

ENVIRONMENTAL AND SOCIAL MANEGEMENT PLAN (ESMP)

Name of Sub-project : **Rehabilitation of Imbang Grande – Tagubong – Gemumua Agahon – Agtabo FMR**

Location : Passi City

Implementing LGU : Iloilo Provincial Government through the Provincial Engineer’s Office

Estimated No. of beneficiaries : 19,187 population; M= 9,983, F= 9,204
4,080 households

Rehabilitation or New : Rehabilitation of existing road

Estimated Total Cost : Php 264,013,219.00

A. Site and Design Consideration

The road does not encroach or traverse any declared protected area or natural habitat.

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

| Issue (Potential Impact) | Assessment | Mitigation Measures | Schedule/Duration of the Mitigation Measures | Instrument of Implementation | Responsible Unit |
|---|--|--|---|------------------------------|------------------|
| A. Pre-construction Phase | | | | | |
| 1. Delivery of construction materials; transport of mechanical equipment to site. | Construction wastes (e.g sacks, cans, plastic, scrap lumber and steel will have a moderate impact to the environment | a. Segregation at source and regular disposal of construction residuals to the City dumpsite b. Collect cement sacks, excess steel bars and lumber for disposal to MRF c. Provide trash can in the project site d. Monitor litters of waste within the project site | Pre-operation phase Pre –project phase, Implementation phase | By administration | PEO, Supplier |
| | Dust and Noise pose a moderate impact to the environment | a. Limit works at daytime b. Decelerate trucks near busy intersections and narrow streets c. Proper supervision of filling and construction works | Implementation phase | | PEO, Contractor |

| | | | | | |
|--|---|---|--------------------------------------|---|--------------------|
| 2. Grievance during construction. | Complaints and Issues can hamper the implementation of the project. | d. Cover hauling trucks with canvass or any equivalent materials. Establish Grievance Redress Mechanism | Implementation Phase | Grievance & Redress Mechanism | LGU Governor, RPCO |
| 3. Possible loss of economic trees during construction. | A number of fruit bearing and forest trees will be cut prior and during construction. | The Local Government Unit (LGU) will be responsible for the cutting of trees and the lumber will be turned-over to the owner. A notarized waiver of quite claim was signed by the owner of the affected trees. A Cutting Tree Permit was issued by the CENRO with all the requirements for compliance included. | Prior, during and after construction | Notarized waiver of quite claim signed by the owner trees. Cutting Tree Permit | LGU |
| Construction Phase | | | | | |
| 1.Domestic wastes | The wastes generated by construction workers will have a moderate impact to the nearby environment Construction wastes will have a moderate impact | a. Segregation at source and regular disposal of residuals to the city dumpsite. b. Collect cement sacks, excess steel bars and lumber and place in the MRF | Construction phase | By administration | PEO |
| 2. Temporary increase in sedimentation | Alteration in identified landscape and elevation due to excavation to minimize the slope and mitigate soil erosion | a. Earthmoving/cutting of slopes to be done during dry months. b. Generated soil/spoil materials will be stockpiled in small mounds and buttressed appropriately with bunds and provided with drainage canal and siltation ponds. c. Slope should be planted with grasses to prevent erosion | Construction Phase | By Contract | Contractor |
| 3. Potential Contamination of surface and ground water with oil and grease | Waste oil and grease from equipment could moderately contaminate surface water | a. Check equipment for leaks and repair as necessary b. Observe proper storage of fuel materials | Construction phase | By Contract | Contractor |

