

v. Social and Environmental Impacts

**Environmental and Social Management Plan**

Name of Road:	<b>Upgrading of Manangle – Caima FMR</b>
Location:	<b>Sipocot, Camarines Sur</b>
Implementing LGU:	<b>Provincial Government of Camarines Sur</b>
Estimated number of beneficiaries:	
New or Rehab:	<b>Upgrading</b>
Estimated Total Cost:	<b>₱ 131,279,137.90</b>

**A. Site and Design Consideration**

1. The Road does not encroach into or traverse any declared protected area of natural habitat;
2. The subproject will not displace, disfigure or render inoperable/inaccessible any monument or physical structure of known cultural and historical significance.

**B. Environmental Issues and Mitigation Measures**

Table 20.Environmental and Social Management Plan

Issue	Assessment	Mitigation Measure	Schedule/ Duration of the Mitigation Measures	Instrument of Implementation	Responsible Unit
1. Temporary increase in sedimentation during construction	<input type="checkbox"/> Topography of the road alignment necessitate massive earthmoving and cutting of clayey or loose topsoil <input checked="" type="checkbox"/> Cut materials will consist mainly of hard rocks and are unlikely to generate significant sediments	<input type="checkbox"/> Earthmoving/ cutting of slopes to be done during dry months <input checked="" type="checkbox"/> Proper disposal and compaction of spoils	550 days construction period	DED/POW; Contract	<b>PEO</b> monitor if the rules are followed  Follow the terms and conditions in the contract
2. Potential contamination of surface and groundwater with oil/grease	<input checked="" type="checkbox"/> Waste oil and grease from equipment could contaminate surface water	<input checked="" type="checkbox"/> Proper handling and disposal of waste oil and grease	580 days plus 1 month after construction		<b>PEO</b> monitor if the rules are followed  Follow the terms and conditions in the contract
3. Potential contamination with human waste	<input checked="" type="checkbox"/> Construction workers would be temporarily housed in a base camp <input checked="" type="checkbox"/> Workers would be	<input checked="" type="checkbox"/> Set up adequate latrine/toilet facility at the base camp	550 days construction period	Contract	<b>PEO</b> monitor if the rules are followed

