

Coastal & River

MANAGEMENT UNIT (MU)	ISSUE/IMPORTANCE	OBJECTIVE	ACTION/STRATEGY	RESPONSIBLE AGENCIES
MU03	<p>Eroding Coastline (northern) Cat 2</p> <ul style="list-style-type: none"> <li>• Coastal Protection</li> <li>• Setback</li> </ul>	<ul style="list-style-type: none"> <li>• To track shoreline changes, analyze seasonal impacts, identify flood &amp; erosion risks and support sustainable management.</li> <li>• Ensure new developments are positioned at a safe distance from the shoreline to allow for natural shoreline movement and protect properties.</li> <li>• Allow flexibility in setback policies to respond to changing shoreline conditions.</li> <li>• Enhance the effectiveness of setbacks by combining them with natural shoreline protection strategies.</li> <li>• Ensure that setbacks remain effective by regularly monitoring shoreline changes and adapting management practices.</li> <li>• Minimize the impact of new developments on the shoreline and support natural processes.</li> <li>• Raise awareness about the importance of setbacks and involve stakeholders in shoreline management efforts.</li> <li>• Ensure compliance with setback requirements and protect the shoreline effectively.</li> </ul>	<ul style="list-style-type: none"> <li>• Frequent observation</li> <li>• Preparation for strengthening coastal protection and other mitigation works (if necessary).</li> <li>• Develop Comprehensive Setback Guidelines, i.e., Conduct scientific assessments &amp; develop flexible setback guidelines</li> <li>• Incorporate Adaptive Setback Practices, i.e., Design setback areas with buffers &amp; Implement zoning regulations. <ul style="list-style-type: none"> <li>➢ Muddy Shoreline</li> <li>➢ With existing bunds; <i>Coastal setback follows the alignment of the bund.</i></li> <li>➢ In already developed areas; <i>Setback is defined by the seaward edge of the development.</i></li> <li>➢ In undeveloped mangrove areas; <i>Setback is established at the landward boundary of the mangroves.</i></li> <li>➢ Sandy Shoreline</li> <li>➢ Erosion occurs at a slower rate.</li> <li>➢ In unprotected areas: <i>Setback can be reduced to 30 meters.</i></li> </ul> </li> </ul>	JPS Melaka JPS Daerah

		<ul style="list-style-type: none"> <li>➢ Where roads or critical infrastructure exist: <i>Setback may be positioned seaward of existing structures.</i></li> <li>➢ In areas with revetments:</li> <li>➢ <i>Setback should align with the revetment line.</i></li> <li>➢ Setback lines in this study have been adjusted to allow for existing infrastructures and predicted movement of shorelines.</li> <li>• Integrate Natural Erosion Control Measures, i.e., Restore and protect natural habitats &amp; Plant native vegetation</li> <li>• Enhance Shoreline Monitoring and Management, i.e., Conduct periodic shoreline surveys &amp; Adjust setback requirements</li> <li>• Promote Sustainable Development Practices, i.e., Encourage low-impact development techniques &amp; Limit construction activities</li> <li>• Educate and Engage Stakeholders, i.e., Conduct outreach and education programs &amp; Involve stakeholders in planning and decision-making</li> <li>• Implement and Enforce Regulations, i.e., Enforce setback regulations &amp; Review and update regulations regularly</li> <li>• Setback determination shall be guided by the recommendations provided in the Decision Support System (DSS).</li> </ul>	
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### Marine Habitats and Biodiversity

The proposed development management strategies for marine habitats and biodiversity at MU03 are as follow.

