B. Bridge and Reinforced Bored piles apping of the erected piles Girders Abutment Flooring of the Bridges Pouring of the concrete cement	Concrete Box Culvert Construction Bored piles are concrete piles cast on-site as foundations for structures such as bridges, are preferred to be used for the project to minimize noise generation compared to pile driving. After the piles are erected, capping of the piles based of the specifications/design plans will be next. The girders of the bridge will be precast at the depot of the contractor. These will be launched after the capping of the erected piles is completed. Bridge abutments are located before the bridge approaches on either side. The piers of the bridges will be anchored in the abutments including the wingwall of the bridge. Construction of these elements will be onsite which includes the fabrication of formworks, rebars and finally fresh cement pouring. The contractor may use steel casting on the flooring of the bridge and proceed with the rebars of the flooring of the bridge. The contractor shall ensure that there is no spillage of the concrete cement onto the water bodies.
a. b. C c. d. e. f. g.	 B. Bridge and Reinforced Bored piles apping of the erected piles Girders Abutment Flooring of the Bridges Pouring of the concrete cement Accessories of the bridge 	Concrete Box Culvert Construction Bored piles are concrete piles cast on-site as foundations for structures such as bridges, are preferred to be used for the project to minimize noise generation compared to pile driving. After the piles are erected, capping of the piles based of the specifications/design plans will be next. The girders of the bridge will be precast at the depot of the contractor. These will be launched after the capping of the erected piles is completed. Bridge abutments are located before the bridge approaches on either side. The piers of the bridges will be anchored in the abutments including the wingwall of the bridge. Construction of these elements will be onsite which includes the fabrication of formworks, rebars and finally fresh cement pouring. The contractor may use steel casting on the flooring of the bridge and proceed with the rebars of the flooring of the bridge. The construction/installation of all other accessories of the bridge will be based on the contractor's methodology. Spillage of concrete cement should be avoided to prevent contamination of the water.

1.5 Project Areas of Influence

Based on the ESIA, the project includes area(s) of influence for direct impacts (referred to as the 'project footprint') and area(s) of influence for indirect impacts. The MTCIP is estimated to have a direct and indirect impact on lands, structures, trees, and livelihoods. Direct impacts areas comprise the road alignment Road Right-of-Way (RROW), and ancillary facilities such as quarry sites, pit and borrow pit sites, construction camp sites, and disposal sites for waste

materials, as well as temporary sites needed for equipment parks and materials stockpiles. The area(s) of influence also considered indirect impact areas such as populations that will experience economic opportunities associated with the project outcome or disturbances from vehicular traffic in the project site for which no significant impacts would result.

Indirect Impact Areas (IIA) such as the barangays, municipalities and cities traversed by MTCIP, are also considered part of the Project Areas of Influence, albeit excluded from the 'project footprint'.

Table 4 is the List of the Municipalities/Cities and barangays traversed by the Main Corridor and the Link Roads 1, 2, and 3.

MAIN CORRIDOR				
Item	Barangay	City/Municipality	MTCIP Corridor	
1	Puerto	Cagayan de Oro City	Main Corridor	
2	Mambatangan	Manolo Fortich	Main Corridor	
3	Alae	Manolo Fortich	Main Corridor	
4	Lunocan	Manolo Fortich	Main Corridor	
5	San Miguel	Manolo Fortich	Main Corridor	
6	Diclum	Manolo Fortich	Main Corridor	
7	Tankulan (Pob.)	Manolo Fortich	Main Corridor	
8	Lingion	Manolo Fortich	Main Corridor	
9	Dalirig	Manolo Fortich	Main Corridor	
10	Maluko	Manolo Fortich	Main Corridor	
11	San Vicente	Sumilao	Main Corridor	
12	Kisolon	Sumilao	Main Corridor	
13	Poblacion	Impasug-Ong	Main Corridor	
14	La Fortuna	Impasug-Ong	Main Corridor	
15	Capitan Bayong	Impasug-Ong	Main Corridor/Link Road 1	
16	Impalutao	Impasug-Ong	Main Corridor	
17	Dalwangan	Malaybalay City	Main Corridor	
18	Patpat (Lapu-lapu)	Malaybalay City	Main Corridor	
19	Kalasungay	Malaybalay City	Main Corridor	
20	Sumpong	Malaybalay City	Main Corridor	
21	Barangay 2 (Pob.)	Malaybalay City	Main Corridor	
22	Barangay 3 (Pob.)	Malaybalay City	Main Corridor	
23	Barangay 4 (Pob.)	Malaybalay City	Main Corridor	
24	Barangay 5 (Pob.)	Malaybalay City	Main Corridor	
25	Barangay 7 (Pob.)	Malaybalay City	Main Corridor	
26	Barangay 8 (Pob.)	Malaybalay City	Main Corridor	
27	Barangay 9 (Pob.)	Malaybalay City	Main Corridor	
28	Casisang	Malaybalay City	Main Corridor	
29	San Jose	Malaybalay City	Main Corridor	
30	Laguitas	Malaybalay City	Main Corridor	
31	Aglayan	Malaybalay City	Main Corridor	
32	Cabangahan	Malaybalay City	Main Corridor	
33	Bangcud	Malaybalay City	Main Corridor	
34	Colonia	Valencia City	Main Corridor	
35	Mailag	Valencia City	Main Corridor	
36	Bagontaas	Valencia City	Main Corridor	
37	Poblacion	Valencia City	Main Corridor	
38	Lumbo	Valencia City	Main Corridor	
39	Dologon	Maramag	Main Corridor	
40	Tubigon	Maramag	Main Corridor	
41	Bayabason (Spring)	Maramag	Main Corridor	
42	Panadtalan	Maramag	Main Corridor	
43	Anahawon	Maramag	Main Corridor	

Table 4. List of the	Municipalities/Cities	and barangays	traversed by	the Main	Corridor	and the	Link
Roads 1, 2, and 3							

MAIN CORRIDOR				
Item	Barangay	City/Municipality	MTCIP Corridor	
44	North Poblacion	Maramag	Main Corridor	
45	South Poblacion	Maramag	Main Corridor	
46	Camp I	Maramag	Main Corridor	
47	San Jose	Quezon	Main Corridor	
48	Poblacion (Kiokong)	Quezon	Main Corridor	
49	Libertad	Quezon	Main Corridor	
50	Salawagan	Quezon	Main Corridor	
51	Mibantang	Quezon	Main Corridor	
52	Cebole	Quezon	Main Corridor	
53	Pinilayan	Quezon	Main Corridor	
54	Kiburiao	Quezon	Main Corridor	
55	Santa Cruz	Quezon	Main Corridor	
56	Puntian	Quezon	Main Corridor	
57	Fast Dalurong	Kitaotao	Main Corridor	
58	Palacapao	Quezon	Main Corridor	
59	Kabusayan	Kitaotao	Main Corridor	
60	Sinuda (Simod)	Kitaotao	Main Corridor	
61	Kinilas	Kitaotao	Main Corridor	
62	Kiulom	Kitaotao	Main Corridor	
63	Tawas	Kitaotao	Main Corridor	
64	Datu Salumay		Main Corridor	
65	Baganiban	Davao City	Main Corridor	
66	Gambadas	Arakan	Main Corridor	
67	Katipupap	Arakan	Main Corridor	
69	Marilag		Main Corridor	
60	Rudo	Davao City	Main Corridor	
70	Salaysay	Davao City	Main Corridor/Link Road 2	
70	Suawan (Tuli)	Davao City	Main Corridor	
71		Davao City	Main Corridor/Link Road 2	
72	Gumalang	Davao City	Main Corridor	
73	Guinalang	Davao City	Main Corridor	
74	Calinan (Dah)	Davao City	Main Corridor	
75	Diverside	Davao City	Main Corridor	
70		Davao City	Main Corridor	
70			Main Corridor	
70	Uld Tughok (Pob.)	Davao City	Main Corridor	
79	Mintal	Davao City	Main Corridor	
00 91	Santa Niño	Davao City	Main Corridor	
01 92	Catalupan Poguoño	Davao City	Main Corridor	
02	Talama (Dab.)		Main Corridor	
84	Matina Crossing	Davao City	Main Corridor	
04 95	Ma a	Davao City	Main Corridor	
86	Rucana	Davao City	Main Corridor	
00	Barangay E. A. (Dab.)	Davao City	Main Corridor	
0/	Barangay 6.4 (POD.)			
00	Barangay 2 A (Pob.)		Main Corridor	
09	Barangay 2-A (FOD.)		Main Corridor	
90	Barangay 28 D (Dob.)		Main Corridor	
91	Barangay 30-D (Pub.)		Main Corridor	
92	Barangay 39-D (POD.)	Davao City	Main Corridor	
93	Dumoy	Davao City	Main Corridor	
94	Lubogan	Davao City	Main Corridor	
90	Toril (Pob.)	Davao City	Main Corridor	
07	Crossing Bayabas	Davao City	Main Corridor	
08	Maranangi	Davao City	Main Corridor	
90	Lizada	Davao City	Main Corridor	
33	Sirowop		Main Corridor	
100	Binugao			
101		Santa Cruz		
102	Darong	Santa Cruz		
103		Santa Ciuz	Main Corridor	
104	Coronon	Santa Cruz	Main Corridor	
105	COLOHOH	Santa Uluz		

MAIN CORRIDOR				
ltem	Barangay	City/Municipality	MTCIP Corridor	
106	Zone I (Pob.)	Santa Cruz	Main Corridor	
107	Zone II (Pob.)	Santa Cruz	Main Corridor	
108	Zone III (Pob.)	Santa Cruz	Main Corridor	
109	Zone IV (Pob.)	Santa Cruz	Main Corridor	
110	Tuban	Santa Cruz	Main Corridor	
111	Tagabuli	Santa Cruz	Main Corridor	
112	Bato	Santa Cruz	Main Corridor	
113	Sinawilan	Digos City	Main Corridor	
114	Cogon	Digos City	Main Corridor	
115	Kiagot	Digos City	Main Corridor	
116	Zone 1 (Pob.)	Digos City	Main Corridor	
117	Zone 2 (Pob.)	Digos City	Main Corridor	
118	Zone 3 (Pob.)	Digos City	Main Corridor	
119	San Jose (Balutakay)	Digos City	Main Corridor	
120	Balutakay	Hagonoy	Main Corridor	
121	Leling	Hagonoy	Main Corridor	
122	Hagonoy Crossing	Hagonoy	Main Corridor	
123	Guihing	Hagonoy	Main Corridor	
124	Paligue	Hagonoy	Main Corridor	
125	Northern Palique	Padada	Main Corridor	
126	Don Sergio Osmeña	Padada	Main Corridor	
127	Southern Palique	Padada	Main Corridor	
128	Almendras (Pob.)	Padada	Main Corridor	
129	N C Ordaneza District (Pob.)	Padada	Main Corridor	
130	Upper Limonzo	Padada	Main Corridor	
131	Harada Butai	Padada	Main Corridor	
132	Talas	Sulop	Main Corridor	
133	Palili	Sulop	Main Corridor	
134	Poblacion	Sulop	Main Corridor	
135	Kiblagon	Sulop	Main Corridor	
136	New Baclayon	Malalag	Main Corridor	
137	Kiblagon	Malalag	Main Corridor	
138	Tagansule	Malalag	Main Corridor	
139	Bolton	Malalag	Main Corridor	
140	Malungon Gamay	Malungon	Main Corridor	
141	J.P. Laurel	Malungon	Main Corridor	
142	Banate	Malungon	Main Corridor	
143	Talus	Malungon	Main Corridor	
144	Malalag Cogon	Malungon	Main Corridor	
145	Poblacion	Malungon	Main Corridor/Link Road 3	
146	Nagpan	Malungon	Main Corridor	
147	Banahaw	Malungon	Main Corridor	
148	Malandag	Malungon	Main Corridor	
149	Batomelong	General Santos City	Main Corridor	
150	Tinagacan	General Santos City	Main Corridor	
151	Katangawan	General Santos City	Main Corridor	
152	Ligaya	General Santos City	Main Corridor	
153	Lagao (1st & 3rd)	General Santos City	Main Corridor	
154	Dadiangas East (Pob.)	General Santos City	Main Corridor	
155	City Heights	General Santos City	Main Corridor	
156	Dadiangas North	General Santos City	Main Corridor	
157	Labangal	General Santos City	Main Corridor	
158	Apopong	General Santos City	Main Corridor	

Link Road 1				
Item	Barangay	City/Municipality		
1	Capitan Bayong	Impasug-ong		
2	Cawayan	Impasug-ong		
3	Kibenton	Impasug-ong		
4	La Fortuna	Impasug-ong		
5	Poblacion	Impasug-ong		

Link Road 2				
Item	Barangay	City/Municipality		
1	New Pandan (Pob.)	Panabo City		
2	Gredu (Pob.)	Panabo City		
3	New Visayas	Panabo City		
4	Datu Abdul Dadia	Panabo City		
5	Little Panay	Panabo City		
6	Katipunan	Panabo City		
7	Сасао	Panabo City		
8	Kauswagan	Panabo City		
9	Consolacion	Panabo City		
10	Malativas	Panabo City		
11	Mabuhay	Davao City		
12	Malabog	Davao City		
13	Paquibato (Pob.)	Davao City		
14	Bantol	Davao City		
15	Malamba	Davao City		
16	Salaysay	Davao City		

Link Road 3			
Item	Barangay	City/Municipality	
1	Poblacion	Malungon	
2	Upper Mainit	Malungon	
3	San Miguel	Malungon	
4	San Roque	Malungon	
5	Kinabalan	Malungon	
6	Datu Intan	Santa Maria	
7	San Antonio	Santa Maria	
8	Pongpong	Santa Maria	
9	San Isidro	Santa Maria	
10	Poblacion	Santa Maria	

1.5.1 Project Affected People

The preliminary data collected during the DDOA is summarized in **Table 5**. The highlighted texts represent the options that were selected taking into consideration all other aspects including impacts on project-affected people. As such, a total of 8,341 structures will be affected by the project.

Table 5 presents a summary of the project-affected structures along the Main Corridor and Link Roads 1,2 and 3. A total of 8,341 structures will be affected by the project.