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	mostly locals and are expected to go home to their respective houses after works				Maintain the cleanliness/maintenance of the facilities																				
4. Potential disruption of traffic flow	<p>[x] The access road and/or segments to be rehabilitated need is vital to daily activities of the residents and farmers and need to be kept open to traffic during construction</p> <p>[x]The construction will not overly affect daily movement of residents and farmers</p>	<p>[x]Keep the road open to traffic flow and minimize disruptions along the access road and/or construction area; Provide adequate warning signs and traffic personnel when necessary;</p> <p>[x] Undertake regular maintenance measures on the passable portions of the roads</p>	550 days construction period	Contract	<p><b>PEO</b></p> <p>Follow the terms and conditions in the contract</p>																				
5. Potential Destruction of Existing Road	<p>[x]The access roads or segments will be the passage of heavy equipment during construction.</p> <p>[x] Existing road as conveyance during construction</p>	<p>[x] Load limits not emphasized if damage will not be avoided, repair should be borne by the contractor</p> <p>[x]Look for detour or other way</p>	550 days construction period	Contract	<p><b>PEO</b></p> <p>Follow the terms and conditions in the contract?</p>																				
6. Potential dust/mud nuisance during construction	<p>[x]Roads could become powdery during dry days and muddy during rainy days of the construction period</p> <p>[x] Access road and/or the construction/ rehabilitation works passes through a populated area</p> <p>[x]Access road and/or construction/ rehabilitation does not pass through any populated area</p>	<p>[x] Undertake sprinkling of road (including access roads) during dry days, and filling up of potholes during rainy days, especially in residential areas</p> <p>[x]Set up speed limits for vehicles, especially within residential areas</p>	550 days construction period	Contract	<p><b>PEO</b></p> <p>Follow the terms and conditions in the contract</p>																				
7. Landslide/ erosion of exposed road sides resulting in sedimentation of waterways	<p>[x] The cut slopes will be hard materials that would resist erosion</p> <p>[x] The road passes through a relatively benign terrain, cuts 0will be minimal</p>	<p>[x] Include slope protection works at the following stations:</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; text-align: center;">Left</td> <td style="width: 50%; text-align: center;">Right</td> </tr> <tr> <td>Segment A</td> <td></td> </tr> <tr> <td>1+020-1+080</td> <td>1+020-1+060</td> </tr> <tr> <td>5+720 - 5+728.9</td> <td>5+720-5+728.9</td> </tr> <tr> <td>Segment B</td> <td></td> </tr> <tr> <td>0+000-0+080</td> <td>0+000-0+080</td> </tr> <tr> <td>0+460-0+500</td> <td>4+420+4+460</td> </tr> <tr> <td>0+800-0+860</td> <td>4+460+4+560</td> </tr> <tr> <td>4+060-4+240</td> <td>5+100-5+200</td> </tr> <tr> <td>4+740-4+800</td> <td>9+660-9+880</td> </tr> </table>	Left	Right	Segment A		1+020-1+080	1+020-1+060	5+720 - 5+728.9	5+720-5+728.9	Segment B		0+000-0+080	0+000-0+080	0+460-0+500	4+420+4+460	0+800-0+860	4+460+4+560	4+060-4+240	5+100-5+200	4+740-4+800	9+660-9+880	550 days construction period	<p>DED/POW</p> <p>Or (if budget does not permit)</p> <p>LGU Commitment Letter</p>	<p><b>PEO</b></p> <p>monitor if the rules are followed</p> <p>(strictly follow the terms/ conditions)</p>
Left	Right																								
Segment A																									
1+020-1+080	1+020-1+060																								
5+720 - 5+728.9	5+720-5+728.9																								
Segment B																									
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Issue	Assessment	Mitigation Measure	Schedule/ Duration of the Mitigation Measures	Instrument of Implementation	Responsible Unit
		9+660-9+880 Segment C 2+200-2+285.54 2+200-2+285.54 ..etc.. (Specify the type/s of slope protection to be applied at each section- Consult with the Municipal Engineer: <input checked="" type="checkbox"/> Use of sand bags as erosion control measures on both sides of the road to contain any eroding embankment			
8. Inadequate drainage resulting in flooding or ponding	<input checked="" type="checkbox"/> The road will block runoff, resulting in flooding on one side of the road during rainy days.	<input checked="" type="checkbox"/> Installation of cross drain, line canals, and repair of inlet/outlet stations:  Cross drains: Segment A Sta 0-048.04 Sta 1+261.85 Sta 1+409.12 Sta 4+971.88 Segment B Sta 0+000 Sta 0+687.01 Sta 0+760 Sta. 1+220 Sta 1+350 Sta 1+720 Sta 1+770 Sta 2+015 Sta 2+046.94 Sta 2+204.88 Sta 3+023.2 Sta 4+445.81 Sta 4+735.29 Sta 5+308 Sta 5+552.68 Sta 5+625.87 Sta 5+846.43 Sta 6+949.4 Sta 6+067.52 Sta 6+450 Sta 6+640 Sta 6+840 Sta 7+055.33 Sta 7+180 Sta 7+320	250 days	DED	<b>PEO</b>  monitor if the rules are followed  (strictly follow the terms/ conditions)

Issue	Assessment	Mitigation Measure	Schedule/ Duration of the Mitigation Measures	Instrument of Implementation	Responsible Unit
		Sta 7+950 Sta 8+150 Sta 8+569.14 Sta 8+940 Sta 9+160 Sta 9+390.31 Sta 9+590 Sta 9+790 Sta 9+853 Sta 10+050 Sta 10+438 Sta 10+636 Segment C Sta 0+434.75 Sta 0+820 Sta 1+075 (1-910mmØx7m)  Inlet/outlet 1+060 3+108.48 3+378.35 4+665.96 5+071.35 5+151.35 7+235.88 7+386.99  Line Canals Left                      Right Segment A 0+020-0+160              0+020-0+060 0+260-0+400              0+340-0+380 0+460-0+580              0+460-0+580 0+880-0920              0+720-0+760 1+409.12-1+780              0+820-1+860 1+700-1+780              1+080-1+160 1+960-2+060              1+700-1+780 2+220-2+360              2+220-2+360 2+440-2+580              2+440-2+580 2+720-2+820              2+720-2+820 2+920-3+020              2+920-3+020 3+100-3+160              3+100-3+160 3+220-3+300              3+220-3+300 3+380-3+500              3+380-3+420 3+680-3+843              3+680-3+720 3+920-4+000              4+040-4+140 4+040-4+140              4+300-4+360 4+300-4+360              4+400-4+460 4+400-4+480              4+540-4+480 4+540-4+620              4+540-4+620 4+800-4+900              4+800-4+900 5+080-5+120              5+200-5+240 5+200-5+240              5+260-5+320 5+260-5+320 5+460-5+500			

