

WASTE MANAGEMENT PROJECTS

II. ENVIRONMENTAL IMPACT AND MANAGEMENT PLAN

Possible Environmental/Social Impacts	Baseline Environment	Preventive/Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		<input checked="" type="checkbox"/> Cost of preventive/mitigating as well as monitoring integrated in the construction /operation cost		
LAND				
<input checked="" type="checkbox"/> Consistency with land use	Current land use w/in 1km radius (as per zoning ordinance): <input checked="" type="checkbox"/> Residential <input checked="" type="checkbox"/> Commercial/ Institutional <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Agricultural/ Recreational <input checked="" type="checkbox"/> Protected Areas <input type="checkbox"/> Others, specify <div style="border: 1px solid black; height: 100px; width: 100%;"></div> Actual land uses w/in 1km radius: <input checked="" type="checkbox"/> Residential <input checked="" type="checkbox"/> Commercial/ Institutional <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Agricultural/ Recreational <input checked="" type="checkbox"/> Protected Areas <input type="checkbox"/> Others, specify <div style="border: 1px solid black; height: 100px; width: 100%;"></div>	<input checked="" type="checkbox"/> See attached proof of compatibility with land use <input checked="" type="checkbox"/> Limit project activities to what is compatible to the land use		
<input type="checkbox"/> Land tenure / compatibility issue	Identify land tenure / compatibility issues :	<input type="checkbox"/> Obtain the following clearances/ permits from	<input checked="" type="checkbox"/> Regularly monitor presence/absence of complaints	

Initial Environmental Examination (IEE) Checklist Report Form for Waste Management Projects

	<input type="checkbox"/> CARP <input type="checkbox"/> CADC/ CADT/ CALC/ CALT <input type="checkbox"/> ROW <input type="checkbox"/> Informal settlers <input type="checkbox"/> Ecologically sensitive or protected area <input type="checkbox"/> Others, specify <div style="border: 1px solid black; height: 100px; width: 100%;"></div>	<p>concerned agencies:</p> <div style="border: 1px solid black; height: 100px; width: 100%;"></div> <input type="checkbox"/> Resettlement Plan prepared <input type="checkbox"/> Provide relocation/disturbance compensation packages <input type="checkbox"/> Ensure participation of IPs in consultations and dialogues <input checked="" type="checkbox"/> MOA prepared/signed <input type="checkbox"/> Provide adequate buffer <input type="checkbox"/> Others, specify <div style="border: 1px solid black; height: 100px; width: 100%;"></div>	<input checked="" type="checkbox"/> Regular coordination with LGU or appropriate agencies <input type="checkbox"/> Others, specify <div style="border: 1px solid black; height: 100px; width: 100%;"></div>	
<input type="checkbox"/> Disturbance to wildlife due to vegetation clearing	<p>Existing vegetation in the area:</p> <input type="checkbox"/> Forestland <input type="checkbox"/> Marshland <input type="checkbox"/> Grassland <input type="checkbox"/> Mangrove <input type="checkbox"/> Wetland <input type="checkbox"/> Others, specify <div style="border: 1px solid black; height: 100px; width: 100%;"></div>	<input checked="" type="checkbox"/> Comply with conditions of DENR/LGU SLUP, Tree Cutting Permit, ROW, PCA Permit <input checked="" type="checkbox"/> Limit land clearing as much as possible <input checked="" type="checkbox"/> Provide temporary fencing for vegetation that will be retained <input checked="" type="checkbox"/> Promote restoration of damaged or destroyed vegetation where possible (e.g., tree planting) <input type="checkbox"/> Provide adequate buffer zone	<input checked="" type="checkbox"/> Annual inspection of area replanted/ re-vegetated <input type="checkbox"/> Others, specify <div style="border: 1px solid black; height: 100px; width: 100%;"></div>	

