ROAD AND BRIDGE PROJECTS

II. ENVIRONMENTAL IMPACT MANAGEMENT AND MONITORING PLAN

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
LAND				
☑ Consistency with land use	Current land use w/in 1km radius (as per zoning ordinance): ☐ Residential ☐ Commercial/ Institutional ☐ Industrial ☐ Agricultural/ Recreational ☐ Protected Areas ☐ Others, specify Actual land uses w/in 1km radius: ☐ Residential ☐ Commercial/ Institutional ☐ Industrial ☐ Agricultural/ Recreational ☐ Protected Areas ☐ Others, specify	☑ See attached proof of compatibility with land use ☐ Others, specify	Actual land uses w/in 1km radius: ☐ Residential ☐ Commercial/ Institutional ☐ Industrial ☐ Agricultural/ Recreational ☐ Protected Areas ☐ Others, specify	

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
☐ Land tenure / compatibility issue	Identify tenure/ compatibility issues: ☐ CARP ☐ CADC/ CADT/ CALC/ CALT ☐ ROW ☐ Informal settlers ☐ Ecologically sensitive or protected area ☐ Others, specify	☐ Obtain the following clearances/ permits from concerned agencies: ☐ Resettlement Plan prepared ☐ Provide relocation/disturbance compensation packages ☐ Ensure participation of IPs in consultations and dialogues ☐ MOA prepared/signed ☐ Provide adequate buffer ☐ Others, specify	☑ Regularly monitor presence/absence of complaints ☑ Regular coordination with LGU or appropriate agencies ☐ Others, specify	
☐ Disturbance to wildlife due to vegetation clearing	Existing vegetation in the area: ☐ Forestland ☐ Marshland ☐ Grassland ☐ Mangrove ☐ Wetland	☑ Comply with conditions of DENR/LGU SLUP, Tree Cutting Permit, ROW, PCA Permit ☑ Limit land clearing as much as possible ☑ Provide temporary fencing for vegetation that will be retained	☑ Annual inspection of area replanted/ re-vegetated ☐ Others, specify	

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures ☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost	Monitoring Parameters/ Implementation	Remarks
	☐ Others, specify	☑ Promote restoration of damaged or destroyed vegetation where possible (e.g., tree planting) ☐ Others, specify		
☐ Change in surface landform/ topography/ terrain/slope ☐ Soil Erosion	Slope: ☐ Flat (0-3%) ☐ Gently sloping to rolling (3-18%) ☐ Steep (>18%) Is the project site located in an area identified by MGB/ PAG-ASA/ PHIVOLCS as hazard prone? ☐ Yes ☐ No	Considering the natural hazards and climate projections in the area: ☐ Employ erosion control and slope protection measures ☐ Designate a spoils storage area, with topsoil set aside for later use and allow maximum re-use of spoils ☐ Construct during dry season ☐ Stabilize embankment with grasses or other soil cover ☐ Conduct Engineering Geological and Geo-hazard Assessment (EGGA) and implement corresponding recommendation ☐ Others, specify	☐ Regular inspection of slope protection measures in erosion-prone areas ☐ Regular inspection for new eroded areas near the site ☐ Others, specify	

