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**Environment Management Report
Mindoro East Cost Road Project
May 31, 2007**

Mindoro East Cost Road Project
Environmental Management Plan Matrix

ENVIRONMENTAL MANAGEMENT PLAN					
Project Activities	Impact	Area Affected	Mitigation/ Enhancement	Monitoring Requirements	Responsibility
I. Pre-Construction/Maintenance					
A. Hiring of labor force/manpower	A.1. Local Labor Employment 2. Increase in sources of income for local residents	Project Area	A. 1. Hire skilled residents as survey aides and other unskilled jobs, etc. 2. Adopt a just compensation scheme to avoid future labor and management conflicts	Payroll, Employment records (in accordance with R.A. 6685 and DPWH D.O. # 51, Series of 1990)	Contractor (DPWH)
B. Mobilization of Equipment and transport of construction materials.	B.1. Air & Noise Pollution in settlements along the road	Project Area	B. 1. All heavy transporting vehicles shall be fitted with noise dampening devices that are operating in good condition. 2. Vehicles transporting sand shall be covered with tarpaulin. 3. Stockpiled sand shall be wetted particularly in windy conditions.	Air pollution Dust Concentration Dust Concentration	Contractor Contractor Contractor
C. Procurement of Construction Materials	C.1. Increase in sale of construction materials	Project Area	C.1.a Adopt a competitive fair pricing among the hardware store owners within the project area	Sales invoice/Receipts	LGUs, DTI, Commercial Establishments
2. Construction/Maintenance Phase					
A. Establishment and Operation of Workers' Camps	A.1. Possible pollution as a result of waste from the camps. 2. Noise pollution and other disturbances to surrounding areas/communities	Camp Sites	A.1. Insist that the contractor install and maintain a system for the collection and treatment of solid wastes during the maintenance period 2. Locate workers' camp as far as possible from existing settlements in order to minimize disturbances	Presence of tanks or other evidence of waste depositories Location of the camps	DPWH, LGUs Contractor DPWH, LGU, Contractor

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B. 1.Operation of Quarry Sites on River Banks and near other water bodies.	B.1. Sedimentation and siltation downstream and riverbank destruction.	Quarry sites	B.1. No work will be permitted to quarry sites with fine sediment	Compliance to ECC Conditions by the Contractor and quarry operators.	Contractor, DPWH, Consultant, LGU
			2. The depth of extraction from river will be limited.		-do-
			3. Identify the riverbed, which has excessive sediment, and limit the excavation to ideal section and depth of the river.		
			4. Locate quarry site away from the populated centers, drinking water intakes and tributaries used the community for domestic purposes.		-do-
	B.1 Changing the course of the river will have a beneficial impact to the flow regime of the rivers.		B.1. Depth and area of extraction limitation should be imposed to prevent loose materials disturbance that may trigger siltation.	Flow discharge of River Turbidity	-do-
B.2 Operation of Quarry Sites on Mountainous Area	B.2. Possibility of landslides and soil erosion	Quarry sites	B.2. Avoid quarrying at mountainous areas as much as possible.	Occurrence of landslides and soil erosion	-do-
	2.1 Damage of existing vegetation in the area		2.1 Secure permit from DENR 2.2 Provide mitigating measures such as slope protection works and re-vegetation after quarrying activities/ extraction of aggregates		
C. Establishment and Operation of Asphalt	C.1. Possible soil and water contamina	Plant site	C.1. Recycle lubricants. Avoid possible spills through the use of a gutter to	Occurrence of the problem	Contractor

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Plant	tion due to grease, oil, other combustible spills 2. Soil & water contamination as a result of spilled bitumen and solvents		capture wastes during work 2. Avoid spills and use a gutter to capture possible spills during bitumen preparation and application	Occurrence of the problem	Contractor
D. Application of Bitumen/ Asphalt Overlaying	D.1. Possible contamination of water courses (surface & sub surface) as a result of bitumen spillage 2. Can have an impact on existing vehicular traffic and pedestrian access	Project Road Project are	D.1. Avoid all possible spills wherever possible. Have emergency measures established in case of major spills and do not allow work during rainy days. Ensure that the contractor implement adequate safety and warning measures/ devices during construction/ maintenance activities.	Condition of the area where bitumen is being treated and spread. Traffic level	DPWH Contractor Contractor
E. Minor Drainage Improvement/ cleaning	E.1 Excavated materials from drainage works along the roadside could affect aesthetic negatively. 2. This could also result to erosion, sedimentation, and slope instability if dumped along the	Selected areas along the Project Road	1. Proper disposal of excavated materials on selected areas. 2. Proper disposal of excess materials on pre-determined spoil banks should be enforced.	Condition of drainage works -do-	Contractor, DPWH Contractor, DPWH

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	steep hillside				
F. De-commissioning and abandonment of Auxiliary Facilities	F.1 Development of temporary camp to permanent resettlement		F.1. All temporary structures, including sleeping quarters, cooking and flood storage structures and latrines shall be removed to prevent encroachment within the road right-of-way 2. The site shall be restored to near natural or stable conditions.	Absence of structures	Contractor, DPWH
	2. Exposed area will impair the aesthetic and could cause soil erosion		2. Exposed areas shall be planted with suitable vegetation. 2.b. Site restoration work shall be ensure before the equipment is allowed to leave	Assessment of the planted area. Clearance from DPWH	Contractor, DPWH Contractor, DPWH
III. Operation					
A. Comfortable Travel	A.1. Unplanned urbanization		A.1. Responsible institutional order and existing regional development policies prevail. 2. Adherence to land use and zoning regulation.	Feedback from communities	DPWH, HNA, LGU LGU, NHA, HLURB
	A.2. Increase business potential		A.2. Encourage business in designated centers.	Presence of new business establishment	DTI, LGU
	A.3. Timely delivery of agricultural products to the		A.3. Introduce high yielding variety of agricultural crops to increase production and increase framers' income	Influx of tourist, improvement of tourist spots.	DA, LGU

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	market. A.4. Increase tourism development		A.4. Promote tourism in the area through advertisement from the local and nationwide venue. A.4. Improve the tourist centers in the area.		DOT, LGU
B. Faster travel time	B.1. Increase risk of Vehicular and pedestrian accidents B.2. Promotes business and faster delivery goods and services as mentioned above.	Project area Project area	B.1. Regular speed in urbanized and accident-prone areas by posting sign boards, pedestrian lanes, barriers in school zones, hospitals, market and other thickly populated areas. B.2. Police or traffic enforcer must be assigned to regulate traffic in thickly populated areas. Sponsoring business convention by LGUs and DTI Dissemination of health and educational programs by the gov't. to the communities.	Record of vehicular accidents Presence of new investors	Police Department, LGU, LTO Dept. of Health and DepEd.