<input type="checkbox"/> Change in surface landform/ topography/ terrain/slope <input type="checkbox"/> Soil Erosion	<p>Slope:</p> <input type="checkbox"/> Flat (0-3%) <input checked="" type="checkbox"/> Gently sloping to rolling (3-18%) <input type="checkbox"/> Steep (>18%)	<input checked="" type="checkbox"/> Employ appropriate soil erosion control and slope protection measures (e.g. contour farming, hedgerow planting, etc.) considering the natural hazards and climate projections in the area <input type="checkbox"/> Stabilization of embankment with grasses or other soil cover <input type="checkbox"/> Comply with the standard criteria for sanitary landfill in DAO 49 and 50 <input type="checkbox"/> Comply with DENR Administrative Order No. 2003-30 and DENR Administrative Order No. 2000-28, Implementing Guidelines on Engineering Geological and Geo-hazard Assessment (EGGA). <input type="checkbox"/> Others, specify	<input checked="" type="checkbox"/> Regular inspection of slope protection measures in erosion-prone areas <input type="checkbox"/> Regular inspection for new eroded areas near the site <input type="checkbox"/> Others, specify	<input type="checkbox"/> Slope/ Erosion Control Cost: <input type="checkbox"/> Others, specify
<input checked="" type="checkbox"/> Soil/Land contamination due to improper solid waste disposal	<p>Existing soil type in the area:</p> <input type="checkbox"/> sandy <input checked="" type="checkbox"/> clay <input type="checkbox"/> sandy-loam <input type="checkbox"/> Others, specify	<input checked="" type="checkbox"/> Implement the Ecological Solid Waste Management Plan (ESWMP) <input type="checkbox"/> Set up temporary fence around the construction area <input checked="" type="checkbox"/> Implement re-use and recycling of waste materials <input checked="" type="checkbox"/> Hazardous waste management system (e.g. used oil) as per DAO 2013-22 <input checked="" type="checkbox"/> Implement proper segregation, collection and disposal of	<input checked="" type="checkbox"/> Daily inspection of waste/recycling bins for segregation <input checked="" type="checkbox"/> Daily inspection for presence of mixed garbage in the facility <input checked="" type="checkbox"/> Weekly inspection of waste accumulated <input type="checkbox"/> Others, specify	

		<p>domestic wastes in designated areas</p> <ul style="list-style-type: none"> <input type="checkbox"/> Implement proper collection, labeling and storage of hazardous waste <input checked="" type="checkbox"/> Provide receptacles / bins for solid wastes <input type="checkbox"/> Coordinate with the municipal / city waste collectors <input type="checkbox"/> Engage third party company for waste collection <input type="checkbox"/> Comply with the minimum standard for sanitary landfill liner system per IRR of RA 9003 <input type="checkbox"/> Others, specify <div data-bbox="965 676 1366 850" style="border: 1px solid black; height: 100px; width: 100%;"></div>		
<ul style="list-style-type: none"> <input type="checkbox"/> Impairment of visual aesthetics <input type="checkbox"/> Devaluation of land values 	<p>Presence of visually significant landforms/landscape/structures?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 	<ul style="list-style-type: none"> <input type="checkbox"/> Implement landscaping and other beautification measures <input type="checkbox"/> Provide adequate buffer <input type="checkbox"/> Compensate adjacent property owners <input type="checkbox"/> Others, specify <div data-bbox="965 1082 1366 1256" style="border: 1px solid black; height: 100px; width: 100%;"></div>	<ul style="list-style-type: none"> <input type="checkbox"/> Regular inspection of landscaping and other beautification activities <input type="checkbox"/> Regular monitoring of buffer zones <input checked="" type="checkbox"/> Regular monitoring for presence/absence of complaints from adjacent property owners 	

<input checked="" type="checkbox"/> Encroachment into protected areas or ecologically-sensitive areas	Is the project area near protected areas or ecologically-sensitive areas? <input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Obtain appropriate permits/clearances from concerned agencies <input checked="" type="checkbox"/> Provide adequate buffer <input type="checkbox"/> Others, specify <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	<input type="checkbox"/> Regular coordination with concerned agencies	<div style="border: 1px solid black; height: 100%; width: 100%;"></div>
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WATER