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
Building of structure and improper solid waste disposal leading to: ☐ Impairment of visual aesthetics ☐ Devaluation of land values	Solid Waste Management Scheme in the area: ☐ SLF ☐ MRF ☐ Composting ☐ Regular Collection of Solid Wastes Presence of visually significant landforms/landscape/structures? ☐ Yes ☐ No	☑ Implement recovery re-use and recycling of waste materials ☑ Provide receptacles / bins for solid wastes ☐ Composting of Organic Wastes ☐ Coordinate with the municipal / city waste collectors ☐ Implement landscaping and other beautification measures ☐ Provide adequate buffer ☐ Compensate adjacent property owners ☐ Others, specify	☐ Daily inspection of waste handling including segregation in waste/recycling bins ☐ Weekly inspection of waste accumulation and disposal ☐ Regular inspection of landscaping and other beautification activities ☐ Regular monitoring of buffer zones ☐ Regular monitoring for presence/absence of complaints from adjacent property owners ☐ Others, specify	☑ Cost integrated in the construction/ operation cost
WATER				
☐ Increased siltation due to project activities ☐ Water quality degradation ☐ Others, specify	Specify nearest water body: Distance to nearest water body: ☐ 0 to less than 0.5 km	☑ Set up proper and adequate sanitary facilities ☑ Ensure strict observance of proper waste handling and disposal and proper sanitation including by the contractor and its workers ☐ Set up silt trap (Gabions,	Regular (ocular) inspection of: ☐ Drainage / canal systems ☐ Sanitation facilities Monitoring of ambient water during construction for: ☑ Turbidity and/or silted condition ☑ Floating wastes or debris	

<table>
<tr><th>Possible Environmental/Social Impacts</th><th>Baseline Environment</th><th>Preventive/Mitigating Measures</th><th>Monitoring Parameters/ Implementation</th><th>Remarks</th></tr>
<tr><td></td><td></td><td>☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost</td><td></td><td></td></tr>
<tr>
<td></td>
<td>☐ 0.5 to 1 km
☐ More than 1 km

Classification of nearest water body:

<table>
<tr><td>☐ Freshwater</td><td>☐ Marine/ coastal water</td></tr>
<tr><td>☐ AA</td><td>☐ SA</td></tr>
<tr><td>☐ A</td><td>☐ SB</td></tr>
<tr><td>☐ B</td><td>☐ SC</td></tr>
<tr><td>☐ C</td><td>☐ SD</td></tr>
<tr><td>☐ D</td><td></td></tr>
</table>
Current use of nearest/receiving water body:
☐ Fishery
☐ Tourist Zone / Park
☐ Recreational
☐ Industrial
☐ Agricultural
☐ Others, specify:

Distance of project area to the nearest well used:
☐ 0 to less than 0.5 km</td>
<td>Fascines)/settling ponds to minimize downstream siltation
☐ Others, specify</td>
<td></td>
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</table>

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
	☐ 0.5 to 1 km ☐ More than 1 km Use of nearest well: ☐ Drinking/Domestic ☐ Industrial ☐ Agricultural			
☐ Competition in water use ☐ Depletion of water resources	Size of population using water source: ☐ ≤ 1,000 persons ☐ >1,000 and ≤ 5,000 persons ☐ >5,000 persons Available/nearest water source. ☐ Deep well ☐ Water district/LGU ☐ Surface water ☐ Others, specify Current Use of water source : ☐ Fishery ☐ Tourist Zone / Park ☐ Recreational ☐ Industrial ☐ Agricultural ☐ Others, specify	☐ Implement rainwater harvesting and similar measures as an alternative source of water ☐ Observe water conservation measures ☐ Others, specify	☑ Regular monitoring for presence/absence of complaints ☑ Regular coordination with concerned agencies ☑ Regular monitoring for occurrences of water shortages ☐ Others, specify	

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures ☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost	Monitoring Parameters/ Implementation	Remarks
☐ Increased occurrence of flooding	Is the project site located in an area identified by MGB/ PAG-ASA as flood prone? ☐ Yes ☐ No	☑ Use appropriate design for project facilities including appropriate drainage mechanism considering the existing local drainage system. ☑ Regularly remove debris and other materials that may obstruct water flow ☐ Others, specify	☑ Regular monitoring for presence/absence of complaints ☑ Regular coordination with concerned agencies ☑ Regular monitoring for increased frequency of flooding ☐ Others, specify	
AIR / NOISE				
Air quality degradation	Distance to nearest community: ☐ 0 to less than 0.5 km ☐ 0.5 to 1 km ☐ More than 1 km	☐ Properly operate and maintain all emission sources (e.g. vehicles, generator, etc) ☐ Install appropriate air pollution control device/s ☐ Strictly enforce good housekeeping practices ☐ Control vehicle speed to lessen	☑ Regular monitoring for presence/absence of complaints Regular (ocular) inspection of: ☐ Absence of white or black smoke from vehicles, generator, etc.	