MANAGEMENT UNIT (MU) (LOCATION)	MANAGEMENT OBJECTIVES	MANAGEMENT STRATEGIES	ISSUE/IMPORTANCE/REASON	RESPECTIVE/ RESPONSIBLE AGENCIES
• MU03 (Tg. Dahan and Sg. Baru)	Mangroves <ul style="list-style-type: none"> <li>• To facilitate mangrove regeneration by implementation of appropriate tools and methods.</li> </ul>	<ul style="list-style-type: none"> <li>• Rehabilitation, restoration and replanting of suitable mangrove species</li> </ul>	<ul style="list-style-type: none"> <li>• Mangroves serves various ecological importance such as providing protection and habitat for a wide diversity of aquatic species of different taxonomic groups.</li> <li>• Degradation of mangroves area due to developments may affect biodiversity in mangrove areas.</li> </ul>	<ul style="list-style-type: none"> <li>• Department of Forestry,</li> </ul>
• MU03 (Kg. Tengah, Kg. Baru and Teluk Belanga)	Turtle Nesting Beach <ul style="list-style-type: none"> <li>• To conserve and preserve turtle landing sites.</li> </ul>	<ul style="list-style-type: none"> <li>• Expedite plans to gazette turtle landing site as protected area.</li> <li>• Promote sustainable coastal development at turtle nesting beaches.</li> <li>• Provision of solid waste disposal infrastructure.</li> <li>• Increase the 'do not litter' signboards at turtle nesting beaches.</li> <li>• Promote turtle awareness and educational programmes in collaboration with relevant agencies.</li> <li>• No coastal reclamation projects allowed at or adjacent to turtle nesting beaches.</li> </ul>	<ul style="list-style-type: none"> <li>• Turtle landing/nesting sites in Kg. Tengah, Kg. Baru and Teluk Belanga</li> <li>• Turtles are susceptible to various stressors from rapid coastal developments and tourism activities i.e., noise disturbance, light spill, and potential solid waste disposal.</li> </ul>	<ul style="list-style-type: none"> <li>• Department of Fisheries,</li> <li>• NGOs,</li> <li>• Majlis Bandaraya Melaka Bersejarah (MBMB),</li> <li>• MOTAC Melaka,</li> <li>• Department of Town and Planning,</li> <li>• Developers.</li> </ul>
• MU03 (Kuala Sg. Baru)	Wildlife in Mangrove Forest <ul style="list-style-type: none"> <li>• To ensure the safety of public beaches/ river from wildlife attacks (e.g., crocodile).</li> </ul>	<ul style="list-style-type: none"> <li>• Promote awareness, education and safety programme about crocodile behaviour and habitats.</li> <li>• Installation of warning signboard (e.g. crocodile habitats) at respective beaches/ river.</li> </ul>	<ul style="list-style-type: none"> <li>• The presence of crocodiles in coastal areas/ river, especially recreational beaches pose a significant risk to tourism and public safety.</li> </ul>	<ul style="list-style-type: none"> <li>• PERHILITAN,</li> <li>• Majlis Bandaraya Melaka Bersejarah (MBMB),</li> </ul>

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	<ul style="list-style-type: none"> <li>• To reduce impact on human-wildlife conflicts.</li> </ul>	<ul style="list-style-type: none"> <li>• Promote sustainable coastal development at mangroves area.</li> <li>• Development of human-wildlife conflict management plan.</li> </ul>	<ul style="list-style-type: none"> <li>• Presence of wildlife (small mammals &amp; avifauna) in mangroves.</li> <li>• Presence of crocodiles in coastal areas especially at recreational beaches pose a significant risk to tourism and public safety.</li> <li>• Development activities could affect mangrove habitats and thus can cause potential human-wildlife conflicts. Human-wildlife conflict can result in the decline and potential loss of species due to habitat degradation, while communities can suffer from financial losses (ecotourism) and threats to public safety, livelihoods and property.</li> </ul>	<ul style="list-style-type: none"> <li>• NGOs.</li> <li>• PERHILITAN,</li> <li>• Majlis Bandaraya Melaka Bersejarah (MBMB),</li> <li>• Department of Town and Planning,</li> <li>• Developers.</li> <li>• NGOs.</li> </ul>

### Fisheries and Aquaculture

The proposed development management strategies for marine capture fisheries at MU03 are as follow.