Issue	Assessment	Mitigation Measure	Schedule/ Duration of the Mitigation Measures	Instrument of Implementation	Responsible Unit
		Segment B 1+060-1+120      0-300-0+360 1+360-1+520      1+060-0+100 1+840-1+880      1+500-1+540 2+400-2+460      1+840-1+880 2+960-3+000      2+860-2+940 4+740-4+780      3+320-3+360 7+780-7+840      3+440-3+520 10+020-10+120    4+740-4+780 10+740-10+880    7+020-7+040  Segment C 0+040-0+120      0+040-0+120 0+200-0+280      0+200-0+280 0+380-0+720      0+480-0+520 0+480-0+520      0+540-0+620 0+540-0+620      1+160-1+260 0+780-0+900      1+340-1+440 1+340-1+440      1+900-1+980 1+680-1+780      2+120-2+180 1+900-1+980 2+120-2+180  Segment D 0+140-0+240			
9. Potential increase use of pesticides due to intensification of cash crop production in the area	[x] There is an ongoing IPM program of DA/PAO in the service area	[x] DA/PAO to continue to support IPM program	Year round	Capacity Building Plan O&M Plan; Capacity Building Plan	MAO/OPA
10. Potential acceleration of denudation of the upland/hilly areas due to intensification of crop production	[x] The road connects only lowland farms to the market	[x] No measure required		O&M Plan; Capacity Building Plan	MAO
11. Potential increased in encroachments of human activities into the nearby public forest	[x] The proposed road does not improve access to a public forest	[x ] No measure required		O&M Plan; Capacity Building Plan	MAO
12. Local employment	[x] Construction will provide local employment opportunities	[x] Hiring priority shall be given to qualified local residents; Implement I-BUILD Manual on local hiring	550 days	Contract	<b>PEO</b>  monitor if the rules are followed   (strictly follow the terms/ conditions)

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13. Disposal of excess excavation	[x] Disposal sites have been identified	[x] Properly dispose the excess excavation  [x] Authority/certification from lot owner/s secured	60 days	<b>Contractor</b>	<b>PEO</b>  monitor if the rules are followed  (strictly follow the terms/ conditions)
14. Road Safety and safety of workers during construction	[x] Installation of appropriate roads signs (if applicable)	[x] Safety gears should be provided as part of the protocol [x] road signs and provisions of traffic personnel at both ends of the FMR.	550 days	<b>Contractor</b>	<b>PEO</b>  monitor if the rules are followed  (strictly follow the terms/ conditions)
15. Road signs Installation near schools and sheer portions	[x] Some portions of the road necessitate installation of road signs	[x] Installation of appropriate road signs are necessary	300 days	<b>Contractor</b>	Contractor PPMIU PEO M&E
16. Construction noise mitigation	[x] Heavy Equipment will entail a lot of noise during construction	[x] Activities will be confined to daytime	550 days	<b>Contractor</b>	<b>PEO</b>  monitor if the rules are followed  (strictly follow the terms/ conditions)
17. Livelihood Assistance	[x] Beneficiaries lack source of income	[x] Livelihood Assistance given to PAPs		Resettlement Plan	PPMIU  To facilitate livelihood projects to PAPs

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18. Possible discovery of artifacts, bones and other objects of interest during construction of the processing plant	<input checked="" type="checkbox"/> Discovery of the artifacts, bones and other objects of interest within the 10 meter radius <input checked="" type="checkbox"/> Discovery of artifacts, bones and other objects of interest outside the 10 meter radius	<input type="checkbox"/> Suspension of the activities and immediately report to the PLGU and RPCO SES Focal Person	During construction period	Contract	Contractor
19. Conflict between project implementers and other stakeholders/ Grievance during implementation	<input checked="" type="checkbox"/> There is an acceptable Grievance Redress Mechanism in place	<input checked="" type="checkbox"/> The project implementers ensure that all grievances are properly addressed	Before and during project implementation	Grievance Redress Mechanism framework Contract	PPMIU/ Contractor






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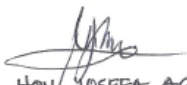
Adopted by PPMIU


  
FELIPE D. VARGAS  
PPMIU Head

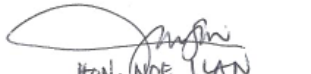
Noted by the local community


  
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HON. REMY M. LORIN  
Barangay Captain

  
HON. JOSEFA AGNOTE  
Barangay Captain

  
HON. JAIME BURAC  
Barangay Captain

  
HON. NOE TAN  
Barangay Captain

  
HON. ROGENER CASAO  
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