

# Port of Geraldton Coastal Processes Management Plan

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# COASTAL PROCESSES MANAGEMENT PLAN

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## Acronyms and abbreviations

<b>BCM</b>	Batavia Coast Marina
<b>BCH</b>	Benthic Communities and Habitats
<b>BCHMT</b>	Benthic Communities and Habitats Management Target
<b>BCHMA</b>	Benthic Communities and Habitats Management Action
<b>CGG</b>	City of Greater Geraldton (formerly CoG)
<b>CoG</b>	City of Geraldton
<b>CH</b>	Commercial Harbour
<b>CMU</b>	Coastal Management Unit
<b>CP</b>	Coastal Processes
<b>CPMP</b>	Coastal Processes Management Plan
<b>CPMT</b>	Coastal Processes Management Target
<b>CPMA</b>	Coastal Processes Management Action
<b>DE</b>	Development Envelope
<b>DEMP</b>	Dredge Environmental Management Plan
<b>DoT</b>	Department of Transport
<b>DPI</b>	Department for Planning and Infrastructure
<b>DPLH</b>	Department of Planning, Lands and Heritage
<b>DREMP</b>	Dredge and Reclamation Environmental Management Plan

<b>DWER</b>	Department of Water and Environmental Regulation
<b>EIA</b>	Environmental Impact Assessment
<b>EMP</b>	Environmental Management Plan
<b>EO</b>	Environmental objective
<b>EP Act</b>	<i>Environmental Protection Act 1986</i>
<b>EPA</b>	Environmental Protection Authority
<b>FBH</b>	Geraldton Fishing Boat Harbour
<b>ILUA</b>	Indigenous Land Use Agreement
<b>JAWG</b>	Joint agency working group
<b>PEP</b>	Geraldton Port Enhancement Project and Preparatory Works for the Town Beach Foreshore Redevelopment
<b>PER</b>	Public Environmental Review
<b>the Port</b>	Port of Geraldton
<b>Port Reserve</b>	The Port of Geraldton Reserve 25300
<b>PMaxP</b>	Geraldton Port Maximisation Project
<b>MEQ</b>	Marine Environmental Quality
<b>MEQMP</b>	Marine Environmental Quality Management Plan
<b>MOU</b>	Memorandum of Understanding
<b>MS600</b>	Ministerial Statement 0600
<b>MWPA</b>	Mid West Ports Authority
<b>MWDC</b>	Mid West Development Commission
<b>NACC</b>	Northern Agricultural Catchments Council
<b>NBSP</b>	Northern Beaches Stabilisation Program
<b>SS</b>	Social Surroundings
<b>SSMA</b>	Social Surroundings Management Action
<b>SSMT</b>	Social Surroundings Management Target
<b>SPP2.6</b>	State Planning Policy 2.6 – State Coastal Planning Policy
<b>WA</b>	Western Australia
<b>WACZS</b>	WA Coastal Zone Strategy
<b>YGSHA</b>	Yamatji Government Standard Heritage Agreement
<b>YSRC</b>	Yamatji Southern Regional Corporation

## 1 Executive summary

This Coastal Processes Management Plan (CPMP) has been developed in accordance with the Environmental Protection Authority’s (EPA) guidance (EPA 2024a), to replace and expand the 2006 Northern Beaches Stabilisation Program (NBSP). The NBSP was a proponent commitment made during the EPA assessment of the *Geraldton Port Enhancement Project and Preparatory Works for the Town Beach Foreshore Redevelopment* in 2002 (the PEP) and approved under Ministerial Statement 0600 (MS600). This plan updates management and monitoring programs relevant to the NBSP to reflect new understandings of coastal processes and incorporates insights gained from 22 years of sediment management under the NBSP. This CPMP seeks to re-establish a Joint Agency Working Group (JAWG) for the ongoing joint management of Geraldton’s coastline. The plan requires ongoing monitoring, routine sand bypassing and the implementation of maintenance dredging activities to mitigate potential impacts to Port operations and benthic communities and habitats (BCH). However, this plan does not address the environmental monitoring and management requirements of these maintenance dredging activities, which are addressed separately. The CPMP will be reviewed in consultation with the City of Greater Geraldton (CGG), Department of Transport (DoT), and Department of Planning, Lands and Heritage (DPLH).

<b>Proposal Name</b>	Geraldton Port Maximisation Project (PMaxP)
<b>Proponent name</b>	Mid West Ports Authority (MWPA)
<b>EPA Assessment No.</b>	2488
<b>Purpose of the CPMP</b>	Outline the ongoing monitoring and mitigation strategies that must be implemented to manage the cumulative impacts of the PEP and PMaxP developments on coastal processes within the Geraldton Region.
<b>CPMP Environmental Factors &amp; Objectives</b>	<p>The CPMP environmental objectives (EO) and management targets (MT) for coastal processes (CP), benthic communities and habitats (BCH) and social surroundings (SS) management are:</p> <p><b>Objective 1: Maintain natural coastal processes while minimising sediment accumulation and migration within port navigable waters.</b></p> <p><u>CP Management Targets:</u></p> <ul style="list-style-type: none"> <li>• CPMT1: Maintain northern beaches profiles within historical range to achieve a long-term dynamic equilibrium.</li> <li>• CPMT2: Maintain an agreed profile for Pages Beach.</li> <li>• CPMT3: Mean annual Northern Beaches sand nourishment volume of 19,000 m<sup>3</sup>, when available.</li> <li>• CPMT4: Maximise return of clean sediments to the natural coastal systems north of the Port to provide ongoing environmental benefits.</li> <li>• CPMT5: No long-term sediment accumulation within or adjacent to existing and proposed Port infrastructure.</li> </ul> <p><b>Objective 2: Minimise disturbance to BCH and ensure no significant loss due to Port induced changes in sediment transport.</b></p> <p><u>BCH Management Targets:</u></p> <ul style="list-style-type: none"> <li>• BCHMT1: No loss of BCH cover attributable to Port induced changes in sediment transport.</li> </ul> <p><b>Objective 3: Maintain public safety and minimise social impacts while enhancing community awareness of coastal processes.</b></p> <p><u>SS Management Targets:</u></p> <ul style="list-style-type: none"> <li>• SSMT1: Collaborate with local coastal management stakeholders to maximise beneficial uses of sediment.</li> </ul>

## 2 Context, scope and rationale

### 2.1 PORT OF GERALDTON

#### 2.1.1 General description

The Port of Geraldton (the Port) is located approximately 430 km north of the Western Australian (WA) capital city of Perth on the Mid West coastline. The Port is situated at the southern extent of Champion Bay adjoining the Geraldton Town Foreshore. The Port has been vested in the Mid West Ports Authority (MWPA) to manage and maintain in accordance with the *Port Authorities Act 1999* (WA) and *Port Authorities Regulations 2001* (WA). The Port provides critical supply chain infrastructure that facilitates the exports and imports associated with the mining, agriculture and fishing sectors within the WA Mid West region.

The Port consists of marine infrastructure that support a Fishing Boat Harbour (FBH), Shipping Channel, Commercial harbour (CH), seven Berths; five of which are operational, a Tug Harbour, a tourism jetty, navigation aids, rock walls and land reclamation areas. Figure 1 below presents the key features of the Port.



Figure 1: Existing layout of the Port of Geraldton

MWPA manages coastal assets including land and waters within Reserve 25300 (the Port Reserve). Figure 2 depicts the land and waters of the Port Reserve; an area of 28,893 ha, extending from Point Moore to a point on the coast near Teakle Rd in the Shire of Northampton (approximately halfway between Woolawar Gully and Bowes River).

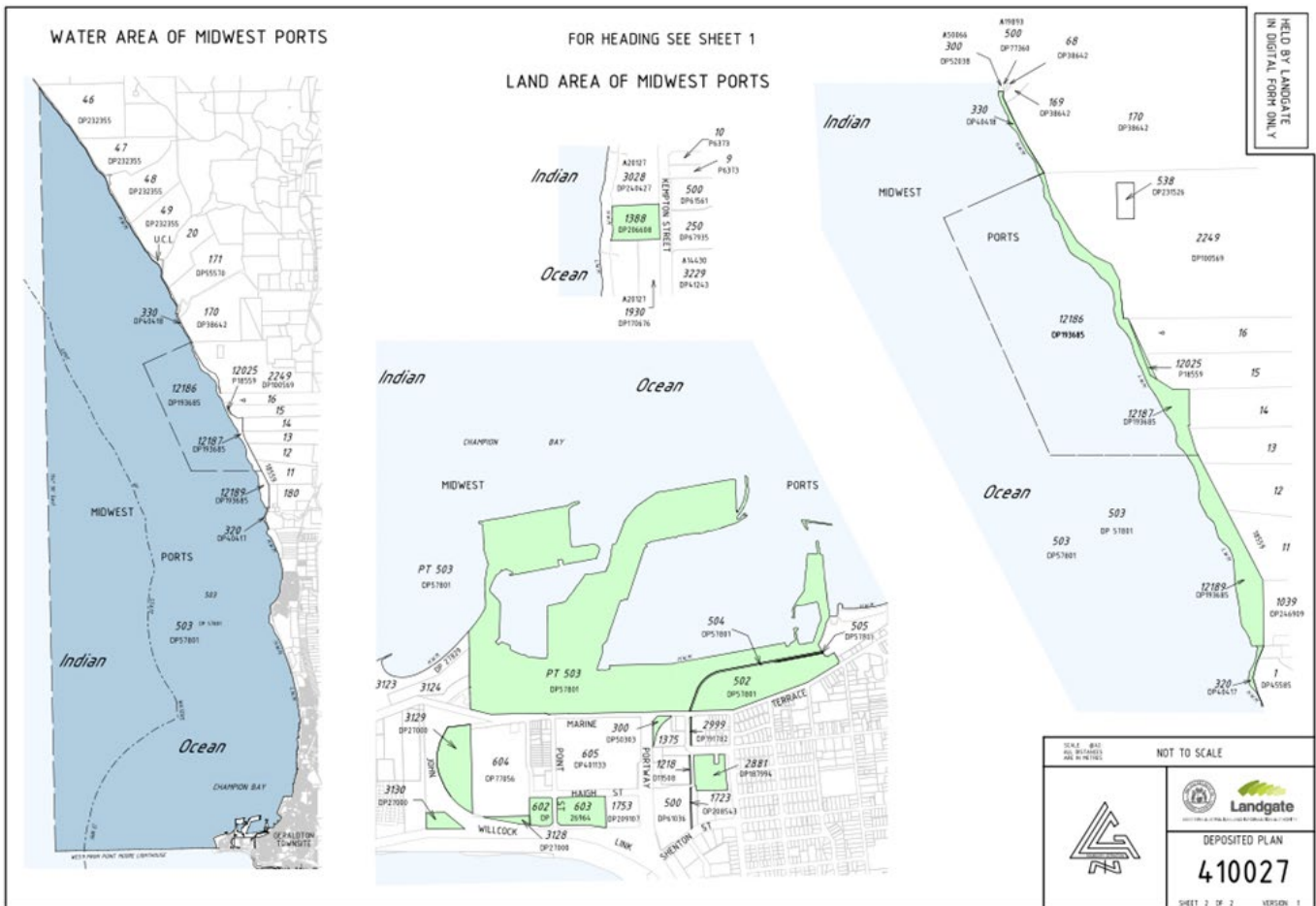


Figure 2. Port of Geraldton Reserve 25300 - land and waters of MWPA

## 2.1.2 Port Maximisation Project (PMaxP)

The PMaxP is a significant amendment to the Port Enhancement Project (PEP) subject of Ministerial Statement 600 (dated 2002). The PMaxP will modernise and improve the Port through the upgrade of existing facilities and construction of new and replacement facilities in optimised locations. PMaxP includes dredging and land reclamation, piling, and installation of a rock revetment (seawall) extending north from the existing Port footprint. Marine infrastructure includes new wharf decks related to new Berth 1 (relocated) and Berth 8/9, an extension of the existing Berth 6 wharf, and a new (relocated) tug harbour. A summary of the PMaxP, including both existing and proposed elements is provided in Table 1.

Table 1. Key proposal characteristics – approved and proposed (SLR 2024a)

Approved Proposal (PEP) extent	Proposed Amendment (PMaxP) extent
<b>Dredging</b>	
Deepen harbour basin from 9.3 metres depth to 12.1 metres depth.	Berth 1 Maintenance dredge: Up to 18,000 m <sup>3</sup> within a 1.2 ha dredge footprint
	Capital dredge (Berth 1): Up to 23,000 m <sup>3</sup> within a 1.5 ha dredge footprint to -13.4 mCD
	Capital dredge (Berth 6): Up to 98,000 m <sup>3</sup> within a 1.3 ha dredge footprint to -13.4 mCD
	Capital dredge (Berth 8/9): Up to 88,000 m <sup>3</sup> within a 2.1 ha dredge footprint to -13.4 mCD

Approved Proposal (PEP) extent	Proposed Amendment (PMaxP) extent
<p>Access channel:</p> <ul style="list-style-type: none"> <li>• Deepen to between 12.5 m at the inshore end, and 14.2 m to 14.7 m at the offshore end.</li> <li>• Widen from 90 m to 200 m at the straight entrance to the harbour basin, from 150 m to 230 m wide around the corner, and from 150 m to 200 m along the outer straight.</li> </ul>	<p>Capital dredge (tug harbour): Up to 31,000 m<sup>3</sup> within a 3.0 ha dredge footprint to -7.6 mCD</p> <p>No change.</p>
<b>Dredge spoil disposal</b>	
<p>Dispose of approximately 3.5 million cubic metres of dredged limestone material offshore to the south-west of Point Moore in sand veneered pavement habitat, between 25 m and 30 m deep to create artificial rock lobster habitat reefs.</p>	<p>No offshore disposal.</p> <p>Dredge spoil to be disposed to existing onshore disposal areas within the Port or used for land reclamation.</p>
<b>Reclamation</b>	
<p>Reclaim land adjacent to existing northern breakwater.</p> <p>Up to 0.4 million cubic metres of dredged material will be pumped directly into the northern reclamation area to provide future hard standing and cargo storage capacity for two future berths adjacent to the northern breakwater.</p>	<p>Extend reclaimed land area north of existing northern reclaim area.</p> <p>Material will be conveyed to the area north of the existing (approved) northern reclamation area to extend the reclamation area to provide future storage and laydown areas and create the new tug harbour spoil disposal area. The reclamation may consist of dredge spoil, depending on quality, supplemented by imported fill.</p>
<p>Reclaim land within eastern breakwater and sand nourishment of Town Beach</p>	<p>No change.</p>
<b>Breakwaters</b>	
<p>Remove 50 m from the western end of the outer breakwater (seal rocks) and relocate the rocks adjacent to the channel entrance to form an 'L'-shape.</p>	<p>No change.</p>
<p>Remove existing northern breakwater on the western side of the port entrance and relocate it some 50 m to the west and extend it a further 200 m north.</p>	<p>Widen and extend breakwater on west side of Port access channel 150 m to entrance to the proposed tug harbour.</p> <p>Extend breakwater from western side of existing northern reclaim by 450 m to the north to form the outer seawall of the proposed tug harbour.</p>

Approved Proposal (PEP) extent	Proposed Amendment (PMaxP) extent
Eastern Breakwater: <ul style="list-style-type: none"> <li>• Fill deep hole north of Geraldton Port Authority recreational boat harbour with marine sands from harbour entrance using small cutter suction dredge.</li> <li>• Construction of new eastern breakwater between the Geraldton Port Authority Recreational Boat Harbour and almost to the outer breakwater but leaving a 10 m wide water buffer.</li> </ul>	No change.
Construction of beach stabilisation groynes in Town Beach: <ul style="list-style-type: none"> <li>• The existing breakwaters at Town Beach will be lengthened by approximately 50 m.</li> <li>• A new groyne will be constructed on the north-west corner of the Batavia Coast Marina.</li> </ul>	No change.
<b>Marine infrastructure</b>	
Modify wharves to access the deeper harbour basin. Install navigational aids.	Up to three new wharf decks (Berth 1, Berth 8/9) Two jetties (tug harbour) Extension of existing Berth 6 wharf deck.
Install new navigational aids to mark the external boundaries of the widened channel.	No change.
<b>Other infrastructure</b>	
Construction of railway line on eastern breakwater: <ul style="list-style-type: none"> <li>• Up to 1 km of double railway track from the grain unloading facility to end of the eastern breakwater.</li> </ul>	No change.

The PMaxP has a disturbance footprint of up to 38 ha within a 75 ha Development Envelope (DE). Of this, 18 ha is a new footprint and the remaining 20 ha is within the existing Port. Figure 3 (below) provides a visual reference.

From an operational perspective, implementation of the PMaxP does not result in a throughput increase.



Figure 3: PMaxP Proposed development

### 2.1.3 Ministerial Statement 600 and the Northern Beaches Stabilisation Program

The Port has been developed iteratively since 1874. The most recent major Port development (the PEP) was approved under MS600. The Public Environmental Review (PER) document for the PEP noted that the Port and other coastal infrastructure in Geraldton had been impacting the northern beaches since (at least) 1942 (URS 2001). In the PER the Port committed to the following:

- Signing a Memorandum of Understanding (MoU) with the City of Geraldton (CoG) [now City of Greater Geraldton (CGG)] for ongoing collaboration in coastal management.
- Monitoring the stability of Town Beach at a frequency agreed with the CGG.
- Conducting stabilising works for the town beaches including ongoing sand nourishment ‘as required’ to stabilise beach profiles.
- Developing and implementing a ‘Northern Beaches Stabilisation Program’ in agreement with CGG and Department for Planning and Infrastructure (DPI) now separated into Department of Transport (DoT) and Department of Planning Lands and Heritage (DPLH).

