

**5.0 Environmental Management and Monitoring Plan** (Instructions: Check applicable boxes &/or input data where asked. Attach supplemental information where deemed necessary for planning/costing purposes)

Project Phase / Activities	Possible Environmental Impacts	Mitigating Measures	Monitoring Parameters	Responsible Agency/ Unit	Cost of Mitigation/ Monitoring
<b>1.0 Pre-construction Phase (Site Selection, Planning/Design, Procurement, Hiring)</b>					
1.1 Site Selection and Planning/Design	<input type="checkbox"/> <b>Encroachment in Protected Areas/ natural/critical habitats</b> (e.g. mangrove/forest ecosystems, coral reefs, & other aquatic ecosystems) <input type="checkbox"/> <b>Inconsistent with protected area zoning</b>	<input type="checkbox"/> Consider alternative site or design to be compatible with the PA zoning <input type="checkbox"/> Secure PAMB Resolution for PA		<input type="checkbox"/> LGU _____ _____ <input type="checkbox"/> PO/NGO _____ _____	
	<input type="checkbox"/> <b>Damage to flora and fauna in forest areas/other critical habitats</b>	<input type="checkbox"/> Consider alternative site or design to reduce effects on flora and fauna <input type="checkbox"/> Secure Special Land Use Permit, Tree Cutting Permit and/or Right-of-Way Permit from DENR-FMB and permits from PAWB for affected wildlife		<input type="checkbox"/> LGU _____ _____ <input type="checkbox"/> PO/NGO _____ _____	
	<input checked="" type="checkbox"/> <b>Land acquisition, ROW conflict, resettlement, structure and crops damage, business loss</b>	<input type="checkbox"/> Consider alternative site with less or no involuntary resettlement issues <input checked="" type="checkbox"/> Secure Deed of Donation or Quit Claim on land <input type="checkbox"/> Prepare compensation package, e.g. Land Acquisition, Resettlement & Rehabilitation Plan (LARRP) or Resettlement Action Plan (RAP) thru prior consultation with Project Affected Persons (PAPs) <input type="checkbox"/> Identify resettlement site (if selected as option) and subject the RAP to consultation with host community <input type="checkbox"/> Implement the		<input type="checkbox"/> LGU _____ _____ <input type="checkbox"/> PO/NGO _____ _____	P20,000.00



Rehab. of Purok 2 – San Martin FMR

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		payments of compensation, at least a month prior to start of Construction Works			
	<input type="checkbox"/> <b>Encroachment in areas with IPs/lands with Ancestral Domain Claim</b>	<input type="checkbox"/> Reroute FMR if possible to lessen impacts, unless the IPs are among the beneficiaries of the FMR <input type="checkbox"/> Apply for FBI and secure FPIC from the IPs thru the NCIP		<input type="checkbox"/> LGU _____ _____ <input type="checkbox"/> PO/NGO _____ _____	
	<input type="checkbox"/> <b>Damage or cause disturbance to adjacent or nearby sites of Cultural Heritage</b>	<input type="checkbox"/> Change the FMR location or design to avoid or lessen probability of damage <input type="checkbox"/> Secure NHI clearance & coordinate on design/ construction works		<input type="checkbox"/> LGU _____ _____ <input type="checkbox"/> PO/NGO _____ _____	
	<input checked="" type="checkbox"/> <b>Unstable or disturbed slopes/ banks may cause damage to FMR</b>	<input checked="" type="checkbox"/> Include in the design appropriate erosion control, slope stabilization and protection measures		<input type="checkbox"/> LGU _____ _____ <input type="checkbox"/> PO/NGO _____ _____	c/o D.E.D
	<input checked="" type="checkbox"/> <b>Negative reactions from the public</b> due to lack of information and coordination	<input checked="" type="checkbox"/> Hold consultative meetings with project beneficiaries and affected persons on the project components and mgt plan		<input type="checkbox"/> LGU _____ _____ <input type="checkbox"/> PO/NGO _____ _____	P5,000.00
	<input checked="" type="checkbox"/> <b>Damage existing utilities and structures,</b> resulting in disruption of service	<input checked="" type="checkbox"/> Re-locate or redesign road route to avoid or minimize damage <input checked="" type="checkbox"/> Conduct prior coordination with utility companies and undertake timely information to the public to minimize inconvenience for loss of service		<input type="checkbox"/> LGU _____ _____ <input type="checkbox"/> PO/NGO _____ _____	c/o Barangay
1.2 Procurement	<input checked="" type="checkbox"/> <b>Possible illegal or unauthorized sourcing of raw/construction materials</b>	<input checked="" type="checkbox"/> Procure construction materials from licensed sources, i.e. for sand and gravel, from those with valid MGB/EMB permits; for timber resources, from those with valid FMB/EMB permits		Barangay Council, Contractor, LGU	c/o B.A.C