MANAGEMENT UNIT (MU) (LOCATION)	MANAGEMENT OBJECTIVES	MANAGEMENT STRATEGIES	ISSUE/IMPORTANCE/REASON	RESPECTIVE/ RESPONSIBLE AGENCIES
• MU03 (Kg. Tengah and Kuala Sg. Baru)	Marine Capture Fisheries <ul style="list-style-type: none"> <li>• To ensure high standards of fish quality, enhanced food safety and nutritional value through provision of better fisheries infrastructures and facilities.</li> </ul>	<ul style="list-style-type: none"> <li>• Upgrade the fisheries infrastructures at respective fish landing points.</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of fisheries infrastructures at Kg. Tengah and Kuala Sg. Baru fish landing points.</li> </ul>	<ul style="list-style-type: none"> <li>• Department of Fisheries.</li> <li>• LKIM.</li> <li>• Melaka State Government.</li> </ul>
	• To ensure food security and safety.	<ul style="list-style-type: none"> <li>• Rehabilitation, restoration and replanting of suitable mangrove species in Kuala Sg. Baru.</li> <li>• Deployment of artificial reefs and Fish Aggregating Devices (FADs).</li> <li>• Promote sustainable coastal development through enhancement of fisheries habitat (eco-engineering structures).</li> <li>• No land reclamation projects allowed along the shoreline.</li> </ul>	<ul style="list-style-type: none"> <li>• Coastal development can cause negative impacts on fisheries resources and fishermen income.</li> </ul>	<ul style="list-style-type: none"> <li>• Department of Forestry,</li> <li>• Department of Fisheries,</li> <li>• Developers.</li> </ul>
• MU03 (Kuala Sg. Baru)	• To improve the navigation of fishing vessels at the affected areas.	<ul style="list-style-type: none"> <li>• Undertake maintenance dredging at the affected river mouths.</li> </ul>	<ul style="list-style-type: none"> <li>• Siltation issues in Kuala Sg. Baru prevented safe passage for fishing vessel during low tides.</li> </ul>	<ul style="list-style-type: none"> <li>• Department of Drainage and Irrigation.</li> </ul>
	• To promote sustainable fishing methods and practices.	<ul style="list-style-type: none"> <li>• Strengthen the surveillance and enforcement.</li> </ul>	<ul style="list-style-type: none"> <li>• Utilization of unsustainable fishing gear as a common fishing method practice.</li> </ul>	<ul style="list-style-type: none"> <li>• Department of Fisheries.</li> </ul>

## Water Quality

MANAGEMENT UNIT (MU) (LOCATION)	MANAGEMENT OBJECTIVES	MANAGEMENT STRATEGIES	ISSUE/IMPORTANCE/REASON	RESPONSIVE AGENCIES
MU03	<p>Erosion and Sediment Control</p> <ul style="list-style-type: none"> <li>• Control the sedimentation</li> </ul>	<ul style="list-style-type: none"> <li>• New activities that fall under the Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015 must submit the EIA report to the Department of Environment for approval.</li> <li>• New activities that do not fall under the Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015 shall submit their development proposal to the Local Authority and conditions on discharge should be imposed on the operators.</li> </ul>	<ul style="list-style-type: none"> <li>• MU03 is located between Tanjong Dahan and Pulau Kamat, spans a distance of approximately 5.5 kilometres.</li> <li>• Kuala Sungai Baru is the primary town within this management unit.</li> <li>• The water quality index (WQI) for MU03 is within the Good category for the year 2017 to 2018.</li> <li>• However, from the year 2019 to 2023, the WQI fell into the Moderate category.</li> </ul>	<ul style="list-style-type: none"> <li>• Department of Environment</li> <li>• Department of Agriculture</li> <li>• Department of Fisheries</li> <li>• Local Council and Authorities</li> <li>• Indah Water Konsortium (IWK)</li> <li>• National Water Services Commission (Suruhanjaya Perkhidmatan Air Negara, SPAN)</li> </ul>
	<p>Sewage Discharge</p> <ul style="list-style-type: none"> <li>• Control of sewage discharge</li> </ul>	<ul style="list-style-type: none"> <li>• Provision of Erosion and Sediment Control (ESCP) for land clearing activities</li> <li>• Submission of the ESCP plan to the Department of Irrigation and Drainage (DID) for approval prior to start of land clearing and earthwork activities</li> <li>• Provision of septic tanks in remote areas</li> <li>• Upgrading of existing sanitary facilities</li> <li>• Compliance to Malaysian Marine Water Quality Standard</li> </ul>		

		<ul style="list-style-type: none"><li>• Compliance to Standard Kebangsaan Kualiti Air Rekreasi Semulajadi dan Garispanduan bagi Pemantauan Air Rekreasi Semulajadi</li><li>• Compliance with Environmental Quality (Sewage) Regulations 2009</li></ul>		
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## Land Use