#### The NBSP remains the only outstanding operational condition from MS600.

The NBSP mechanically bypasses sand (via truck) from Pages Beach (directly west of the Port) to the beaches extending north from Batavia Coast Marina (BCM) to the mouth of the Chapman River. The purpose of the NBSP is to mitigate predicted changes in the sediment transport regime, expected to exacerbate existing erosion problems brought about by the deepening of the Port’s Shipping Channel during the implementation of the PEP.

### 2.1.4 Purpose of this plan

As the PMaxP is considered a significant amendment to the PEP, and coastal processes are considered a key factor for the environmental assessment, an updated CPMP (this plan) is required to outline the ongoing mitigation strategies that must be implemented to manage the cumulative impacts of the PEP and PMaxP developments to coastal processes.

Recent hydrodynamic modelling studies and over 20 years of monitoring data have substantially increased the understanding of the complex coastal systems around Geraldton (see Section 2.4.3). MWPA have therefore taken the opportunity to integrate learnings from these sources into this updated CPMP. A key being to maximise the beneficial use of any clean sediments recovered during maintenance dredging programs for return to the natural coastal processes north of the Port. In preparing this plan MWPA has adopted the PIANC (2009) approach to 'sustainable relocation' of sediments, defining Sustainable Sediment Management as:

*'the removal of accumulated sediments from marine infrastructure for return to the nearshore coastal system; to maintain or supplement sediment supply and sustain the natural coastal processes.'*

(PIANC 2009a, 2009b)

## 2.2 KEY ENVIRONMENTAL FACTORS

### 2.2.1 Coastal processes

This section outlines the existing environment, including historical impacts of the PEP and the anticipated impacts of the PMaxP on coastal processes within the Geraldton region.

#### 2.2.1.1 Existing environment

The sediment transport cells and limits of the coastal processes discussed within this plan align with DoT secondary sediment cell R07F15 defined for Point Moore to Glenfield Beach (Stul et. al., 2014, [Figure 4 below]) and the sediment management units between West End and Sunset Beach defined in the CGG Coastal Management Plan (UDLA, 2023b, Figure 10).

Champion Bay is characterised as a high-energy coastal environment influenced by a range of dynamic factors, including waves, tides, swell, currents, winds, and the morphology and composition of the seabed. These elements, combined with the presence of benthic ecosystems, contribute to complex nearshore sediment transport processes. The Port is recognised as a sediment sink within sediment transport cell R07F15.

Physical elements of the Port including rock walls, reclaimed land, and the main shipping channel and (to a lesser extent) the BCM, act as a barrier to longshore transport of sediment. The interaction between coastal processes and elements of the Port can result in sediment accretion within port waters and against reclamation rock walls.

Sediment accumulation can impact the operational efficiencies of the port and pose a navigational risk if left unmanaged. It is noted in the PER for the PEP that the interruption of longshore sediment transport has been an ongoing coastal management issue causing erosion at the beaches adjacent to the Chapman River mouth since at least 1942 (URS, 2001).

An assessment by MP Rogers and Associates in 2019 estimated the total volume of sediment arriving at Pages Beach to be in the order of 19,000 m<sup>3</sup> per annum. This has since been validated by MWPA's Coastal and Marine Engineer via historical beach volume calculations. Since approximately 2015 (when Pages Beach reached maximum sediment holding capacity) sediment which has not been artificially bypassed by the NBSP has migrated around the FBH Northern Reclaim and into the mouth of the FBH, resulting in the need for regular maintenance dredging and sea bed levelling campaigns in this area.

Appendix A presents the indicative sediment budget used by MWPA to develop this plan.

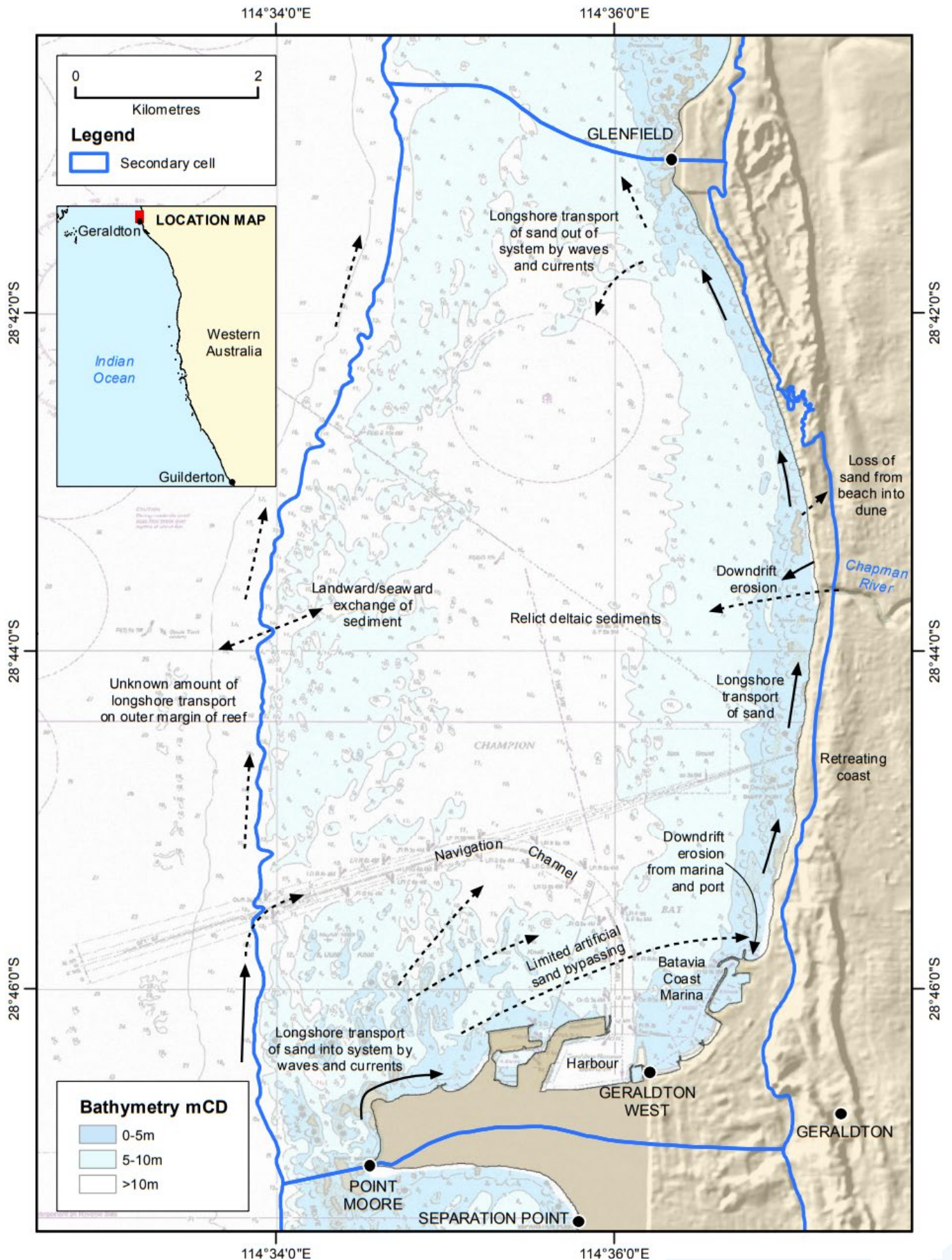


Figure 4: Secondary sediment cell R07F15 (Stul et. al. 2014)

### 2.2.1.2 Impact of the PEP

The modelling undertaken in support of the PEP (CES 2001), predicted:

- The deepening of the shipping channel would result in increased wave energy striking the coast north of the BCM and south of the Chapman River.
- It was predicted this could double the sediment transport capacity, eroding beaches immediately north of the BCM, as well as increasing the potential net sediment transport north of the Chapman River by up to 20%.
- The PER noted that due to the existing modified environment in Geraldton no additional areas of erosion were anticipated but changes to the rate of erosion could be expected (URS 2001).
- An unintended consequence of the PEP development was the interaction between the incident wave climate and the shipping channel. The increased depth and width of the main shipping channel caused Long Period Waves (LPWs) to refract towards the harbour entrance resulting in an increased surge environment within the harbour basin. When unfavourable ocean conditions occur, the resulting surge can be so extreme the port is closed to shipping and ships relocate to anchorages to wait for surge conditions to subside.

Figure 5 is taken from detailed coastal processes modelling undertaken by Royal Haskoning DHV on behalf of MWPA between 2021 and 2023 (RHDHV 2023a, 2023b). The conceptual model accounts for the complex coastal processes occurring in Geraldton including interaction with the existing (deepened) shipping channel and harbour basin as approved under the PEP.

### 2.2.1.3 Impact of the PMaxP

Figure 6 presents the conceptual model for the same coastal processes as modelled under the PMaxP development scenario (RHDHV 2024). The processes described are largely similar as the primary sediment sinks are the existing Port development and the existing shipping channel. Key impacts attributed to the PMaxP development include:

- Increased potential sediment deposition directly west of the new tug harbour outer breakwater with the potential to impact benthic communities and habitats (including seagrass meadows) if not actively managed.
- Changes to the distribution of sedimentation around the FBH (moving slightly further offshore).
- Reduced wave heights and wave energy in the area east of the new breakwater (at the town beaches and BCM) anticipated to confine future longshore transport of sand to within 40m of the water line (making the existing groyne structures more effective in containing/stabilising the beaches).
- Minor rotation of the town beaches due to wave diffraction caused by the extended breakwater.

**The above impacts are not considered significant in the context of the existing modified coastal environment of Geraldton but will require ongoing management to mitigate long term impacts (this plan).**



Figure 5: Conceptual coastal processes model prior to PMaxP development (RHDHV 2023b)

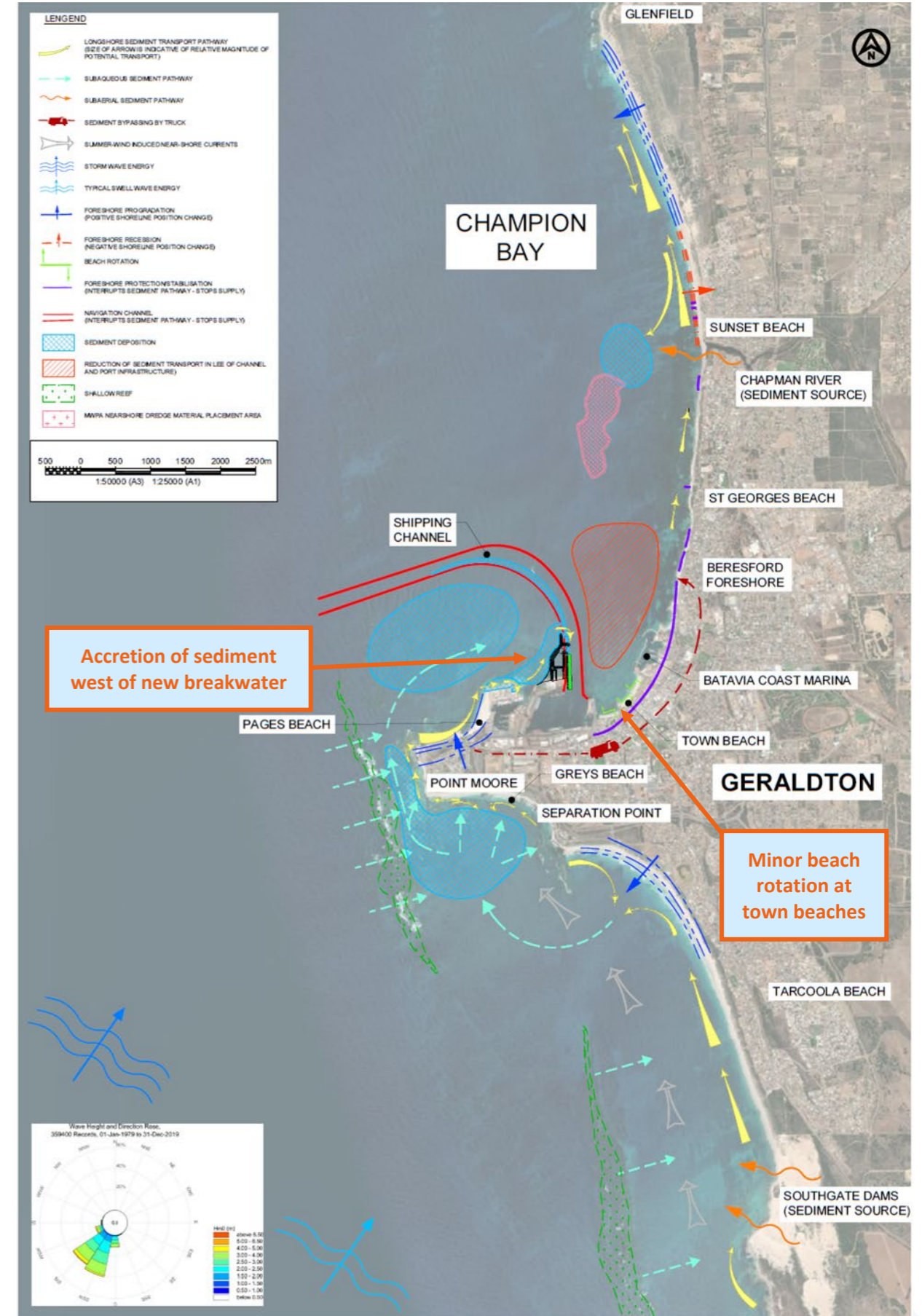


Figure 6: Conceptual coastal processes model post PMaxP development (RHDHV 2024)

## 2.2.2 Benthic communities and habitats

This section outlines the existing BCH and anticipated impacts of the PMaxP development caused by changes to coastal process as described in Section 2.2.1.3. It does not address potential impacts to BCH that may result from the PMaxP dredging and construction activities. These will be managed via a dedicated Dredging and Reclamation Environmental Management Plan (DREMP) including a Marine Environmental Quality Management Plan (MEQMP) and are beyond the scope of this plan.

Where this plan triggers the requirement for maintenance dredging activities (to mitigate impacts to Port infrastructure or BCH), risks to BCH posed by those maintenance dredging activities will be addressed in project specific Dredge Environmental Management Plans (DEMPs) and are beyond the scope of the PMaxP and this plan.

### 2.2.2.1 Existing environment

Champion Bay is a highly dynamic marine environment dominated by strong wind and swell generated currents. The bay is mostly natural with anthropogenic modification generally limited to coastal modification in the south and south-east, including land reclamation, the Port, marinas, rock groynes and the shipping channel. BCH are highly diverse throughout the bay and include mixed seagrass communities, mixed seagrass and macroalgal communities, low to high relief limestone reefs and mobile sand sheets overlaying limestone pavements (O2 Marine 2024).

In 2020 MWPA commissioned AECOM to undertake broadscale mapping of Champion Bay. Figure 7 presents the results of the AECOM (2020) mapping campaign. In 2024, in support of the PMaxP, MWPA commissioned SLR to conduct updated BCH mapping for the PMaxP development with a focus on areas of direct impact and adjacent communities. The SLR (2024b) results indicate:

#### Seagrasses (see Figure 8)

- The area including and adjacent to the PMaxP development was characterised by soft sediment and moderately dense patchy seagrass, with sparse macroalgae interspersed throughout. Soft sediment was recorded at all sampling sites, with an absence of hard substrate throughout this location.
- Of the 92 sites sampled within this area, bare unconsolidated sediment was observed at 36% of these sites, with the remaining 64% having seagrass and / or macroalgae coverage. Seagrass and macroalgae were observed together at 10% of the sites sampled.
- Seagrass was observed at 45% of sites throughout the area with most of these sites located to the west of the proposal footprint. *Posidonia sp.* were clearly dominant throughout the area other seagrass taxa observed included *Halophila sp.*, *Syringodium sp.* and *Amphibolis sp.*
- The mean % cover of seagrass at sites (where observed) was 51% ( $\pm 3.6$  SE). Based on the natural neighbour interpolation model output, seagrass coverage and the density of seagrass was highest in the southwest portion of the area. Very little seagrass was observed around the existing breakwater and shipping channel, and mostly sparse cover of seagrass was present within the proposal footprint for the tug harbour and Berth 8/9. Similarly, seagrass was absent or observed at low density in the northern portion of the area

#### Macroalgae (see Figure 9)

- Macroalgae was observed at 28% of the sites sampled and were generally interspersed throughout much of the area with no apparent spatial pattern. Macroalgae was observed at sparser densities compared to seagrass with a mean % cover of 37% ( $\pm 3.6$  SE) at the sites where observed. The macroalgae taxa observed were mostly *Sargassum sp.* with some unidentified filamentous brown algae.
- Results from the interpolation model indicates that macroalgae cover was mostly sparse throughout the area with several small denser patches (25%-50% cover) observed within the southern extent of the location and near the northwest and northeast corners of the study area.