<input type="checkbox"/> Increased siltation due to project activities <input type="checkbox"/> Water quality degradation <input type="checkbox"/> Others, specify <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	Specify nearest water body: Distance to nearest water body: <input type="checkbox"/> 0 to less than 0.5 km <input type="checkbox"/> 0.5 to 1 km <input checked="" type="checkbox"/> More than 1 km Classification of nearest water body: <table border="1" style="width: 100%;"> <tr> <td><input type="checkbox"/> Freshwater</td> <td><input type="checkbox"/> Marine/coastal water</td> </tr> <tr> <td><input type="checkbox"/> AA</td> <td><input type="checkbox"/> SA</td> </tr> <tr> <td><input type="checkbox"/> A</td> <td><input type="checkbox"/> SB</td> </tr> <tr> <td><input checked="" type="checkbox"/> B</td> <td><input type="checkbox"/> SC</td> </tr> <tr> <td><input type="checkbox"/> C</td> <td><input type="checkbox"/> SD</td> </tr> <tr> <td><input type="checkbox"/> D</td> <td></td> </tr> </table>	<input type="checkbox"/> Freshwater	<input type="checkbox"/> Marine/coastal water	<input type="checkbox"/> AA	<input type="checkbox"/> SA	<input type="checkbox"/> A	<input type="checkbox"/> SB	<input checked="" type="checkbox"/> B	<input type="checkbox"/> SC	<input type="checkbox"/> C	<input type="checkbox"/> SD	<input type="checkbox"/> D		<input checked="" type="checkbox"/> Set up proper and adequate sanitary facilities <input type="checkbox"/> Strictly require the contractor and its workers to observe proper waste disposal and proper sanitation <input checked="" type="checkbox"/> Strictly observe proper waste handling and disposal <input type="checkbox"/> Provide wastewater treatment facility (e.g., septic tank, oil and water separator, etc.) <input type="checkbox"/> Set up silt trap/settling ponds to minimize downstream siltation <input type="checkbox"/> Provide ring canals around fuelling tanks/ motor pool/ maintenance areas <input type="checkbox"/> Limit, where possible, the extent of impervious (paved) areas <input type="checkbox"/> Installation of biogas digester/s system <input type="checkbox"/> Provide at least 50 meters distance between the landfill and any perennial lake, stream or river <input type="checkbox"/> Provide the minimum standard for sanitary landfill liner	Regular (ocular) inspection of: <input type="checkbox"/> Drainage / canal systems <input type="checkbox"/> Water treatment facility (i.e., grease trap, septic tank, etc.) Regular monitoring of the following: <table border="1" style="width: 100%;"> <thead> <tr> <th>Parameter</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> pH</td> <td> <input type="checkbox"/> Annual <input type="checkbox"/> Semi-annual <input type="checkbox"/> Quarterly </td> </tr> <tr> <td><input type="checkbox"/> TSS concentration</td> <td> <input type="checkbox"/> Annual <input type="checkbox"/> Semi-annual <input type="checkbox"/> Quarterly </td> </tr> <tr> <td><input type="checkbox"/> BOD</td> <td> <input type="checkbox"/> Annual <input type="checkbox"/> Semi-annual <input type="checkbox"/> Quarterly </td> </tr> <tr> <td><input type="checkbox"/> Color</td> <td> <input type="checkbox"/> Annual <input type="checkbox"/> Semi-annual </td> </tr> </tbody> </table>	Parameter	Frequency	<input type="checkbox"/> pH	<input type="checkbox"/> Annual <input type="checkbox"/> Semi-annual <input type="checkbox"/> Quarterly	<input type="checkbox"/> TSS concentration	<input type="checkbox"/> Annual <input type="checkbox"/> Semi-annual <input type="checkbox"/> Quarterly	<input type="checkbox"/> BOD	<input type="checkbox"/> Annual <input type="checkbox"/> Semi-annual <input type="checkbox"/> Quarterly	<input type="checkbox"/> Color	<input type="checkbox"/> Annual <input type="checkbox"/> Semi-annual	<div style="border: 1px solid black; height: 100%; width: 100%;"></div>
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<div style="border: 1px solid black; height: 100%; width: 100%;"></div>	Current Use of nearest/ receiving water body : <input type="checkbox"/> Fishery <input checked="" type="checkbox"/> Tourist Zone / Park <input type="checkbox"/> Recreational <input type="checkbox"/> Industrial <input type="checkbox"/> Agricultural																									