MTCIP Road	Option 1	Option 2	Option 3
Main Corridor	5,013	5,015	5,422
Link Road 1	361	517	814
Link Road 2	1,478	1,478	1,708
Link Road 3	847	806	806
Total no. of Structures		8,341	

Table 5. Summary of project-affected structures

Winning Option

Source: Structure count - Environment and Social Team; GoogleEarth approximation - Engineering Team, Galerio Environmental Consultancy Inc.

MTCIP Road	Option 1	Option 2	Option 3
Main Corridor	1,002	1,003	1,035
Link Road 1	312	448	707
Link Road 2	1,082	1,082	1.217
Link Road 3	790	757	757
Total no. of Households		3,683	

Table 6. Summary of project-affected households

Winning Option

Source: Structure count - Environment and Social Team; GoogleEarth approximation - Engineering Team, Galerio Environmental Consultancy Inc.

Some 3,683 households will be affected by the project. The main impact of MTCIP on these 2,327 households is involuntary resettlement.

Nearly a third of these households (1,217 households) reside along Link Road 2. Additionally, some 1,002 households along the Main Corridor will be affected by the project. On Link Road 1, it is expected that 707 households will be at risk of resettlement, while on Link Road 3, the project will affect 757 households.

Informal settler families

The number of informal settler households among the project-affected population was estimated using secondary data from the barangay profile of all barangays along the three link roads. The secondary information was corroborated with key informants, particularly through key informant interviews with barangay officials.

Of the total project-affected households, an estimated 305 households can be considered informal settler families. These ISFs reside within the 20-meter width of Link Road 2 and Link Road 3 (92 ISFs in Link Road 2 and 213 ISFs in Link Road 3). No ISFs occupy the 20-meter within Link Road 1 and along the Main Corridor. This preliminary information on the housing tenure of the PAPs needs to be validated during the FS and DED stages of the MTCIP.

Indigenous communities

Within these communities, the presence of Indigenous Cultural Communities (ICCs) was recognized, especially in the area traversed by the LRs. The ICC account for 30% Higa-onon on Link Road 1, 98% composed of Matigsalog and Islamized Ethnic Group (Kagan/Kalagan) on Link Road 2, and 98% Tagakaulo on Link Road 3.

Link Road 1 is predominantly inhabited by the Higa-onon tribal community, representing 30% of the total population in the three barangays the road traverses. Notably, this road lies outside the recognized ancestral domain of the Higa-onon community, with houses situated within municipal or barangay zoned built-up areas.

Link Road 2 passes through the ancestral domain of the Matigsalog communities in the Marilog and Paquibato districts of Davao City. Additionally, Kagan/Kalagan communities have opted to settle in vacant land spaces alongside this road, categorizing them as informal settlers' families (ISF), with over 200 families constructing structures along this link road.

Link Road 3 passes through barangays within the recognized ancestral lands of the Tagakaolo cultural communities, covering a distance exceeding 50 kilometers and traversing residential and agricultural areas of the Tagakaolo indigenous people. Maguindanaons also constitute informal settlers' families along this road. The barangay government in Link Road 3 permits Kagan/Kalagan to occupy public lands used as built-up areas, while some act as tenants on agricultural lands owned by medium to commercial-scale agricultural producers.

Considering the project impact on indigenous communities and ancestral domains, policies are formulated and detailed in the **MTCIP Indigenous Peoples Policy Framework.**

1.5.2 Security and Conflict Context

Security and conflict issues in MTCIP project areas, spanning, the conflict affected regions of Northern Mindanao, SOCCSKSARGEN emanate from ethnic differences, reported armed conflict between alleged terrorist groups and government military forces, overlapping and unreconciled tenurial instruments within the project area, fair compensation for affected assets, some form of gender-based violence, as well as, grinding poverty.

Inter-ethnic conflict is due to different cultural laws, practices, and traditions. Some ethnic groups in Davao City, Davao Occidental, and Saranggani embraced Islam thus belonging to the Muslim community. On the other hand, IP groups such as Matigsalogs, and Higa-onon in Davao City and Bukidnon observe cultural practices and have communally-owned ancestral domain, which may exclude other ethnic groups.

Reported ambuscades and skirmishes in remote areas in Region X (Misamis Oriental and Bukidnon) raise threats to local populations. The MTCIP may be stopped or significantly delayed due to these security concerns.

Tenurial instruments include Certificate of Land Ownership Agreement under CARP, Community-based Forest Management Agreement (CBFMA) under DENR, Certificate of Ancestral Domain Title (CADT) from NCIP, Protected Areas under NIPAS, private land title and public estate. Each tenurial instrument is governed by specific laws and guidelines which may have different interpretations, and which may not be reconciled. These will entail harmonization of the laws governing ownership, development, and management of land. For example, the proposed Link Road 1 traverses CBFMA, CARP, private and public lands which entail compliance with the governing regulations on land ownership that may affect Roadright-of-Way acquisition. The MTCIP needs to engage with tenure holders and enter a memorandum of agreement in cases where the land is communally-owned. The MTCIP will facilitate raw claims involving ancestral domains owned by indigenous cultural communities (ICCs) and IPs, recognized under IPRA, affected by the implementation of national government infrastructure projects. The following provisions is adopted and incorporated in the DPWH ROW Acquisition Manual (DRAM): Section 2.16. A. ROW Acquisition by Easement of ROW (Minimal Area); and Section 2.16- B, ROW Acquisition by Easement of ROW (Ancestral Domain: Objective: To acquire RROW involving lands covered by Certificate of Ancestral Domain Title (CADT) or NCIP- confirmed Ancestral Domain. Under the procedure,

a ROW Easement Agreement shall be executed by and between the NCIP Accredited or Certified Tribal Council and the Implementing Office (IO), where the former will grant the latter the absolute and unimpeded right to use the affected portion of their ancestral domain as RROW for as long as the public requirement subsists, but the IPs/ICCs retain ownership of that portion of the lot. The agreement shall be in accordance with the procedure and requirements set forth in the Department Order No. 43, Series of 2020.

During the Public Consultations conducted for MTCIP-DDOA, the issue of fair compensation for affected lands was raised by the barangay officials. According to them, the payment for DPWH Right-of-way acquisition for other projects has remained unsettled mainly due to incomplete or missing landowner documents, and the landowners worry that for the MTCIP, the delayed payment may happen again. This raises the risk of DPWH being denied entry by the affected households to the proposed alignment.

For all options in the Main Corridor and the Link Roads, the project will entail hiring workers, which may originate outside the project sites and LGUs. This will lead to a labor influx in the local community, presenting risks of sexual exploitation and abuse/ sexual harassment (SEA/SH) and increase in gender and child-related violence and cultural insensitivity.

A high per capita poverty threshold and poverty incidence among the population lead to competition for scarce resources to address basic needs such as food, education, health and shelter. MTCIP can contribute to poverty alleviation by providing livelihood and employment opportunities among the vulnerable affected households. Owners of affected structures, trees and crops will be compensated according to their replacement cost.

1.6 Environmental Risks and Impacts and Generic Mitigation Measures

Environmental impacts of the project are associated with project activities such as clearing of RROW, cut and fill, slope protection, cutting of trees/clearing of vegetation, civil works for the repair/rehab/road widening in the Main Corridor and concreting/construction of new roads and bridges, box culverts of the link roads.

Environmental safeguard issues from road repair, rehabilitation, slope protection and/or road widening activities, to construction of new roads and bridges, comprise:

- a. Risks/impacts on land (i.e. increase on geo-hydrological hazards due to loss of current vegetation cover; change in land use, and soil erosion);
- b. Increase air pollution and generation of greenhouse gases;
- c. Noise, vibration, and traffic congestion during road/bridge construction;
- d. Change in hydrology, water pollution, and impact on aquatic organism due to siltation from construction of bridge/river embankment; pollutants from vehicle exhaust, oil, dirt, and roadway runoff;
- e. Generation of solid and hazardous waste.

Where the project will be implemented in areas with sensitive receptors such as hospitals and schools, emission of pollutants and nuisance related to air and noise emissions may pose public health concerns.

The above listed environmental safeguard issues are not unique to MTCIP, these are also issues common to road projects in Mindanao or in other places in the country. In Mindanao due to the presence of critical habitat/protected area, road project substantial requirements on construction materials, biodiversity conservation, resource management, pollution prevention and abatement, are common environmental safeguard considerations for road projects, not to mention the effects of climate change and conflict situation that might affect or be exacerbated by the project.

Details of the project risks/impacts in relation to ESSs 2-10, including the proposed mitigation measures are discussed in detail in the ESIA and ESMP for MTCIP.

Environmental impacts due to repair, rehabilitation and widening works on the existing Main Corridor are anticipated to be minor, temporary and localized, i.e. within the road right-of way. Slope protection, installation of box culverts and line ditches to improve drainage ways are part of climate resiliency adaptation, classified under EMB MC 2014-005 as Category C Projects, i.e. Projects meant to address environmental problems, thus, are presumed exempted from the PEISS.

Encroachment to environmental critical habitats/protected areas such as the Mt. Kitanglad Range Natural Park (MKRNP) in Impasug-ong, Bukidnon and Mt. Apo Natural Park in Davao City and North Cotabato are excluded from the MTCIP. Link road (LR) 1 is located more than 10 km away from MKRNP (see **Appendix 14**, PENRO Bukidnon Certification and attached map indicating that LR1 is outside the boundary of the protected area and buffer zone of MKRNP). Further, the periphery surroundings of Link Road 1 had long been modified to multiple use, i.e. extensive agricultural use for high value crops, greenhouses, banana and pineapple plantations, mixed livestock and poultry breeding/growing, interspersed with a negligible number of houses and small communities at the town proper of barangays Cawayan and Kibenton.

For the Link Roads 1 to 3, impacts from the land clearing activities resulting to loss of vegetation cover may be significant depending on the number of trees and crops that would be affected. Assessment in the context of conflict situation in the project area of influence has been considered in the E&S instruments such as the RPF and IPPF. Proper disclosure, timely addressing of the issue, and sensitivity to the culture of PAPs and IPs on the loss of vegetation/crops will prevent igniting or aggravating opposing attitudes towards the project.

The ESIA for the project, which examined each project component for potential E&S risks and impacts, has identified appropriate risk mitigation and management measures that are presented in the project's Environmental and Social Management Plan (ESMP). For example, the ESMP sets out the management and remediation measures to ensure the safe disposal of construction debris, dredged or cleared vegetation, spent fuel, oil and lubricants, and solid /liquid waste from campsites. The ESMP include plans for occupational and community health and safety during construction and operation of the facilities. It also addresses issues related to localized traffic disruptions and impacts on commerce and related activities in neighboring communities which will be detailed in the site-specific C-ESMP.

The MTCIP is divided into 13 civil work contract packages identified as part of the DDOA study conducted for the project. The contract packages, hereinafter referred to as subprojects, were

based on the Multiple Contract Model which provide balance between administrative efficiency and the benefits of smaller contracts, such as local participation and competition. It offers manageable project sizes, reduces administrative burdens, encourages competition, and facilitates coordination across the project stretch. The civil work packages are defined by contiguous road segments ranging from 40 km to 64 km for the Main Corridor and 18 km to 40 km for the Link Roads. The Main Corridor is divided into 8 sub-projects, Link Road 1 is one sub-project, and Link Road 2 and 3 have two sub-projects each. **Appendix 10** provides the listing and location map or the 13 sub-projects.

An environmental and social baseline characterization and impact assessment shall be conducted for each of the 13 subprojects during the Detailed Engineering Design (DED) Stage. The baseline characterization and impact assessment shall focus on the following unknown information that may pose substantial to significant environmental risks/impacts for each of the subprojects. The table below presents the environmental issues identified during the DDOA study and corresponding proposed actions to be taken for the specific sub-projects during DED.

Table 7. Environmental issues identified during the DDOA and corresponding proposed actions to be taken for the specific sub-projects during DED

Issues	Action to be taken	
Exacerbation of geological hazards	Site baseline characterization to be validated for presence of geologic	
	hazards that may be exacerbated by construction activities.	
Decline in water quality due to changes in	Conduct of water quality sampling should there be bridge	
surface runoff	repair/construction along the river system in the project site.	
Production of hazardous waste such as oil,	Identification of type of hazardous waste to be generated in the sub-	
grease, and other chemicals	project sites.	
Improper disposal of solid wastes, including	Identification of type of solid waste to be generated in the sub-project	
plastics and toxic chemicals	sites.	
Release of greenhouse gases and other gases	Identification of type of greenhouse gases and other gases to be	
	generated in the sub-project sites.	
Generation of gaseous pollutants and noise	Determine the presence of sensitive receptors at the sub-project	
	sites, conduct air quality and noise measurements as necessary	
Critical habitat	Determine the presence of critical habitat/flora and fauna species that	
	might be affected by construction activities in the sub-project sites.	

1.7 Social Risks and Impacts and Generic Mitigation Measures

Social safeguard issues for MTCIP generally pertain to Land acquisition and involuntary resettlement. Land acquisition, both permanent and temporary, will be needed for the repair of bridges and/or widening of the Main Corridor, and construction of the new link roads. Land acquisition requirements will vary, with the Main Corridor potentially necessitating some sections a RROW width as much as 60 m, and a 15-20 m RROW for the Link Roads. A Resettlement Policy Framework (RPF) has been prepared to ensure that impacts are properly screened, identified, and mitigated. The RPF is included as **Appendix 5** in this ESMF.

The proposed roads traverse recognized ancestral lands of Indigenous Peoples. Some of them may need to be physically moved. An Indigenous Peoples Policy Framework (IPPF) has been prepared to ensure that Indigenous Peoples are properly identified and meaningfully consulted. The IPPF also supplements the RPF in cases where land acquisition and involuntary resettlement of Indigenous Peoples is required. The IPPF is included in this ESMF as **Appendix 6**.

During project implementation, the following key labor risks are anticipated:

Occupational Safety and Health (OSH)

- No provision of safety signages and devices along the construction areas and worker's camp which leads to lack of awareness of the workers and other persons to dangers and accidents.
- No provision of medical supplies, equipment and facilities which will be required during the setting up of the contractor's campsite. This will lead to delayed treatment of worker's injuries and worsen situations for injuries that need immediate treatment.
- No provision of qualified safety officer
- Unsanitary welfare facilities which lead to illness of workers.
- Improper or no provision of appropriate PPEs to workers exposes them to serious health and safety risk such as working in heights during excavation and installation of slope protection barriers.
- Improper handling of construction wastes
- Exposure to hazardous materials

Child Labor or Forced Labor

The employment of children below the age of eighteen (18) is strictly prohibited in the implementation of the project.