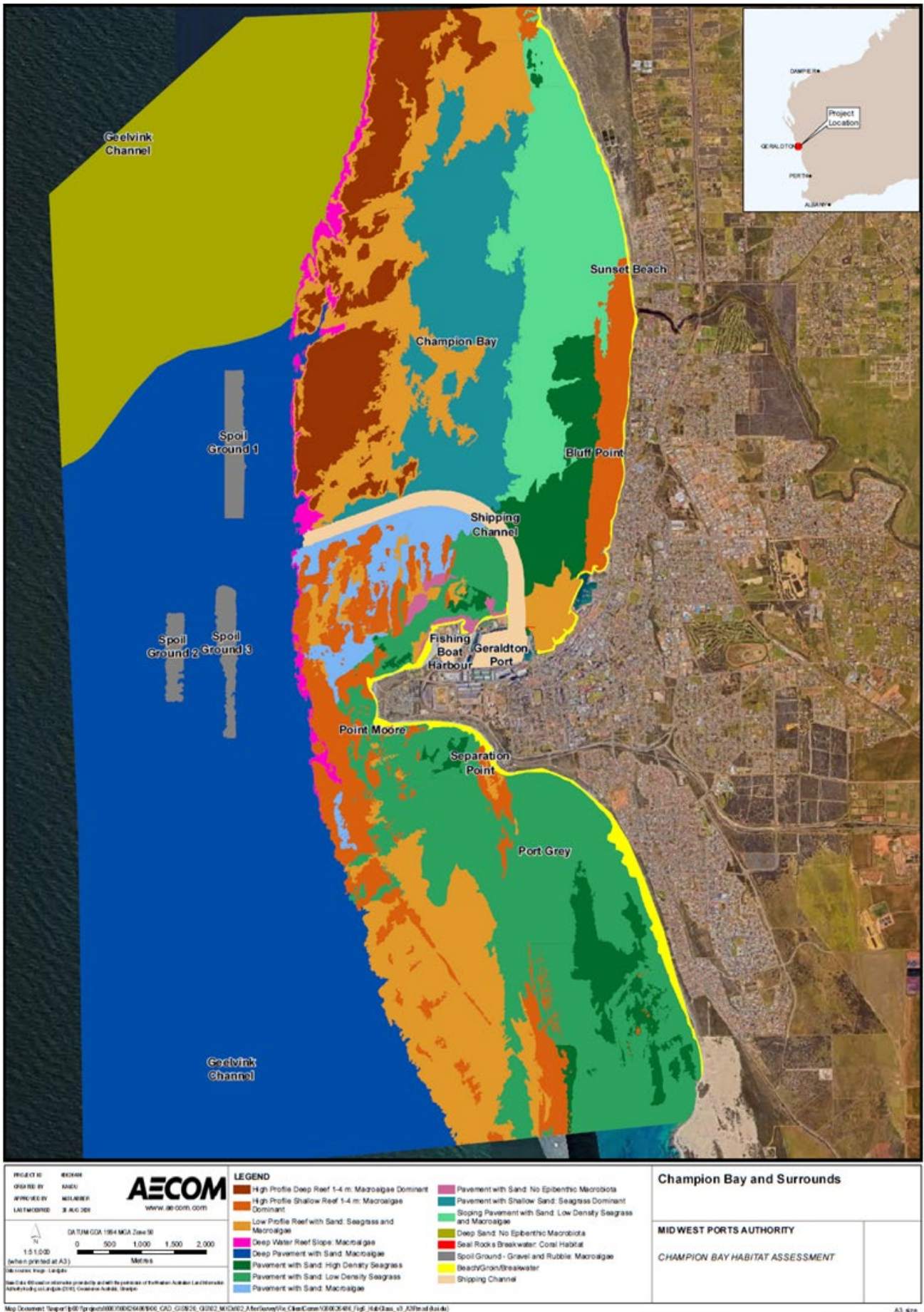


Figure 7: Benthic communities and habitats mapping (AECOM 2020)

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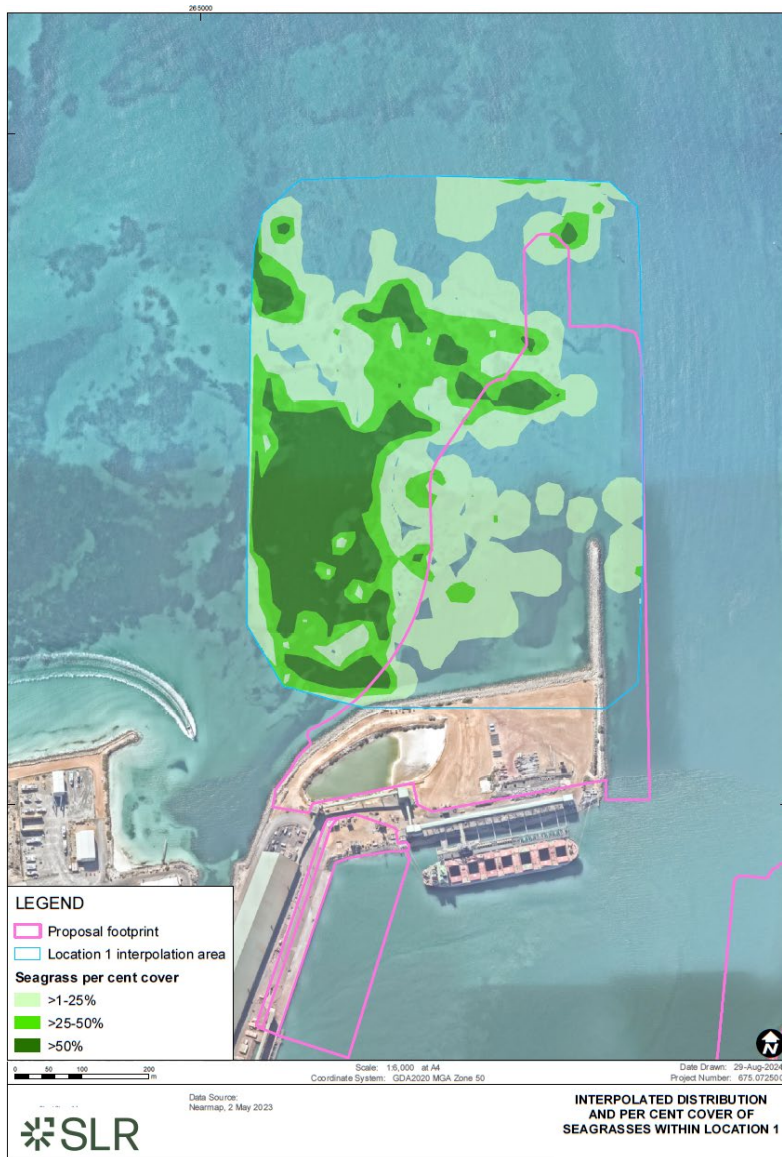


Figure 8: Interpolated distribution & cover of seagrasses adjacent to PMaxP DE (SLR 2024b)

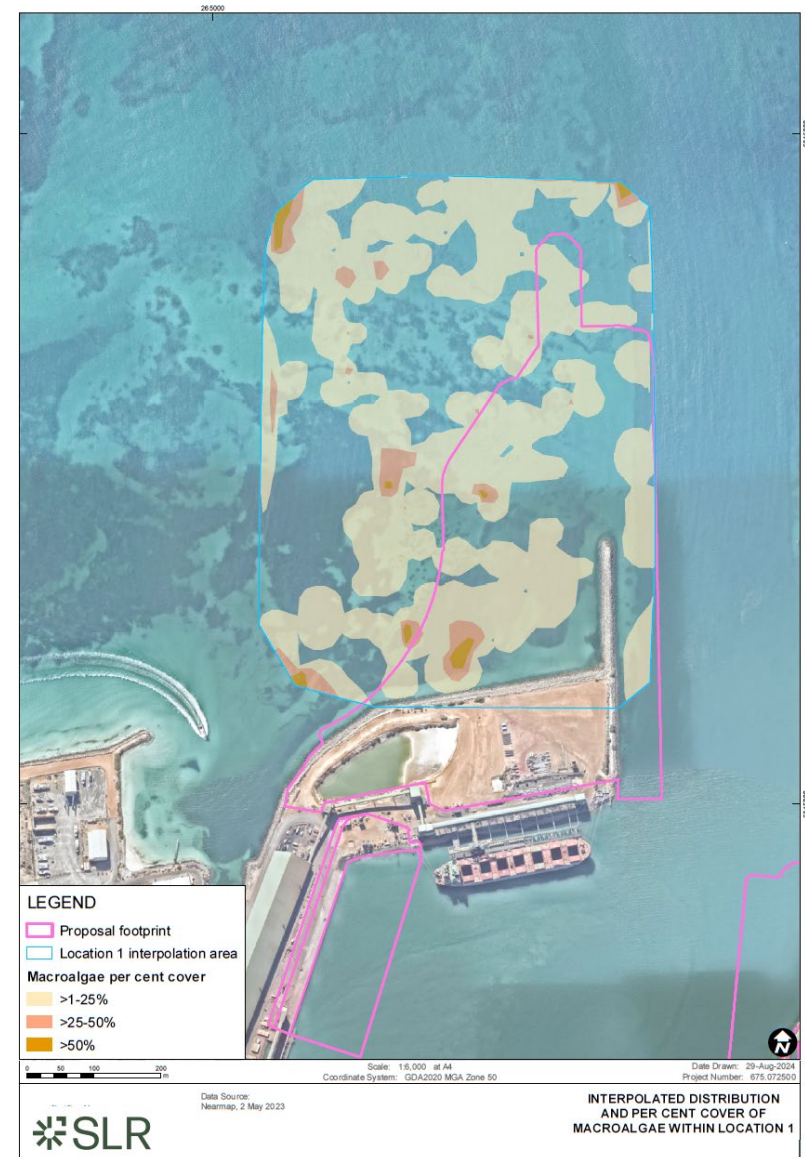


Figure 9: Interpolated distribution & cover of macroalgae adjacent to PMaxP DE (SLR 2024b)

### 2.2.2.2 Impact of the PMaxP

By combining the data presented in Section 2.2.1.3 (Figure 6) and 2.2.2.1 (Figure 8, Figure 9) it can be inferred that if sediments are allowed to accumulate on the western face of the new outer breakwater then smothering and loss of seagrasses and macroalgae beyond the PMaxP DE may be expected.

This plan therefore requires ongoing monitoring of sediment accretion surrounding port infrastructure.

- Maintenance dredging activities will be implemented based on the outcomes of the ongoing monitoring program to prevent the secondary loss of BCH beyond the PMaxP DE where sediment accumulation presents a risk to seagrasses and/or macroalgae.

## 2.3 OTHER ENVIRONMENTAL FACTORS

### 2.3.1 Social surroundings

Consistent with the EPA's decision to assess the PMaxP under Part IV of the EP Act (EPA 2024b), social surroundings is not considered a key factor of the PMaxP. However, MWPA acknowledge the historical focus of the NBSP, the potential impacts to coastal infrastructure, and social amenity of the wider coastal zone surrounding Geraldton. MWPA therefore consider that social surroundings are a significant aspect of the environment that require mitigation and management strategies in this plan to ensure that any associated risks remain low and acceptable.

#### 2.3.1.1 Existing environment

CGG are the primary stakeholder with responsibility for management of the coastal zone around Geraldton. In 2003 Geraldton Port Authority (GPA) [now MWPA] signed a memorandum of understanding (MoU) to support the Geraldton Town Beach and Foreshore Redevelopment. The MoU makes a commitment to collaboration between MWPA and CGG and clarifies the shared responsibilities for protection of community assets and the environment.

The MoU supports CGG and MWPA in considering the interests of the general community such that social benefits of those community assets are maintained and enhanced (GPA & CoG 2003). In developing this plan MWPA has considered the MoU as well as the following key aspects of the CGG coastal management approach:

#### 1. Coastal Hazard Risk Management and Adaptation Planning

Geraldton is a coastal city that offers its residents all the social, recreational, environmental and economic benefits of living and working near the ocean. Like all of Australia's coastal communities Geraldton is vulnerable to coastal erosion and inundation because of major storm surges, storm tides and sea level rise (CGG 2024). To help guide long term management of the coastal zone CGG has undertaken coastal hazard risk management and adaptation planning (CHRMAP) in accordance with Western Australia's *State Planning Policy 2.6 – State Coastal Planning Policy* (SPP2.6) (Baird 2019a, 2019b, 2019c).

The risk-based CHRMAP divides the coastal zones of greater Geraldton into 12 distinct Coastal Management Units (CMU's) from Cape Burney in the south to Drummond Cove in the north (see Figure 10 ). The UDLA (2023b) Foreshore Management Plan (FMP) addresses 10 of the 12 CMUs with recommendations for ongoing management of coastal assets. The FMP excludes the CMUs of Geraldton and Beresford (refer Figure 10) as these locations are managed under separate standalone documents.

#### 2. The Town Beach and Geraldton Foreshore (Geraldton CMU)

Geraldton prides itself on the coastal lifestyle the city offers. Central to this are the community focused areas of the Geraldton Town Beaches and Foreshore which stretch from the Port's Eastern Breakwater to the BCM (see Figure 3). The current layout of beaches and groynes which stabilise the area was approved and established under MS600, the full title of which is *Geraldton Port Enhancement Project and Preparatory Works for the Town Beach Foreshore Redevelopment*. As part of that development the Geraldton Port Authority (GPA) [now MWPA] committed to the ongoing monitoring and nourishment of the town beaches as required (see section 2.1.3).

This plan will continue to implement the commitments to monitor and nourish the town beaches made under MS600.

### **3. Beresford Foreshore (Beresford CMU)**

The *Beresford Foreshore Coastal Protection and Enhancement Project* was referred to the EPA by CGG in 2012. The EPA determined that the project did not pose a significant risk to environment as it could be readily managed through integration with the commitments made under MS600. This decision was appealed but the appeal was dismissed by the Minister for Environment on the advice of the Appeals Convenor due to the concurrent implementation of the NBSP, the Beach Monitoring Program, Seagrass Management and Monitoring Program and the Marine Mammal Management and Monitoring Program (EPA, 2012). The project was completed in 2018, by CGG in collaboration with DoT, MWPA and the Mid West Development Commission (MWDC), reducing the impacts of erosion on the Beresford Foreshore. MWPA continues to support CGG by supplying sand to nourish the Beresford foreshore and northern beaches consistent with the NBSP.

MWPA has designed the management provisions within this CPMP to facilitate this continued supply.

#### **2.3.1.2 Joint agency working group and the NBSP**

The NBSP was developed by a joint agency working group (JAWG) including CGG, MWPA, the DPI (now DoT and DPLH) and Department of Environmental Protection (DEP, now Department of Water and Environmental Regulation [DWER]) (refer Section 2.1.3). Under the NBSP the JAWG was intended to meet twice yearly (April and Sept) to review data and agree actions.

The JAWG operated under the NBSP to support the Geraldton Foreshore Redevelopment and the Beresford Foreshore Enhancement projects (above). Since the completion of the Beresford Foreshore Enhancement works in 2018 collaboration on the ongoing sand bypassing program has been on a 'per campaign' basis between CGG and MWPA only with limited involvement from the other JAWG partners.

This plan seeks to re-establish the JAWG under an agreed terms of reference, to facilitate collaborative decision making between coastal management entities and maximise the ongoing beneficial use of sediments within the Port Reserve.

#### **2.3.1.3 Aboriginal cultural heritage**

The Port Reserve (25300) sits within the Yamatji Nation Indigenous Land Use Agreement (ILUA) area signed between the Government of Western Australia and Yamatji Southern Regional Corporation (YSRC) under the *Native Title Act 1993* (Cth). MWPA acknowledge the traditional and ongoing connection to Champion Bay (known as Jambinbirri in the Wilunyu language) held by Yamatji people.

MWPA are committed to signing a Yamatji Government Standard Heritage Agreement (YGSHA) and working with YSRC to protect Yamatji culture and heritage within the Port Reserve. MWPA consider YSRC to be a key stakeholder in the ongoing management of the coastal zone and are working with the YSRC to determine which sediment management activities require formal activity notices under the YGSHA.

MWPA has established regular forums for updating YSRC on Port activities and is committed to long term collaboration with YSRC on management of the Port Reserve, including membership of the JAWG if considered beneficial by YSRC.



Figure 10: City of Greater Geraldton CMUs (after UDLA 2023b)

## 2.4 RATIONALE AND APPROACH

### 2.4.1 MWPA approach

MWPA operates under the *Port Authority Act, 1999* (WA) and associated regulations, and maintains an EMP applicable to the Port’s operations and services. Consistent with MWPA’s EMP, Environmental Policy, Climate Change Policy and sustainability goals, the development of a comprehensive sustainable sediment management strategy is recognised as an important tool to balance the demands of maritime commerce with the preservation of ecological values, ensuring the long-term viability of the Port, its customers and the community.



Figure 11. MWPA Sustainability Goals

In developing this CPMP, MWPA has established a series of high-level objectives designed to ensure all obligations and commitments associated with sediment management are being met. The sustainable sediment management objectives have been refined into three environmental objectives that align with the EPA factors addressed by this plan.

- **Coastal Processes Objective:** Maintain natural coastal processes while minimising sediment accumulation and migration within port navigable waters.
- **Benthic Communities & Habitats Objective:** Minimise disturbance to BCH and ensure no significant loss due to Port induced changes in sediment transport.
- **Social Surroundings Objective:** Maintain public safety and minimise social impacts while enhancing community awareness of coastal processes.

#### 2.4.1.1 Interaction of this plan with maintenance dredging activities

Recent hydrodynamic modelling studies and over 20 years of monitoring data have substantially increased the understanding of the complex coastal systems around Geraldton (see Section 2.4.3). MWPA have therefore taken the opportunity to integrate learnings from these sources into this updated CPMP. A key being to maximise the beneficial use of any clean sediments recovered during maintenance dredging programs for return to the natural coastal processes north of the Port. In support of this MWPA has adopted the PIANC (2009) approach to ‘sustainable relocation’ of sediments (see 2.1.4).

The overarching goal of this plan is to mitigate any potential impacts of Port development on coastal processes, particularly within Champion Bay and along the beaches north of the Port. The intent of the coastal monitoring and sand bypassing regime outlined in this plan is to minimise sediment accumulation within the Port’s operational areas and maximise the supply of clean sediment to the natural environment north of the Port.