		<p>system</p> <input type="checkbox"/> Install underdrain system <input type="checkbox"/> Separate at least two (2) meters between the top of the liner system and the underlying groundwater <input type="checkbox"/> Others, specify <div style="border: 1px solid black; height: 30px; width: 100%;"></div>	<input type="checkbox"/> Oil and Grease <input type="checkbox"/> Trace Metals (Pb, Cd, Hg, Cr(VI), As) <input type="checkbox"/> Quarterly <input type="checkbox"/> Annual <input type="checkbox"/> Semi-annual <input type="checkbox"/> Quarterly <input type="checkbox"/> Annual <input type="checkbox"/> Semi-annual <input type="checkbox"/> Quarterly	
<input type="checkbox"/> Increased occurrence of flooding	<p>Is the project site located in an area identified by MGB/PAGASA as flood prone?</p> <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Use appropriate design for project facilities <input type="checkbox"/> Implement appropriate drainage system <input type="checkbox"/> Regularly remove debris and other materials that may obstruct water flow <input type="checkbox"/> Use appropriate technology (e.g., raised hand-pumps) to protect drinking water from flood contamination <input type="checkbox"/> Others, specify <div style="border: 1px solid black; height: 30px; width: 100%;"></div>	<input checked="" type="checkbox"/> Regular monitoring for presence/absence of complaints <input checked="" type="checkbox"/> Regular coordination with concerned agencies <input checked="" type="checkbox"/> Regular monitoring for increased frequency of flooding <input type="checkbox"/> Others, specify <div style="border: 1px solid black; height: 30px; width: 100%;"></div>	
AIR / NOISE				
Air quality degradation	<p>Distance to nearest community:</p> <input checked="" type="checkbox"/> 0 to less than 0.5 km <input type="checkbox"/> 0.5 to 1 km <input type="checkbox"/> More than 1 km <p>Is the wind direction blowing towards</p>	<input checked="" type="checkbox"/> Properly operate and maintain all emission sources (e.g. vehicles, boiler, generator, etc) <input type="checkbox"/> Install, when applicable, the appropriate air pollution	<input checked="" type="checkbox"/> Regular monitoring for presence/ absence of complaints Regular (ocular) inspection of:	<p>Noise level of air blower each units is 40dBA.</p>

Final Examination (IEE) Checklist Report Form for Waste

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	<p>the nearest community most of the year?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>control device/s</p> <p><input type="checkbox"/> Install methane recovery facility</p> <p><input type="checkbox"/> Install biogas and composting facility</p> <p><input type="checkbox"/> Install a Continuous Emission Monitoring System (CEMS) as per DAO 2007-22</p> <p><input type="checkbox"/> Strictly enforce good housekeeping practices</p> <p><input type="checkbox"/> Control vehicle speed to lessen suspension of road dust</p> <p><input type="checkbox"/> Conduct water spraying to suppress dust sources and minimize discomfort to nearby residents</p> <p><input type="checkbox"/> Use covered vehicles to deliver materials that may generate dust</p> <p><input type="checkbox"/> Other, specify:</p> <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	<p><input type="checkbox"/> Absence of white or black smoke from vehicles, generator, etc.</p> <p><input type="checkbox"/> Absence of fugitive dust emission from milling operation</p> <p><input type="checkbox"/> Presence of truck cover during deliveries</p> <p>Regular monitoring of ambient air for the following:</p> <p><input type="checkbox"/> TSP</p> <p><input type="checkbox"/> PM₁₀</p> <p><input type="checkbox"/> NO_x</p> <p><input type="checkbox"/> SO_x</p> <p><input type="checkbox"/> CO / CO₂</p> <p><u>Frequency:</u></p> <p><input checked="" type="checkbox"/> Annual</p> <p><input type="checkbox"/> Semi-Annual</p> <p><input type="checkbox"/> Quarterly</p>	
<p><input checked="" type="checkbox"/> Nuisance due to generation of obnoxious/unpleasant odor</p>	<p>Distance to nearest community:</p> <p><input checked="" type="checkbox"/> 0 to less than 0.5 km</p> <p><input type="checkbox"/> 0.5 to 1 km</p> <p><input type="checkbox"/> More than 1 km</p> <p>Is the wind direction blowing towards the nearest community most of the year?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p><input type="checkbox"/> Use environment-friendly deodorizer or odor masking substances</p> <p><input type="checkbox"/> Use sprays with natural / microbial disinfectants</p> <p><input type="checkbox"/> Apply soil cover daily</p> <p><input type="checkbox"/> Provide adequate buffer and/or planting of trees</p> <p><input checked="" type="checkbox"/> Others, specify</p>	<p><input checked="" type="checkbox"/> Regular monitoring for presence/absence of complaints</p>	