Labor disputes over terms and conditions of employment

For direct workers, disputes may arise due to lack of adherence to official work hours and compensation for overtime, potential discrimination in recruitment and employment and potential for lack of equal pay for equal work for men and women in violation of national law.

For contracted workers, disputes may arise due to the delay of processing of wages, disagreement with the working conditions, and health and safety concerns in the work environment. Likewise, unequal distribution of tasks and unresolved grievances of workers may lead to labor unrest.

Labor Influx and gender-based violence

Although there is an existing law, RA 6685, which prioritizes the hiring of local skilled and unskilled labor to construction projects, there should considerations on a possibility that labor of influx will happen. This might be caused of unavailability or shortage in the hiring of local workforce in the required specialized skill. This program will provide skills training, related in the construction industry, to the locals as part in the programs of the government.

Since the road construction is seen as predominantly male-employed workers, the project might be susceptible to incidents of Gender-Based Violence. GBV awareness orientation and programs will be conducted to all contract packages to spread awareness, not only to the contractor's workforce but also to the local community along the project area.

MTCIP will apply the following policies and procedures to address the key labor risks.

Occupational Safety and Health (OSH)

The relevant international laws, national laws and administrative issuances which serve guidelines for government agencies to ensure good working conditions of the workers shall be followed. The MTCIP staff and Contractor's Project Engineers shall ensure that the workers are well protected against possible OSH risks through the following measures:

- Identification of potential hazards to workers within their respective area;
- Provide workers with information, training, and documentation on occupational safety and health standards, hazards, and preventive measures.
- Training and information materials made readily available and accessible to workers.Provisions of preventive and protective measures such as personal protective equipment and devices, medical, dental, and occupational safety compensation, and government-funded health insurance program that provides coverage for medical expenses;
- All construction projects must have an appropriate Construction Safety and Health Program that adheres to the Department of Labor and Employment's guidelines;.
- Training of workers on safety measures and conduct of drills in case of calamities;
- Documentation and reporting of occupational incidents;
- Emergency preparedness;
- Remedies for occupational injuries and fatalities.

Child Labor

To prevent engagement of underage workers, the age employment scheme provided under the Age of Employment Section hereof should be strictly observed by the hiring authority. Proper procedure in the screening, with age verification, shall be undertaken in the selection of workers to ensure that no child shall be employed in the implementation of the project. Likewise, all contracts must have a provision as to the minimum age requirement and the hiring authority shall keep a labor registry of all hired workers.

Labor disputes over terms and conditions of employment

Fair, reasonable and lawful terms and conditions shall be applied in the contract provisions of all project workers to prevent labor disputes. Moreover, there will be an efficient grievance mechanism to address any issues that may arise during the existence of the contract. The guidelines provided under GRM Section of the Labor Management Procedures shall be strictly observed to resolve work-related disputes including terms and conditions of employment.

Gender gaps/issues identified during FGDs and key informant interviews (Task 2, undertaken in five selected barangays in three provinces (Sarangani, Davao Occidental, Bukidnon) and two cities (Panabo City and Davao City):

Findings show various gender issues/effects to different groups of women (girls/young women, pregnant women, seniors, PWD, working women in the población) due to bad road conditions or absence of link roads especially during heavy rains, (flooding during heavy rains which make the road, slippery, muddy, the rivers overflow and are not passable, big rocks and stones are exposed due to soil erosion). Cost of transport is much higher during heavy rains: very limited number of vehicles, usually only single motors, dare to navigate the difficult road conditions.

- Pregnant women miscarriage (when the single motor tips over or crashes, or when they fall from the single motor or as a result of frequent traveling on rough, muddy, slippery roads ("matagtag', "mag untol untol"); serious complications in childbirth due to delay in reaching birth facilities, reports of maternal deaths due to delay in reaching the facility are reported, in particular in remote areas.
- Unplanned pregnancy delay in seeking resupply of contraceptives (pills, injectables) when roads become impassable, or women cannot afford the high cost of fare in accessing family planning services of fare.
- Early marriage and early pregnancy some girls stop schooling when they get tired of taking long walks every day in going to school (they have to wake up early and go home late), being absent from classes when rivers and roads are impassable due to heavy rains and made more complicated when they are in tight financial condition. With minimal options for education and job opportunities, some of them get into live in relationships and consequently, early pregnancy.
- Cases of VAW (violence against women) participants report that husband's drinking alcohol as well as financial constraints (a major cause of quarrel) are the two main causes why women experience physical and other forms of abuse. Participants perceive that with improved road conditions, both women and men will have more economic opportunities, and with improved incomes, this is perceived to contribute to better relations between husband and wife because they are now less saddled with financial constraints.
- Increased burden of health care to women when household members who are ill experience more serious health complications due to delay in reaching health facility; or when medical mission by health providers and distribution of medicine, deworming, family planning supplies and vitamins by barangay health workers are canceled or postponed.
- Women could not attend meetings of their organizations (PWDs, seniors, 4Ps, school meetings)
- Women and girls taking alternative routes when roads are impassable expressed that they are reported to be more at risk of sexual assault, snake bites, dog bites by stray dogs and robbery, especially at nighttime or when the area is isolated. Reports of robbery at gunpoint was reported; this occurred in isolated areas and with unlighted roads; robbers hide in thick vegetation.
- Wives working in the center or población could only go home during weekends, they cannot afford high cost of fare and usually the employers' policy is no work, no pay; husbands worry because the children are neglected.
- According to single motor drivers, one reason why more women are injured as passengers are because they easily fall, and they easily get confused or afraid and they might have thought it is safer if they jump from the motor and this results to injuries.
- More women (including IP women) than men migrate to the cities or abroad for better economic opportunities (they work mostly as domestic helpers)
- In remote IP areas, there is often late registration of births, it is the mothers more than the fathers who attend to this, especially when needed for enrollment and graduation purposes of their kids in school. The female FGD participants (Malabog) said that with better road conditions, more IP women will be encouraged to give birth in birthing facilities where immediate birth registration is taken care of by the staff in the facility.
- In IP areas, due to distance and high cost of transport, it is the men who go to the market to sell produce, buy inputs and basic consumption needs for the households. As a result, women are not used to decision making, negotiating, and interacting with

others ('kulang sa kaalam kay dili exposed"). The IPs believed that when remote areas are connected to the center/población via good roads, more IP women will travel and hence develop self confidence in facing other people and might even engage in more economic activities.

 Most of the participants in the FGDs and KIIs believed that there will be women who will be interested to work in road construction, maintenance, and operation. They are used to work under the sun doing heavy work in the farm (clearing, planting, harvesting, plowing or "daro"). Barriers to women's participation in road projects were identified: 1. there will be some spouse who will not give consent for the reason that "It is an insult to their manhood if they allow their wife to work in a men's work doing heavy labor" 2. Lack or absence of childcare support especially for those with young children (some women expressed that they are willing to pay for this)

In accordance with the ESS10, this ESMF categorizes the stakeholders into three groups in order to ensure a more efficient and effective stakeholder engagement:

- affected parties are individuals, groups, local communities, and other stakeholders whose interests or rights will be affected, directly or indirectly by the Project, positively or negatively, who may have an interest, and who have the potential to influence the Project outcomes in any way.
- vulnerable/ disadvantaged groups refers to groups or individuals among the affected parties who may be more likely to be adversely affected by the project impacts and/or more limited than others in their ability to take advantage of a project's benefits. Vulnerable groups are placed at a disadvantaged position as a result of the barriers they experience to social, economic, political and environmental resources, as well as limitations due to illness or disability. Such an individual/group is also more likely to be excluded from/unable to participate fully in the mainstream consultation process and as such may require specific measures and/or assistance to do so.
- other interested parties are stakeholders who may be interested in the project because of its location, its proximity to natural or other resources, or because of the sector or parties involved in the project. These may be national agencies, local government officials, community leaders, and civil society organizations, particularly those who work in or with the affected communities.

A Stakeholder Identification and Analysis Matrix is presented in **Appendix 8** Stakeholder Engagement Framework. The matrix shows the degree of influence and interest on the project for each identified stakeholder based on the role or potential role of the stakeholder in the Project.

2. Policy, Legal, and Regulatory Requirements

2.1 Philippine Legal and Policy Framework and World Bank Environment Social Policy and Standards

This ESMF is developed to comply with the Philippine Government laws, policies, regulations and standards which impose restrictions on project activities to avoid/prevent, minimize, or mitigate likely impact/s on the environment and the people. The Project also conforms with the World Bank's Environmental and Social Framework (ESF) which defines specific Environmental and Social Standards (ESSs) designed to avoid, minimize, reduce or mitigate adverse environmental and social risks and impacts of projects.

Under the Philippine Environmental Impact Statement System, the MTCIP is categorized as Category B (Link Roads) and D (Main Corridor) as per the Revised Procedural Manual for Department of Environment and Natural Resources (DENR) Administrative Order, Series of 2003, and Environmental Management Bureau (EMB) MC 2014-005 (Revised Guidelines for Coverage Screening and Standardized Requirements under the Philippine EIS System). Under this category, multiple Certificate of Non-Coverage (CNC) will be secured for the 20 sections (less than 2 km in length, scattered across the three regions) of the Multiple Corridor subject to improvement. Meanwhile, Environmental Compliance Certificate (ECC) will be secured for Link Roads.

On the other hand, based on the ESF risk classification, the environmental and social risk of MTCIP is assessed to be "Substantial" due to potential risks and significant impacts arising from the type, magnitude/scale and location of the project. The risk classification summary for this project under the ESF indicates that the activities associated with pre-construction, construction, and demobilization could lead to significant environmental changes. These include exacerbation of geological hazards, water quality decline due to altered surface runoff, hazardous waste production, improper solid waste disposal, greenhouse gas emissions, and dust generation. Although no critical habitats are within a 10km buffer of the project sites, the physical disturbances could still affect the local flora and fauna to some extent.

Despite the significant risks, the environmental impacts are largely predictable, temporary, and reversible, with a limited geographic scope. The project design incorporates climate resilience, and the anticipated risks can be mitigated through technical designs and measures adhering to Good International Industry Practice (GIIP). The implementation of the Bank's Environmental and Social Standards (ESS) and Environmental Health and Safety Guidelines will further mitigate residual risks.

The social risk rating is also substantial due to significant involuntary resettlement, the involvement of Indigenous Peoples, and the conflict situation in the project areas. The project will affect approximately 3,683 households. While Philippine legislation on right-of-way acquisition is largely aligned with ESS 5, some local practices may require alignment with the Bank's standards. Indigenous Peoples residing near the link roads are project beneficiaries, and their involvement requires free, prior, and informed consent (FPIC) under both the Philippines' Indigenous Peoples' Rights Act (IPRA) and ESS 7. The Indigenous

Peoples' Policy Framework outlines the procedures for engaging with and mitigating risks to these communities. Social risks related to labor and working conditions, sexual exploitation and abuse/harassment (SEA/SH), community health and safety, and stakeholder engagement are considered low. However, the conflict and Covid-19 situations could complicate project implementation and management of social risks, including land acquisition and involuntary resettlement. The ESMF addresses these risks and includes Labor Management Procedures to ensure the project's adherence to the ESF's requirements.

The project's Implementing Agency, the Department of Public Works and Highways (DPWH), has a strong track record of managing Bank-financed projects and is supported by experienced units in ongoing environmental and social (E&S) risk management. The project includes capacity building and institutional development to strengthen E&S risk management. The Philippine legal and regulatory framework is well-defined for environmental issues, and the DPWH is equipped to manage risks and impacts in line with the ESF and national policies. The Environment and Social Management Framework (ESMF) and the environmental and social impact assessment (ESIA) provide the basis for preventing and minimizing environmental risks and impacts. Site-specific E&S risk management plans will detail mitigation measures for local roads and main corridor sections.

As committed in the DPWH SEMS Manual and the DPWH Department Order 159 series of 2022, foreign funded projects shall be governed by the Philippine environmental and social laws and regulations as well as the safeguards policies of the International Funding Agency (the World Bank, in this case). The PIU (the UPMO RMC II) shall level off with the Foreign Institution to come up with an agreement in resolving any policy gaps. **Appendix 9** details the relevant environmental and social laws, regulations, guidelines, and standards in the Philippines applicable to MTCIP while **Table 8** summarizes the core laws related to the project.