However, despite proactive management efforts, sediment accumulation around Port infrastructure is unavoidable. This CPMP therefore requires the implementation of maintenance dredging activities to mitigate

potential impacts to BCH, maintain the operability of the Port, and to supplement the ongoing sand bypassing regime.

This plan does not seek to address the environmental monitoring and management requirements of these maintenance dredging activities. Rather this plan requires that:

- All maintenance dredging activities be forecast based on sediment accumulation rates (to allow for timely planning of maintenance dredging);
- The potential environmental impacts of these activities be assessed; and
- Project specific dredge environmental management plans (DEMPs) are developed to mitigate those impacts on a per project basis.

#### **2.4.2 Relevant coastal management plans, guidelines and policies**

The documents that are relevant to and used to inform the development of this CPMP include:

- *Memorandum of Understanding between Geraldton Port Authority (GPA) and City of Geraldton (CoG), 2003*
- *Deed of Agreement between City of Geraldton Greenough and Geraldton Port Authority, 2007*
- *Coastal Planning and Management Manual, WAPC 2003*
- *Geraldton Northern Beaches Stabilisation Program prepared for CoG, GPA and Department of Planning and Infrastructure, 2006*
- *Deed of agreement between City of Geraldton – Greenough and Geraldton Port Authority. CGG & GPA 2007*
- *Dredged Material as a Resource; Options and constraints. Report number 104-2009 (WG 104). PIANC, January 2009*
- *Dredging Management Practices for The Environment; a structured selection approach. Report number 100-2009 (WG 100). PIANC, January 2009*
- *Beresford Foreshore Master Plan prepared for CGG by Cardno, 2012*
- *Beresford Foreshore Coastal Protection Project: Public Advice issued by the Office of the EPA under the Environmental Protection Act 1986, March 2012*
- *Coastal Sediment Cells for the Mid-West Coast; Between the Moore River and Glenfield Beach, Western Australia. prepared for DoT, 2014*
- *Beresford Foreshore Coastal Protection and Enhancement Project Investigation prepared for CGG, MWPA, DoT by MP Rogers, 2015*
- *Coastal Hazard Risk Management and Adaptation Planning Guidelines. WAPC 2019*
- *State Coastal Planning Policy Guidelines. WAPC 2020*
- *State Coastal Planning Policy No 2.6. WAPC 2013*
- *WA Coastal Zone Strategy. WAPC 2021*
- *Geraldton Coastal Strategy and Foreshore Management Plan prepared for CGG (UDLA, 2023a, 2023b)*

#### **2.4.3 Relevant coastal processes studies and coastal protection investigations**

This CPMP is informed by key outcomes and findings of the following technical studies:

- *Geraldton PMaxP Sediment Transport Assessment PA3387-RHD-XX-XX-RP-X-000 Royal Haskoning DHV, (RHDHV 2024)*
- *Geraldton Coastal Processes Analysis Stage 1 Report: Data Review PA2153Stage1\_Final Report\_v2. Royal Haskoning DHV August 2023 (RHDHV 2023a)*

- *Geraldton Coastal Process Study Stage 2: Hydrodynamic Modelling, Stage 3: Sediment Transport Understanding, PA2153Stage2\_3 Final\_v4 Royal Haskoning DHV August 2023 (RHDHV 2023b)*
- *Geraldton Southern Transport Corridor (GSTC) and Greys Beach conceptual coastal protection strategy Stage 1 and 2 Adaption Strategy R1771 Rev 3, MP Rogers & Associates, 2023 (MRA 2023a)*
- *Greys Beach Coastal Monitoring Plan, Report R1804 Rev 1, M P Rogers & Associates June 2023 (MRA 2023b)*
- *Geraldton Coastal Hazard Risk Management and Adaptation Project, prepared for CGG by Baird, 2019 (Baird 2019a, 2019b)*
- *Geraldton Geophysical and Geotechnical Investigations; Analysis of Coastal Erosion for the Northern Beaches, prepared for CGG. Report number 12693.201.R1. Rev0 9 Sept 2019. Baird Australia 2019 (Baird 2019c)*
- *Pages Beach Sedimentation Desktop study Letter 19022 Rev 0, prepared for CGG by MP Rogers and Associates (MRA) 2019*
- *Annual NBSP Reports 2004 – 2023 prepared by MWPA for CGG*
- *MWPA sand bypassing records and beach volume calculations, MWPA Coastal Engineer; internal technical memo 2024*

#### **2.4.3.1 Summarised study findings**

While the studies above have varying scope, purpose and clients, key themes can be drawn from these studies that inform the sediment management approach adopted by MWPA:

- Significant sediment supply from the south results in accretion at Pages Beach. Sediment supply in this location is greater than the current 12,500 m<sup>3</sup> minimum annual bypassing under the NBSP. Accreted sediments will then transport into and around Port infrastructure if sediment supply is not actively managed (MRA, 2019, 2023a, 2023b, RHDHV 2023a, 2023b, 2024).
- Erosion is a significant problem at the northern beaches, particularly adjacent to and north of the Chapman River, where engineered foreshore stabilisation is not as extensive as in locations further south. The erosion in this location is attributed (in part) to a reduction in natural sediment supply for replenishment. Reduced natural replenishment of sediment by longshore transport can be attributed to the coastal infrastructure of Geraldton (including the Port) (Baird 2019a 2019b 2019c, RHDHV 2023a, 2023b, 2024).
- The coastal system at Geraldton is highly dynamic with significant variation in sediment transport rates year to year and seasonally (Baird 2019a, 2019b, 2019c, MRA 2019, 2023a, 2023b, RHDHV 2023a, 2023b, 2024).
- Adaptive management strategies which rely on comprehensive monitoring of sediment dynamics across the system and seek to mimic natural sediment transport processes are the best available ongoing management approach (Baird, 2019a, 2019b, 2019c, MRA 2019, MRA 2023a 2023b, RHDHV 2023a, 2023b, RHDHV 2024).

#### **2.4.4 Key assumption and uncertainties**

- It is important to note that the Baird reports on Geraldton erosion hotspots has referred to “Northern Beaches” when reporting on the coastlines between Bluff Point and Drummonds Cove. This is not the same management area as defined within the NBSP.
- As Pages Beach has filled and widened over time the community has grown to value this beach for recreational activities. The wide beach profile is likely to have altered the reflective wave energies that were previously generated along the exposed rock walls. This may be resulting in calmer conditions which are beneficial to both the public and seagrass meadows that have increased in density (BMT 2022). Therefore, the wider and longer beach may hold value for BCH and social surroundings that need to be considered when making sediment management decisions.
- MWPA is committed to maintaining sediment nourishment to the beaches north of the Port between the BCM and the Chapman River mouth and the Town Beach Foreshore as required. Any management beyond this would need to be jointly managed and financed by CGG as the responsible coastal management agency.

- Modelling of the nearshore inter and sub tidal areas is difficult. The resolution of the models used to date are believed appropriate but do not accurately account for how sediments interact with reef systems and swash zones within the transition zone between marine and land base transport systems.
- Higher resolution models of the reef systems and resulting coastal processes could give better results, though this would not be feasible over such a large area in terms of cost and computing time required.
- There remains uncertainty as to the relative contribution of local biogenic sediment production from seagrass meadows to the overall sediment budget compared to the contribution of Southgate Dunes. The overall output from these two sources determines the overall coastal stability and sediment output from the Geraldton sediment transport system.
- Sediment budgets developed by RHDHV are based on annual average “potential transport capacity” of the system. These sediment budgets are indicative only and actual rates of erosion and accretion vary significantly between seasons and years. Therefore, MWPA is committed to a mean annual sediment bypassing volume, rather than an annual minimum to account for natural variation in sediment transport rates, within the context of the indicative sediment budget outlined in Appendix A.

## 3 CPMP components

### 3.1 OBJECTIVE-BASED MANAGEMENT

This CPMP provides a framework for MWPA to systematically monitor and assess beach profiles, coastal sediment transport patterns, and sediment accumulation within Port operational areas. This information enables MWPA to implement appropriate management strategies to maintain navigational safety, protect infrastructure, and preserve coastal ecosystems within the Port Reserve. Monitoring and management provisions are focused on:

- Understanding and managing coastal processes and sediment transport systems,
- Maintaining Port operational efficiencies and navigable waters,
- Managing and mitigating impacts to BCH, and
- Actively engaging with relevant local coastal management authorities to build community understanding of and confidence in, MWPA’s approach to sustainable sediment management.

Uncertainty around long-term sediment supply, erosion and accretion rates, as well as the predicted impacts of climate change makes it difficult to quantify numeric criteria and/or thresholds for coastal processes and social surroundings specific to the potential impacts of MWPA’s sediment management activities.

Given the PMaxP is predicted to have a negligible impact on coastal processes and the impacts of the current port footprint are reasonably well understood and effectively managed under the existing NBSP, a continued objective-based management approach has been adopted in the CPMP in favour of an outcome-based plan.

Table 2 outlines the environmental objectives, management targets, management actions, monitoring programs reporting requirements and high-level responsibilities.

Table 2. Summary of CPMP Management Provisions

EPA Factor/Environmental Objective (EO)	Management Target (MT)	Management Actions (MA)	Monitoring	Reporting	Responsibilities		
<p><b>COASTAL PROCESSES</b></p> <p><u>CPMP Objective:</u></p> <p>Maintain natural coastal processes while minimising sediment accumulation and migration within port navigable waters.</p>	CPMT1: Maintain northern beaches profiles within historical range to achieve a long-term dynamic equilibrium.	CPMA1: Monitor beach profiles at established transect locations between S1 at Separation Point to N31 at Glenfield Beach.	<p><b>Indicators:</b></p> <ul style="list-style-type: none"> <li>- Calculated beach volumes.</li> <li>- Photographic monitoring.</li> <li>- Aerial imagery.</li> </ul> <p><b>Method:</b> Topographic Beach Profile surveys, NearMaps and PhotoMon subscriptions.</p> <p><b>Frequency:</b> Six monthly.</p>	<p><b>Annual Sustainable Sediment Management Report provided to CGG and DoT.</b> Inclusive of:</p> <ul style="list-style-type: none"> <li>- Beach stability trends and effectiveness of MA's.</li> <li>- Evaluating triggers (e.g., Northern beaches beach volume reductions) and review MA's as necessary.</li> <li>- Sediment accumulation trends at Pages Beach compared to model predictions,</li> <li>- MA effectiveness, and exceedances of asset management targets set for managing sediment accumulation within port limits.</li> <li>- Forecast annual sand bypassing target volumes and timing.</li> <li>- Maintenance dredge forecast volumes and timing.</li> <li>- Interim management actions (e.g. seabed levelling)</li> </ul> <p><b>Hydrographic and bathymetric survey reports</b></p> <p>Monitor sediment accumulation rates</p>	<ul style="list-style-type: none"> <li>• MWPA Assets &amp; Engineering Manager</li> </ul>		
	CPMT2: Maintain an agreed profile for Pages Beach.	CPMA2: Extract sand from Pages Beach at a rate greater than or equal to the rate of accretion, in agreement with CGG.					
	CPMT3: Mean annual northern beaches sand nourishment volume of 19,000 m <sup>3</sup> , when available.	CPMA3: Implement sand bypassing at required intervals to maintain sediment transport to the north of the port and to align with seasonal sediment movement.	<p><b>Hydrographic survey of:</b></p> <ul style="list-style-type: none"> <li>• Shipping channel</li> <li>• FBH entrance</li> <li>• Commercial harbour</li> </ul> <p><b>Monitoring of nearshore topography and bathymetry including:</b></p> <ul style="list-style-type: none"> <li>• Rock walls</li> <li>• Land reclamation areas</li> <li>• Lives beach accretion areas</li> </ul> <p><b>Indicators:</b></p> <p>Sediment accumulation rates.</p> <p><b>Frequency:</b></p> <p>Annually for the first 5 years, then as required based on accumulation rates observed over 5 years of data collection.</p>		<ul style="list-style-type: none"> <li>• MWPA Assets &amp; Engineering Manager</li> </ul>		
	CPMT4: Maximise return of clean sediments to the natural coastal systems north of the Port to provide ongoing environmental benefits.	CPMA4: Bypass a mean sediment volume of 19,000 m <sup>3</sup> annually, when available, to the northern beaches, in agreement with CGG.					
	CPMT5: No long-term sediment accumulation within or adjacent to existing and proposed Port infrastructure.	CPMA5: Monitor Port infrastructure including shipping channel, FBH entrance, and commercial harbour for accretion of sediment above design depths and widths.					
			CPMA6: Monitor sediments adjacent to Port infrastructure including rock walls, land reclamation areas and breakwaters for accretion and erosion which may impact ongoing port operations.				
			CPMA7: Implement maintenance dredging programs to maintain design depths and widths.		<p><b>Hydrographic &amp; bathymetric surveys</b> (above) will trigger the need for maintenance dredge planning.</p> <p><b>Project specific Dredge Environmental Management Plans (DEMP)</b> to specify monitoring requirements for maintenance dredging projects.</p>	<p><b>Project specific DEMP</b></p> <p>Specify monitoring and management requirements for maintenance dredging projects.</p> <p><b>DEMP implementation reports</b></p> <p>Summarise sediment quality and MEQ results and any MA's triggered.</p>	<ul style="list-style-type: none"> <li>• MWPA Assets &amp; Engineering Manager</li> <li>• MWPA Project Managers</li> <li>• MWPA Environment Manager</li> </ul>

EPA Factor/Environmental Objective (EO)	Management Target (MT)	Management Actions (MA)	Monitoring	Reporting	Responsibilities
<b>BENTHIC COMMUNITIES &amp; HABITATS (BCH)</b> <u>CPMP Objective:</u> Minimise disturbance to BCH and ensure no significant loss due to sediment management activities.	BCHMT1: No loss of BCH cover attributable to Port induced changes in sediment transport	BCHMA1: Map BCH adjacent to the Port	<b>Five Yearly BCH Mapping</b>	<b>BCH Mapping Report</b> Report on BCH distribution & mapping, comparison of observations to previous mapping data.	<ul style="list-style-type: none"> <li>MWPA Environment Manager</li> <li>MWPA Assets &amp; Engineering Manager</li> <li>MWPA Environment Manager</li> </ul>
		BCHMA2: Monitor sediments adjacent to Port infrastructure including rock walls, land reclamation areas and breakwaters for accretion and erosion which may impact BCH	<b>Hydrographic &amp; bathymetric surveys</b> (as per CPMA5 & CPMA6 above). <b>Indicators:</b> - Sediment accumulation rates.	<b>Hydrographic and bathymetric survey reports</b>  <b>DWER Compliance Report</b> Immediately report potential non-compliance to DWER	
		BCHMA3: Implement maintenance dredging programs to prevent impacts to BCH	<b>Hydrographic &amp; bathymetric surveys</b> (above) will trigger the need for maintenance dredge planning. <b>Project specific DEMPs</b> as per CPMA7.	<b>Project specific DEMP</b> Specify monitoring and management requirements for maintenance dredging projects. <b>DEMP implementation reports</b> Summarise sediment quality and MEQ results and any MA's triggered.	
<b>SOCIAL SURROUNDINGS</b> <u>CPMP Objective:</u> Maintain public safety and minimise social impacts while enhancing community awareness of coastal processes.	SSMT1: Collaborate with local coastal management stakeholders to maximise beneficial uses of sediment	SSMA1: Establish Joint Agency Working Group (JAWG) under an agreed Terms of Reference document.	<b>Indicators:</b> - Agreed JAWG Terms of Reference Document signed by all parties. - JAWG meeting minutes. <b>Frequency:</b> Ongoing.	<b>Annual Sustainable Sediment Management Report provided to CGG and DoT.</b> Inclusive of: - Beach stability trends and effectiveness of MA's. - Evaluating triggers (e.g., beach volume reductions) and review MA's as necessary. - Sediment accumulation trends at Pages Beach compared to model predictions, - MA effectiveness, and exceedances of asset management targets set for managing sediment accumulation within port limits. - Forecast annual sand bypassing target volumes and timing. - Maintenance dredge forecast volumes and timing. - Interim management actions (e.g. seabed levelling) <b>Public Annual Report</b> Summarise CPMP activities, spend and outcomes.	<ul style="list-style-type: none"> <li>MWPA Assets &amp; Engineering Manager</li> <li>MWPA Project Managers</li> <li>MWPA Environment Manager</li> </ul>

**Note:** Further details are provided on monitoring programs and reporting requirements in Section 4.

## 3.2 STAKEHOLDER CONSULTATION

### 3.2.1 Collaborative implementation of the CPMP

This CPMP recognises that the stewardship of the state’s coastal assets is a shared responsibility among state and local government, public and private organisations and natural resource management agencies. The CPMP seeks to re-establish a framework for a JAWG, as specified under the NBSP. The CPMP focuses on the CMUs between Pages Beach and the Chapman River Mouth (Figure 10).

The ownership, monitoring, maintenance and sediment management responsibilities for coastal assets within these CMUs are summarised in Table 3.