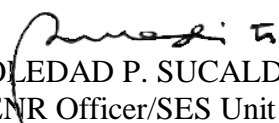
| | | | | | |
|--|--|---|--------------------|-------------|------------|
| 4. Potential contamination with human waste | Workers would be mostly locals and are expected to go home to their respective houses after work | Set up adequate toilet facility at the base camp | Construction phase | By contract | Contractor |
| 5. Potential disruption of traffic flow | 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>a. Keep the road open to traffic flow and minimize disruptions along the access road and/or construction area</p> <p>b. Provide adequate warning signs and traffic personnel when necessary</p> | Construction Phase | By contract | Contractor |
| 6. Potential dust/mud nuisance during construction | <p>Roads could become powdery during dry days and muddy during rainy days of the construction period</p> <p>Access road and/or the construction rehabilitation works passes through a populated area</p> | <p>a. Undertake sprinkling of road (including access roads) during dry days, and filling up of potholes during rainy days, especially in residential areas</p> <p>b. Set up speed limits</p> | Construction Phase | By contract | Contractor |
| 7. Landslide/erosion of exposed road sides resulting in sedimentation of waterways | The road passes through a relatively benign terrain, cuts will be minimal | <p>a. Include slope protection works at the following stations:</p> <p>Segment A Sta 03+795-Sta 03 + 835 Slope Protection at Right Side (40LM)</p> <p>Sta 15+780-Sta 15+920 Slope Protection at Right Side (140LM)</p> <p>Segment B Sta 04+850-Sta 05+180 Slope Protection at Both Side (330LM)</p> <p>Segment C Sta 00+338-Sta 00+378 Slope Protection at Both Side (40LM)</p> <p>Sta 01+410-Sta 01+430 Slope Protection at Both Side (20LM)</p> <p>Sta 02+270-Sta 02+300 Slope Protection at Both Side (30LM)</p> <p>Sta 03+855-Sta 03+875 Slope</p> | Construction Phase | By contract | Contractor |

| | | | | | |
|---|--|--|--------------------|-------------|------------|
| | | <p>Protection at Both Side (20LM)</p> <p>Sta 03+950-Sta 03+970 Slope Protection at Both Side (20LM)</p> <p>b. Bioengineering with geomat with cover crop or grasses.</p> | | | |
| 8. Inadequate drainage resulting in flooding or ponding | The road will block run-off, resulting in flooding on one side of the road during rainy days | <p>Drain at stations:</p> <p>Segment A (cross drain)</p> <p>Sta 01+713</p> <p>Sta 02+733.50</p> <p>Sta 03+520</p> <p>Sta 03+929.40</p> <p>Sta 04+896</p> <p>Sta 04+951</p> <p>Sta 05+236</p> <p>Sta 05+296</p> <p>Sta 07+660</p> <p>Sta 11+512</p> <p>Sta 11+773</p> <p>Sta 15+625</p> <p>Sta 15+795</p> <p>Sta 15+848</p> <p>Sta 16+129</p> <p>Sta 16+240</p> <p>Sta 16+311</p> <p>Sta 16+669</p> <p>Sta 03+781(box culvert)</p> <p>Segment B(cross drain)</p> <p>Sta 00+768</p> <p>Sta 01+048</p> <p>Sta 01+357</p> <p>Sta 01+694</p> <p>Sta 01+700</p> <p>Sta 01+927</p> <p>Sta 01+995</p> <p>Sta 02+198</p> <p>Sta 02+624</p> <p>Sta 02+822.6</p> <p>Sta 02+986.9</p> <p>Sta 04+915</p> <p>Sta 04+960</p> <p>Sta 05+796</p> <p>Sta 06+035</p> <p>Sta 06+808.5</p> <p>Sta 06+852</p> <p>Sta 07+697</p> <p>Sta 03+989 to 04 + 004- overflow bridge</p> <p>Sta 07+030 to 07 + 048 – box culvert</p> <p>Segment C (cross drain)</p> <p>Sta 00+221</p> <p>Sta 00+358</p> <p>Sta 00+589</p> <p>Sta 02+286</p> <p>Sta 02+611</p> <p>Sta 02+719</p> <p>Sta 02+737</p> | Construction phase | By Contract | Contractor |


