

MANAGEMENT UNIT (MU) (LOCATION)	MANAGEMENT OBJECTIVES	MANAGEMENT STRATEGIES	ISSUE/IMPORTANCE/REASON	RESPECTIVE RESPONSIBLE AGENCIES
MU14	<b>Setback</b> <ul style="list-style-type: none"> <li>Necessary deviations to allow for existing infrastructures and predicted movement of shorelines.</li> </ul>	<ul style="list-style-type: none"> <li>Setback have been determined based on the coastal features and important infrastructure. Generally, the DID guidance of landward of the tree line 400m for mangroves and 60m landward of the Highest Astronomical Tide contour for sandy beaches is followed. However, deviations were necessary to allow for existing infrastructures such as roads and bunds where the authorities will be required to maintain the line. In such cases, the setback is placed landward of the infrastructure (see Appendix Bund Mangrove Cover and Setback).</li> <li>The DSS should be used to determine the setback required for future developments.</li> </ul>	<ul style="list-style-type: none"> <li>Allow for movement of the shoreline.</li> </ul>	<ul style="list-style-type: none"> <li>JPS</li> </ul>
	<b>Coastal Bund</b> <ul style="list-style-type: none"> <li>To keep record and update the bund levels.</li> <li>To maintain safe bund levels and making sure that the bunds are in good condition.</li> <li>Ease for bund improvement/repair.</li> </ul>	<ul style="list-style-type: none"> <li>All bund levels must be above 2.91m LSD. Carry out annual monitoring of bund levels and top up bunds where necessary. <ul style="list-style-type: none"> <li>Monthly monitoring of the bunds.</li> <li>Biannually bund level measurements</li> </ul> </li> <li>Carry out immediate improvement/repair on damaged and insufficient bund levels.</li> </ul>	<ul style="list-style-type: none"> <li>Insufficient information on the bund levels, for reaches that have coastal bunds.</li> <li>Seawater overtopping the bunds during HAT and storm surge.</li> </ul>	

		<ul style="list-style-type: none"> <li>• Check for mud lobster burrows. Where mud lobster burrows are allowing sea water to seep through the bund, the seepage must be plugged quickly.</li> </ul>	<ul style="list-style-type: none"> <li>• Bund damage due to storm surge, human activity and mud crabs.</li> <li>• Settlement of bund due to heavy vehicles.</li> </ul>	
	<b>Sea Level Rise</b> <ul style="list-style-type: none"> <li>• Maintain and improve the usability and performance of the tidal gates</li> <li>• To make sure that developments along the coastal area are constructed away from flood prone areas.</li> <li>• Developments along the shoreline must take into account Sea Level Rise.</li> </ul>	<ul style="list-style-type: none"> <li>• Existing drainage systems will require improvement or adaptation.</li> <li>• Pumps maybe required to assist in evacuation of flood water.</li> <li>• Bund levels will have to be increased.</li> <li>• Determine practical setbacks along the coastal area.</li> <li>• To include the sea level rise value (aside from wind setup, storm surge and wave runup) in the calculation of the platform/finish level of a design.</li> </ul>	<ul style="list-style-type: none"> <li>• Tidal gate usability and performance</li> <li>• Coastal flooding</li> </ul>	

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MU14	<b>Marine Capture Fisheries</b> <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 infrastructure at respective fish landing points (Teluk Rubiah, Kg. Permatang, Pasir Panjang, Sg. Limau and Batu 8)</li> </ul>	<ul style="list-style-type: none"> <li>Lack of fisheries infrastructure at most fish landing points</li> </ul>	<ul style="list-style-type: none"> <li>Lembaga Kemajuan Ikan Malaysia (LKIM)</li> </ul>
	<ul style="list-style-type: none"> <li>To improve the navigation of fishing vessels at the affected areas.</li> </ul>	<ul style="list-style-type: none"> <li>Undertake maintenance dredging with proper planning and mitigation measures</li> </ul>	<ul style="list-style-type: none"> <li>Siltation problem at Teluk Rubiah, Kg. Permatang, Pasir Panjang, Sg. Limau and Batu 8 have prevented safe passage for fishing vessel during low tides.</li> </ul>	<ul style="list-style-type: none"> <li>JPS</li> <li>Marine Department</li> <li>Department of Fisheries</li> </ul>
	<b>Aquaculture</b> <ul style="list-style-type: none"> <li>To minimize the potential of water quality degradation from aquaculture activities.</li> <li>To promote sustainable aquaculture practice</li> </ul>	<ul style="list-style-type: none"> <li>Provision of proper wastewater treatment facilities at aquaculture farms to reduce discharge of untreated water directly into the river.</li> <li>Regular maintenance of the treatment facilities.</li> <li>Encourage aquaculture farmers to get MyGAP certification.</li> </ul>	<ul style="list-style-type: none"> <li>Degradation of water quality due to the untreated wastewater discharge from brackishwater pond culture.</li> </ul>	<ul style="list-style-type: none"> <li>Department of Fisheries</li> </ul>