Table 3. Geraldton foreshore and state-owned coastal assets

Shorelines and Structures	Ownership	Monitoring Responsibility	Maintenance and Management Coordination Entity
<b>Pages Beach</b>	CGG Public Space MWPA within Port Reserve	MWPA	CGG MWPA
<b>FBH and Port Reclamation</b>	MWPA	MWPA	MWPA
<b>Harbours and Shipping Channel</b>	MWPA	MWPA	MWPA
<b>Eastern Breakwater (Esplanade)</b>	MWPA within MSIC CCG outside MSIC	MWPA CGG	MWPA CGG
<b>Tourism Jetty</b>	MWPA	MWPA	MWPA
<b>Boat Ramps</b>	CGG Town Beach DoT Marina	CGG DoT	CGG DoT
<b>Town Beach and Groynes</b>	CGG	CGG / MWPA	CGG / MWPA
<b>Batavia Coast Marina</b>	DoT	DoT	DoT
<b>Beresford &amp; Bluff Point Foreshores</b>	CGG	MWPA	CGG

### 3.2.2 Other stakeholders

MWPA has an established Community Consultation Committee with representatives from the YSRC, Northern Agricultural Catchments Council (NACC), CGG, Shire of Chapman Valley and various community groups. The committee meets quarterly, MWPA presents updates on port development, operations and community projects. Minutes of meetings are published to the MWPA website. As per Section 2.3.1.3 the Port Reserve sits within the Yamatji Nation ILUA area. Due to the significance of the coastal environment to Yamatji people and their ongoing connection to land and sea country MWPA is committed to working with YSRC to collaboratively manage the coastal environment of the Port Reserve.

## 4 Monitoring and reporting

### 4.1 MONITORING

Monitoring programs have been designed to substantiate the achievement of environmental sediment management objectives. provide further detail on specific monitoring programs. MWPA’s coastal processes monitoring programs assess performance against the following objectives:

- Maintain natural coastal processes while minimizing sediment accumulation and migration within port navigable waters.
- Minimise disturbance to BCH and ensure no significant loss due to sediment management activities.

Table 4. Coastal processes monitoring programs

Indicator	Method / Frequency	Location	Responsibility	Status
<b>Beach Profiles</b>	Land based topographic surveys <ul style="list-style-type: none"> <li>Twice yearly</li> </ul>	<ul style="list-style-type: none"> <li>23 transects between Separation Point to Point Moore (S1 to S19).</li> <li>9 transects on Pages Beach (P1 to P9)</li> <li>9 transects on Town Beach (T1 to T9)</li> <li>31 transects between Batavia Coast Marina and Glenfield Beach (N1 to N31)</li> </ul>	MWPA	<ul style="list-style-type: none"> <li>Ongoing</li> </ul> Monitoring commenced in 2004 under NBSP Refer Appendix A for transect locations
<b>Beach volume</b>	Calculated from beach profile changes <ul style="list-style-type: none"> <li>Annually</li> </ul>	<ul style="list-style-type: none"> <li>Pages Beach (P1 to P9)</li> <li>South Beresford (N7 – N11)</li> <li>North Beresford (N12-N14)</li> <li>Bluff Point to Chapman River mouth (N15-N23)</li> </ul>	MWPA	<ul style="list-style-type: none"> <li>Ongoing (refer Appendix A)</li> </ul>
<b>Sediment Accumulation</b>	Hydrographic Surveys <ul style="list-style-type: none"> <li>Annually</li> </ul>	<ul style="list-style-type: none"> <li>FBH Entrance, Main Shipping Channel and Commercial Harbour Basin.</li> </ul>	MWPA	<ul style="list-style-type: none"> <li>Ongoing</li> </ul>
	Monitoring of nearshore topography and bathymetry <ul style="list-style-type: none"> <li>Annually</li> </ul>	Sediment accumulation along: <ul style="list-style-type: none"> <li>Rock walls</li> <li>Land reclamation areas</li> <li>Lives beach accretion areas</li> </ul>	MWPA	<ul style="list-style-type: none"> <li>To commence as part of PMaxP</li> </ul>
<b>General Beach Conditions</b>	Photo Monitoring (NACC Photomon App) <ul style="list-style-type: none"> <li>Twice yearly</li> </ul>	<ul style="list-style-type: none"> <li>Pages Beach to Separation Point, locations as per MRA 2023b Figure 3.6</li> </ul>	MWPA	<ul style="list-style-type: none"> <li>Ongoing</li> </ul>
	Aerial Photography (NearMaps subscription) <ul style="list-style-type: none"> <li>Annually</li> </ul>	<ul style="list-style-type: none"> <li>Port Reserve</li> </ul>	MWPA	<ul style="list-style-type: none"> <li>Ongoing</li> </ul>
	Sand bypassing site inspection <ul style="list-style-type: none"> <li>Twice yearly</li> </ul>	<ul style="list-style-type: none"> <li>Pages Beach, Lives Beach, and Northern Beaches</li> </ul>	MWPA/CGG	<ul style="list-style-type: none"> <li>Ongoing</li> </ul> Per campaign
<b>BCH Mapping</b>	Combined aerial and satellite imagery assessment with ground truthing by towed camera survey <ul style="list-style-type: none"> <li>Five yearly (from 2020 baseline)</li> </ul>	<ul style="list-style-type: none"> <li>Champion Bay and surrounds as per AECOM 2020 mapping extent (see Figure 7).</li> </ul>	MWPA	<ul style="list-style-type: none"> <li>Ongoing</li> </ul> Next BCH mapping campaign scheduled for 2025

## 4.2 REPORTING

Table 5 sets out the CPMP reporting framework. Annual reports will analyse monitoring results and discuss trends to demonstrate how management targets and environmental outcomes are being achieved. In the event targets and objectives are not achieved, these compliance reports will provide a description of the effectiveness of revised and/or additional management actions implemented as per Section 5.

Table 5: CPMP reporting framework

Report	Frequency	Content	Prepared by	Submitted to
Ministerial Statement Compliance	Annual	<ul style="list-style-type: none"> <li>• <b>Performance Statement.</b> Assessment on whether environmental objectives are being achieved</li> <li>• <b>Monitoring Results.</b> Substantiating achievement of targets and validate performance statements</li> <li>• <b>Review and Adaptation.</b> Summary of review recommendations and management response</li> </ul>	MWPA	DWER
Ministerial Statement non-compliance	As required	<ul style="list-style-type: none"> <li>• Non-compliance with Management Targets and adapted management actions implementation in response</li> </ul>	MWPA	DWER
Sediment Management Report	Annual	<ul style="list-style-type: none"> <li>• <b>Beach Profile Monitoring</b> summarising trends and significant changes</li> <li>• <b>3-Year Sediment Management Forecast</b> updated with actual volumes from the current year surveys</li> <li>• <b>Sand Bypassed Volumes and Location</b> of Beach Nourishment for activities undertaken in the previous year</li> </ul>	MWPA	CGG / Joint Agency Working Group
MWPA Public Report	Annual	<ul style="list-style-type: none"> <li>• Overview of sediment management objectives and activities</li> <li>• Volume sand bypassed</li> <li>• Location of beach nourishment</li> <li>• Cost of beach nourishment activities</li> </ul>	MWPA	Portfolio Minister & Treasurer/ Published Publicly

## 5 Review and adaptive management

The CPMP monitoring programs inform decisions that support adaptive sediment management. MWPA, in consultation with CGG and the JAWG, will review the implementation of management actions to:

- Apply learnings from monitoring
- Evaluate performance against targets
- Implement measures to manage impacts on coastal processes, BCH and the social environment; and

- Validate model predictions.

A flexible and adaptive management approach is required due to the natural variability in sediment accretion and erosion rates over time.

## 5.1 ADAPTIVE MANAGEMENT APPROACH

MWPA will adapt management actions by:

- Systematic evaluation of model predictions (RHDHV and MP Rogers).
- Collaboration to enhance knowledge and understanding of coastal processes.
- Assessing and incorporating new guidelines and regulatory requirements.
- Adjusting monitoring and management based on performance reviews and stakeholder feedback.
- Annual review of CPMP effectiveness by the JAWG.
- Periodic assessment of monitoring methods to ensure impacts are being adequately measured and managed.

## 5.2 SIGNIFICANT REVIEW TRIGGERS

In accordance with the MWPA quality management system this document must be reviewed every five years from the last scheduled review date or sooner where major changes in facilities, activities, or environmental conditions affect CPMP adequacy.

The Document Custodian is responsible for conducting the review in accordance with **Controlled Documents Review and Approval Process Work Instruction**.

Where significant changes to the CPMP occur, the revised CPMP will be submitted to the EPA for approval if required.

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## 7 Associated MWPA documents

Document Title
Geraldton Fishing Boat Harbour Development Plan, Published March 2023 Available at <a href="#">FBH Development Plan » Mid West Ports</a>
Port of Geraldton Master Plan, Published June 2020. Available at <a href="#">Geraldton Port Master Plan » Mid West Ports</a>
Sand Bypassing Environmental Standard (Draft)

**Location** – Mid West Ports Website – <https://www.midwestports.com.au/>

## 8 Administration

Document Custodian: **Environment Manager**

Document Approver: **Chief Environmental, Social and Governance Officer**

Document Review Period: **5 years**

# Appendix A: Indicative Sediment Management Budget

## Potential sediment transport budget

**Note: Potential sediment transport capacity is an estimate of the total sediment carrying capacity of the system.**

Actual sediment transport rates are dependent on a combination of potential sediment transport capacity, and actual sediment load available for transport.

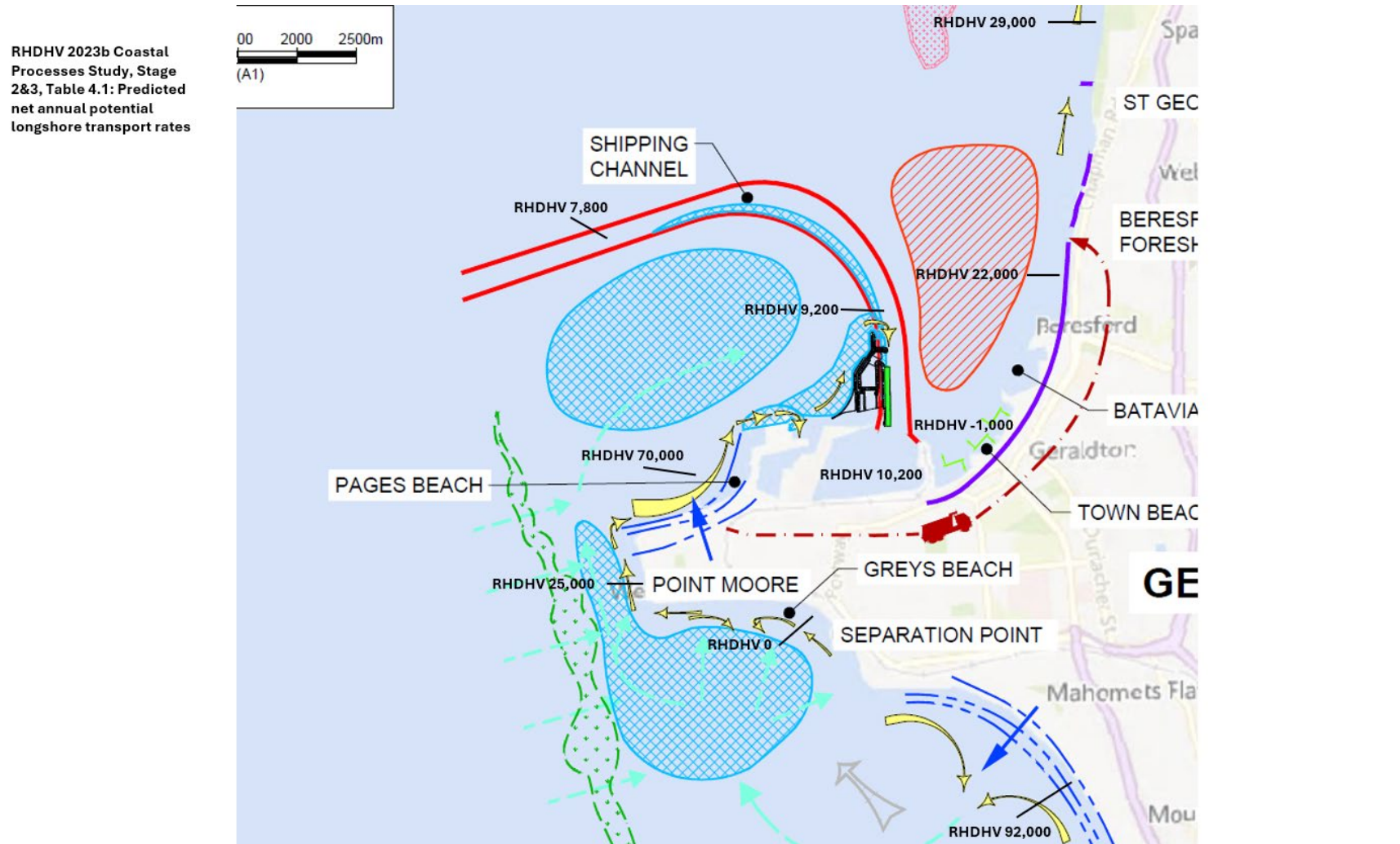


Figure A1: Modelled potential sediment transport capacity (m³) from Tarcoola Beach to Beresford (RHDHV 2023b)

RHDHV 2023b Coastal Processes Study, Stage 2&3, Table 4.1: Predicted net annual potential longshore transport rates

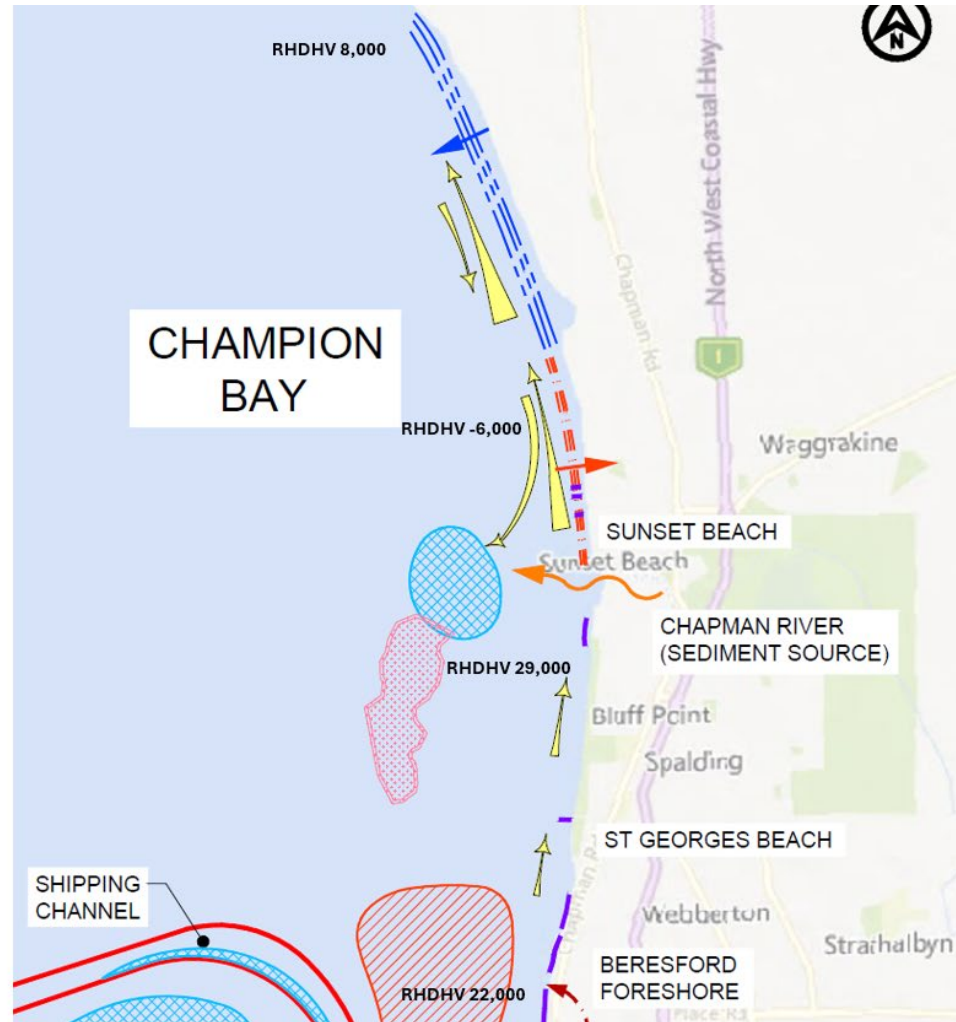


Figure A2: Modelled potential sediment transport capacity ( $m^3$ ) from Beresford to Glenfield Beach (RHDHV 2023b)

## Estimated actual sediment transport budget

MRA, 2019. Pages Beach Sedimentation Letter to CGG.