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1.3 Hiring of labor and other manpower services	<input checked="" type="checkbox"/> <b>Increased employment opportunity and community income</b> <input type="checkbox"/> <b>Entry of external workforce</b>	<input checked="" type="checkbox"/> Give hiring preference to qualified local community residents, particularly those who will be displaced		Barangay Government & LGU Isulan	
<b>2.0 Construction Phase</b>					
2.1 Mobilization/Temporary Facility/Bridge Construction/Demolition	<input checked="" type="checkbox"/> <b>Soil erosion and landslides due to clearing/excavation operations</b>	<input checked="" type="checkbox"/> Provide slope protection through bank compaction, rip-rapping on critical sections, or vegetative stabilization <input type="checkbox"/> Designate a Spoils Storage Area, with topsoil set aside for later use and allow maximum re-use of spoils	<input checked="" type="checkbox"/> Presence of eroded areas near the site <input type="checkbox"/> Occurrence of landslide	Contractor	
	<input type="checkbox"/> <b>Removal of vegetation and disturbance to wildlife</b>	<input type="checkbox"/> Secure prior DENR Tree Cutting Permit (TCP) <input type="checkbox"/> Do replacement planting with double purpose of serving as vegetation buffers for disturbed wildlife <input type="checkbox"/> In forest roads, put up wildlife conservation signs, and set guidelines with corresponding IEC for workers to prohibit wildlife collection, hunting, poaching, with meaningful consequences for violation such as employment termination	<input type="checkbox"/> Presence of FMB TCP <input type="checkbox"/> Area replanted <input type="checkbox"/> Presence of signs <input type="checkbox"/> # of violations to set guidelines	Contractor	c/o contractor
	<input checked="" type="checkbox"/> <b>Dust suspension from spoils stockpiles, vehicle movement in unpaved roads &amp; construction works</b>	<input checked="" type="checkbox"/> Compact spoils storage areas <input checked="" type="checkbox"/> Wet areas of dust sources to minimize discomfort to nearby residents <input checked="" type="checkbox"/> Control of vehicle speed to lessen suspension of road dust	<input type="checkbox"/> # public complaints received by Proponent/Contractor	Contractor O & M	c/o contractor



Project Phase / Activities	Possible Environmental Impacts	Mitigating Measures	Monitoring Parameters	Responsible Agency / Unit	Cost of Mitigation / Monitoring
	<ul style="list-style-type: none"> <li>✓ <b>Obnoxious gas &amp; particulate emissions</b> from vehicles, heavy equipment &amp; genset</li> </ul>	<ul style="list-style-type: none"> <li>✓ Regular equipment M&amp;R</li> <li>□ Contractor to present proof of compliance with emission standards as part of the annual vehicle registration process</li> </ul>	<ul style="list-style-type: none"> <li>□ Presence of black smoke from construction sources</li> </ul>	Contractor : _____ _____ _____ O & M	
	<ul style="list-style-type: none"> <li>✓ <b>Noise generation</b> from heavy equipment &amp; genset operations</li> </ul>	<ul style="list-style-type: none"> <li>✓ Schedule equipment movement during non-peak hours of daytime vehicular traffic</li> <li>✓ Minimize noise preferably no night-time construction activities</li> <li>□ Provide housing for gensets, if near residences</li> <li>✓ Provide silencers/mufflers for heavy equipment</li> </ul>	<ul style="list-style-type: none"> <li>□ # public complaints received by Proponent / Contractor</li> </ul>	Contractor : _____ _____ _____	c/o contractor
	<ul style="list-style-type: none"> <li>✓ <b>Increased river turbidity &amp; siltation</b>, causing inconvenience in community use of the affected river water</li> </ul>	<ul style="list-style-type: none"> <li>✓ Set up sediment traps along rivers and/or gabions along banks to filter out eroded sediments</li> <li>✓ Same measures above for erosion control and slope stabilization</li> </ul>	<ul style="list-style-type: none"> <li>□ # public complaints received by Proponent / Contractor</li> </ul>	Contractor : _____ _____ _____	c/o contractor
	<ul style="list-style-type: none"> <li>✓ <b>Oil &amp; grease contamination of water bodies</b> due to poor equipment M &amp; R &amp; refuelling</li> </ul>	<ul style="list-style-type: none"> <li>□ Provide oil &amp; grease traps in stilling ponds</li> <li>✓ Provide ring canals around fuelling tanks/ motorpool/ maintenance areas</li> <li>✓ Collect used oils in containers</li> </ul>	<ul style="list-style-type: none"> <li>□ Presence of oil film on water surface;</li> <li>□ # public complaints received by Proponent / Contractor</li> </ul>	Contractor : _____ _____ _____	c/o contractor
	<ul style="list-style-type: none"> <li>✓ <b>Decreased public access</b> through the construction area</li> </ul>	<ul style="list-style-type: none"> <li>✓ Designate an alternate route for pedestrian and vehicles in coordination with the LGU or provide safe passageway thru the construction site</li> </ul>	<ul style="list-style-type: none"> <li>□ # public complaints received by Proponent /</li> </ul>	Contractor : _____ _____ _____	