Regulation	Date/Year issued	Description
A. Environmental		
PD No. 1586 1978		Established PEIS to conduct EIA study for the environmentally critical projects and the projects in the environmentally critical areas
PP No. 2146 & PP No. 803	1981/1996	Proclaiming Environmentally Critical Areas and types of projects as Environmentally Critical Projects and within the scope of PEISS
DAR AO 2002-01	February 28, 2002	Land Use Conversion
DENR AO 03-24	June 30, 2003	Pursuant to RA 9175, Requiring the securing of Chainsaw Permit for cutting/clearing of trees from DENR
DENR AO 03-30	2003	Implementing Rules and Regulations (IRR) for the Philippine Environmental Impact Statement (EIS) System
DENR AO 03-27	August 2003	Self-Monitoring Report (SMR) System
DENR 2004-26 & MC 2007-03		Requiring Permit to Operate Generator Sets
DENR AO-2004-59	August 11, 2004	Forest Land use Agreement (FLAg)
EMB MC 07-002	August 21, 2007	Revised Procedural Manual for DAO 03-30, requiring among others, the submittal of semi-annual Compliance Monitoring Report
DENR AO 07-17 July 25, 2007		Pursuant to RA 7586, (1992), National Integrated Protected Areas System/, Rules and Regulations on Special use Agreement within Protected Area (SAPA)
EMB MC 11-05	Nov. 11, 2011	Incorporating DRR-CCA in PEIS System, and EIA DRR/CCA Technical Guidelines
DENR AO 13-22	2013	Pursuant to RA 6969, (1990) Revised Procedures and Standards for the Mgmt of HazWastes (Revising DAO 2004-36)

Table 8. Environm	iental, Social, an	d Health & Safety	(ESHS) Regulations	/Standards Applicable to
MTCIP		-		

Regulation	Date/Year	Description
	issued	
EMB MC 2014-005	July 07, 2014	Revised Guidelines for Coverage Screening and Standardized
	-	Requirements under the Phil. EIS System
DENR AO 2017-15	2017	Impact Statement System
DENICAO 2017-13	2017	Updated Guidelines in the Processing and Issuance of ECC for
EMB MC 2019-003	March 26, 2019	Category B Projects
	November 05.	
DENR MO 2012-02	2012	Uniform Seedling Replacement Ratio for Cut Trees
DENR MO 2023-01	January 13,	Guidelines on Project ECC Applications within or with Close Proximity
DENIC MO 2020-01	2023	to Protected Areas or RAMSAR Sites
RA 7586	1992	Establishment and Management of National Integrated Protected
		Areas System (NIPAS)
RA 7942	March 3, 1995	Philippine Mining Act (RA 7942) requiring Quarry Permit to be
PA 8048	lune 7 1005	Philippine Coconut Authority (PCA) Permit to cut Coconut Trees
	November 07	Implementing Rules and Regulations for the Clean Air Act (RA 8749)
DENR AO 2000-81	2000	establishing the National Ambient Air Quality Standards
DENR AO-87-78, DENR AO-		Constitution Downit (CTOD)
88-86, DENR AO-00-21		Special free Cutting Permit (STCP)
DENR AO 01-34	Dec. 20, 2001	IRR of Ecological Solid Waste Management Act of 2000 (RA 9003)
DENR AO 22-01	January 11,	Guidelines in Granting Government Agencies Gratuitous Permits for
	2022	Special Uses of Forest Lands
DENR AO 01-34	Dec 20, 2001	IRR for Ecological Solid Waste Management (RA 9003)
DENR AO 03-24	June 30, 2003	Chainsaw Act of 2002(RA 9175) Regulating and requiring the
		Adoption of Euro//IV/ Emission Limits/Standards
DENR AO 16-08	May 14, 2016	Water Quality Guidelines and General Effluent Standards
DENICAO 10-00	1viay 14, 2010	Establishing Air Quality Index (AQI) for PM 2.5 and amending the
DENR AO 20-14	Oct. 21, 2020	provisional short term guideline values for PM2.5 at 35 ug/Ncm
PD 856		Sanitation Code of the Philippines
	2017	Updated National List of Threatened Philippine Plants and their
DENR AO 17-11	2017	Categories
DENR AO 19-09	2019	Updated List of Threatened Philippine Fauna and their Categories
DENR AO 17-15	2017	Disclosure and Participation Aspects in PEISS
DENR AO 00-08	2000	Implementing Guidelines on Engineering Geological and Geo-Hazard
		Assessment (EGGA)
h SOCIAL		Implementation of Slope Protection Supplemental Guidelines
B. COURE	1	Urban Development and Housing Act of 1992 Stipulating procedures
RA 7279	1992	for eviction and demolition for informal settlers' families
DA 9371	1007	Indigenous Peoples Rights Act (IPRA) to recognize, protect and
RA 0371	1997	promote the rights of Indigenous Communities/Indigenous Peoples
RA 10066	2009	National Cultural Heritage Act of 2009
DPWH DO 05 s 2003	2003	Stipulating the necessary guidelines for the preparation of land
		acquisition and resettlement action plan for infrastructure projects
DPWH DO 65 s 2017	2017	Stipulating the scope and delegation of the ROW functions and
DPWH DO 43 s 2020		ROW Acquisition and Payment in Ancestral Domains
DPWH DO 142 s 2019		Clearing of Structures/Improvements Trees/Crops within ROW Limits
		of Projects
DPWH DO 152 s 2017		Directing the Use of DPWH ROW Acquisition Manual (DRAM)
DDW/U DO 150 a 2022		Implementation of Social & Environmental Management System
		Operations Manual
DPWH DO 327 s 2003		Guidelines for Land Acquisition and Resettlement Action Plans
		(LAPRAPs) for Infrastructure Projects
NCIP AO 3 s 2012		Revised Guidelines on Free and Prior Informed Consent (FPIC) and
PD 442	T	Labor Code of the Philippines
OSHS	1989	Amended Philippine Occupational Health and Safety Standards
NPCC MC 1980-02	1980	Noise Control Regulations and Standards

The Government of the Philippines is also a party to international environmental treaties /agreements pertaining to biodiversity, climate change, pollution, historical/cultural heritage, forestry and social.

The following outlines the relevant laws, regulations, guidelines, and standards in the Philippines applicable to MTCIP and its relevance to the corresponding WB ESS.

Table 9. Brief description of the relevance of the World Bank ESS to the Project

ESF Environmental and Social Standards	Relevance to MTCIP and ESF Instruments
ESS1: Assessment and Management of ES Risks and Impacts	<i>Relevant.</i> Project activities under Components 1 (Link Roads) and 2 (Main Corridor) are expected to pose significant, site-specific E&S risks and impacts that need to be adequately identified, assessed, managed, and monitored to improve the project's overall environment and social performance throughout the project's lifecycle. The ESIA for the Main Corridor and all three Link Roads has been formulated for the Project. The project will use a design-and-build approach, and the ESIA will be further validated after the detailed engineering design (DED) and bill of quantities have been completed.
ESS2: Labor and working conditions	<i>Relevant.</i> The Project will involve government personnel and consultants, but the bulk of employees would be contracted local workers. It will not engage forced or child labor, per the requirements of ESS2, and will prioritize unskilled workers to come from the community where construction is and given that the nature of construction is not highly technical, labor influx is not expected. Community workers will not be utilized under the Project. A set of Labor Management Procedures (LMP) has been prepared under the Project which mirrors the key provisions of Philippine Labor Code. It specifies a GRM for project workers that is different from the GRM for stakeholders.
ESS3: Resource Efficiency and Pollution Prevention and Management	<i>Relevant.</i> Construction, upgrading activities, and road safety improvement interventions activities to be financed under Components 1 and 2 may impact the environment or human health but these are not expected to be in a significant manner. If proper managements are not in place, however, civil works may generate some adverse E&S impacts. The site-specific ESMP, based on the project ESMP and the ESMF, will adopt prevention and management measures to manage risks and impacts of pollution from potential sources.
ESS4: Community Health and Safety	<i>Relevant.</i> Road construction activities can expose communities to project- related traffic and road safety risks, particularly in the main corridor. DPWH will undertake a road safety assessment for each phase of the project and will monitor incidents and accidents and prepare regular reports of such monitoring. This is elaborated in the ESMF and will be further detailed in the Project Operations Manual, and the site-specific ESIA and ESMP.
ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	<i>Relevant.</i> The main highway and the link roads are existing and DPWH claims that road right-of-way has already been secured in many parts. Nevertheless, a substantial area of land was estimated to be needed. In addition, over 8,000 structures are expected to be affected. Over 2,000 project-affected households would need to be relocated, over 300 of which are informal settler families. A Resettlement Policy Framework (RPF) will guide the development of individual subproject Resettlement Action Plans (RAPs). As the project runs through ancestral domains and some Indigenous Peoples may need to be relocated, the RPF refers to the Indigenous Peoples Policy Framework (IPPF).
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	<i>Relevant.</i> Although civil works will mainly occur in existing roads, there are potential direct and indirect adverse risks and impacts to natural habitats. The ESMF includes criteria and procedures to ensure that the civil works packages / sub-project activities are designed and implemented in ways that avoid damage to protected areas or critical habitats following the mitigation hierarchy and GIIP and apply adaptive management practices, and this will be further elaborated in the site-specific ESIAs and ESMPs of the link roads and the road sections of the main corridor.
ESS7: Indigenous Peoples/Sub- Saharan African Historically Underserved Traditional Local Communities	<i>Relevant.</i> Various Indigenous Peoples are present within the project area. In general, Indigenous Peoples are expected to benefit from safer roads and increased access to markets, ports, and social services. An Indigenous Peoples Planning Framework (IPPF) has been prepared during project preparation to ensure proper screening of Indigenous Peoples, their meaningful consultation / participation during subproject planning and implementation, and full respect for their rights and views.
ESS8: Cultural Heritage	<i>Relevant.</i> given that the project is located in the vicinity of protected areas and, possibly, within recognized cultural heritage site, as well will involve excavations and movement of earth, the ESMF includes a chance finds procedure that sets out how chance finds associated with the project will be managed.
ESS10: Stakeholder Engagement and Information Disclosure	<i>Relevant.</i> The primary stakeholders of the Project who will benefit from safer roads and increased access to social services will similarly be the ones who will be affected during upgrading and construction. A Stakeholder Engagement Framework (SEF) has been developed during project preparation to ensure that

community consultations will be undertaken to make subprojects more responsive to the needs and views of road users.

2.2 Gap Analysis Between Applicable WB Safeguards Policies and GoP Regulations

The World Bank's ESF and 10 ESSs are areas of intervention around which environmental and social management practices have been developed to ensure that the Bank-assisted development initiatives do not adversely affect the social and environmental conditions of the people and landscapes where projects are implemented or supported. The World Bank's support in the ESF related matter aims at enhancing the capacity of the DPWH in a manner that is consistent with international good practice in terms of technical, environmental, social and health and safety standards. The provisions of ESF shall prevail for the MTCIP.

According to the World Bank ESF, under ESS 1, the Bank undertakes environmental and social due diligence of the proposed projects that are classified into one of four categories High Risk, Substantial Risk, Moderate Risk and Low Risk depending on their type, location, sensitivity, the scale of the project, and the nature and magnitude of its potential environmental impacts and the capacity and commitment of the borrower. In the MTCIP Concept Environmental and Social Review Summary Report, the Project risks were assessed to be 'Substantial' for both the Environment and Social aspects.

The Environmental Risk Rating of 'Substantial' is due to potential risks and significant impacts arising from the type, magnitude/scale and location of the project. Thus, project risks/impacts from civil works such as cutting/clearing of trees, especially those threatened species which may adversely affect sensitive locations such as biodiversity sites and protected areas in proximity to project activities but to a limited extent; emission of air pollutants and nuisance related to noise during construction up to operations phase which may pose public health concerns, although anticipated to be within pertinent GOP regulatory standards; and changes in roadbed elevation, road widening activities and construction of new bridges may lead to soil erosion, siltation of waterways, changes in surface runoff direction, loss of roadside vegetation, and wildlife disturbances, again to a limited extent and should be compliant to regulatory standards. The presence of sensitive receptors; steep slopes and hydro-geological hazards also contribute to risks to community and public health & safety. Project activities however are not expected to be located in ecologically sensitive or biodiversity areas and will take place within existing road segments. In addition, project activities or sources of construction material, e.g. quarry sites and/or camp sites will follow exclusion principles to avoid ecologically sensitive areas. Potential risks and impacts may be significant but are mostly temporary, predictable, mitigable, and/or reversible, and the magnitude and spatial extent are likely to be limited in geographic scope and within the technical footprint of the project. The legal and regulatory environment of the project is well-defined. DPWH is well experienced in implementing projects financed by the Bank and other financial institutions. It also has the technical and institutional capacity to manage risks and impacts consistent with the Bank's ESF and the country regulations.

Social risks are rated 'Substantial' owing to the significant involuntary resettlement that will be involved in the infrastructure components of the Project, some subproject areas being in ancestral domains and the involvement of Indigenous Peoples (some of whom may need to be relocated), and the conflict situation in which the Project will be implemented. However, Philippine legislation on right-of-way acquisition is substantially aligned with ESS 5 with some gaps on compensation for income losses and on cases involving expropriation. DPWH has extensive experience in land acquisition using Philippine laws, but some local practices would need to be fully aligned with the requirements of ESS 5. Indigenous Peoples are among the beneficiaries of the three subproject link roads under Component 1.

Table 10 presents the comparative/gap analysis between the WB ESSs and the GoP laws and regulations and the corresponding measures aimed to close the gap.

World Bank ESS		Counterpart Philippine Legislation	Comparative/Gap Analysis	Response Measures
ESS1 - Assessment and	•	PD 1586 (1987) – Philippine EIS	The WB ESS1, as well as the PEISS, applies to MTCIP.	Under ESS1, An Environmental and Social Impact
Management of		System: DENR AO 2003-30:	Considering the project component's location, nature and	Assessment (ESIA) will be conducted and an ESMP
Environmental and		EMB MC # 2007-002- Revised	size, the project components are covered by the Philippine	including the additional necessary environmental
Social Risks and		Procedural Manual of DAO 2003-	Environmental Impact Statement (EIS) System guidelines,	instruments will be prepared for a selected Link Road
Impacts		30; EMB MC 2014-005- Revised	thus will be required to secure an Environmental Compliance	project component.
		Guidelines for Coverage	Certificate (ECC). Those sections which will not be covered,	
		Screening and Standard	will be issued with a Certificate of non-coverage (CNC).	The ESIA includes a risk assessment of the project
		Requirements.	However, based on the screening process under DENR EMB	impacts. The potential risks/impacts of the project in
			MC# 2014-005, MTCIP components, e.g. sections of the	land, water, air, and people were assessed as to the
	•	DPWH Social and Environmental	existing Main Corridor which will be repaired to address	whether positive or negative, magnitude (i.e. in terms
		Management Systems Manual of	environmental related problems, e.g. slope protection, climate	of extent, duration, and intensity) and likelihood
		2016	adaptation such as improvement of flood control structures,	/probability of the impact happening per project
			including installation of road safety barriers/signs components	development phase and activities. Significant negative
			will not be covered by the PEIS, and issued with a Certificate	impacts will be formulated with mitigation measures
			of Non-Coverage (CNC).	following the WB Mitigation Hierarchy (i.e. avoid where
			Furthermore, the type of EIA document needed to support the	possible, mitigate or reduce/minimize, compensate
			ECC application for MTCIP will depend on the scale/length of	and/or offset) to acceptable levels or compliant to
			the road/bridge and on the presence/absence of critical	regulations.
			slopes.	
			Those sections of the Main Corridor which have been	Under DENR EMB MC# 2014-005, a link road and/or
			operating prior to 1982 and will undergo road widening within	bridge, whether for upgrading or to be newly
			the existing RROW and the length of which is less than the	constructed, if the scale/length and presence of slopes
			threshold limit of 20km or less than 10 km with critical (>50	is more than the threshold limits (see comparative/gap
			degree) slopes, the supporting EIA document for ECC	analysis column), then, an EIS (full EIA with EMP
			application will be IEE Checklist. Construction of the new link	report) will be required.
			roads, depending on the scale, i.e. if within the threshold	All MICIP project components, either for construction
			limits, ECC application shall be likewise required to be	of the new link Roads, or for the repair, rehab,
			supported with an IEE Checklist, otherwise, an EIS report	widening or slope protection of the particular sections
			shall be required. Whether the required EIA report will be an	of the Main Corridor covered by the MICIP, shall be
			IEE Checklist or an EIS, data from the ESIA and the ESMP	secured with the appropriate environmental clearance
			can be utilized or extracted either for the preparation of the	certification- ECC or CNC, with the corresponding
			IEE Checklist or for the EIS report.	appropriate supporting EIA report.
				I his ESIMF also includes provision for the
			rey gaps: The END specifies thresholds on screening of	management of contractors to ensure contractor
			projects for ECC application. whereas, the World Bank	operations are consistent with the requirements of the
			categorizes projects based on risk classification that is high	ESS/GOP environmental regulations.
			nsk, mouerate fisk or negligible fisk depending on location,	
ESS2 Labor and			The Dilipping labor laws and regulations,	Labor Management Procedures (LMD) will be
Working Conditions	•	RA 6715 – Labor Code of the	olomonts of ESS2 that includes labor management	reported to fully align with the ESS2
WORKING CONDITIONS		Philippines	elements of ESSZ that includes labor management	prepared to runy any num the ESS2.