MANAGEMENT UNIT (MU) (LOCATION)	MANAGEMENT OBJECTIVES	MANAGEMENT STRATEGIES	ISSUE/IMPORTANCE/REASON	RESPECTIVE/ RESPONSIBLE AGENCIES
<b>Human Settlement</b>				
MU03	<ul style="list-style-type: none"> <li>To manage and control any land use changes along the coast</li> </ul>	<ul style="list-style-type: none"> <li>Define coastal zoning categories (including residential, commercial, conservation, and mixed-use areas).</li> <li>Establish zoning regulations</li> <li>Control the allowable density type for any development along the coast.</li> <li>Limit land conversion and approval for TOL permit</li> </ul>	<ul style="list-style-type: none"> <li>Increase of population along the coastline may impact the existing infrastructure (including road, utilities, and traffic)</li> </ul>	<ul style="list-style-type: none"> <li>MPAG</li> <li>PTD Alor Gajah</li> <li>PTG Melaka</li> <li>JKR</li> <li>JPS</li> <li>IWK</li> <li>SAMB</li> <li>TNB</li> </ul>
	<ul style="list-style-type: none"> <li>To prevent and control erosion.</li> <li>To ensure compliance with environmental regulations regarding hydraulic impact assessments and erosion control.</li> </ul>	<ul style="list-style-type: none"> <li>Construct proper erosion control structures such as retaining walls and sediment control barriers.</li> <li>Conduct regular hydrological studies to identify high-risk erosion zones.</li> <li>Enforce guidelines for land development near water bodies to minimize erosion risks.</li> </ul>	<ul style="list-style-type: none"> <li>Impact from the hydraulic can cause erosion to the settlement</li> </ul>	<ul style="list-style-type: none"> <li>JPS</li> </ul>
	<ul style="list-style-type: none"> <li>To reduce environmental impact caused by the construction activities on the site</li> </ul>	<ul style="list-style-type: none"> <li>Prepare an Environmental Impact Assessment (EIA) for any major projects along the coast (based on the DOE requirements).</li> <li>Manage thorough evaluations of EIA before approving construction projects.</li> <li>Adhere to the Environmental Managing Plan (EMP) recommendations as part of the mitigation major.</li> <li>Conduct periodical inspection during and</li> </ul>	<ul style="list-style-type: none"> <li>Any changes to land use due to construction may affect the environment.</li> </ul>	<ul style="list-style-type: none"> <li>MPAG</li> <li>DOE</li> </ul>

MANAGEMENT UNIT (MU) (LOCATION)	MANAGEMENT OBJECTIVES	MANAGEMENT STRATEGIES	ISSUE/IMPORTANCE/REASON	RESPECTIVE/ RESPONSIBLE AGENCIES
		after construction.		
	<ul style="list-style-type: none"> <li>• To monitor coastal development</li> </ul>	<ul style="list-style-type: none"> <li>• Conduct periodical inspection.</li> <li>• Regulate the law related to any developments along the coast.</li> <li>• Implement sustainable zoning regulations to prevent excessive land reclamation.</li> </ul>	<ul style="list-style-type: none"> <li>• Coastal development within Melaka coastline possesses adverse impacts towards adjacent mudflat areas.</li> </ul>	<ul style="list-style-type: none"> <li>• MPAG</li> <li>• PTD Alor Gajah</li> <li>• PTG Melaka</li> </ul>
<b>Forest And Mangroves</b>				
MU03	<ul style="list-style-type: none"> <li>• To regulate human activities in order to minimize environmental impact</li> </ul>	<ul style="list-style-type: none"> <li>• Establish guidelines for tourism, aquaculture, and infrastructure development.</li> <li>• Enforce regulations to control pollution, illegal logging, and encroachment.</li> </ul>	<ul style="list-style-type: none"> <li>• Existence of the human activities within the mangrove forest, and requires proper management</li> </ul>	<ul style="list-style-type: none"> <li>• FDPM</li> <li>• MPAG</li> </ul>

## Recreational & Tourism

MANAGEMENT UNIT (MU) (LOCATION)	MANAGEMENT OBJECTIVES	MANAGEMENT STRATEGIES	ISSUE/IMPORTANCE/REASON	RESPECTIVE/ RESPONSIBLE AGENCIES
<b>Activities</b>				
MU03	<ul style="list-style-type: none"> <li>To manage and control all the business activities to be legal in operations and follow the Standard Operating Procedures</li> </ul>	<ul style="list-style-type: none"> <li>Local authorities need to carry out enforcement operations on illegal business operations.</li> </ul>	<ul style="list-style-type: none"> <li>Licensing issues related to tourism involving buildings, sites and land use.</li> </ul>	<ul style="list-style-type: none"> <li>MPAG</li> </ul>
	<ul style="list-style-type: none"> <li>To implement zoning to separate different activities and prevent accidents.</li> </ul>	<ul style="list-style-type: none"> <li>Provide a gazette area for the water-sport activities such as windsurfing, kayaking, banana-boat rides, and scuba diving lessons.</li> <li>Establish clear safety guidelines and enforce regulations for all water sports.</li> </ul>	<ul style="list-style-type: none"> <li>There is no specific area that have been dedicated for water-sport activities.</li> </ul>	<ul style="list-style-type: none"> <li>MPAG</li> </ul>
<b>Attractions</b>				
MU03	<ul style="list-style-type: none"> <li>To preserve the scenic beauty and environmental quality of tourist areas.</li> </ul>	<ul style="list-style-type: none"> <li>Implement sustainable practices and stricter environmental regulations to reduce pollution and maintain cleanliness in key tourist zones</li> <li>Encourage the development of hotels and F&amp;B establishments beyond the Core Zone to promote balanced tourism distribution and alleviate congestion</li> <li>Implement sustainable practices and stricter environmental regulations to reduce pollution and maintain cleanliness in key tourist</li> </ul>	<ul style="list-style-type: none"> <li>Inappropriate condition of stalls at several beaches may have result to poor cleanliness and disrupt the scenic view.</li> <li>In some cases, there are huge waste collector provided at the beach which destroy the relaxing view of beach.</li> <li>Public toilets beaches that are unsupervised have a poor hygiene and not well ventilated.</li> </ul>	<ul style="list-style-type: none"> <li>MOTAC</li> <li>Tourism Malaysia</li> <li>MPAG</li> </ul>