MRA, 2023a. GSTC & Greys Beach Coastal Adaption Strategy

WL, 2020a. FBH Sand Management Strategy – Technical Note

WL, 2020b. Geraldton Dredge Strategy Report

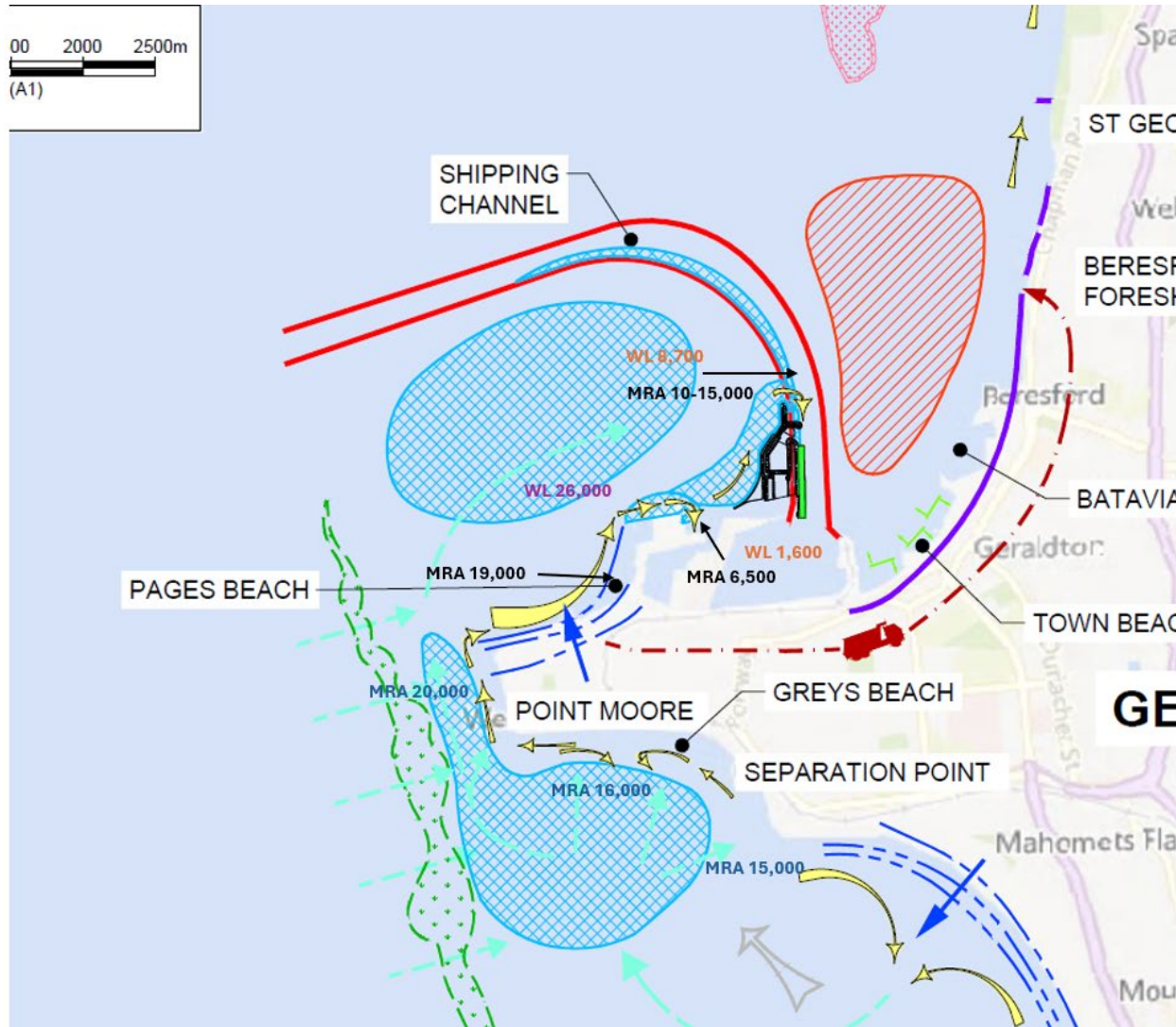


Figure A3: Estimated actual sediment transport rates from Separation Point to the Shipping Channel ( $m^3$ ) from consultants' reports 2019 - 2023

**MWPA Beach Transect Data: 2017-2024:**

- MWPA1: South Beresford (N7-N11)**
- MWPA2: North Beresford (N12-N14)**
- MWPA3: St Georges to Chapman River (N15-N23)**

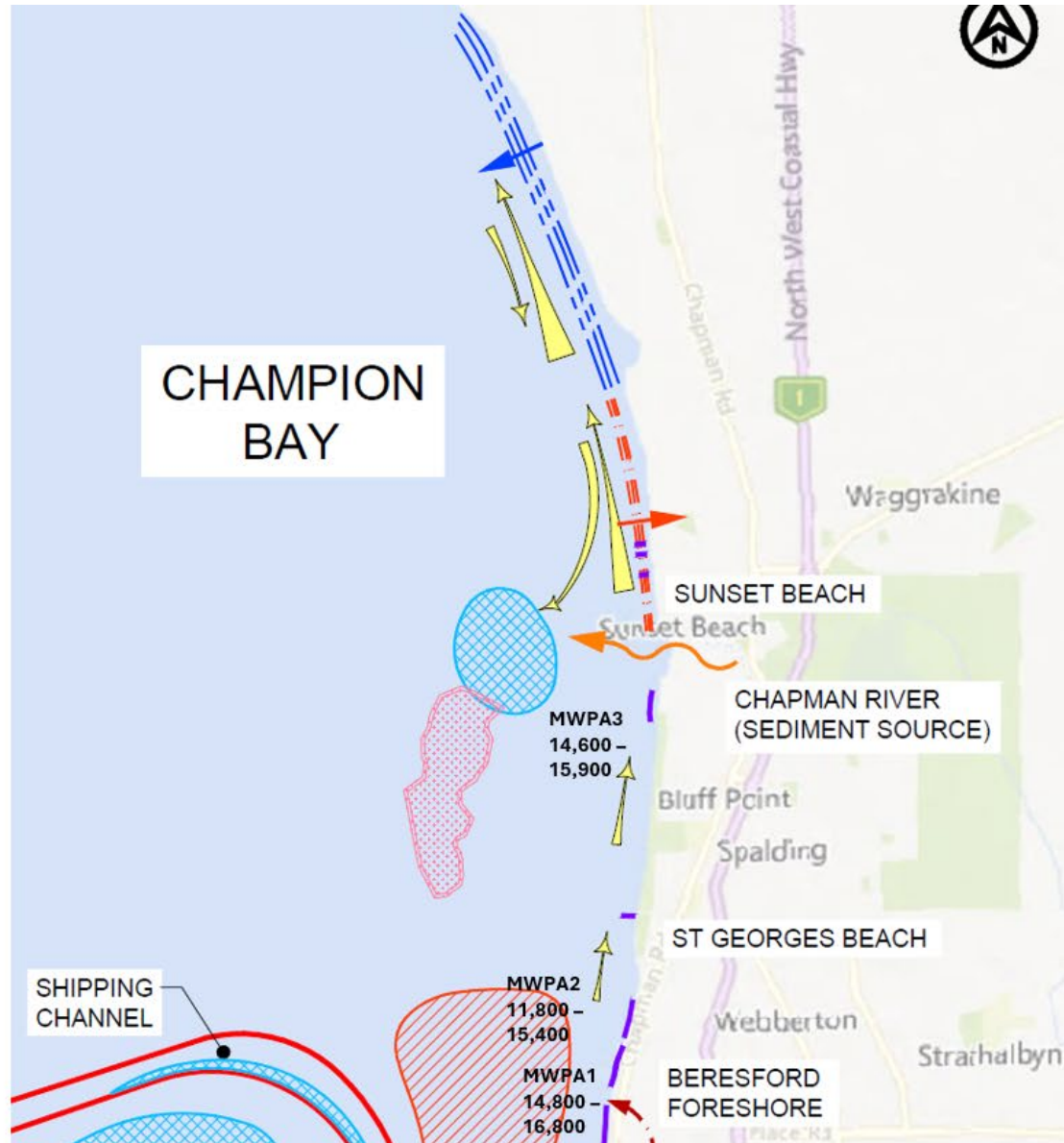


Figure A4: Estimated actual sediment transport rates from South Beresford to Chapman River Mouth ( $m^3$ )



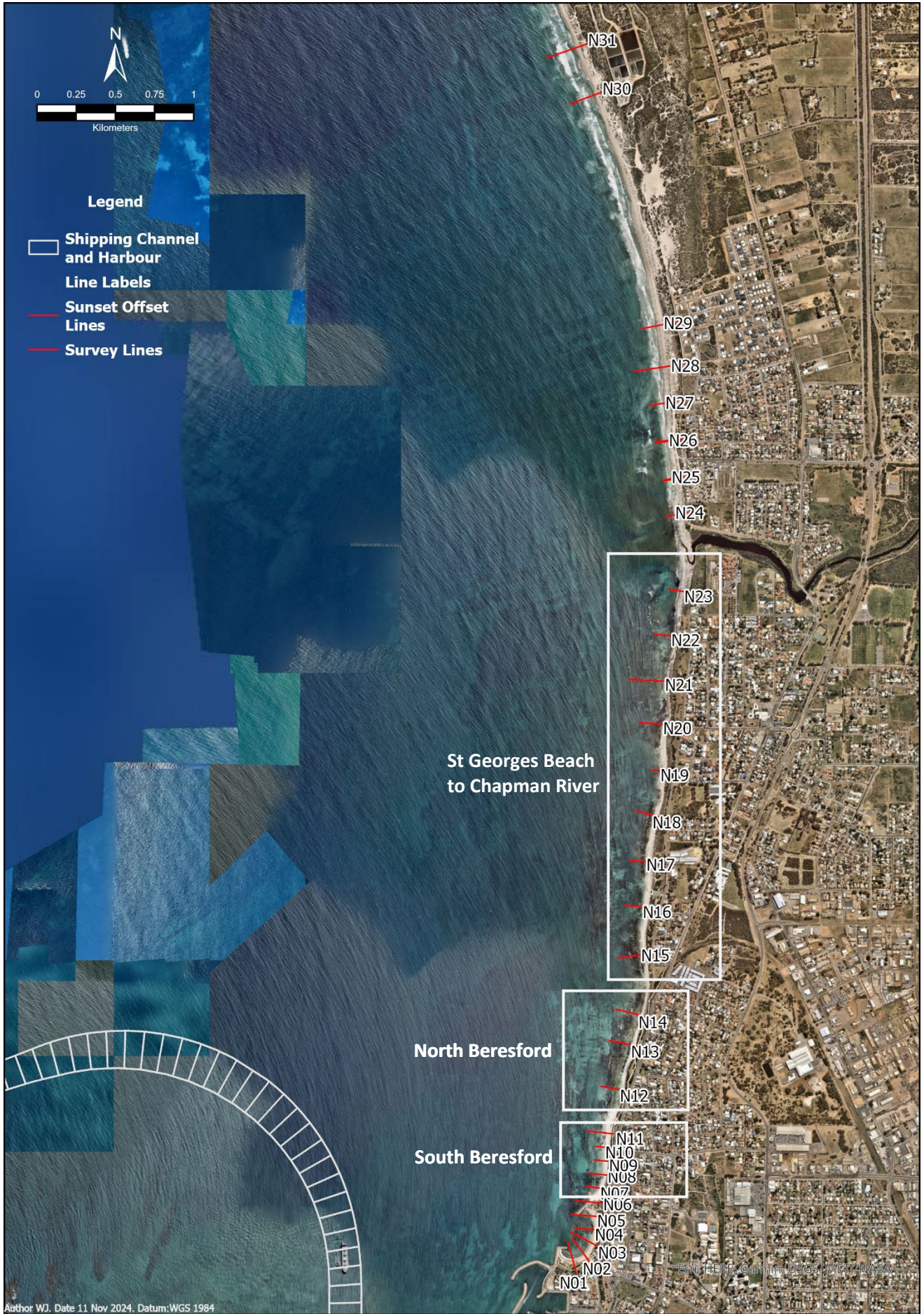


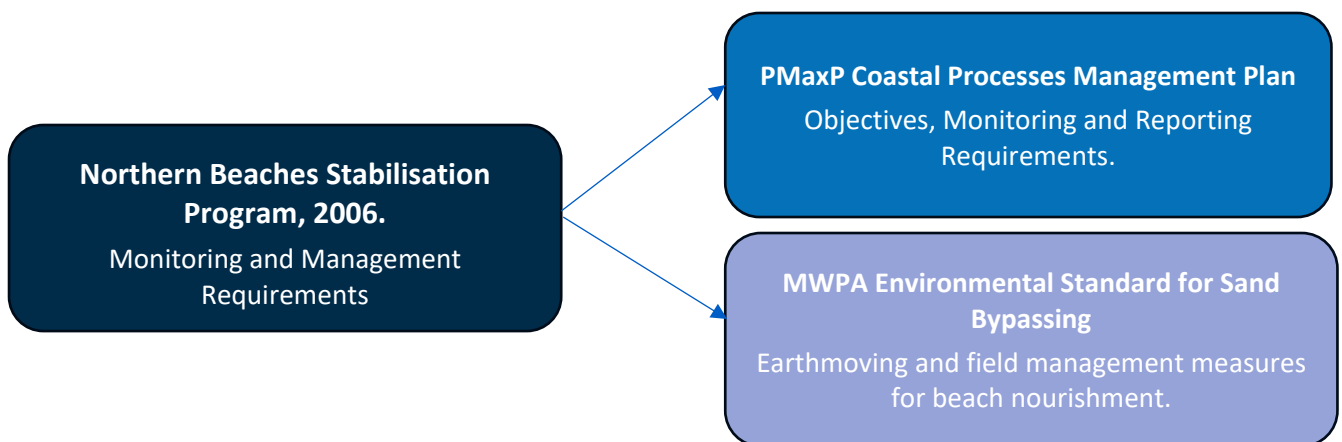
Figure A6: MWPA Beach Survey Transect Lines South Beresford to Glenfield Beach

# Appendix B: Northern Beaches Stabilisation Program Requirements Mapping

## NBSP Requirements Mapping

A commitments and obligations mapping exercise undertaken by MWPA ensured that the requirements of the original NBSP were not lost in the process of modernising the plan and aligning it with the EPA EMP Guidance (EPA 2024a). The high level structure of the updated plan is summarised below:

- The *MWPA Coastal Processes Management Plan* defines strategic objectives and outcome for all sediment management activities carried out by MWPA incorporating sand bypassing and beach nourishment actions previously set out in the NBSP. This document is designed for managers to assist in forecasting sediment management activities, assessing performance against objectives and allocating adequate resources.
- The *MWPA Environmental Standard for Sand Bypassing* specifies management controls, records and contractor compliance obligations when undertaking sand bypassing and beach nourishment. This document is designed for project managers and field supervisor to ensure impacts to the environment, public health and amenity are mitigated and managed consistently and appropriately.



Northern Beaches Stabilisation Programme (NBSP) Text, Rev A MWPA Internal Compliance Audit 25/08/2006	Coastal Processes Management Plan	Sand Bypassing Standard
<b>1. BACKGROUND</b>		
<p>Geraldton, located some 430 kilometres north of Perth in Western Australia, is a thriving coastal community. The area offers a range of coastal activities and is a major trade facilitating centre with the Port of Geraldton. The foreshore to the north of Batavia Coast Marina in Geraldton is one of the most used and enjoyed by the community. Often referred to as the 'northern beaches' the area offers good walking and cycling paths, beautiful ocean views, and various facilities including barbeques and other sheltered nodes. The protection of this area to ensure ongoing availability is therefore of high importance to the City of Geraldton and its citizens....</p>	<p>This description is now out of date. CGG Coastal Adaption Projects - e.g. Sunset and St Georges Beach groynes and revetment and Beresford Foreshore Coastal Protection works have since been completed and gone a long way to stabilise the areas of coastline referred to in this description.</p>	<p>The CPMP provides an updated summary of the background and history associated with sediment bypassing in Geraldton including updated commentary of projects completed since 2002.</p>
<b>2. STABILISATION OPTIONS</b>		
<p>"Development of a range of options for stabilising the northern beaches was undertaken by MRA (2002). All the options investigated included as a pre-requisite, the large-scale initial beach nourishment of some 100,000 to 150,000 m<sup>3</sup> using Geraldton Southern Transport Corridor Project (GSTC) sand first, followed either by just annual sand nourishment, or a combination of annual sand nourishment and various beach and offshore structures."</p>	<p>Nourishment of the northern beaches with material from GSTC was managed and completed by CGG and DPI in conjunction with PTA and Main Roads in 2005.</p>	<p>N/A</p>
<p>The development of this Northern Beaches Stabilisation Programme (NBSP) document was through agreement from a joint agency working group with representation from the City of Geraldton, Geraldton Port Authority, Department for Planning and Infrastructure and the Department of Environment with Technical support from MP Rogers and Associates and URS Australia.</p>	<p>This working group appeared to operate and meet regularly until around 2012/15 with the completion of the Beresford Foreshore Master Plan and Coastal Protection &amp; Enhancement Project.</p> <p>Since this time MWPA and CGG have operated independently with respect to coordinating targeted coastal processes studies. In alignment with the 2003 MOU both agencies have continued to consult one another but, no formal coastal management working group is functioning at present.</p> <p>There was a commitment to revise the NBSP in 2018 but this was deferred as MWPA was undertaking work with Royal Haskoning DHV (RHDHV).</p>	<p>The CPMP has been developed to provide a framework for a Joint Agency Working Group to be re-established.</p> <p>This approach is discussed in Section 2.3.1.2 and 3.2.1.</p>
<p>Any proposed management contained in this NBSP contains certain environmental considerations. The Department of Environment was represented on the working group to provide advice on concerns and minimisation of environmental impacts as a result of the programme.</p>	<p>Impacts to the environment were assessed as part of the PEP Referral and are being reconsidered under the PMaxP significant amendment.</p>	<p>Sand Bypassing is implemented as a mitigation strategy for the ongoing impacts to the northern beaches caused by the presence of the Port infrastructure.</p> <p>Where maintenance dredging is required the environmental impacts of each campaign must be assessed and mitigated.</p> <p>See Section 2.4.1.1</p>
<p>This NBSP outlines the programme for the stabilisation of the northern beaches between the Batavia Coast Marina and south of the Chapman River mouth. It does not include areas to the north of the river mouth.</p>	<p>This remains the agreed definition, between MWPA and CGG, for the Northern Beaches .</p>	<p>"Northern Beaches" defined in Section 2.3.1.1 and Figure 10.</p>
<b>3. OBJECTIVES AND AIMS</b>		
<p>The Northern Beaches Stabilisation Programme (NBSP) focuses on long term dynamic equilibrium. Static equilibrium of beaches on active coast lines is never possible.</p>	<p>Beach profile monitoring demonstrates that areas such as Town Beach have reached an equilibrium that requires very little intervention while other areas (north of the BCM) require annual nourishment.</p>	<p>2.4.1 MWPA approach</p> <p>Table 2: Management Targets:</p> <p>CPMT1: Maintain northern beaches profiles within historical range to achieve a long-term dynamic equilibrium.</p>
<p>The objective of the Northern Beaches Stabilisation Programme is for the Geraldton Port Authority to monitor shoreline movement of beaches between Batavia Coast Marina and Chapman River and provide beach sand nourishment to maintain long-term shoreline stability.</p>	<p>MWPA has monitored beach profiles since 2004, acquired aerial imagery and completed annual sand bypassing program in accordance with the NBSP.</p>	<p>Table 2: Management Actions</p> <p>CPMA1: Monitor beach profiles at established transect locations between S1 at Separation Point to N31 at Glenfield Beach.</p>