Table 10. Comparison between World Bank ESS and Relevant Philippine Laws and Regulations

World Bank ESS	Counterpart Philippine Legislation	Comparative/Gap Analysis	Response Measures
	 RA 11058 - Occupational Safety and Health Standards Act and DOLE DO 198- 2018 Joint Memorandum Circular No. 1, series 2020 - Occupational Safety and Health Standards for the Public Sector RA 6685 - Private Contractors to whom national, provincial, city and municipal public works projects to hire at least 50 % of unskilled and at least 30% of skilled labor requirements to be taken from bonafide residents in the province and/or city where the project is located. 	procedures, terms and conditions of employment, rights of workers, occupational health and safety, non- discrimination and equal opportunity, prohibition on forced labor, and provisions on workers' organizations, grievance mechanism, and regulations for vulnerable workers, including child workers. Key gaps: the regulations are not clear on measures to prevent harassment, other than sexual and gender-based offenses, exploitation in the workplace, and on provision of social benefits and applicability of grievance mechanism to contract employees in the public sector.	
ESS3 - Resource Efficiency and Pollution Prevention and Management	 RA 8749 – Philippine Clean Air Act and DENR AO 2000-81 RA 9275 – Philippine Water Air Act and DENR Administrative Order 2016-08 RA 9003 – Ecological Waste Management Act and DENR AO 2001-34 RA 6969 - Toxic Substances and Hazardous and Nuclear Wastes Control Act RA 11285 – Energy Efficiency and Conservation Act of 2019 	Counterpart Philippine legislations conforms with the requirements of ESS3. Pertinent Philippine regulations/standards such as RA8749, RA9275, RA9003, and RA6969 will apply to road repair, rehabilitation, road widening including road/bridge construction activities which will create potential impacts related to air pollution from dust emission from site works and emission from equipment and construction vehicles used for construction; water pollution from runoff or soil erosion from stockpiled construction workers, and accidental spillage of oil and other lubricants; noise from construction activities that may disturb nearby communities; generation of construction wastes and possibly hazardous materials such as used lead acid batteries, busted lamps, used oil, etc. Likewise, with ESS3 requirements, Quarry sites shall be secured with permits from the local government. Key Gaps: None, but there may be partial enforcement and implementation of environmental mitigation measures and monitoring activities.	The Environmental and Social Management Plan (ESMP) will be developed to manage the anticipated environmental and social impacts of the Project. The ESMP shall form part of the bid document for project contractors' compliance. On the other hand, Philippine regulations require, among other supporting documents, the submission and implementation of Environmental Management Plan (EMP) and Environmental Monitoring Plan (EMOP) for ECC applications.

World Bank ESS	Counterpart Philippine Legislation	Comparative/Gap Analysis	Response Measures
ESS4 - Community Health and Safety	 PD 1586 (1987) - Philippine Ecglishton PD 1586 (1987) - Philippine EIS System and DENR AO 2003-30 Presidential Decree 856 – Sanitation Code of the Philippines RA 11058 - Occupational Safety and Health Standards DOLE Department Order 198- 2018 DPWH Social and Environmental Management System (SEMS) Manual (Sub-section 6.6.4 Community Health and Safety) Accessibility Law (BP 344) Revised Manual on DPWH Highway Safety Design Standards, May 2012 Edition (DO 41 s. 2012) Preventive Maintenance Manual for DPWH Most Commonly Used Equipment and Service Vehicles (DO 5 s. 2018) 	The ESS4 and pertinent GoP public health laws will apply to the Project. *** The repair/rehab/road widening works may be conducted near sensitive receptor premises such as school/clinics/other community service facilities, where civil works may pose hazards. There will be a number of vehicles transporting equipment and construction materials to the project site that may generate noise, dust, and temporary disturbance, and risk to vehicular accidents to staff and occupants of the school and health centers and to the nearby communities. Laws, policies and regulations are well in place and generally sufficient to ensure community health and safety. Key gap: There may be some gaps in implementation and enforcement, especially in some cases where monitoring is lagging.	The Environmental and Social Management Plan (ESMP) will be developed to manage these anticipated environmental and social impacts of the Project. The Environmental and Social Monitoring Plan (ESMOP) will monitor, evaluate and report on compliance.
ESS5 - Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	 RA 10752 – An Act facilitating the Acquisition or Right of Way, Site or Location for National Government Infrastructure Projects. RA No. 8974 - An Act to Facilitate the Acquisition of Right-of-Way, Site or Location for National Government Infrastructure Projects and for Other Purposes. Art. III, Sect. 9 of the 1987 Constitution - Private property shall not be taken for public use without just compensation. RA 7279 Urban Development and Housing Act of 1992 	 MTCIP project components will involve land acquisition or resettlement impacts. Temporary displacement or disruptions to household activities or farming operations are anticipated. Although the governing laws and policies in the country significantly meet the requirements of the international funding institutions like the WB, some gaps are still unavoidable. These gaps are oftentimes addressed in the Resettlement Policy Framework documents as "gap filling measures". Key gaps: There is no stated regulation on compensation for loss of income directly resulting from land acquisition. Republic Act 7279 states that eligible homeless and poor informal settlers in urban areas are entitled to resettlement if they are affected by development projects. However, R.A. 7279 limits this to residential informal settlers and does not 	A Resettlement Policy Framework will be prepared in conjunction with this ESMF.

World Bank ESS	Counterpart Philippine Legislation	Comparative/Gap Analysis	Response Measures
		 cover informal structures on public or private land used for commercial purposes. 3. The Philippine Constitution states that private lands expropriated or taken for the public interest shall be paid just compensation. The Supreme Court defines just compensation as current market value less the cost of any future benefits the landowner may derive from residual land. For land subjected to expropriation proceedings, Section 7 (a) of the IRR of RA 10752 directs the implementing agency to deposit to the court in favor of the owner the amount equivalent to the sum of one hundred percent (100%) of the value of the land based on the current zonal valuation of the BIR, issued not more than three (3) years prior the filing of the expropriation complaint. 	
ESS6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources	 PD 705- Forestry Reform Code of the Philippines RA 9147- The Philippines' Wildlife Act RA 7586 and 11038 - National Integrated Protected Areas System DENR M.O. No. 2012-02- Uniform Replacement Ratio for Cut or Relocated Trees 	GoP's NIPAS, DENR's guidelines on uniform replacement of cut trees, and DPWH policies on minimizing cutting of trees and clearing of vegetation in road projects, are consistent with ESS6 requirements. Key Gaps: None, but there may be partial enforcement and implementation of environmental mitigation measures and monitoring activities.	A site specific ESMP will be prepared to address the concern on protection of biodiversity conservation areas.
ESS 7 - Indigenous People/Sub- Saharan African Historically Underserved Traditional Local Communities	 RA 8371 – Indigenous Peoples Rights Act (IPRA) DPWH DO No. 43, Series of 2020. Guidelines for Right-of-Way (ROW) Acquisition and Payment of Ancestral Domain Affected by the Implementation of National Government Infrastructure Projects 	Some sections/components of MTCIP, particularly the new link roads, will traverse through identified ancestral domains of Indigenous Peoples (IPs). Engaging with IP communities is protected under NCIP Administrative Order No. 3 s. 2012 or the Revised Guidelines on FPIC of 2012. It is decisive and absolute in its procedures as implemented by NCIP. FPIC information requirements requiring validation are (i) FBI Report; (ii) Identity of the IP Elders and Leaders; (iii) IP Decision-making process;	An Indigenous Peoples Policy Framework will be developed for MTCIP. As a rule, the more stringent policy will prevail over the less stringent. In this case, the Project shall adopt the definition of FPIC as per RA 8371 (IPRA), particularly consensus decision among ICCs to support a project.

World Bank ESS	Counterpart Philippine Legislation	Comparative/Gap Analysis	Response Measures
		(iv) Census of IPs/migrant IPs;	
		(v) Area affected;	
		(vi) Existence of boundary conflict with other ancestral	
		domains; (vii) Conflict resolution mechanism and facilitate the	
		conduct of the same by the chosen/selected Elders/Leaders;	
		and	
		(viii) Proceedings towards IP community consensus building.	
		Key gap: The FPIC requires 100% consensus from the	
		Indigenous cultural communities (ICCs) to support a project.	
		Whereas, WB ESS 7 does not require unanimity however	
		IPRA requires a consensus decision among all members of	
		the ICCs/IPs.	
ESS8 - Cultural Heritage	RA 10066 (Philippine Cultural Heritage	RA 10066 and ESS8 are applicable to this Project.	A Chance Find procedure will be developed and
	Act)	Archaeological artifacts may be accidentally discovered	included in this ESMF based on the National
		during excavation or clearing activities for some road	Commission for Culture and the Arts (NCCA)
		widening activities or for the new link roads.	guidelines.
		No key policy gaps but there may be partial enforcement and	
ESS0 Einanaial		ESSO is not applicable to the Dreject. There are no Einspeid	
ESS9 - Financial		ESS9 is not applicable to the Project. There are no Financial solutions	
Internetialles		providers involved in the Project	
ESS10 - Stakeholder		ESS10 applies to the Project.	The Stakeholder Engagement Framework (SEF) is
Engagement and	System	The public disclosure and consultations starting from the	developed to provide guidance in the conduct of
Information Disclosure		project preparation up to project implementation and	public participation through open and participatory
	 DENR AO 2017-15 – guidelines on Dublic Dorticipation under the Dbill EIS 	operation, will enable stakeholders to give feedback on	consultations with communities and affected
	System	Project risks and impacts and that may help develop	persons.
	System	measures to address these issues. Key stakeholders of the	
	Local Government Code of 1991	Project include LGU officials, elders from the concerned IP,	
	 DPWH Social and Environmental 	PAPs, and other interested parties.	
	Management Systems Manual of 2021		
		No substantial policy gaps in stakenoider engagement and	

3. Environmental and Social Safeguards Procedures

The identification and management of environmental and social risks will be mainstreamed into the overall project management procedures. Thus, the timing of safeguards activities will be synchronized as much as possible with the various phases of the project. The following sections set out in detail the procedures to be followed in identifying, preparing, and implementing the subprojects, including the following:

- Screening each subproject for potential E&S risks and impacts and classifying each subproject according to risk (Screening Form)
- Conducting E&S assessment for each subproject and developing site-specific management plans/instruments
- Consultation and disclosure of E&S plans and instruments
- Review and approval of E&S plans and instruments.
- Implementation and monitoring of E&S plans and instruments.

The environmental and social safeguard procedures for all project phases and the ESF instruments such as the Resettlement Policy Framework (RPF), IP Policy Framework (IPPF), Stakeholder Engagement Framework (SEF) as discussed in the following sections shall apply and shall be the guidance documents to be considered in the preparation of the corresponding E&S plans and instruments that may be required for each of the 13 sub-projects.

As per Sec. 3.5 'DPWH Safeguards Activities by Project Phase' of the DPWH SEMS Manual of 2021, SEMS involves timing the matching environmental and social safeguards activities for the following project phases: Identification; Preparation; Implementation; and Operation and Evaluation. These shall apply to all 13 subprojects.

3.1 Subproject Identification Phase

Activities during this phase include initial interagency and public project announcement through consultation meetings and subproject E&S screening. Each subproject will be screened for E&S issues, and the relevant ESSs will be determined as well as the subproject E&S risk classification. Some relevant government processes that require early engagement with the respective oversight agency may also be initiated at this stage such as the application for NCIP Certification Precondition for those project components located in an IP area. Preparation of EIA and other appropriate E&S plans and instruments will be done in the subproject preparation phase although some early preparatory activities may be initiated at this stage such as notifying the relevant oversight agencies.

The sub-project footprint will cover the direct impact areas (DIA) of the road right-of-way, and the associated ancillary facilities such as quarry sites, camp sites, disposal sites for spoils, unwanted materials from cut and fill activities, and solid waste materials from construction sites and campsites, and the resettlement areas. The sub-projects will be screened for potential E&S risks and impacts and classified according to risk category using the Environmental and Social Risk/Impact Screening Form in **Appendix 2**. The result of the screening will be used to define the scope and coverage of subproject specific management plans/instruments as well as initiate the applications of special permits that require sufficient lead time from the responsible government agency.

MTCIP components, particularly Link Roads 1, 2 and 3 traverses IP/Ancestral domains. In conformance with ESS7 and in compliance with the GoP IPRA, application for NCIP Certification Precondition, and Memorandum of Agreement shall be already initiated as part of the safeguard preparation process. **Figure 3** presents the FPIC Process Flowchart.

Link Road 1 of MTCIP is 3.36 km outside of the protected area and buffer zone of Mt. Kitanglad Range Natural Park, hence exempted from DENR Memorandum Order No. 2023-01, requiring approval by the Office of the DENR Secretary (OSEC) of ECCs of non-ECPs located within or close proximity (10 km) of protected areas (PA) or RAMSAR sites. In conformance with WB ESS6, PAMB Clearance had been secured for Link Road 1. **Appendix 14** is the Certification issued by the PENRO-Bukidnon stating that the Link Road 1 is outside the boundary of Mt. Kitanglad Range Natural Park (MKRNP). The attached supporting figure/map shows that the Link Road 1 is outside the protected area and buffer zone boundaries of MKRNP.