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		<p>zones</p> <ul style="list-style-type: none"> <li>Develop and expand accessible beachfront public spaces and parks to enhance recreational opportunities and attract visitors</li> </ul>		
<b>Accessibilities</b>				
MU03	<ul style="list-style-type: none"> <li>To formalize and designate trails for vehicular transport.</li> </ul>	<ul style="list-style-type: none"> <li>Create a transit- friendly beaches of public transportation.</li> <li>Formalize and designate trails for vehicular transport.</li> <li>Improve transportation links, signage, and infrastructure to enhance accessibility to popular <i>ikan bakar</i> spots, promoting local cuisine and culture</li> </ul>	<ul style="list-style-type: none"> <li>Most of the beaches in Melaka have narrow road or do not have proper road for vehicle access to the beach at all.</li> <li>Limited access to <i>ikan bakar</i> dining spots</li> </ul>	<ul style="list-style-type: none"> <li>MOTAC</li> <li>Tourism Malaysia</li> <li>MPAG</li> </ul>
<b>Amenities</b>				
MU03	<ul style="list-style-type: none"> <li>To provide an adequate number of facilities and amenities to tourist usage</li> </ul>	<ul style="list-style-type: none"> <li>Upgrade utilities and regular maintenance amenities at tourist beaches to improve convenience and comfort for visitors</li> <li>Provide an effective signage that is clearly marked, simple and easy to find.</li> <li>Cater proper walkway accessibility along the shoreline and proper paved parking space for visitors.</li> </ul>	<ul style="list-style-type: none"> <li>Only few well-planned and upgraded beach provided facilities for the disabled.</li> <li>Only some parts of the beach areas are equipped with information resources for the swimmers and beachgoers. Providing it is crucial to avoid any emergencies cases and contact references.</li> <li>The provision of basic amenities has no uniformity in terms of design structure that can clearly outstands Melaka beaches.</li> </ul>	<ul style="list-style-type: none"> <li>MOTAC</li> <li>Tourism Malaysia</li> <li>MPAG</li> </ul>

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			<ul style="list-style-type: none"> <li>There are some beaches do not have a proper paved area for parking spaces; thus, it is vital in order to preserve the white sandy beach and nearby living creatures.</li> </ul>	
	<ul style="list-style-type: none"> <li>To enhance safety measures to ensure a secure and enjoyable visitor experience</li> </ul>	<ul style="list-style-type: none"> <li>Utilize surveillance cameras, panic buttons, and mobile alerts to enhance security.</li> </ul>	<ul style="list-style-type: none"> <li>The existence of wild crocodile in certain beaches fears the public</li> </ul>	<ul style="list-style-type: none"> <li>MOTAC</li> <li>Tourism Malaysia</li> <li>MPAG</li> </ul>
<b>Accommodations</b>				
MU03	<ul style="list-style-type: none"> <li>To provide sufficient and accommodation with add-on value for the best visitor experiences.</li> </ul>	<ul style="list-style-type: none"> <li>Introduction of high-end accommodation such as hotels and resorts along the Melaka coastline as to upgrade the facilities and ambience for the tourists' experience with Add-on Value</li> </ul>	<ul style="list-style-type: none"> <li>There have been complaints about the inadequate accommodation by the beach which is not as good to be the main attraction for visit purpose there.</li> </ul>	<ul style="list-style-type: none"> <li>MOTAC</li> <li>Tourism Malaysia</li> <li>MPAG</li> </ul>