

B. Environmental Issues and Mitigation Measures

Issue (Potential Impact)	Assessment	Mitigation Measure	Instrument of Implementation (POW, Contract, IDP, or O&M Plan)*
1. Potential encroachment to private property (ROW acquisition)	<input type="checkbox"/> The need for detour road negotiation and acquisition prior to start of construction	<input type="checkbox"/> Settle ROW acquisition with documentation (i.e. Deeds of Donation, Deeds of sale, or Certification of Use as consent by the affected land owners) prior to start of construction	Contract; DOD/DOS, and /or Certification from the Land Owner
2. Loss of land and/or crops and relocation of household owners living within the construction area	<input type="checkbox"/> Proposed bridge is within built-up area but there is no person will be displaced	<input type="checkbox"/> Conduct community consultation and secure right of way with documentation. <input type="checkbox"/> Proper compensation of project affected persons	LGU -Abbreviated resettlement plan DOD/DOS, and /or Certification from the Land Owner
3. Potential increase of scrap materials and junk during removal and demolition of dilapidated facility	<input type="checkbox"/> Impact occurs with existing facility for replacement <input type="checkbox"/> No existing cross drain facility present for replacement	<input type="checkbox"/> Recycle and reuse scraps and other extracted materials <input type="checkbox"/> Proper disposal of solid waste materials	POW and Contract
4. Create hazard to health and safety of workers and nearby residents	<input type="checkbox"/> Hazard and accident prone activity include demolition and construction	<input type="checkbox"/> Standard, safety and proper procedures employed during demolition and construction of bridge <input type="checkbox"/> Installation of warning signs and safety devices	POW and Contract
5. Potential destabilization and erosion of	<input type="checkbox"/> Movement of earth slope at both portals near	Employ erosion and sediment retention measures	DED; POW and Contract Or (if budget does not

riverbanks	the river banks during earthworks and as construction progresses		permit) LGU Commitment Letter
6. Potential damage to access road as construction progresses	<input type="checkbox"/> Modification of local topographic features along the roadway due to continual hauling of aggregate materials	<input type="checkbox"/> Proper drainage and slope protection structures must be installed to prevent or minimize soil erosion or deposition of sediments in low lying areas <input type="checkbox"/> Implementation of repairs to damages be done by the Contractor	POW and Contract
7. Potential negative impact on fishes and other aquatic life in the Buyacan River	<input type="checkbox"/> Stream/ river diversion leads to modification of stream/river beds	<input type="checkbox"/> Employ Best Management Practice (BMP) on planning and employing water diversion and minimize delineation area of cofferdam.	POW and Contract
8. Temporary increased turbidity of river water and siltation in Buyacan River	<input type="checkbox"/> Water run-off may carry with it soil from extraction, excavation and embankment filling	<input type="checkbox"/> Proper disposal and compaction of spoils <input type="checkbox"/> Employ methods of silt trapping or settling basins	Contract
9. Potential contamination of river with oil/grease	<input type="checkbox"/> Waste oil and grease from equipment could contaminate surface water <input type="checkbox"/> There will be insignificant amount of waste oil/grease	<input type="checkbox"/> Proper handling and disposal of waste oil and grease	Contract
10. Potential river contamination with human waste	<input type="checkbox"/> Construction workers would be temporarily housed in a base	<input type="checkbox"/> Set up adequate latrine/toilet facility at the base camp	Contract

	<p>camp</p> <ul style="list-style-type: none"> <input type="checkbox"/> Workers would be mostly locals and are expected to go home to their respective houses after works 		
11. Potential disruption of domestic activities for residents at the downstream area of Buyacan river (i.e. laundry washing and other equipments, water use for domesticated animals etc.)	<ul style="list-style-type: none"> <input type="checkbox"/> Bridge construction would likely cause water diversion and dewatering that leads to lessening of water volume downstream 	<ul style="list-style-type: none"> <input type="checkbox"/> Public information and consultation of the possibility of dewatering prior to start of construction 	LGU and Pre Construction Meeting
12. Potential disruption of traffic flow	<ul style="list-style-type: none"> <input type="checkbox"/> Vital daily activities of the residents and farmers need to traverse the Buyacan River to access goods and services from the town center 	<ul style="list-style-type: none"> <input type="checkbox"/> Provide access to alternate road or detour road <input type="checkbox"/> Allow one-lane passage on the bridge's carriageway for the pedestrians and vehicles. 	Contract
13. Potential noise emission and air emission	<ul style="list-style-type: none"> <input type="checkbox"/> Bridge construction may employ pile driving of concrete columns or piers <input type="checkbox"/> Pile drivers and equipments emit dark fumes during operation. 	<ul style="list-style-type: none"> <input type="checkbox"/> Maintain daytime work schedule to avoid annoyance of nearby residents <input type="checkbox"/> Mobilize equipments in good operating condition. 	Contract
14. Quarrying/ Extraction of aggregates	<ul style="list-style-type: none"> <input type="checkbox"/> Excessive quarrying causes soil destabilization and erosion in the quarry area. <input type="checkbox"/> Quarrying results 	<ul style="list-style-type: none"> <input type="checkbox"/> Required aggregates sourced from quarry(ies) approved by DPWH and operating with Permit to Quarry issued by DENR/LGU concerned. 	Procurement receipt with Permit to Quarry issued to operators be kept on file and LGU; Contract

	disrupted ecosystem (i.e. surface water, groundwater, flora and fauna etc.		
15. Local employment	<input type="checkbox"/> Construction will provide local employment opportunities	<input type="checkbox"/> Hiring priority shall be given to qualified local residents; implement RI Manual on local hiring	Contract