3.2 Subproject Preparation Phase

This phase involves conducting E&S assessment for each subproject and developing project specific management plans/instruments; consulting and disclosing the E&S plans and instruments; and reviewing and approving the E&S plans and instruments. This includes the preparation of the required EIA report (EIS or IEE) for the Category B, and Project Description (PD) for the Category C subproject components of MTCIP; and the preparation of appropriate risk management plans as required by the Environmental and Social Standards of the World Bank ESF.

The subproject preparation phase also covers fund appropriation, detailed engineering, and inclusion of the subproject in the annual work and financial plan of DPWH. Such subproject preparations also involve obtaining various government clearances, permits, authorization as well as detailing site-specific impacts and risks, mitigation measures, and monitoring activities.

Identified environmental and social risks/impacts and corresponding mitigation measures shall be integrated in the detailed engineering design of the project. Site environmental conditions such as topography, geology, geo-hydrological hazards, distance to fault lines, among others, will be needed primarily for design considerations. Based on DPWH experience, there were instances necessitating alteration in design upon discovery of environmental issues by the contractor. Nevertheless, the contractors were required to comply with the DPWH pertinent manuals that included occupational health and safety requirements, worksite management guidelines, and management of environmental and social risks and impacts as part of the activities during detailed engineering design.

Once the type of repair/upgrading technology to be employed and the environmental and social issues inherent at the site have been identified, the design team and the UPMOUPMO-RMC II as the Project Implementing Unit (PIU), will be able to integrate in the DED the appropriate technologies and methods tailored-fit for the actual conditions of the structure and determine the applicable safeguard instruments for the repair/upgrading activities based on level of impacts and risks that will be generated.

The LMP (**Appendix 4**) is relevant to the whole MTCIP and, therefore, applicable to all subproject components. Other E&S instruments may be required specific to the requirements of the sub-project based on the result of the screening or as may be determined during implementation. The RPF (**Appendix 5**) and the IPPF (**Appendix 6**) will serve as guidance

instruments in preparing the plans for the resettlement of the PAPs, and acquisition of MTCIP RROW. The CFP will be applied if previously unknown cultural heritage is encountered during subproject activities such as those involving excavations/earth movements. The procedure will also be included in all contracts relating to construction of the sub-projects. **Table 11** describes the applicability of the different E&S plans and instruments to MTCIP, all of which the documentation should be completed prior to the project implementation stage.

Environmental and Social Risk	Applicability
Environmental and Social Management Plan (ESMP)	The Project has an ESMP to manage the risks and impacts of project activities based on the Environmental and Social Impact Assessment (ESIA). Based on the ESMP. Site-specific Construction Environmental and Social Management Plan (C-ESMP) will be prepared to mitigate and monitor risks and impacts from sub-project activities such as repair, slope protection, drainage works, engineering works on roadways and/or bridge repair/construction. The construction impacts are site-specific and in most cases are manageable. The C-ESMP, including the Environmental and Social Monitoring Plan (ESMoP), will be prepared based on the result of the E&S screening and guided by the project ESMP. It will include other environmental and social risk management sub-plans as may be relevant, such as the waste management plan (e.g., construction waste materials), construction safety and health plan, construction materials transport and storage plan, and traffic management plan. The ESMP for each sub-project/road section will be approved by the World Bank, disclosed, consulted locally, and redisclosed with consultation minutes. It will prepare their C-ESMP and estimate budgets for implementing ES requirements. An example C-ESMP template is in Appendix 11-A and the ESMoP.
Labor Management Procedure (LMP)	The LMP (Appendix 4) is consistent with the national labor laws and policies and standards occupational safety and health and the WB Environmental and Social Standards ESS2 provisions addressing labor risks and issues that may arise during implementation of the subprojects. The LMP includes GRM for sub project workers. This will be applied to all subprojects. The SEF applies to all subprojects to guide consultations with key stakeholders
Framework (SEF)	throughout the different stages from subproject design to implementation. Appendix 8 , presents the SEF.
Resettlement Policy Framework (RPF)	The Resettlement Policy Framework is consistent with WB ESS 5, which requires that any resettlement activities are properly planned and implemented with appropriate disclosure of information, meaningful consultation, and informed participation of persons that are affected. The RPF applies to sub-projects that entail land acquisition, involuntary resettlement, and restrictions on land use. When land acquisition and involuntary resettlement are unavoidable during subproject implementation, the RPF presents guidelines to mitigate adverse social and economic impacts and to provide the compensation and entitlements of persons whose lands are acquired for MTCIP or those who are subject to involuntary resettlement.
Indigenous Peoples Policy Framework (IPPF)	The IPPF applies to all interventions proposed or implemented in areas with presence of indigenous peoples and those that will traverse a recognized ancestral domain. IPPF is a compliance with the operational framework and standards stated in WB's ESF and ESS7. Prior to detailed engineering design and implementation phases, the IPPF is formulated to ensure that the indigenous cultural communities in the subproject sites, NCIP and other relevant stakeholders are consulted to comply with the free, prior, and informed consent (FPIC). The IPPF will also serve as basis for the compliance of the legal framework of the Philippines laws and regulations on indigenous peoples, required steps on FPIC, and appropriate grievance mechanisms for the indigenous peoples. It will also serve as basis for the monitoring and evaluation of how MTCIP incorporates and resolve issues about the indigenous peoples in the proposed project sites. Figure 3 presents the FPIC Flow Chart

Table 11. Applicability of Environment and Social Risk Mitigation Instruments

Environmental and Social Risk Mitigation Instruments	Applicability
	activities. The CFP aims to conserve any artifact that may be accidentally discovered during sub-project activities following the requirements of the National Commission on Culture and Arts, National Cultural Heritage Act of 2009 (Republic Act 10066), National Museum Act of 1998 (Republic Act 8492), Cultural Properties Preservation and Protection Act (Presidential Decree 374), and the requirements of ESS8.



Figure 3. FPIC Flow Chart (Series of 2012)

The process of obtaining the required government clearances and permits is elaborated in the ECC application process. **Appendix 3-B**, from EMB MC No. 2014-005, presents the classification and requirements for ECC applications for construction of new roads and bridges, and/or modification of existing roads and bridges, including those operating prior to 1982 and without an ECC. The ECC applications for construction of new roads/bridges such as those Link Road components of MTCIP shall be supported with, among others, EIA documents (either EIS, IEE Report, or IEE Checklist) and an EMP. Comprehensiveness of the EIA study report depends on factors such as the length of the road section/bridge to be constructed, and the presence/absence of steep slopes.

Table 12 lists the other government environmental clearances, permits, and/or authorizations, including the required supporting documents that are needed to be secured for MTCIP prior to project implementation. This includes, as applicable, the following:

- Special Tree Cutting Permit;
- Coconut Tree Cutting Permit;
- Quarry Permit:
- Chainsaw Permit;
- Permit to Operate Generator Set: and
- Excavation Permit

Outputs for the subproject project preparation phase include among others, the Stakeholder Engagement Plan, Resettlement Action Plan (RAP), Indigenous Peoples Plan (IPP), site-specific Construction Environmental and Social Management Plan (CESMP), and Environmental and Social Monitoring Plan (ESMoP) for the subprojects. The SEP shall be reviewed periodically and enhanced accordingly based on additional information and experiences during project implementation as deemed relevant. Templates of ESMP and EMoP, both of which are supporting documents to the required EIA Report for the project ECC application.

Regulation	Requirements for Application for Special Tree Cutting Permit	
	Duly accomplished Application Form.:	
	For trees in private land, authenticated copy of Land Title/CLOA with approved sketch map of	
	the area applied for:	
	For trees in Public Land, sketch map of the area showing the relative location of trees to be cut:	
	Inventory fee based on DAO 2004-16.	
DENR AO-87-78,	Harvesting Development Plan.	
DENR AO-88-86,	Endorsement or Certification from any of the following Local Government Unit Officials,	
DENR AO-00-21	interposing no objection to cutting of requested trees:	
	a. Barangay Chairperson;	
	b. Municipal/City Mayor; or	
	c. Governor	
	Timber Inventory Report	
	Tally Sheet and Stand and Stock Table (duly subscribed and sworn)	
	Geotagged photos	
	Special Tree Cutting Permit. Processing fee, P1,200/ha Inventory Fee + P36 Oath Fee	
Regulation	Requirements for Application for Permit to Cut Coconut Trees	
DA 0040	PCA prescribed application form for Permit to Cut	
RA 8048	Valid I.D. or Community Tax Certificate	
	Proof of Ownership of legal possession of affected land (TCT's, Tax Declaration, etc.)	
	Affidavit of non-encumbrance	

 Table 12. Required Supporting Documents to Environmental Permits for MTCIP

	Additional requirements:
	Duly notarized written consent or Special Power of Attorney (SPA) if applicant is through a
	representative:
	a. Duly approved board resolution for corporation
	b. Notarized written consent of co-owners
	c. Sangguniang barangay resolution
	Permit processing fee, P100.00/tree
Regulation	Supporting Documents for Chainsaw Permit Application
	(For Agencies of the government, government-owned and controlled corporations)
	Duly accomplished application form
	Certification from the Head of Office or his/her authorized representative, that the chainsaws
	are owned/possessed by the office and will be used for legal purposes
	a. Specify the purpose of use
DENR AO-03-24	Proof of the Detailed specification of chainsaws to be registered
	a. Brand, Model, Engine Capacity, Serial Number
	b. Purpose of Use
	c. Area/Location the chainsaw will be used
	d. Name of Owner
	e. Date of Purchase
	f. Name of Dealer
	Registration fee, P500.00/chainsaw
Regulation	Requirements for Quarry Permit Application to the concerned LGU
	A. Mandatory Requirements
	1. Duly Accomplished and notarized Application form
	2. Payment of the following:
	a. Filing Fee
	b. Processing Fee
	c. Verification Fee
	3. Survey Sketch Plan (minimum scale 1:3000)
	4. Work Program and Rehabilitation Plan to include EPEP and SDMP (MGB-prescribed format)
	5. Proof of financial capability to undertake the activities pursuant to Work Program or Project
	Description/Profile and EPEP, etc. such as the following:
	a. For individual - Sworn Statement of assets and liabilities. Certification of bank deposit/credit
	lines and similar negotiable instrument.
	b. For corporation, partnership, association or cooperative - Latest Audited Financial
	Statement, Credit Lines, bank guarantees and/or similar negotiable instrument.
	6. Proof of Technical Capability such as the following:
	a. Duly signed Curriculum Vitae of the Technical Personnel who will undertake the
	implementation of the Work Program. EPEP, etc.
	b. Proof of the availed services of the Technical Personnel which maybe in the form of the
	contract/agreement or a Certificate of Employment.
	7. In case of Partnership or Corporation, duly certified Certificate of Registration, Articles of
RA 7942	Partnership/Incorporation and By-Laws (one certified true-copy and four duplicates of the
	certified true copy). In case of Cooperative, duly certified Certification of Registration with the
	Cooperative Development Authority, Articles of Cooperation and By-Laws (one certified true
	copy and four duplicates of the certified true copy)
	8. Favorable Resolution/Endorsement from concerned Sanguniang Barangay and
	Bayan/Panglungsod
	9. Panoramic view of the applied area
	10. Biodata with recent 2x2 picture of the applicant
	B. Subsequent Requirements
	1. Area Clearance/Status from MGB
	2. ECC/Certificate of Non-Coverage (CNC) from EMB Regional Office
	3. Operating Agreement/Contract/Consent between holder/s of valid and existing mining rights,
	as may be deemed applicable
	4. Cash Bond of P20,000.00 - to cover for the cost of rehabilitation
	5. Surety Bond of P500,000.00 and P1,000,000.00 for Small Scale (QP and SAG-CP) and Large
	Scale (SAG-IP), respectively, to be issued by a Bonding Company to answer for whatever actual
	damages incurred
	6. Copy of the Land Title/Tax Declaration (latest copy) of the applied area
	7. Consent from the Landowner, if the applicant does not own the land (Mandatory for untitled
	lot; not required if land is titled)
	9. Contification of Land Classification Status from concerned DEND, CENDO Office.

Regulation	Permit to Operate Standby Genset less than 300Kw
DENR 2004-26 &	Duly accomplished and notarized application form (3 copies).
MC 2007-03	For stand-by Generator Sets with less than 300 KW capacity, submit copy of manual/picture of the nameplate of the generator set.
Regulation	Excavation Permit
DPWH DO-026 s2011	DPWH Form – Excavation Permit

Information about the subproject and its E&S instruments will be disclosed at the project webpage in the DPWH website and in the DPWH UPMO-RMC II official social media accounts. Any substantive change in the subproject and its E&S instruments, as determined by the Bank, will require the redisclosure of the documents. DPWH shall make sure that documents disclosed after public consultations will respond to and address comments and issues raised by the local residents.

The DPWH shall ensure proper disclosure of relevant information about the project in a timely manner. Information disclosure promotes transparency, accountability, accessibility to information, public dialogue, and engagement with stakeholders. Consistent with ESS10, information disclosure supports decision making by the Project by allowing the public access to information on environmental and social aspects of the project. The means by which the Project complies with the disclosure policy would include the following: conduct of meaningful consultation processes; disclosure of pertinent project documents at the DPWH and World Bank websites; posting of project information at the subproject sites.

Information should be presented in the most accessible format and language possible, adapted to literacy levels within each group. It should also be adapted for those who are sight or hearing impaired. The project shall disclose project information to allow stakeholders to understand the risks and impacts of the subprojects, and potential opportunities. The project will provide stakeholders with access to the following minimum information as early as possible and in a time frame that enables meaningful consultations with stakeholders. The information disclosure strategies are outlined in the Stakeholder Engagement Framework annexed to this ESMF.

3.3 Subproject Implementation Phase

The Subproject Implementation Phase is initiated when government funds are readily available for Right-of-Way (ROW) Acquisition, Consultant Services, and Civil Works. It begins after successful bidding and encompasses contracting, construction, completion, and acceptance. This phase also entails implementing necessary impact mitigating measures, monitoring plans, and fulfilling performance reporting requirements. Physical works on site can only begin after the respective RAP for resettlement impacts has been implemented.