		A chimney will be installed to release the odor into the atmosphere where there is no one.		
<input checked="" type="checkbox"/> Nuisance due to noise generation	Distance to nearest community: <input checked="" type="checkbox"/> 0 to less than 0.5 km <input type="checkbox"/> 0.5 to 1 km <input type="checkbox"/> More than 1 km	<input checked="" type="checkbox"/> Properly operate and maintain all noise sources (e.g., vehicles, boiler, generator, etc.) <input type="checkbox"/> Install, when applicable, the appropriate noise control device/s (e.g., mufflers, silencer, sound barriers, etc.) <input type="checkbox"/> Implement appropriate operating hours <input type="checkbox"/> Provide adequate buffer and plating of trees <input type="checkbox"/> Others, specify 	<input checked="" type="checkbox"/> Regular monitoring for presence/absence of complaints <input type="checkbox"/> Regular monitoring of buffer zones	Noise level of air blower each units is 40dBA.
PEOPLE				
<input type="checkbox"/> Displacement of residents including indigenous people (if any) in the project site and within its vicinity <input type="checkbox"/> Enhanced employment and/or livelihood opportunities <input type="checkbox"/> Reduced employment and/or livelihood opportunities <input type="checkbox"/> Increased revenues for LGU	Size of population of host barangay: <input type="checkbox"/> ≤ 1,000 persons <input type="checkbox"/> >1,000 and ≤ 5,000 persons <input type="checkbox"/> >5,000 persons <input type="checkbox"/> Indigenous People Size: Classification of host barangay: <input type="checkbox"/> Urban	<input type="checkbox"/> Provide relocation/disturbance compensation packages <input checked="" type="checkbox"/> Prioritize local residents for employment <input checked="" type="checkbox"/> Promptly pay local taxes and other financial obligations <input checked="" type="checkbox"/> Regularly coordinate with LGU <input type="checkbox"/> Conduct prior consultation and coordination to minimize disruption on daily domestic activities and to ensure respect for IP rights and cultural practices <input type="checkbox"/> Ensure participation of IPs in consultations and dialogues	<input checked="" type="checkbox"/> Regular monitoring for presence/absence of complaints <input checked="" type="checkbox"/> Regular coordination with LGU <input type="checkbox"/> Others, specify	

Initial Environmental Examination (IEE) Check

Project Form for Waste Management Projects

<input type="checkbox"/> Disruption/ Competition in delivery of public services (e.g., education, peace and order, etc.) <input type="checkbox"/> Enhanced delivery of public services (e.g., education, peace and order, etc.) <input type="checkbox"/> Increase in traffic volume and worsening of traffic flow	<input type="checkbox"/> Rural Employment/Livelihood Opportunity Rate in the host Municipality: <input type="checkbox"/> High <input type="checkbox"/> Low Description: <div style="border: 1px solid black; height: 100px; width: 100%;"></div> Available services within/near the host barangay: <input type="checkbox"/> Schools (e.g. elementary, high school, college) <input type="checkbox"/> Health facilities (e.g., clinics, hospitals, etc.) <input type="checkbox"/> Peace and order (e.g., police outpost, Brgy. Tanod, etc.) <input type="checkbox"/> Recreation and sports facilities <input type="checkbox"/> Others, specify <div style="border: 1px solid black; height: 100px; width: 100%;"></div>	<input type="checkbox"/> Provide appropriate traffic/warning signs, lighting, etc <input type="checkbox"/> Others, specify <div style="border: 1px solid black; height: 100px; width: 100%;"></div>		
<input type="checkbox"/> Impacts on community health and safety <input type="checkbox"/> Others, specify <div style="border: 1px solid black; height: 100px; width: 100%;"></div>	Source of Risks: <input type="checkbox"/> Explosives : <div style="border: 1px solid black; height: 100px; width: 100%;"></div> <input type="checkbox"/> Flammable substances:	<input checked="" type="checkbox"/> Regularly coordinate with LGU <input type="checkbox"/> Provide appropriate warning signs, lighting and barricades, whenever practicable <input checked="" type="checkbox"/> Observe proper housekeeping <input type="checkbox"/> Provide on-site medical services for any emergency. <input type="checkbox"/> Participate in public awareness programs on	<input checked="" type="checkbox"/> Regular monitoring for presence/absence of complaints <input checked="" type="checkbox"/> Regular coordination with LGU <input checked="" type="checkbox"/> Regular submission of reports to concerned agency <input type="checkbox"/> Others, specify	

	<input type="checkbox"/> Toxic substances: <input type="checkbox"/> Others, specify	<p>health and safety</p> <input type="checkbox"/> Implement appropriate safety programs for both community and workers <input checked="" type="checkbox"/> Strictly comply with fire, safety and similar regulatory requirements <input type="checkbox"/> Others, specify		
<input type="checkbox"/> Destruction/disturbance of physical cultural resources. <i>(✓ if project site has been identified to have such by NM, NHCP, NCAA and LGUs)</i>	Physical Cultural resources within the vicinity of the project site:	<input type="checkbox"/> Implement appropriate protocols based on NM, NHCP, NCAA and LGU guidelines including those for chance finds (if any). Specify:	<input type="checkbox"/> Regular coordination with NM, NHCP, NCAA and LGU	