Project Phase / Activities	Possible Environmental Impacts	Mitigating Measures	Monitoring Parameters	Responsible Agency / Unit	Cost of Mitigation / Monitoring
	<p>✓ <b>Increased traffic</b> due to frequent heavy equipment/ vehicle movement</p>	<p>✓ Schedule vehicle movement during lean daytime traffic hours or at night.                      ✓ Provide traffic aides/flagmen (e.g. thru barangay) , traffic signs to help ensure the free and safe flow of traffic                      ✓ Maintain &amp; Repair temporary alternative route of vehicles &amp; pedestrians</p>	<p>r</p> <p><input type="checkbox"/> Presence of traffic signs  <input type="checkbox"/> # of public complaints received by Proponent/ Contractor  <input type="checkbox"/> Occurrence of traffic build-up</p>	<p>Contractor :                      _____                      _____</p>	<p>c/o contractor</p>
	<p>✓ <b>Increased community hazards</b> of vehicular accidents and construction works</p>	<p>✓ Provide appropriate warning signs, lighting and barricades, whenever practicable                      ✓ Observe traffic rules, e.g. vehicle speed                      ✓ Observe proper housekeeping during construction and demobilization to clear site of construction debris                      ✓ Provide on-site medical services and supplies for any emergency, thru institutional and administrative arrangements with the barangay health unit</p>	<p><input type="checkbox"/> Presence of signages  <input type="checkbox"/> # of accidents  <input type="checkbox"/> Presence of scattered construction debris</p>	<p>Contractor :                      _____                      _____</p>	<p>c/o contractor and O &amp; M</p>
	<p>✓ <b>Occupational health hazards</b> to workers</p>	<p>✓ Require all workers to strictly observe safety standards                      ✓ Put up safety signs along the road construction route                      ✓ Provide potable water &amp; sanitary facilities for construction workers</p>	<p><input type="checkbox"/> Presence of signages  <input type="checkbox"/> Quality of water source  <input type="checkbox"/> Presence of adequate sanitary facilities  <input type="checkbox"/> # of medical complaints</p>	<p>Contractor :                      _____                      _____</p>	<p>c/o contractor</p>



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	<input checked="" type="checkbox"/> <b>Increased micro-economic activity</b> within the area	<input checked="" type="checkbox"/> Coordinate with the LGU on management of traffic & handling of solid waste  <input checked="" type="checkbox"/> Comply with city/town ordinances	<input type="checkbox"/> # businesses <input type="checkbox"/> Presence of clean commercial area <input type="checkbox"/> Low traffic	Contractor : _____	c/o contractor
	<input type="checkbox"/> <b>Damage to cultural property</b> which may be traversed or encountered during construction	<input type="checkbox"/> Reroute road, if possible <input type="checkbox"/> If not possible to reroute, observe reporting and conservation protocols based on prior coordination with the NHI/NM	<input type="checkbox"/> Presence of clearance <input type="checkbox"/> # of public complaints received by Proponent & Contractor	Contractor : _____	c/o contractor
	<input checked="" type="checkbox"/> <b>Impact to IPs, women &amp; other vulnerable groups</b> who may be affected by the road construction, including those who may be inconvenienced in their use of the river downstream for domestic works.	<input checked="" type="checkbox"/> Addressed by measures to prevent water quality impacts <input checked="" type="checkbox"/> Prior consultation & coordination to minimize disruption on daily domestic activities & avoid violation of human rights	<input type="checkbox"/> # of public complaints received by Proponent & Contractor	Contractor : _____	c/o contractor and LGU O & M
	<input checked="" type="checkbox"/> <b>Over-flooding of the roadway</b> due to excessive accumulation of rainwater and undiverted waterways	<input checked="" type="checkbox"/> Provision of adequate drainage system and proper road grading so that roadway will not be prone to flooding & erosion	<input type="checkbox"/> Pools of water on the road after rains	Contractor : _____	c/o contractor
2.2 Monitoring of quality of construction	<input checked="" type="checkbox"/> Poor M&E or lack of it can result to <b>sub-standard</b> construction	<input checked="" type="checkbox"/> Regular Project M&E integrates environmental M&E on conformance to original design	<input type="checkbox"/> Occurrence of damages during	Contractor : _____	