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
		suspension of road dust ☐ Conduct water spraying to suppress dust sources and minimize discomfort to nearby residents ☐ Use covered vehicles to deliver materials that may generate dust ☐ Others, specify	☐ Presence of truck cover during deliveries	
☐ Nuisance due to noise generation	Distance to nearest community: ☐ 0 to less than 0.5 km ☐ 0.5 to 1 km ☐ More than 1 km	☐ Properly operate and maintain all noise sources (e.g., vehicles, generator, etc.) ☐ Install, when applicable, the appropriate noise control device/s (e.g., mufflers, silencer, sound barriers, etc.) ☐ Implement appropriate operating hours ☐ Provide adequate buffer and/or planting of trees ☐ Others, specify	☐ Regular monitoring for presence/absence of complaints ☐ Regular monitoring of buffer zones ☐ Quarterly monitoring of noise level ☐ Others, specify	

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
PEOPLE				
☐ Displacement of residents including indigenous people (if any) in the project site and within its vicinity ☐ Enhanced employment and/or livelihood opportunities ☐ Reduced employment and/or livelihood opportunities ☐ Increased revenues for LGU ☐ Disruption/ Competition in delivery of public services (e.g., education, peace and order, etc.) ☐ Enhanced delivery of public services (e.g., education, peace and order, etc.) ☐ Increase in traffic volume and worsening of traffic flow	Size of population of host barangay: ☐ ≤ 1,000 persons ☐ >1,000 and ≤ 5,000 persons ☐ >5,000 persons Classification of host barangay: ☐ Urban ☐ Rural Employment/Livelihood Opportunity Rate in the host Municipality: ☐ High ☐ Low Description: Available services within/near the host barangay: ☐ Schools (e.g., elementary, high school, college)	☐ Provide relocation/disturbance compensation packages ☑ Prioritize local residents for employment ☑ Promptly pay local taxes and other financial obligations ☑ Regularly coordinate with LGU ☐ Conduct prior consultation and coordination to minimize disruption of daily domestic activities ☐ Ensure participation of IPs in consultations and dialogues and consider IP rights and cultural practices in the provision of relocation/disturbance compensation packages ☐ Provide appropriate traffic/warning signs, lighting, etc. ☐ Others, specify	☑ Regular monitoring for presence/absence of complaints ☑ Regular coordination with LGU ☐ Others, specify	☑ Cost integrated in the construction/ operation cost

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
	☐ Health facilities (e.g., clinics, hospitals, etc.) ☐ Peace and order (e.g., police outpost, Brgy. Tanod, etc.) ☐ Recreation and sports facilities ☐ Others, specify			
☐ Destruction/disturbance of physical cultural resources. *(✓ if project site has been identified to have such by NM, NHCP, NCAA and LGUs)*	Physical Cultural resources within the vicinity of the project site:	☐ Implement appropriate protocols based on NM, NHCP, NCAA and LGU guidelines including those for chance finds (if any). Specify:	☐ Regular coordination with NM, NHCP, NCAA and LGU	
☐ Impacts on community safety	☐ Structures posing safety risk to the community:	☑ Regularly coordinate with LGU ☐ Provide appropriate warning signs, lighting and barricades, whenever practicable ☑ Observe proper housekeeping ☐ Provide on-site medical services for any emergency. ☐ Participate in public awareness programs on health and safety	☑ Regular monitoring for presence/absence of complaints ☑ Regular coordination with LGU ☑ Regular submission of reports to concerned agency	

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		☑ Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
		☐ Implement appropriate safety programs for both community and workers ☐ Others, specify	☐ Others, specify	