	<ul style="list-style-type: none"> <li>To promote sustainable aquaculture practice.</li> </ul>	<ul style="list-style-type: none"> <li>Promote programmes related to the restoration and replanting of suitable mangrove species</li> <li>Prohibition of new development plans within mangrove areas.</li> <li>Restoration of abandoned farms as an alternative to minimize the development of new aquaculture farms.</li> <li>Reforestation of abandoned shrimp farms.</li> </ul>	<ul style="list-style-type: none"> <li>Aquaculture activities or coastal modification contributes to mangrove degradation.</li> </ul>	<ul style="list-style-type: none"> <li>Department of Forestry</li> <li>Department of Fisheries</li> <li>PlaNMalaysia Perak</li> </ul>
	<ul style="list-style-type: none"> <li>To conserve natural spatfall and cockle farming area through protection of mudflat areas.</li> </ul>	<ul style="list-style-type: none"> <li>Mudflats and natural spatfall areas gazetted as fisheries protected area.</li> <li>Propose Aquaculture Industrial Zone (AIZ) for cockle farming.</li> </ul>	<ul style="list-style-type: none"> <li>Mudflat areas serve as important grounds for natural spatfall and cockle farming off Pasir Panjang to Tg. Kepah</li> </ul>	<ul style="list-style-type: none"> <li>Department of Fisheries</li> </ul>
	<b>Recreational Fisheries</b> <ul style="list-style-type: none"> <li>To improve recreational fisheries infrastructures and facilities.</li> </ul>	<ul style="list-style-type: none"> <li>Upgrade the recreational fisheries infrastructure at Kg. Permatang Upgrade/Add septic tanks/toilets</li> </ul>	<ul style="list-style-type: none"> <li>Limited recreational fisheries infrastructures and facilities at Kg. Permatang</li> </ul>	<ul style="list-style-type: none"> <li>Local Authority</li> </ul>
	<ul style="list-style-type: none"> <li>To promote good fishing practices in recreational fishing activities</li> </ul>	<ul style="list-style-type: none"> <li>Strengthen the surveillance and enforcement.</li> </ul>	<ul style="list-style-type: none"> <li>Unregistered fishing boat for recreational fishing activities can lead to unsustainable fishing and safety issues.</li> </ul>	<ul style="list-style-type: none"> <li>Malaysian Maritime Enforcement Agency</li> </ul>

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MU14	<ul style="list-style-type: none"> <li>Accelerate the growth of industry, tourism, agriculture and commercial</li> </ul>	<ul style="list-style-type: none"> <li>Promote high-value industrial activities</li> </ul>	<ul style="list-style-type: none"> <li>In line with the strategy in PIDAP which proposes 12 categories of high value industries that are viable to be developed in the State of Perak.</li> <li>To support the development of downstream industry activities that will complement the development of high-impact industries that are now operating in Manjung district.</li> <li>Able to increase the income of employees involved in the industry sector.</li> </ul>	<ul style="list-style-type: none"> <li>Manjung Municipal Council</li> <li>State Government</li> <li>UPEN</li> </ul>
		<ul style="list-style-type: none"> <li>Develop and upgrade infrastructure and support facilities for fisheries activities</li> </ul>	<ul style="list-style-type: none"> <li>Support and strengthen the long-term development of district fisheries activities and further develop the district's economy</li> </ul>	<ul style="list-style-type: none"> <li>Department of Fisheries</li> </ul>
		<ul style="list-style-type: none"> <li>Developing markets and collection centres for agricultural products</li> </ul>	<ul style="list-style-type: none"> <li>Support the long-term development of agricultural activities</li> <li>Increase the income of farmers or small planters.</li> </ul>	<ul style="list-style-type: none"> <li>Department of Agriculture</li> </ul>
	<ul style="list-style-type: none"> <li>Convince infrastructure reliability</li> </ul>	<ul style="list-style-type: none"> <li>Reduce the risk of flooding (channel improvement)</li> </ul>	<ul style="list-style-type: none"> <li>Ensuring durability and able to accommodate drainage carrying capacity</li> </ul>	<ul style="list-style-type: none"> <li>JPS</li> <li>Manjung Municipal Council</li> </ul>