Project Phase / Activities	Possible Environmental Impacts	Mitigating Measures	Monitoring Parameters	Responsible Agency/ Unit	Cost of Mitigation/ Monitoring and LGU
	<p>standard materials, potentially resulting to structural damages which can unnecessarily expose FMR users to hazards and accidents</p> <p>✓ Good Maintenance result to <b>Quality Assurance</b> for sustainability of FMR</p>	<p>sufficient budget for project M&amp;E</p> <p>✓ Designate, deputize or enter into an agreement with the barangay LGU or local community for transparent M&amp;E of construction works</p> <p>✓ Provision for Contractor's performance bond or withholding final payment until repairs are done before turn-over by the Contractor to the LGU/PO/NGO</p>	<p><input type="checkbox"/> Visual presence of sub-standard materials</p> <p><input type="checkbox"/> % completion per schedule and budget</p>	<p><input type="checkbox"/> LGU: _____</p> <p><input type="checkbox"/> PO/NGO _____</p> <p>Local Community Rep: _____</p>	<p>and LGU</p>

**3.0 Operation and Maintenance**

	<p>✓ <b>Unsustained FMR operations at optimum capacity</b> due to structural damages</p>	<p>✓ Prepare and implement an acceptable O &amp; M Plan</p> <p>✓ Sustained and regular monitoring and maintenance &amp; repair of FMR structure</p> <p>✓ Allocate sufficient budget for M&amp;E and maintenance and repair</p> <p>✓ Designate, deputize or enter into an agreement with the barangay LGU or local community for M&amp;E of the FMR status</p> <p>✓ Provide appropriate load limit sign at FMR approach to lessen/prevent passing of overloaded vehicles</p>	<p><input type="checkbox"/> No. of accurate reports on O&amp;M status</p> <p><input type="checkbox"/> No. of back-jobs</p> <p><input type="checkbox"/> % repaired cracks</p>	<p><input type="checkbox"/> LGU: _____</p> <p><input type="checkbox"/> PO/NGO _____</p> <p>Local Community Rep: _____</p>	<p>c/o BROMTE AM, M.&amp; E, Brangay official and beneficiaries</p>
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	<p>✓ <b>Obstruction of water flow and aggregation of garbage</b></p>	<p>✓ Regular removal of debris and other materials clogging the road culverts upstream of the FMR that may obstruct water flow</p>	<p>✓ Occurrence of accumulated garbage upstream of the FMR</p> <p><input type="checkbox"/> Occurrence of damming</p>	<p><input type="checkbox"/> LGU _____</p> <p><input type="checkbox"/> PO/NGO _____</p>	<p>c/o contractor</p>
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<b>Prepared by:</b>	<b>Endorsed by:</b>
 <b>OVETTE C. VIRAY</b> (Signature over Printed Name)	 <b>DIOSDADO G. PALLASIGUE</b> (Signature over Printed Name)
LGU: <u>ISULAN, SULTAN KUDARAT</u> PO/NGO: _____ _____ (Date signed)	LGU: <u>ISULAN, SULTAN KUDARAT</u> PO/NGO: _____ _____ (Date signed)

Based on the submitted loan application documents:

<b>Final PD/EMP Reviewed by:</b>	<b>Reviewed PD/EMP Approved by:</b>
_____ (Signature over Printed Name)	_____ (Signature over Printed Name)
PMO: _____ GA : _____ _____ (Date signed)	PMO: _____ GA : _____ _____ (Date signed)

Distribution of approved copies:

Proponent - original

PMO - copy

GA- copy

7.1 Status of ECC application, tree cutting permits:

Since the project is categorize as rehabilitation, CNC is a requirements of this project, no need of tree cutting permit because there are no trees to be cut in the sub-project area. See attached copy of CNC.