Northern Beaches Stabilisation Programme (NBSP) Text, Rev A MWPA Internal Compliance Audit Coastal Processes Management Plan Sand Bypassing Standard  
25/08/2006

		<p>CPMA2: Extract sand from Pages Beach at a rate greater than or equal to the rate of accretion, in agreement with CGG.</p> <p>CPMA3: Implement sand bypassing at required intervals to maintain sediment transport to the north of the port and to align with seasonal sediment movement.</p>	
<p>Also to contribute to the City of Geraldton’s Northern Beaches Stabilisation and Enhancement Strategy in association with the City of Geraldton and the Department for Planning and Infrastructure.</p>	<p>This objective has been met as demonstrated in MWPA sand bypassing volumes records and annual reports submitted to CGG and audited periodically by the EPA.</p>	<p>Table 2: SOCIAL SURROUNDINGS</p> <p>SSMT1: Collaborate with local coastal management stakeholders to maximise beneficial uses of sediment</p> <p>SSMA 1: Establish Joint Agency Working Group (JAWG) under an agreed Terms of Reference document.</p>	<p>N/A</p>
<p>The objective of the Strategy includes to provide a long term stable foreshore through the following specific aims:</p> <p>Replace the natural littoral drift of sand blocked by the Port and Batavia Coast Marina structures;</p> <p>Endeavour to maintain existing infrastructure in the short term;</p> <p>Provide a stable foreshore through:</p> <p>a. sand replenishment,</p> <p>b. improved vegetation lines; and</p> <p>c. possible rationalisation of the location of man-made assets in the longer term.</p>	<p>Demonstrated as follows:</p> <p>MWPA sand bypassing volumes and annual reports</p> <p>No significant coastal infrastructure losses as a result coastal erosion between 2006 and 2024 along the northern beaches:</p> <p>a) MWPA Annual Sand Bypassing</p> <p>b) Foreshore vegetation and restoration projects are the responsibility of CGG.</p> <p>c) The CGG CHRMAP has rationalised the protection or managed retreat for certain man-made assets.</p>	<p>Table 2: Management Targets:</p> <p>CPMT4: Maximise return of clean sediments to the natural coastal systems north of the Port to provide ongoing environmental benefits.</p> <p>CPMT5: No long-term sediment accumulation within or adjacent to existing and proposed Port infrastructure.</p> <p>SSMT1: Collaborate with local coastal management stakeholders to maximise beneficial uses of sediment</p>	<p>N/A</p> <p>N/A</p> <p>Section 6.1 Annual Priorities</p>
<p>The NBSP addresses the following key elements:</p> <ol style="list-style-type: none"> <li>1. beach monitoring locations and frequency;</li> <li>2. volume of sand by-passing and timing of placement;</li> <li>3. location and scale of stabilisation works (if any);</li> <li>4. management of dust, noise and traffic impacts during nourishment; and</li> <li>5. community consultation and awareness.</li> </ol>	<p>Demonstrated as follows:</p> <p>Beach Profile Monitoring Reports - generally twice per year</p> <p>23 transects between Separation Point to Point Moore (S1 to S19).</p> <p>9 transects on Pages Beach (P1 to P9)</p> <p>9 transects on Town Beach (T1 to T9) only once per year.</p> <p>31 transects between Batavia Coast Marina and Glenfield Beach (N1 to N31)</p> <p>Annual Aerial Photos</p> <p>Historical volumes reported annually to CGG and published in the MWPA Public Annual Report. Bypassing occurs pre and post summer (Peak accretion periods)</p> <p>Stabilisation works outside of the port are the responsibility of CGG to coordinate. MWPA and CGG have collaborated on the Beresford stabilisation project and additional sand has been delivered to CGG stabilisation sites as part of the annual bypassing program. Sand for nourishment of beaches north of the Chapman River are undertaken via a negotiated joint funding arrangement.</p> <p>MWPA has a sand bypassing safety management plan and sets strong HSE performance expectations with contractors. Incidents and complaints are recorded and investigated in consultation with CGG. Traffic management plans and controls are in place for each sand bypass campaign.</p> <p>MWPA works with CGG to advertise sand bypassing activities, issues targeted stakeholder notifications and posts general updates on social media.</p> <p>MWPA has recently published the results of technical studies and educational material on coastal processes on the MWPA external website. <a href="#">Mid West Ports&gt;&gt;Coastal Processes</a></p>	<p>Table 2: Management Actions</p> <p>CPMA1: Monitor beach profiles at established transect locations between S1 at Separation Point to N31 at Glenfield Beach.</p> <p>CPMA5: Monitor Port infrastructure including shipping channel, FBH entrance, and commercial harbour for accretion of sediment above design depths and widths.</p> <p>CPMA6: Monitor sediments adjacent to Port infrastructure including rock walls, land reclamation areas and breakwaters for accretion and erosion which may impact ongoing port operations.</p> <p>Section 4: Monitoring and reporting</p> <p>Table 4: Coastal processes monitoring programs</p> <p>Table 5: CPMP reporting framework</p>	<p>4.2 SITE HISTORY</p> <p>4.8 Timing</p> <p>7.2 Performance Monitoring</p> <p>5.1.2 Health Safety and Amenity Impacts</p> <p>6.1.1 Annual Target</p> <p>6.1.1.1 Monitoring</p> <p>6.1.2 Joint Agency Review</p> <p>7.1.4 Consultation and Communication</p> <p>7.2.1 Performance Outcomes</p> <p>8 Mandatory Controls</p>

4 METHODOLOGY, PROCEDURES AND RESPONSIBILITIES

<p>4.1.1 COASTAL STRUCTURES AND STABILISATION WORKS</p> <p>No groyne structures by the City of Geraldton, Geraldton Port Authority, or Department for Planning and Infrastructure are currently planned for the</p>	<p>Since 2006 several projects have been led by CGG such as the sandbag structure at St Georges Beach and reshaping breakwaters north of to the Marina as part of the Beresford Foreshore protection works. CGG actively consults with stakeholders</p>	<p>N/A</p>	<p>N/A</p>
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Northern Beaches Stabilisation Programme (NBSP) Text, Rev A MWPA Internal Compliance Audit Coastal Processes Management Plan Sand Bypassing Standard 25/08/2006

<p>beaches between the Batavia Coast Marina and the Chapman River mouth. Any planning, should it occur, at a later date in respect of such matters by any of these parties will be with the full liaison of the other parties, and will incorporate community consultation by the City.</p>	<p>and the community and published details on the city website. <a href="#">Coastal Adaptation Works » City of Greater Geraldton</a></p>		
<p><b>4.1.2 BEACH NOURISHMENT</b> The NBSP does not address the beach nourishment programme for the area north of the Batavia Coast Marina to be undertaken for CoG and DPI under the auspices of the Main Roads WA / Public Transport Authority's (MRWA/PTA) Geraldton Southern Transport Corridor Project (GSTC).</p>	<p>This work was completed independent of the NBSP.</p>	<p>N/A</p>	<p>N/A</p>
<p><b>4.1.3 SAND BYPASSING</b> <b>a) Sources of sand:</b> Sand will be obtained from a primary source location at the extreme eastern end of Page's Beach. Access will be via Connell Road at the rear of the Fishing Boat Harbour or via pages Beach access. In the event that a) insufficient by-pass sand is available from the primary source location, and b) a clear immediate replenishment need exists at the nourishment site; then a secondary source may be established adjacent to the primary source within that section of Pages Beach currently designated for horse use. In the event that insufficient bypass sand exists at either the primary or secondary source locations GPA also agrees, subject to CoG request and DoE approval to extract natural beach sand from sources no further from the northern beaches than Point Moore. In such instances GPA shall:- - Secure each excavation site to protect the Public - Make each excavation site safe for public access at the end of sand extraction process - Ensure that the vegetation is not disturbed</p>	<p>The eastern end of Pages Beach has been the primary source of sand. Sand has not always been recovered from the extreme end or edge of the beach within the swash zone. Different contractors have refused to put equipment in the water or on soft areas of the beach reducing the volume of sand recovered from within the active sediment transport zone of the beach. The secondary area of Pages Beach (known as the Horse exercise area) has not been required to achieve the 12,500m<sup>3</sup> of material annually. Material from the beach forming adjacent to the Fishing Boat Harbour entrances has been moved onto Pages and relocated as part of sand bypassing activities. Pages Beach is now full and has sufficient holding capacity to service the annual bypassing program. The recent erosion at Point Moore and state planning setbacks would suggest that the original strategy of making up any shortfall from Point Moore should now be avoided. Pages Beach has sufficient volumes of sand to meet annual commitments. Additional sand has been relocated from Lives Beach to prevent encroachment into FBH Entrance.</p>	<p>The CPMP contains high level objectives and no specifics on sand bypassing field operations. Details are provided in the MWPA sand bypassing standard. Some high level sediment budget data is provided in Appendix A.</p>	<p>4.3 Sand Sources 7.2.1 Performance Outcomes 8 Mandatory Controls 8.1.4 Site Management</p>
<p><b>b) Nature of extraction:</b> Based on broad evaluation of sand by-passing options it has been agreed by all Agencies that truck sand by-passing should be utilised initially. Further options for sand by-passing, may be considered in the future subject to DPI and DoE evaluation relating to cost, effectiveness, environmental issues and practicality. The sand will be excavated by an excavator / front end loader and loaded onto trucks for transport to the beaches north of BCM. The extraction operation will be one of surface skimming rather than deep excavation.</p>	<p>Truck sand bypassing was implemented and continues. MWPA are committed to investigating a pump and pipe sand strategy for sand bypassing to align with its sustainability strategy, reduce emissions and mitigate social impacts associated with trucking sand through the city. Design and funding options are currently being investigated and will be tracked via the MWPA strategic asset plan. This methodology is documented in the MWPA HSE Plan, Traffic Management and Contractor Management Plans.</p>	<p>N/A. Sand Bypassing methodology not described in CPMP to allow for continuous improvement and possible future alternatives such as pump and piping.</p>	<p>2 Scope 2.2 Inclusions 2.3 Exclusions 8 Mandatory Controls 8.1.4.1 Beach Sand Extraction Site</p>
<p><b>c) Volumes:</b> The GPA will initially contribute a base annual quantity of 12,500 banked m<sup>3</sup> of sand per year as of right toward the long-term stability of the northern beaches as a replacement for interrupted natural sand flow and to offset any increased erosion potential. Any unused volumes will be carried forward. Any additional or any variation in volumes will be subject to discussion and agreement between CoG and GPA with consideration being given to monitoring results, budgetary constraints and sand availability. It is agreed that unless an obvious case for review of the base annual quantity arises sooner, such a review will be made five (5) years after the date of the beach nourishment programme for the area north of the Batavia Coast Marina to be under taken in 2004 for CoG and DPI under the auspices of the Main Roads WA / Public Transport Authority's (MRWA/PTA) Geraldton Southern Transport Corridor Project (GSTC).</p>	<p>The 20yr average annual volume bypassed = 17,064m<sup>3</sup>. There have been only 2 years where less than 12,500m<sup>3</sup> were moved (2009 and 2021). In each case the years prior and after exceeded 12,500m<sup>3</sup>. There are several examples where MWPA and CGG have worked together to extract more than the baseline 12,500m<sup>3</sup> and added various locations such as supporting landscaping around the Dome Café (2019), Drummonds (2020) and Bluff Point. The plan was revised in 2006 and approved by CoG - updating transport methods and replacing the transport route map. The planned 2009/10 review did not happen in a formal documented manner. Sediment transport budgets were revised in 2012 as part of the Beresford Foreshore project. At this time bulk nourishment of these beaches were capped at 17,000m<sup>3</sup> by CGG.</p>	<p>Table 2: Management Targets CPMT1: Maintain northern beaches profiles within historical range to achieve a long-term dynamic equilibrium. CPMT3: Mean annual northern beaches sand nourishment volume of 19,000 m<sup>3</sup>, when available. SSMT1: Collaborate with local coastal management stakeholders to maximise beneficial uses of sediment</p> <p>Section 2.4 Rationale and approach, Section 2.4.3 Relevant coastal processes studies and coastal protection investigations</p>	<p>Section 6 Annual Sand Bypassing Program 6.1 Annual priorities Section 7 MWPA Management Requirements 7.1.2 Work Area Definition and Scheduling 8.3 Records</p>

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<p>The short term aim will be to maintain the foreshore line west of the existing dual use pathway.</p> <p>It is further agreed that it will not be possible to determine a long term target coast line for a number of years however by 2009/2010 the GSTC nourishment works are likely to have settled to a stable profile and the on going effect of the annual sand by-passing will start to become evident from the monitoring results. The conversion rate between truck m<sup>3</sup> and banked m<sup>3</sup> will be calculated by survey measurement to ascertain the volume of material cut from the source beach and loaded into trucks during a particular period of operation.</p> <p>The volume for each truck will be determined by striking level two or three loads for each truck on at least one occasion per year to ascertain the loaded truck m<sup>3</sup>. The total volume records will be kept by count of number of truck trips x truck volume and details forwarded to the City following each sand by-passing program for each section of coast line.</p>	<p>No erosion impacting foreshore pathways between Port and St Georges beach to date.</p> <p>The 2009/2010 review was postponed until CGG and MWPA completed coastal processes studies and developed CHRMAPs for their areas of responsibility. The Coastal Processes Management Plan intends to modernise the NBSP and capture broader coastal management objectives for MWPA while continuing to fulfil sand nourishment commitments identified in CHRMAPs and the Geraldton foreshore management plans.</p> <p>MWPA's contract conditions specify how the volumes shall be recorded, validated and charged.</p> <p>Record keeping includes total number of truck movements, fuel consumption, location and volume of material bypassed.</p>	<p>Section 5 Review and adaptive management Appendix A. Indicative sediment management budget</p>	
<p><b>d) Transport methods.</b> Unless agreed otherwise by the City of Geraldton and Department of Environment, Single tipper trucks (either rigid body or articulated) up to nominal volume of 18 m<sup>3</sup> will be used for sand cartage.</p> <p>The transport route will generally use the following roads: Willcock Drive, Phelps St, Connell Road, Chapman Road, John Willcock Link, Wiebbe Hayes Lane, North West Coastal Highway, Stella Maris Drive. Refer to the attached drawing.</p> <p>To avoid periods of heavy beach and dual-use-path usage work will generally not be undertaken on weekends or on school or public holidays.</p> <p>CoG will remove any fences required in order to permit placement operations to occur.</p>	<p>As per MWPA contract conditions.</p> <p>Approved Traffic Management Plans and reviewed by CGG prior to works.</p> <p>As documented in MWPA and Contractor HSE Plans and Work Method Statements</p> <p>As agreed during CGG &amp; MWPA pre-works meetings, site inspections and ongoing consultation.</p>	<p>N/A</p>	<p>4.7 Designated Transport Route 8.1.3 Traffic Management Plan</p>
<p><b>f) Safety, community awareness and beach access.</b> Safety at the extraction site within the Port area will be the responsibility of the GPA. Safety at extraction sites outside the Port and at placement sites shall be through a joint arrangement between the CoG and the GPA. A safety management plan will be drafted by GPA and agreed by both parties.</p> <p>CoG will make traffic and pedestrian control devices and signs available for use at the placement locations.</p> <p>CoG will erect permanent signage and necessary fences at the placement sites. CoG will be responsible for beach access and securing any potentially hazardous banks and slopes.</p> <p>CoG will undertake a community awareness program utilising the following tools:</p> <ol style="list-style-type: none"> <li>1) A single sheet hand out / mail out,</li> <li>2) Permanent signs, and</li> <li>3) Web site.</li> </ol> <p>GPA will add to this programme twice yearly advice of the commencement of by-passing in the local press and posting the NBSP document on it's web site.</p> <p>In the event of extraction from other than the primary or secondary sources the CoG will undertake community awareness programmes to install semi-permanent vehicle access restriction / warning signs.</p>	<p>MWPA maintains a Sand Bypassing Safety Management plan and checklist. The appointed project manager is responsible for ensuring all control measures are in place and functioning.</p> <p>MWPA also requires a Contractor Risk Assessment and a MWPA Permit to Work to be completed prior to works commencing.</p> <p>Traffic Management (TM) Plans and use of accredited TM control company</p> <p>The earthmoving contractor and TM control company engaged provide all required signage and fencing to control access and egress to the area.</p> <p>MWPA has an established Communications Plan for Sand bypassing activities</p> <p>The mail out is no longer completed. Email and social media is used instead.</p> <p>Safety Management Plan dictates Signage and Barricading requirements</p> <p>CGG and MWPA Websites - media releases, social media updates.</p> <p>MWPA Communications Team - ensures the community is informed via a Public Notice (Newspaper Ad) and Social Media Updates.</p> <p>This happens on a case by case basis.</p>	<p>Table 2: SOCIAL SURROUNDINGS</p> <p><u>CPMP Objective:</u> Maintain public safety and minimize social impacts while enhancing community awareness of coastal processes.</p> <p>3.2.1. Collaborative implementation of the CPMP</p>	<p>4.9 Responsibilities 7.1.2 Work Area Definition and Scheduling 7.1.3 Work Risk Assessment 7.1.4 Consultation and Communication 7.2.1 Performance Outcomes 8 Mandatory Controls</p>
<p><b>g) Placement operations</b> At the nourishment site, sand will be spread by front-end loader or other plant. The method of placement will generally be by pushing material that has been dumped by truck out over the top the bank. Bank edges to be rounded to avoid sharp unstable bank faces which may create a hazard to the public.</p>	<p>The Contractor Work Method Statement and risk assessment captures these requirements and MWPA and CGG supervisors inspect the works daily to ensure compliance with agreed requirements.</p>	<p>N/A</p>	<p>8 Mandatory Controls 8.1.4 Site Management 8.1.4.2 Beach Nourishment Sites 8.1.4.3 Site Demobilisation</p>