| | | | | | |
|--|--|--|---|--|------------------------|
| | | Sta 02+893 Sta 03+354 Sta 03+865 Sta 03+959 Sta 04+385 Sta 01+419 to 01 + 422 – box culvert | | | |
| 9. Local Employment | Construction will provide local employment opportunities. | Hiring priority shall be given to qualified local residents. | Construction Phase | By Contract | Contractor |
| 10. Potential damage to existing road due to hauling of quarry materials | Transportation of quarry materials from source to FMR will cause damage to existing roads. | Regular maintenance and repair of existing road. | All throughout the construction duration | By Contract | Contractor |
| 11. Possible discovery of artifacts, bones, and other objects of interest during construction of the road. | Discovery of artifacts bones and other objects of interest within 10 meter radius. | Suspension of the activities and immediately report to the PLGU and RPCO SES Focal Person. | All throughout the construction duration | Finds Procedures | Contractor, LGU, PPMIU |
| 12. Possible impacts of quarrying activities in the quarry sites. | Over extraction of quarry materials in the quarry sites and the possible negative impact in the surrounding area. | The Provincial Environment and Natural Resources Office (PENRO) is mandated through its officer in-charge of quarry sites to regularly monitor quarrying activities and ensure that the volume of materials extracted does not exceed on what is indicated in the quarry permit issued. | The mitigation measure is a regular function of PENRO and it will be conducted during construction. | PENRO function | PENRO |
| 13. Batching plant requirement | Setting up of mobile batching plant In case of concrete batching plants, cements, sand and aggregates can produce dust which may adversely affect neighboring premises. | Mobile batching plant will be set up at the vacant open field that is not being utilized for other purposes. The best way to avoid offsite problems is to prevent the release of the dust through good design and management techniques by providing wind barriers such as tarpaulins or plywood cover that may help control the emission of dust from the plant. | During Batching Plant operation | By Contract | Contractor |
| 14. Possible contamination of soil and water from the waste water of the batching plant operation. | Waste water from the operation of the batching plant will moderately contaminate the water and soil in the area. | Constant monitoring of the engineer in-charge on the operation of the batching plant. | During Batching Plant operation | Regular function of the field engineer assigned to the project | PEO |
| 15. Possible long term impact of waste water from the project. | Moderate impact of waste water from the project and possible impact would be temporary. | Provide proper area for disposal of waste water from the construction. | During construction | By Contract | Contractor |
| 16. Grievance during construction. | Complaints and Issues can hamper the implementation of the project. | Establish Grievance Redress Mechanism | Implementation Phase | Grievance & Redress Mechanism | LGU Governor, RPCO |

| | | | | | |
|--|---|--|---|---|---------------------|
| <p>17. Possible loss of economic trees during construction.</p> | <p>A number of fruit bearing and forest trees will be cut prior and during construction.</p> | <p>The Local Government Unit (LGU) will be responsible for the cutting of trees and the lumber will be turned-over to the owner.</p> <p>A notarized waiver of quite claim was signed by the owner of the affected trees.</p> <p>A Cutting Tree Permit was issued by the CENRO and PCA with all the requirements for compliance included.</p> | <p>Prior, during and after construction</p> | <p>Notarized waiver of quite claim signed by the owner trees. Cutting Tree Permit</p> | <p>LGU</p> |
| <p>Post -Construction Phase</p> | | | | | |
| <p>1. Potential increase use of pesticides due to intensification of cash crop production in the area</p> | <p>There is an ongoing IPM program of City Agriculture's Office (CAO) and DA in the service area</p> | <p>CAO & DA to continue to support IPM program</p> | <p>Ongoing even before construction</p> | <p>Capacity Building Plan O&M Plan; Capacity Building Plan</p> | <p>CAO & DA</p> |
| <p>2. Potential acceleration of denudation of the upland/hilly areas due to intensification of crop production</p> | <p>The proposed road will connect to the market an upland/hilly area where farmers are currently practicing erosive farming techniques. The road could help accelerate the denudation of the upland/hillsides rendering them unproductive in a few years.</p> | <p>The OPA and PENRO will introduce sustainable upland farming systems in the area</p> | <p>Post-Construction Phase</p> | <p>O & M Plan, capacity building Plan</p> | <p>OPA, PENRO</p> |
| <p>3. Potential increased in encroachments of human activities into the nearby forest</p> | <p>The proposed road will improve human access to the nearby public forest, resulting in increased slash and burn cultivation</p> | <p>DENR will deputize the local community to enforce forestry laws</p> | <p>Post-Construction Phase</p> | <p>Capacity building plan</p> | <p>DENR, PENRO</p> |

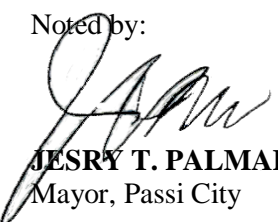
Prepared by:


SOLEDAD P. SUCALDITO
 PENR Officer/SES Unit Head

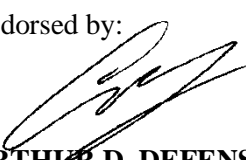
Adopted by:


RAUL N. BANIAS, M.D
 Provincial Administrator
 Chairperson, PPMIU

Noted by:


JESRY T. PALMARES
 Mayor, Passi City

Endorsed by:


ARTHUR D. DEFENSOR
 Governor