		<ul style="list-style-type: none"> <li>• Improve utility manning capabilities involving broadband (High Speed Broadband HSBB)</li> </ul>	<ul style="list-style-type: none"> <li>• To increase the internet penetration rate by implementing High Speed Broadband (HSBB) programmes and plans for municipalities and major settlements.</li> </ul>	<ul style="list-style-type: none"> <li>• MCMC</li> </ul>
		<ul style="list-style-type: none"> <li>• Support creating a clean, conducive, and quality environment by improving sewerage system and solid waste management</li> </ul>	<ul style="list-style-type: none"> <li>• Facilitate management and operation of the sewer system with direct connection to the Local Centralized Sewage Treatment System.</li> </ul>	<ul style="list-style-type: none"> <li>• JPS</li> <li>• Manjung Municipal Council</li> <li>• IWK</li> </ul>
	<ul style="list-style-type: none"> <li>• Improving the quality of liveability</li> </ul>	<ul style="list-style-type: none"> <li>• Providing sufficient and affordable housing (Pasir Panjang public housing plan)</li> </ul>	<ul style="list-style-type: none"> <li>• Building low-cost housing to help low-income individual who cannot afford to buy and rent their own homes</li> </ul>	<ul style="list-style-type: none"> <li>• Manjung Municipal Council</li> <li>• Perak State government</li> <li>• Perak Housing &amp; Property Authority (LPHP)</li> </ul>
		<ul style="list-style-type: none"> <li>• Provide adequate, quality and easily accessible community facilities (Educational facilities)</li> </ul>	<ul style="list-style-type: none"> <li>• Increase in the number of schools to meet the needs and increase in current students.</li> <li>• To provide opportunities for talented students in the Manjung District to continue their education in boarding school</li> <li>• Increase the number of IPT and options for students.</li> <li>• Based on the approved committed development.</li> <li>• Replacement of classrooms and other facilities in SJK (T) Pangkor that have been used and damaged.</li> <li>• Based on the development project proposal by the Perak SUK Office.</li> </ul>	<ul style="list-style-type: none"> <li>• Manjung Municipal Council</li> </ul>

		<ul style="list-style-type: none"> <li>• Provide adequate, quality and easily accessible community facilities (religious facilities)</li> </ul>	<ul style="list-style-type: none"> <li>• The construction of new mosques is to meet the needs of the people based on the proposed new development.</li> <li>• Based on the approved committed development.</li> </ul>	
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The major land use in MU14 is agriculture which include palm oil plantation, aquaculture activities and rubber. These activities are very encouraging for economic growth, as mentioned in table above. This can also create employment opportunities for the locals as there are settlement areas in MU14.

However, economic growth initiatives will be incomplete if there are no support facilities in place to ensure that economic activities run smoothly. It is very important to ensure the adequateness of facilities including facilities for fisheries activity and proper solid disposal.

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MU14	<b>Mangroves</b> <ul style="list-style-type: none"> <li>To protect, conserve and rehabilitate the mangrove areas.</li> <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 at the affected areas.</li> </ul>	<ul style="list-style-type: none"> <li>Degradation of mangroves area at some part within Perak coastline due to the coastal erosion.</li> </ul>	<ul style="list-style-type: none"> <li>Department of Forestry</li> </ul>
		<ul style="list-style-type: none"> <li>Promote programmes related to the restoration and replanting of suitable mangrove species.</li> <li>Provision of buffer zone between mangrove and development areas.</li> <li>Restoration of abandoned farms as an alternative to minimize the development of new aquaculture farms.</li> <li>Reforestation of abandoned shrimp farms.</li> </ul>	<ul style="list-style-type: none"> <li>Potential mangrove forest degradation due to coastal and aquaculture developments.</li> </ul>	
	<b>Mudflat</b> <ul style="list-style-type: none"> <li>To protect and conserve the mudflat areas.</li> </ul>	<ul style="list-style-type: none"> <li>Minimize coastal developments in respect to mudflat areas.</li> </ul>	<ul style="list-style-type: none"> <li>Coastal development within Perak coastline possesses adverse impacts towards adjacent mudflat areas.</li> </ul>	<ul style="list-style-type: none"> <li>Pejabat Tanah dan Galian (PTG) Perak</li> </ul>
		<ul style="list-style-type: none"> <li>Mudflats and natural spatfall areas gazetted as fisheries protected area.</li> </ul>	<ul style="list-style-type: none"> <li>Mudflat areas serve as important grounds for natural spatfall and cockle farming.off Pasir Panjang to Tg. Kepah</li> </ul>	<ul style="list-style-type: none"> <li>Department of Fisheries</li> </ul>



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MU14	<ul style="list-style-type: none"> <li>Control of effluent, sewage and wastewater discharge from the industrial sector, agricultural and residential areas.</li> </ul>	<ul style="list-style-type: none"> <li>Promote the use of biological control and more environmentally friendly/biodegradable pesticides and herbicides.</li> <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> <li>Existing activities that are found to cause pollution by discharging untreated effluent and wastewater shall be warrant with a stop work order.</li> </ul>	<ul style="list-style-type: none"> <li>Effluent, sewage and wastewater discharge</li> </ul>	<ul style="list-style-type: none"> <li>Department of Environment</li> <li>Department of Agriculture</li> <li>Local Council</li> <li>Indah Water Konsortium</li> </ul>