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<p>There will generally be four placement locations depending on needs. They are specific designated spots in the following areas:</p> <ol style="list-style-type: none"> <li>1) The cove in the southern crook of the bay on the north side of BCM,</li> <li>2) The eroding zone between 150 Chapman Road (Cramer &amp; Neil) and 160 Chapman Road (Crothers Construction);</li> <li>3) The eroding zone between Mitchell &amp; Brown and 170 Chapman Road; and</li> <li>4) Between Adam Street and Trigg Street.</li> </ol> <p>Refer to the drawing.</p> <p>No placement of sand will be undertaken in such a manner as to disturb any established vegetation.</p> <p>Volumes of placement at each location on each specific event will be by agreement between GPA and CoG.</p> <p>Actual Volumes placed at each location to be recorded with copy to CoG.</p> <p>Sweeping of the dual-use-path &amp; roads, and re-erection of fencing will be undertaken by CoG at the end of each day of placement.</p>	<p>MWPA and CGG meet, discuss and agree on priority placement sites. Generally CGG directs material to be placed onto the Beresford Foreshore and primarily at the southern end adjacent to Migdalia's Beach.</p> <p>Each placement site has a designated access road maintained by CGG.</p> <p>MWPA notifies CGG representatives 6 weeks prior to works.</p> <p>A site visit is arranged, and placement sites determined and agreed.</p> <p>CGG and MWPA conduct a Pre works inspection of each placement site.</p> <p>At the end of the program a handover inspection is completed and actual volumes placed discussed. An annual report is issued tracking and reporting volumes to CGG.</p> <p>MWPA contractors are responsible for leaving the site safe for public access.</p>		
<p><b>h) Turbidity</b> The by-pass sand will be natural beach sand. Never the less some turbidity of the ocean at the placement location is likely to occur</p>	<p>Turbidity associated with placement activities is visible for a short period less than a week. Placement occurs for 5 days at a time with no placement on weekends. Material is remobilised by wave action. Storm events can result in slugs of material being deposited on reefs and nearshore environments but within this high energy environment material continues to move. Mostly turbidity has been recorded as observations and anecdotal evidence only. There are no formal turbidity monitoring programs established.</p> <p>MWPA does conduct BCH Mapping and Seagrass Surveys at a regional scale.</p>	<p>4.1 MONITORING Table 4: Coastal processes monitoring programs: General Beach Conditions BCH Mapping</p>	<p>7.2.1 Performance Outcomes 8.2 Environmental Management</p>
<p><b>i) Dust Management</b> GPA will attend to dust management during truck cartage and placing. CoG will be responsible for dust management following placement operations.</p> <p>GPA agree when available to cart a number of truck loads of seagrass wrack from the source beaches for delivery to the placement sites at the end of each days carting and then spread over the newly placed sand.</p>	<p>This is a requirement of the Contractor SMP. All Complaints and Incidents are recorded and investigated (CAMMS Register)</p> <p>This has been done in the past but, is not encouraged by CGG and the local Birdlife representatives. Wrack is an important feeding habitat for shorebirds and can become a public nuisance as a source of odour along the foreshore.</p>	<p>N/A</p>	<p>7.2.1 Performance Outcomes 8.1.2 Safety Management</p>
<p><b>j) Short term coastal stability</b> The GPA will by-pass sand as agreed within the NBSP in an endeavour to maintain the coastline's stability. However the GPA will not be solely responsible for responding to erosion events caused by major storms events. The GPA, DPI and CoG will consult after such events to agree to the actions necessary.</p>	<p>A key component of the CGG CHRMAP Report was the identification of long term adaptation pathways for 12 Coastal Management Units (CMUs) along the developed Geraldton coastline including beach nourishment with sand supplied by MWPA. CGG has adopted a Policy on Coastal Adaptation that is being implemented via the Geraldton Coastal Strategy and Foreshore Management Plan.</p> <p>As the CGG, DoT and MWPA coastal management responsibilities overlap ongoing consultation is required going forward.</p>	<p>The CPMP has been developed to provide a framework for a Joint Agency Working Group to be re-established. See: 2.3.1.2 Joint agency working group and the NBSP 2.4.1. MWPA approach Table 2: SOCIAL SURROUNDINGS SSMT1: Collaborate with local coastal management stakeholders to maximise beneficial uses of sediment SSMA 1: Establish Joint Agency Working Group (JAWG) under an agreed Terms of Reference document. 3.2.1. Collaborative implementation of the CPMP 5. Review and adaptive management</p>	<p>N/A</p>

5. MAJOR STORM EVENTS

<p>Extensive erosion often occurs at the northern beaches during winter storm events. High water levels, and large seas and swell can pound the active area causing rapid degradation.</p> <p>A major storm event is one which creates higher than normal winter wave heights and storm surge and causes greater erosion than annual episodic storm events.</p>	<p>The areas most prone to erosion have been Identified by DOT in the Coastal Erosion Hotspots in WA document published in 2019.</p> <p>Since the completion of the Beresford Foreshore works collaboration and joint communications on issues has been limited, generally organisations have focused on their areas of responsibility in isolation. MWPA sees an opportunity to establish a coastal management working group similar to that established for Local Government Agencies in the south of the state.</p>	<p>3.2.1. Collaborative implementation of the CPMP Table 3. Geraldton foreshore and state-owned coastal assets</p>	<p>N/A</p>
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In the event of a major storm event, the GPA shall work co-operatively with the CoG, the DPI and the general community to resolve any beach damage which may occur as a result.

The responsibility for co-ordinating a response to major storm events rests with the CoG. The State Government, through DPI, to provide assistance to local government by way of Emergency Protection Funding.

CGG still remains responsible for coordinating emergency response efforts.

MWPA was successful in obtaining DoT funding via the CAP Grant scheme to develop an adaptation strategy for Greys Beach to ensure emergency situations don't impact important transport assets within the Geraldton Southern Transport Corridor. This model of funding could be applied elsewhere along the Northern Beaches.

**6. MONITORING, RECORDS & REPORTING**

To ascertain the suitability and effectiveness of this plan a number of monitoring programs shall be implemented. These range from shoreline surveys, aerial surveys, photographic records and truck bypassing records.

**6.1.1 SHORELINE SURVEYS:** To develop the required understanding of sediment dynamics, the GPA has established an initial baseline description of the current topography of the near shore waters and beaches at a number of transects along the coast. Transects are spaced approximately 75 m apart for the first 750 m north of BCM, thence some 250 m apart north to Chapman River.

All beach transects will extend from high water mark to -1.9m AHD. The approximate location of the proposed monitoring transects is shown in the attached figure. (All levels to be correlated to AHD)

These transects will be surveyed on a bi-annual basis for the first three years, once at the end of summer, and once at the end of winter. Thereafter, transects will be surveyed on an annual basis at the end of summer and prior to the onset of winter storms.

The GPA will also continue its current beach monitoring regime at Town Beach and Pages Beach. It will also establish a "one-off" baseline near shore hydrographic survey (out to -4.9m AHD or in line with the offshore breakwater) after placement of STC sands on Town Beach.

It is anticipated that an agreed profile will be nominated in about 2009/2010 for sections of beach and that the beach management programme will aim to maintain that agreed profile over the long term.

The beach monitoring programme will measure deviations from the agreed profile, review the aerial photographic record and historical shoreline location plots, assess the potential implications of the deviations on longer-term coastal stability, and identify appropriate locations for the placement of sand and volumes required.

**6.1.2 AERIAL SURVEYS:** The GPA shall undertake annual aerial surveys of the northern beaches area to support transect surveys and assessment of the adequacy of this plan.

**6.1.3 Photographic Records:** The CoG will keep regular (at least annual) photographic records of the Northern Beaches Shoreline, in order to develop a time series record. A procedure will be developed to endeavour to photograph the same sites, from the same location and in the same direction at the same time each year.

**6.1.4 TRUCK CARTING:** The GPA shall record volumes of sand carted, including the following records for each period of operation:

- 1) volume by:
  - a. source location
  - b. dates of volume placements, and
  - c. placement location
- 2) prevailing weather conditions, and

MWPA has maintained the following monitoring programs:

Monitoring transects have been maintained since 2004 and a number of additional transects added over time along Pages and Greys Beach and further north as required.

Transects were maintained on a biannual basis for over 10yrs. Town Beach has now been reduced to annual surveys while all other locations remain on a biannual basis.

The "one-off" PEP baseline near shore hydrographic survey conducted after placement of STC sands on Town Beach was completed by Hardcastle & Richards May 2000 (A2027412).

MWPA and CGG now have 20+ years of data from which to derive an "envelope" of normal seasonal variations from which a target profile can be agreed and monitored against. Presently the approach has simply been to maintain safe slopes and prevent damage to pathways and foreshore landscaping.

To date the annual monitoring report provided to CGG provides a basic interpretation only. The profiles provide an indication of eroding or accreting trends against a historical envelope of data. There are no agreed profile or triggers for action set. Shoreline location plots have not been produced. MWPA's coastal engineer has developed analytical tools to calculate beach volume in recent times but there are further opportunities to use the historical set of data and photos to inform decisions and educate the community.

Table 2: Management Targets

CPMT1: Maintain northern beaches profiles within historical range to achieve a long-term dynamic equilibrium.

CPMT2: Maintain an agreed profile for Pages Beach.

Table 2: Management Actions:

CPMA1: Monitor beach profiles at established transect locations between S1 at Separation Point to N31 at Glenfield Beach.

CPMA2: Extract sand from Pages Beach at a rate greater than or equal to the rate of accretion, in agreement with CGG.

CPMA3: Implement sand bypassing at required intervals to maintain sediment transport to the north of the port and to align with seasonal sediment movement.

CPMA5: Monitor Port infrastructure including shipping channel, FBH entrance, and commercial harbour for accretion of sediment above design depths and widths.

CPMA6: Monitor sediments adjacent to Port infrastructure including rock walls, land reclamation areas and breakwaters for accretion and erosion which may impact ongoing port operations.

Section 4.1 Monitoring

Table 4. Coastal processes monitoring programs:

- Beach Profiles
- Beach volume
- Sediment Accumulation
- General Beach Conditions

Section 4.2 Reporting

Table 5: CPMP reporting framework

5. Review and adaptive management

6.1.3 Target Beach Profiles

8.3.1 Contractor Records and Carting Logs

8.3.3 MWPA Records

4.9.4 Joint Agency Working Group

3) before and after photographic records at the placement site.

**6.1.5 RECORDS AND REPORTING:** The results of the beach monitoring surveys together with an assessment of volume of sand required to stabilise the eroding beaches for the forthcoming winter will be reported within one month of completion of the end of autumn survey. The report will be sent to the CoG and DPI and agreement reached with GPA on the most appropriate location for nourishment, volume to be emplaced, and timing for nourishment.

All shoreline and truck carting data will be stored by the GPA, but will be available to both the CoG and DPI as requested. Monitoring data shall include the results of bathymetric and beach profile surveys, a record of agreed beach management action (volume of sand and location of placement, a log of sand volumes actually by-passed and to which location, and prevailing weather conditions at time of sand placement). GPA will compile and provide to CoG and DoE an annual report on outlining:

Shoreline Surveys

Aerial Surveys

Summary of volumes of sand carted, including the following records for each period of operation by:

- a. source location
- b. dates, and
- c. placement location.

The CoG and GPA shall generate a joint annual report to stakeholders which shall detail the action that has been undertaken, the effectiveness of those measures and the proposal for future management.

**6.1.6 REVIEW OF DATA:** The NBSP working group will meet to review data and agree actions twice yearly, in early April and early September.

**7. SUMMARY OF RESPONSIBILITIES**

The following summary of responsibilities shall apply to the NBSP:

Geraldton Port Authority:

- 1. Bypassing of 12,500 banked m3 of fill each year; including
  - a. Loading,
  - b. Carting, and
  - c. Pushing.
- 2. Joint decision with CoG on when and where fill is required;
- 3. Joint role with CoG in safety management during fill carting and placement;
- 4. Dust management during sand placement;
- 5. Twice yearly advertising of annual sand by-passing activities;
- 6. Assistance with emergency response to storm events;
- 7. Shoreline surveys;
- 8. Aerial surveys;
- 9. Truck carting records;
- 10. Annual data and monitoring report; and
- 11. Representation at meetings.

Now Mid West Ports Authority

- 1. Places an average of 17,000m<sup>3</sup> per year
- 2. Pre sand bypassing consultation completed between CGG and MWPA.
- 3. MWPA takes the lead and provides CGG an opportunity to review plans.
- 4. MWPA contract requirement that is audited throughout the program.
- 5. Via newspaper and social media.
- 6. As required and upon CGG request.
- 7. Completed twice yearly.
- 8. Acquired at least annually.
- 9. MWPA contract requirement that is audited throughout the program.
- 10. Annual reporting
- 11. NBSP working group no longer meets.

Table 2 Monitoring

Section 4.1 Monitoring

Section 4.2 Reporting

Section 5 Review and Adaptive Management

4.9 Responsibilities

Table 3 Summary of Responsibilities  
Table 6. Sand Bypassing Sand Bypassing Environmental, Health Safety and Amenity Performance Outcomes and KPIs

City of Geraldton:

- 1. Management of the northern beaches;
- 2. Signage and fencing at sand placement locations;

Now City of Greater Geraldton

- 1. Beresford Foreshore and Town Beach management strategies defined in CGG CHRMAP

2.4.1. MWPA approach

2.3.1.2 Joint agency working group and the NBSP

Table 2: SOCIAL SURROUNDINGS

4.9 Responsibilities

Table 3 Summary of Responsibilities  
Table 6. Sand Bypassing Sand Bypassing Environmental, Health Safety and

Northern Beaches Stabilisation Programme (NBSP) Text, Rev A 25/08/2006	MWPA Internal Compliance Audit	Coastal Processes Management Plan	Sand Bypassing Standard
3. Stabilisation after sand placement; 4. Sweeping of paths and roads following sand placement; 5. Dust management following sand placement; 6. Community education and communication; 7. Response to storm events; 8. Joint decision with GPA on when and where fill is required; 9. Vegetation management; 10. Amenities and developments; 11. Photographic records; 12. Public beach access; 13. Joint role with GPA in safety management during fill carting and placement; 14. Annual Stakeholder Reporting; 15. Meeting convening and reporting; and 16. Representation at meetings.	2. Generally supplied by MWPA contractors as part of Safety Management and Traffic Management plans 3. MWPA hands over a stable beach face. CGG manages beaches between bypass activities. 4. Completed by MWPA contractor before handover. CGG manages beaches between bypass activities. 5. CGG manages beaches between bypass activities. 6. CGG website, signage and community consultation. 7. CGG monitors and manages beaches post storm events. 8. Pre sand bypassing consultation completed between CGG and MWPA. 9. CGG monitors and manages foreshore reserves. 10. Geraldton Coastal Strategy and Foreshore Management Plan - UDLA 2023 11. MWPA and CGG maintain photo monitoring sites. 12. CGG manages beaches between bypass activities. Closing when and if required for public safety. 13. MWPA takes the lead and provides CGG an opportunity to review plans. 14. MWPA is unsure what stakeholder reporting CGG undertakes. MWPA provides an annual report to CGG. MWPA publishes a sand bypassing overview in its Public Annual Report 15. The NBSP working group hasn't functioned formally for sometime. 16. The NBSP working group hasn't functioned formally for sometime.	SSMT1: Collaborate with local coastal management stakeholders to maximise beneficial uses of sediment SSMA 1: Establish Joint Agency Working Group (JAWG) under an agreed Terms of Reference document. 3.2.1 Collaborative implementation of the CPMP Table 3: Geraldton foreshore and state-owned coastal assets 4.1 Monitoring 4.2 Reporting	Amenity Performance Outcomes and KPIs
Department of Planning and Infrastructure: 1. Assistance with emergency response to storm events; 2. Technical Coastal advice and assistance as required; and 3. Representation at meetings.	This function is now fulfilled by the DoT Coastal Infrastructure Team as described in the <i>WA Coastal Zone Strategy</i> (WAPC, 2021). The NBSP working group hasn't functioned formally for sometime.	as above	4.9.4 Joint Agency Working Group
<b>8. RESOLUTION OF ISSUES</b>			
Where issues cannot be resolved directly at officer or working group level they shall be brought to the City of Geraldton – Geraldton Port Authority Liaison Committee for discussion and recommendation to City Council and GPA Board for resolution.	An MOU was signed in 2003 outlining how the two organisation would work collaboratively to manage the Town and Beresford Foreshores. MWPA and CGG CEO's meet regularly to share information and provide updates. Both agencies consult one another during coastal processes studies, development planning and NBSP sand bypassing activities. MWPA provides project proposal overviews (e.g. dredging material placement options, development etc) to the City Council via their Concept Forums for consideration. Ministerial Statement 600 was audited by EPA in 2018. The NBSP implementation was assessed and MWPA was deemed compliant with its commitments.	Section 4.2 Reporting Section 5 Review and adaptive management	N/A