In general, engineering works of the sub-projects result to manageable impacts that can be addressed through the implementation of measures in the C-ESMP, RAP, IPP and complying with the requirements listed in **Table 12**. The safeguard instruments prepared for the project (e.g., ESMP, LMP, RPF, IPPF, CFP, SEF) shall be included in the bid and contract documents for the contractor and will serve as guidance for the contractor to prepare site-specific plans, such as the ESMP, RAP, SEP, and IPP (if applicable), and allocate resources for the implementation of mitigation measures in their bids. The tender documents for the sub-projects will include special provisions under "Environmental Clauses" (DO 245 s. 2003). A sample of the "Environmental Clauses' in Bid document is presented in **Appendix 11**. The capacity of the contractor to implement the safeguard instruments will form part of the bid

selection criteria. **Appendix 12-A** contains a Checklist for Evaluation of site-specific ESMP of Contractor.

Timely and effective monitoring is fundamental to ensure compliance and facilitate adaptive management. The monitoring of implementation of the mitigating measures by the contractor as contained in the site-specific construction ESMP shall be the responsibility of the UPMO RMC II. The concerned DPWH Regional Office (RO) or District Engineering Office (DEO) shall assist the UPMO RMC II, and the third-party construction quality assurance firm, as may be required, in routinely monitoring sub-project activities to check the progress of works, ensure that the works are in accordance with plans and specifications, and if environment, health and safety measures – as embodied in the safeguard instruments – are being properly implemented. The requirements for supervision of the site-specific Construction ESMP (CESMP) implementation will be included in the terms of reference of the third-party construction quality assurance firm, also known as the Construction Supervision Consultant.

The designated UPMO RMC II engineering staff, through the Safeguards Monitoring Section of the RO or DEO, will also monitor and evaluate onsite conditions and inspect work camps, materials yard, and waste storage and disposal site. The UPMO RMC II will check on workers' health and safety, the overall sanitation, and housekeeping practices at the worksites, and meet with the community and other relevant stakeholders to inquire on any issues that they may have about the sub-project activities. The Environment and Social Safeguard Site Instruction Form and Inspection Checklist (**Appendix 12-D**) will be accomplished by the UPMO RMC II to document the findings during the site visit. Adverse findings during site inspections will be relayed immediately to the contractor through the site instruction so that corrective actions are implemented and closely monitored.

The UPMO RMC II will prepare monthly project status report containing information on the progress of project construction, materials logbook, weather chart, together with compilation of monitoring charts, status reports, environment and social safeguard site instructions and inspection checklists, minutes of meetings, and correspondences. The report will be uploaded at the DPWH's Project Contract Management Application (PCMA) online monitoring system as shown in **Appendix 13**. Refer to items no. 3 & 4 in **Table 11**, Institutional Arrangement and Responsibility; and **Figure 5**, ESMF Process.

Regular compliance monitoring and reporting shall be observed throughout the implementation phase. The Contractor designated Pollution Control Officer (PCO), who may also be the designated Environmental, Health & Safety (EHS) Officer, is required to regularly submit monitoring reports to the pertinent DENR-EMB Regional Office where the sub-project is located. The templates for the quarterly Self-Monitoring Report (SMR) are presented in **Appendix 12-B** and the semi-annual Compliance Monitoring Report (CMR) is in **Appendix 12-C**. The SMR and CMR is a requirement of the ECC and will form part of the regular monitoring reports of the UPMO RMC II to the World Bank as specified in the Environmental and Social Commitment Plan (ESCP). To validate the contractors' compliance to the E&S requirements, the UPMO and/or its authorized regional/district counterparts shall conduct periodic project monitoring activities through the use of an E&S Safeguards Inspection Checklist (**Appendix 12-D**).

In addition, the UPMO RMC II will promptly notify the World Bank of any incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, and the public or workers no later than 48 hours after

learning of the incident or accident as provided for in the ESCP. This includes, inter alia, cases of sexual exploitation and abuse (SEA), sexual harassment (SH), and accidents that result in death, serious or multiple injury. The report will include sufficient detail regarding the scope, severity, and possible causes of the incident or accident, indicating immediate measures taken or that are planned to be taken to address it, and any information provided by any contractor and/or supervising firm, as appropriate. Subsequently, at the World Bank's request, the UPMO RMC II will prepare a report on the incident or accident and propose any measures to address it and prevent its recurrence.

During implementation, sub-projects that have to be modified will be re-assessed to ascertain the materiality of the proposed changes. Sub-projects which have been issued with an ECC but will not exceed the coverage thresholds or the EMP has been assessed to be still able to sufficiently address the impacts and risks arising from the sub-project modification, shall be required to submit a request for ECC amendment only.

Sub-projects that have been assessed to propose material changes beyond the approved project footprint shall undergo another E&S screening and will be required to submit a request for an ECC Amendment/ Environmental Performance Report and Management Plan (EPRMP). The EIS, IEE Checklist, Project Description would have to be updated and resubmitted along with the EPRMP. The templates are provided in **Appendix 3**. The E&S screening and the applicable EIA document shall be used to support the application for ECC amendment for the particular sub-project.

At the end of the construction activities, monitoring will be conducted to check whether the site has been satisfactorily restored. The site should be free of pollution and hazards left over from construction. The result of the inspection is critical because it is one of the bases whether the project may be turned over by the contractor or not.

The cost of implementing risk and impact mitigating measures in the ECCs and C-ESMPs/EMoPs shall be included in the project budget of the UPMO RMC II. The UPMO RMC II shall ensure that the costs of implementing the environmental compliance and monitoring activities, as indicated in the SEMS Operations Manual, are included in the project budget. (DO 245 s. 2003 and DO 057 s. 2016). The budget for safeguards activities is proposed and approved annually through the Government Appropriations Act (GAA). Additional resources to support its implementation can be mobilized through the provisions in the DENR-DPWH MOA (1999) which include the:

- Contractor's All Risk Insurance (CARI) is provided as a replacement to Environmental Guarantee (EGF), to cover expenses for the following: indemnification/compensation of damage to life and property that may be caused by the implementation of the projects and abandonment/decommissioning of the project facilities related to the prevention of possible negative impact.
- 2. Quick Response Fund (QRF), supplementing CARI, will be used for emergency repairs/restorations of the critically damaged infrastructure facilities after calamity in order to restore mobility and ensure safety in the affected areas.
- 3. Environmental and Social Monitoring Fund (ESMF) for the Multipartite Monitoring Team (MMT) required for Category A projects is organized through the Bayanihan Approach, so that the participating representatives from different entities will charge their cost of participation from their respective offices.

3.4 Subproject Operation and Evaluation Phase

Upon project completion, the operation and maintenance of the MTCIP shall be turned over to the concerned DPWH RO or DEO.

The Project Operation and Evaluation Phase includes the assessment of the overall performance on the implementation of the environmental and social safeguards. Spill-over measures continue after construction. Thus, conduct of periodic inspection/monitoring shall continue in accordance with Section 16: Monitoring and Evaluation of DPWH Social and Environmental Management Systems (SEMS) Operations Manual.

4. Public Consultation and Disclosure

Consultations with stakeholders, including national government agencies, local communities, and LGU officials, identified any community issues related to the project such as incidences of flooding, flood prone areas, availability of road access and materials stockpile area, proximity to sensitive receptors such as residential community and religious places, presence of cultural/historical sites, and trees/crops, and economic enterprises (e.g. farm product loading areas, copra driers, etc.) that may be affected by the project. Considering and integrating the aforementioned community issues in the formulation of mitigation measures shall address concerns of opposition parties, to the project, if there is any.

Part of the DDOA Study for MTCIP required the conduct of stakeholder consultation. **Appendix 8** is MTCIP Stakeholder Engagement Framework (SEF). Consistent with WB ESS10, the SEF, which will provide guidance in the preparation of subproject Stakeholder Engagement Plan (SEP), is aimed to identify the main stakeholders, and given the conflict situation in the area, describes the best approach to engage them. The SEF also provide the opportunity to involve key stakeholders in the discussions, such that the project can be used as an instrument for peace building. The SEF also contains a GRM for stakeholders which applies to the Project.

Based on the DPWH Social and Environmental Management Systems (SEMS) Manual of 2021, initial public project announcement through courtesy calls, IEC, and consultation with the regulatory agencies and LGUs, as well as with affected residents, civil societies, NGOs) have been done as early as the project identification phase. This is to gather as early as possible, feedback and/or support for the project from the stakeholders and other interested parties.

The ones we conducted for the DDOA aimed to introduce the project to the public and get their perspective on how it would impact them. The ES reports have not been presented to the public - this will happen at the subproject level, during the FS or DED phase. The stakeholder meetings for ROWA will also be conducted after the surveys have been completed in the FS or DED phase. The stakeholder consultation meetings will involve the PAPs, it will be focused mostly on the households or individuals at risk of being physically and economically displaced.

Continuing stakeholder engagement and information disclosure during project implementation and operation is necessary, particularly during emergency response after the occurrence of a natural disaster such as earthquake or typhoon, and rehabilitation works may have to be urgently undertaken.

5. Institutional Arrangements, Responsibilities and Capacity Building

5.1 Institutional Arrangement and Responsibility

MTCIP will be implemented over seven years, following project effectiveness. DPWH will act as the Implementing Agency (IA) for Components 1 to 4, with the Department of Finance acting as the IA for Component 5, **Figure 4** shows the organizational chart for the Project.



Figure 4. Project Organizational Chart

DPWH is the main Implementing Agency (IA) for this Project. It shall interface with the NEDA, Minda, DBM, DOF and World Bank on matters related to MTCIP.

DPWH'sUPMO UPMO RMC-II cluster will the Project Implementation Unit (PIU). The UUPMO RMC-II will be responsible for the daily management of the project. The Mindanao Development Authority (MinDA), as the lead agency for Mindanao's development, is the key government office that the DPWH will be coordinating in the approval of the proposed MTCIP. The LGUs in the project area will be supporting the RMC-II of project implementation.

Staffing. The PIU within DPWH's UPMO UPMORMC-II is set up with the following staff complement:

i. **Project Manager**: Oversees the day-to-day implementation of the Project, coordinates the implementation of the Project, and acts as the focal point for

communication with WB and other agencies;

- ii. **Deputy Project Manager**: assist the project manager in day-to-day Project implementation, oversee technical and safeguard aspects of the project, and also communicate on behalf of the project manager to the WB and other agencies.
- iii. **Technical support staff** will consist of technical specialists who will be responsible for the respective aspects of the project. These technical support staff include those for environmental, social/resettlement, gender, road safety, financial planning, procurement, etc.

The pertinent Regional/District Engineering offices shall provide assistance to the UPMOUPMO RMC II on the implementation and monitoring of sub-projects located in their respective area of jurisdiction.

The UPMO RMC-II will maintain an Environmental and Social Safequards Unit (ESSU) with qualified and trained staff and resources to support management of ESHS risks and impacts of the Project, including environmental specialists, social specialists, health & safety specialist, gender specialist, stakeholder engagement specialist, and other specialists as may be determined during project implementation. Furthermore, the DPWH Central Office will continue and maintain the existing ESSU with at least one permanent staff as Senior Environmental Specialist and one permanent staff as Senior Social Specialist who shall be responsible for overall management of ESHS risks and impacts of the Project. At the relevant DPWH Regional Offices and District Engineering Offices, environmental and social safeguards focal persons shall be designated to be responsible for providing technical assistance to the ESSU and coordinating with local government units (LGUs) in the conduct of safeguards activities, monitoring and reporting of the sub-projects. The UPMO RMC-II, through MinDA, will coordinate with and involve the local government units on capacity building activities for environmental and social risk management and other relevant aspects of road asset management to build lasting capacity at the local level that can be retained after the project.

Third-Party Monitoring. DPWH will engage an External Monitoring Agent (EMA), who will perform semi-annual integrated performance audits covering, among others, engineering designs, management of social and environmental issues, including the implementation of the SEA/SH action plan, and quality assurance. Construction Supervision Consultants (CSC) will provide regular supervision of the work contracts. Consultants and non-governmental organizations will aid DPWH in the implementation of resettlement, GBV, VAC, and HIV/AIDS action plans. A Road User Satisfaction Survey consultant will carry out baseline, mid-term, and end-stage user satisfaction surveys. Results Monitoring Consultants will develop methodologies, collect data, carry out required surveys, and measure the values of outcome and intermediate indicators. Consultants procured under the Project will carry out the studies and/or training under Components 3 and 4. The World Bank, through meetings with PIU, DPWH, and the implementation support missions, will regularly monitor the progress of all the activities supported under the Project and the Project's compliance with environmental, social, technical, health, and safety requirements. The World Bank will also work closely with the DPWH to continually monitor the protection environment throughout project implementation.

A Project Operations Manual (POM) will be prepared. It will contain detailed arrangements and procedures for implementation of the Project including, inter alia: (i) implementation arrangements, including the delineation of roles and responsibilities of various entities, institutions, and agencies involved in Project implementation and their coordination; (ii) procurement procedures and standard procurement documentation; (iii) disbursement arrangements, reporting requirements, financial management procedures, and audit procedures; (iv) procedures for preparing and reviewing a consolidated annual work plan and budget for each fiscal year; (v) the Project performance indicators and monitoring and evaluation arrangements; (vi) arrangements and procedures for mitigating environmental and social risks and impacts; (vii) a grievance redress mechanism; (viii) information, education, and communication of Project activities; and (ix) such other administrative, financial, technical, and organizational arrangements and procedures as shall be required for the Project. **Table 13** presents the responsibilities for the ESMP implementation.

