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**ENVIRONMENTAL MANAGEMENT PLAN  
SURIGAO-DAVAO COASTAL ROAD  
(Manay-Mati)**

**June 1, 2007**

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SURIGAO-DAVAO COASTAL ROAD  
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<b>Project Activities (Pre-Construction, Construction Operation)</b>	<b>Impact Description Per Parameter (Physical, Biological, Socio-Economic)</b>	<b>Mitigation (If Negative) / Enhancement (If Positive)</b>	<b>Monitoring Requirements</b>	<b>Responsible Entity</b>
<b>PRE CONSTRUCTION PHASE</b>				
Surveying	<u>Positive</u>  Employment of local labor	Government regulation requires labor force to be sourced from host barangays whenever available  Skilled residents of the most barangays could be hired as Instrumentman, and Survey Aides etc.	Payroll and employment records	Contractor
Land Acquisition for Right-of-Way	<u>Negative</u>	This impact is minima since the existing	Satisfaction of the affected people	DPWH, Contractor and LGUs

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	Dislocation and disturbance to existing living conditions of the affected families	alignment will be utilized.  Compensation will be paid to affected people.		
Preparatory works i.e Clearing and stripping of Vegetative Cover	<u>Negative</u>  Areas identified shall be cleared and stripped of the vegetative cover to prepare it for pavement	This is an unavoidable impact. It will be ensured that stripping and clearing will be within construction limits only.	Periodic assessment of floral communities and replanting of trees in other areas.	DPWH, Contractor, DENR, LGUs
<b>CONSTRUCTION PHASE</b>				
Construction and Management of Work Camps	<u>Negative</u>  Potential nuisance and pollution  Cutting of trees for fuel requirements	Install and maintain a system for the collection of liquid and solid waste within the work camps during construction.  Locate the work camps a fair distance from residential areas in the		

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	<p>Development of temporary camps into permanent resettlement.</p> <p><u>Positive</u></p> <p>Provision of employment and livelihood opportunities for residents of the host LGUs.</p> <p>Increase in revenues for the LGUs</p> <p>Beneficial to the host municipality re: provision of additional facilities at no cost</p>	<p>project area.</p> <p>Ensure abandonment of construction camps after completion of the project.</p> <p>Donate work camp buildings as public facilities such as school, barangay centers hospitals, etc.</p>	<p>Physico-chemical parameters Complaints from residents</p>	<p>Contractor, DPWH</p>
Establishment and		Site facilities will be	TSP, SO <sub>x</sub> , Nox	Contractor, DPWH,

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operation of Batching Plant, Crushing Plant, etc.	<u>Negative</u>  Potentially pollutive facilities that could affect air and water quality and create noise nuisance	located away from settlement and environmentally sensitive areas. Provision of adequate and efficient pollution control devices to minimize adverse impacts. Operation of these facilities will be limited to daytime only.	Physico-chemical parameters  Complaints from residents	DENR
Operation of Quarry Sites and Borrow Pits	<u>Negative</u>  a. Near water bodies: Sediments and siltation downstream and potential riverbank destruction.	Quarry sites will be located away from population areas and services such as water supply facilities, drinking water intakes and tributaries utilized for communal domestic purposes.  No work will be permitted	Turbidity, TSS  Complaints from residents.  Regularity of material extraction  Flow discharge of river	LGU Contractor, DPWH, Consultant

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	b. Operation of Quarry Sites on mountainous area	<p>in areas with fine sediments.</p> <p>Provision of access road to facilitate fast and efficient hauling of materials.</p> <p>Limitation on depth and area of extraction from rivers will be strictly imposed to prevent loose materials disturbance and siltation.</p> <p>Avoid quarrying at mountainous areas as much as possible</p> <p>Secure permit from DENR</p> <p>Provide mitigation measures such as slope</p>	Occurrence of landslides and soil erosion	-do-

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		protection works and re-vegetation after quarrying activities of aggregates		
Preparation of subgrade & Base Construction of Pavement	<u>Negative</u> Dust generation, vibrations potential contamination of water course (surface and groundwater) as a result of spillage, potential flooding of the area.	Limit number of workers in the area to minimize disturbance in the nearby communities. Institute noise abatement measures to minimize nuisance.  Regular spraying of bare areas with water.  Provision of adequate safety and warning devices during construction activities. Work will not be permitted during	TSP  Contractor's compliance to design and construction requirements	Contractor, DPWH, Consultation

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		<p>inclement weather conditions.</p> <p>Clearing and cutting of trees and floral assemblages will be minimized and areas.</p> <p>Culverts and drainage facilities will be designed taking into consideration flood discharge values and construction parameters.</p>		
Repair and reconstruction of Bridges	<p><u>Negative</u></p> <p>Traffic obstruction.</p> <p>Temporary albeit, minimal alteration of river flow in the construction area.</p>	<p>Provision of detour road/bridges whenever possible for vehicular and pedestrian traffic.</p> <p>Establish flagmen and provide appropriate number of signages and other warning devices.</p>	<p>TSS, Physico-chemical parameters.</p> <p>Contractor's compliance to design and construction requirements</p>	Contractor, DPWH consultant, DENR, LGUs



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	Potential temporary siltation	<p>No works will be permitted during inclement weather conditions.</p> <p>Cofferdams will be established prior to bridges piers repair works to drench and prevent water into the section during the excavation.</p> <p>Flow of river water will be diverted away from construction area.</p>		
Construction of Drainage Facilities	<p><u>Negative</u></p> <p>Excavation materials from drainage works may induce sedimentation and siltation of nearby water bodies.</p>	Proper disposal of excavation materials on designated spoils disposal areas or in private properties upon consent of owners.	TSP, TSS	Contractor, DPWH, LGUs

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	<p>Excess materials if not properly managed and disposed could induce slope instability and erosion.</p> <p><u>Positive</u></p> <p>Provisions of free or cheap fill materials for residents of low-lying areas.</p>			
Decommissioning and Abandonment of Auxilliary Facilities	<p><u>Negative</u></p> <p>Development of temporary camps to permanent resettlement areas.</p>	<p>All temporary structures will be removed to prevent encroachment within the RROW.</p> <p>Work camps will be donated to the LGUs for their appropriate utilization.</p>	<p>Absence of temporary structures and facilities.</p> <p>Assessment of planted areas</p>	Contractor, DPWH, DENR, Consultants

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	<u>Positive</u>  Acquisition of free facilities by the host municipalities for utilization as school, health, centers etc.	Exposed areas will be planted with suitable vegetation. Site restoration work will be undertaken prior to demobilization of equipment. The areas will be restored to near natural or stable conditions.	Clearance of DPWH	
<b>OPERATION PHASE</b>				
Increased Access	<u>Positive</u>  Increased economic activity in the area that would result to a higher standard of living for the residents.  Enhanced trade and development due to better transport and communication facilities.	Strict compliance to existing land-use and zoning regulations.  Compliance to existing environmental management principles and policies.  Encourage business development in designated areas.		DENR, LGUs, HLURB, DTI, PNP, LTO

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		Regulation of speed in designated areas and the posting of appropriate signages and warning devices to prevent occurrence of traffic accidents.		