Agency	Responsibility
Department of Public Works and Highways (DPWH)	Implementing Agency (IA) with overall responsibility for project construction and operation
	 Ensure that sufficient funds are available to properly implement the ESMP. Ensure that project implementation complex with government environmental
	nolicies and regulations:
	 Ensure that the project, regardless of its financing source, complies with the provisions of the ESMP_WB_ESS_ and GOP statutory requirements;
	Obtain necessary environmental approval(s)/clearances/permits from the DENR-
	EMB and/or other concerned government agencies prior to the commencement of civil works;
	Ensure that tender and contract documents for design, supervision, and civil works include the relevant ESMP requirements.
	• Establish information on an environmental grievance redress mechanism to receive and facilitate resolution of affected people's concerns; and
	Submit semi-annual monitoring reports on ESMP implementation to the WB.
DPWH-Unified Project	Project Implementing Unit (PIU) with direct responsibility for the implementation
Management Office (UUPMO), Roads Management Cluster II	of civil works, engineering designs, and project coordination, including the incorporation of ESMP design measures in the detailed design;
(RMC-II)	Shall conduct an environmental and social assessment, prepare the necessary environmental and social document, and secure the corresponding
	environmental clearance, whether ECC or CNC, prior to project implementation. (DO 057 s. 2016).
	• Ensure that the cost of implementing these ESMP/CESMP conditions and
	mitigating measures in the ECCs and CESMPs/EMoPs is included in the project budget (DO 245 s. 2003).
	Ensure that the costs of implementing the environmental compliance and
	monitoring activities, as indicated in the SEMS Operations Manual, are included in the project budget. (DO 245 s. 2003).
	Ensure that ESMP/CESMP provisions are strictly implemented and monitored
	during various project phases (design/preconstruction, construction, and operation) to mitigate environmental impacts to acceptable levels;
	Ensure compliance with environmental permits; and
	 Include relevant provisions of the ESMP in the bid and contract documents for design civil works, and supervision
	 Coordinate with DENR-EMB. LGUs, and other concerned agencies related to
	environmental aspects to maintain the project's compliance with environmental permits.
Concerned Regional or District	Assist the UUPMO-RMC II and CSC in undertaking their environment-related
Engineering Office of DPWH	tasks, such as the review of EIA documents, the review of ESMP and
	Construction ESMP (CESMP), and monitoring and reporting on CESMP
	MTCIP.
Detailed Engineering Design	Incorporate into the project design the environmental protection and mitigation
(DED) Consultant	measures identified in the ESMP for the design/pre-construction stage; and
	from the ESMP are incorporated in the bidding and contract documents for
	project supervision and civil works.
Construction Supervision	• Prior to the establishment of the contractor's facilities and the commencement of
	civil works, undertake a review of specific environmental management plans (e.g. borrow pits and quarries, develop spoil disposal facilities, etc.) to be
	prepared by contractors to ensure that such plans are consistent with the
	provisions of the ESMP.
	and monitoring of CESMP implementation and the contractor's environmental
	performance; Conduct periodic site visite to access the status of CESMP implementation and
	the overall environmental performance of the project.

Agency	Responsibility		
Contractor	 Review environmental monitoring reports submitted by the contractor to ensure that adverse impacts and risks are properly addressed; and As part of day-to-day project supervision, closely supervise the contractor's implementation of mitigation measures specified in the CESMP, including monthly monitoring of the contractor's environmental performance and the overall contribution to the implementation of the project's ESMP; Prepare semi-annual environmental monitoring reports on the status of CESMP implementation for submission to DPWH; Based on the results of CESMP monitoring, identify environmental corrective actions and prepare a corrective action plan, as necessary, for submission to WB. Recruit a qualified environmental and safety officer (EHSO) to ensure 		
	 compliance with environmental statutory requirements, contractual obligations, and CESMP/ESMP provisions; Provide sufficient funding and human and physical resources for the proper and timely implementation of the required mitigation and monitoring measures in the CESMP; and Implement additional environmental mitigation measures, as necessary, to avoid, minimize, and/or compensate for adverse impacts due to construction works and related activities performed by the contractor. 		
DENR-EMB	 Review and approve environmental assessment reports required by the government; and Undertake monitoring of the project's environmental performance based on their mandate. 		
Other oversight agencies: NCIP - National Commission on Indigenous Peoples DHSUD - Department of Human Settlements and Urban Development NHA - National Housing Authority DENR - Department of Environment and Natural Resources PENRO - Provincial Environment and Natural Resources Office CENRO - City Environment and Natural Resources Office DOLE - Department of Labor and Employment NCMF - National Conciliation and Mediation Board LGUs - Local Government Units NEDA - National Economic and Development Authority RDC - Regional Development Council DILG - Department of the Interior and Local Government MinDA - Mindanao Development Authority Mind Bank	 Review and approve environmental and social reports required by their respective agency, and Undertake monitoring of the project's environmental and social performance based on their mandate. 		
World Bank	 Conduct periodic site visits to assess the status of E&S instruments' implementation and the overall environmental and social performance of the project. Review environmental monitoring reports submitted by the Implementing Agency to ensure that adverse impacts and risks are properly addressed; and Publicly disclose, through posting on the WBs website, environmental monitoring reports and corrective action plans prepared by the Implementing Agency during project implementation. 		



Figure 5. ESMF Process

Note: E&S prohibited list include protected areas

5.2 Capacity Building

One of the MTCIP component pertains to Capacity Building and Institutional Development (Component 3) to enhance the capacity of DPWH and select LGUs (e.g., through training, studies, knowledge exchange, among others) for managing social and environmental risks in transport network planning and asset management. Capacity development will not only enhance the project's compliance to government laws, policies and regulations, and the Environmental and Social Standards of the World Bank ESF. More importantly, it will result in:

- a. Improved functional knowledge and technical skills in E & S risks assessment for road improvement project using WB ESF and relevant national policies;
- b. Developed E&S tools or instrument under relevant ESSs to address E & S impact and risks mitigation;
- c. Increased efficiency in and timely flow of information from DPWH-UUPMO to other DPWH offices for E & S related decisions; and
- d. Better reporting and monitoring system in addressing emerging issues on road improvement project.

The capacity building objectives are met when DPWH UPMO RMC-II and its contractors strengthen their capacity on proper identification, minimization, mitigation of E&S risks, and/or timely and positive management of E&S risks that do materialize. Mitigation measures will be further elaborated in the site-specific Construction Environmental and Social Management Plan (CESMP) of the local roads and the road sections of the main corridor. Through the capacity building component, results of the preparatory studies will be validated and risk mitigation measures will be implemented fully aligned with the requirements of World Bank Environmental and Social Standards as outlined in following frameworks and plans:

- a. Environment and Social Management Framework (ESMF)
- b. Environmental and Social Impact Assessment (ESIA)
- c. Environmental and Social Management Plan (ESMP)
- d. Labor Management Procedures (LMP)
- e. Resettlement Policy Framework (RPF)
- f. Indigenous Peoples Policy Framework (IPPF)
- g. Stakeholder Engagement Framework (SEF)

Main target participants to the capacity building program are the designated DPWH personnel in the UPMO RMC-II and the PIUs, primarily those who are tasked to prepare and implemented E&S instruments needed to support the project. This includes the designated focal persons from the DPWH UPMO RMC-II, Regional Offices of Region X, XI, and XII, and District Engineering Offices (DEOs) responsible for the maintenance and monitoring of road segments along MTCIP main corridor and link roads. The DPWH will assess the job description and required competencies of the ESF focal persons that will sustain the outcome of the capacity building exercises.

External training facilitators and expert resource persons will be involved in capacity building activities as may be needed. The DPWH UUPMO-RMC II will invite Resource Persons from NCIP, DENR and different DPWH RO/DEO to clarify national laws, DPWH policies and compliance processes relevant to the topic or demand of the workshop. UPMO

Strengthening the capacities of project staff will be achieved by continuous capacity building throughout project implementation on the following topics, among others:

- The ESF and its environmental and social standards
- Deep dive on the ESF instruments of the project (e.g., ESMF, ESIA/ESMP, sitespecific ESMP, RPF/RAP, IPPF/IPP, SZEF/SEP).
- Monitoring, supervision, and reporting on E&S compliance.
- Conflict sensitivity and conflict assessment, including stakeholder mapping and engagement for project implementers;
- Transport asset management systems;
- Climate change and disaster resilience in the transport sector; and
- Other related trainings as required during project implementation.

5.3 Budget for ESMF Implementation

The estimates of the budget for the implementation of the ESMF are included in the project budget and embedded in project activities, mainly under Component 3: Capacity building and Institutional Development, particularly for capacity building activities, and Component 4: Project Management, particularly for staff cost such as hiring the environmental and social specialists. The budget for stakeholder engagement is estimated at PHP38,995,425.00 composed of staff salaries and related expenses; consultations/participatory planning, and decision-making meetings; communication campaigns; trainings on ESF instruments such as Resettlement Action Plan, and key topics such as Gender and Development; beneficiary surveys; and grievance mechanism. The detailed budget table is provided in the Stakeholder Engagement Framework.

The costs of ESMF supporting activities for all subprojects are to be financed under the total subproject cost. This comprise of, among others, staff cost for subproject environmental and social specialists; training and capacity building; stakeholder engagement; preparing subproject E&S instruments; securing Environmental Compliance Certificates (ECC) and permitting; cost for ESMP implementation by the contractors; cost for ESMP implementation, monitoring, and reporting by the construction supervision consultant/third-party E&S monitoring.

The cost allocation would be proportional to the nature of activities, extent of impacts, and proposed mitigation measure. It will be included in the project procurement plan as a legal basis for implementation. The ESIA presents the summary estimate of costs for the implementation of environmental and social management measures outlined in the ESMP.

Project Activities	Environmental Components	Type of Cost	Cost (PHP in mil.)
PRE-CONSTRUCTION PHASE			
Acquisition and Applicable Permits	People	Development Cost	19.46
processing			
Land Acquisition RROW	People (Landowners)		97.28
Hiring of Workers (Local)	People (barangay host)		29.19
Site Preparation	Land		9.73
	10/-4-n		40.40
Vegetation Cleaning	vvater		19.40
Utilities Relocation	People		29 19
		C	ONSTRUCTION PHASE
Construction of Temp Facilities for	Land, Water, People (Solid Waste	Civil Works Cost	32.89
Workers	Management Plan)		
	Land, Water, People (Adequate		24.66
	Sanitation Facilities)		
	People (Safety Risks Peace and		41 11
	Order) Coordinators		
	- , -		
Civil Works for the Main Corridor and	Land (ground vibration control)		8.22
Link Roads			0.00
	Land, vvater, People (Proper		8.22
	disposal of debris/spolis and other		
	solid wastes)		
	Land, Water, People (Proper onsite		16.44
	handling, transport and disposal of		
	hazardous materials)		
	Water (implementing measures for		32.89
	water spillage)		
	Land Water (oil spill management	-	24.66
	implementation)		24.00
	implementation		
	Air, People (dust control measures)	1	8.22
	Air, People (Air emission and noise		8.22
	control measures)		
	People (Occupational Safety and	4	205 55
	Health		205.00
	- iouiti		

Table 12. Summary of E&S Management Measures Implementation Costs

Project Activities	Environmental Components	Type of Cost	Cost (PHP in mil.)		
	People (safety risks: Barriers, early warning devices)		41.11		
	People (coordinator for basic resources/providers, residents for any threats and concerns)		41.11		
	People (traffic control measures implementation)		82.22		
DEMOBILIZATION AND OPERATIONAL PHASE					
Dismantling of Temporary Facilities for Workers	Land, Water (solid waste management plan)		26.91		
	Air, People (Air emission and noise control measures)		67.28		
	People (Occupational Safety and Health		26.56		
Road Operations	Water (storm water management implementation)		134.56		
	People (enhancement employment livelihood)		17.71		
	People (Road traffic noise control)		8.85		
	People (Occupational Safety and Health		26.56		
	People (traffic control measures implementation)		8.85		

6. References

- Art. III, Sect. 9 of the 1987 Constitution: Private property shall not be taken for public use without just compensation.
- DENR AO 2003-27 SMR System
- DENR AO 2017-15 Guidelines on Public Participation under the Phil. EIS System
- DENR M.O. No. 2012-02- Uniform Replacement Ratio for Cut or Relocated Trees
- DOLE Department Order 198-2018
- DPWH. Social-Environmental Management Systems Manual. 2021.
- DPWH. ESMF-Philippine Seismic Risk Reduction and Resilience Project (PSRRP). December 2020.
- DPWH. ESMF- Metro Manila Flood Management Project. 01 May 2017.
- DPWH-JICA. Cavite-Laguna (CALA) East-West National Road Project: EIS. October 2006.
- DPWH-JICA. Road Network Development Project in Conflict Affected Areas in Mindanao (Marawi City Ring Road).
- DPWH-JICA. PHI: Improving Growth Corridors in Mindanao Road Sector Project. May 2020.
- DPWH DO No. 43, Series of 2020. Guidelines for Right-of-Way (ROW) Acquisition and Payment of Ancestral Domain Affected by the Implementation of National Government Infrastructure Projects
- EMB MC 2007-002. Revised Procedure Manual to IRR DAO 03-30.
 EMB MC 2014-005. Revised Guidelines for Coverage Screening and Standardized Requirements under the PEISS.
- PD 1586 (1987) Philippine EIS System and DENR AO 2003-30
- PD 705- Forestry Reform Code of the Philippines
- Presidential Decree 856 Sanitation Code of the Philippines
- R.A. 6715. Labor Code of the Philippines.
- RA 6685 An act requiring private contractors, including subcontractors, to whom awards are made for the undertaking of national and local public works projects funded by either the National Government or any local government unit including foreign-assisted projects must hire at least fifty percent (50%) of the unskilled and thirty percent (30%) of the skilled labor requirements from the unemployed bona fide and actual residents in the province, city and municipality in which the projects are to be undertaken.
- RA 8749 Philippine Clean Air Act and DENR AO 2000-81
- RA 9275 Philippine Water Air Act and DENR Administrative Order 2016-08
- RA 9003 Ecological Waste Management Act and DENR AO 2001-34
- RA 6969 Toxic Substances and Hazardous and Nuclear Wastes Control Act
- RA 11058 Occupational Safety and Health Standards
- RA 7279 Urban Development and Housing Act of 1992
- RA 9147- The Philippines' Wildlife Act
- RA 7586 and 11038 National Integrated Protected Areas System
- RA 8371 Indigenous Peoples Rights Act (IPRA)
- RA 10066 Philippine Cultural Heritage Act
- DENR AO 2017-15 Guidelines on Public Participation under the Phil. EIS System
- Local Government Code of 1991

- RA 10752 An Act facilitating the Acquisition or Right of Way, Site or Location for National Government Infrastructure Projects.
- RA No. 8974 An Act to Facilitate the Acquisition of Right-of-Way, Site or Location for National Government Infrastructure Projects and for Other Purposes.
- RA 7279 Urban Development and Housing Act of 1992
- WB Environmental and Social Framework (ESF)