

<b>TITLE:</b>	<b>COASTAL PLANNING POLICY</b>
<b>ADOPTED:</b>	OMC..... – Pages
<b>REVIEWED:</b>	OMC..... – Pages OMC..... – Pages OMC..... – Pages OMC..... – Pages
<b>ASSOCIATED LEGISLATION:</b>	Planning and Development Act 2005 Planning and Development (Local Planning Schemes) Regulations 2015
<b>ASSOCIATED DOCUMENTS:</b>	State Planning Policy 2.6 – State Coastal Policy Broome Townsite Coastal Hazard Risk Management Adaptation Plan
<b>REVIEW RESPONSIBILITY:</b>	Director Development Services
<b>DELEGATION:</b>	N/A

## Objective:

1. To ensure land in the coastal zone is continuously provided for coastal foreshore management, public access, recreation and conservation.
2. To ensure public safety and reduce risk associated with coastal erosion and inundation.
3. To avoid inappropriate land use and development of land at risk from coastal erosion and inundation.
4. To ensure land use and development does not accelerate coastal erosion or inundation risks; or have a detrimental impact on the functions of public reserves.
5. To ensure that development addresses the Broome Townsite Coastal Hazard Risk Management and Adaptation plan prepared in accordance with State Planning Policy No. 2.6 Coastal Planning Policy (as amended).

## **Policy:**

## **Definitions:**

The words and phrases set out in this policy are in addition to those identified in State Planning Policy 2.6 – State Coastal Planning Policy (SPP2.6).

**‘Australian Height Datum’** (or **AHD**) is the vertical survey datum adopted.

**‘Average Recurrence Interval’** (or **ARI**) is a term used to describe an inundation or erosion event size. It is a means of describing how likely an inundation or erosion hazard is to occur in a given year.

**‘Coastal Compartments’** are areas delineated along the Broome coast with similar geomorphological characteristics, coastal processes and geographical locations of interest in accordance with Appendix 2.

**‘Habitable room’** as a room used for normal domestic activities that includes:

- a bedroom, living room, lounge room, music room, sitting room, television room, kitchen, dining room, sewing room, study, playroom, sunroom, gymnasium, fully enclosed swimming pool or patio; but excludes
- a bathroom, laundry, water closet, food storage pantry, walk-in wardrobe, corridor, hallway, lobby, photographic darkroom, clothes drying room, verandah and unenclosed swimming pool or patio and other spaces of a specialised nature occupied neither frequently nor for extended periods.

**‘Horizontal Shoreline Datum’** (or **HSD**) defines the active limit of the shoreline under storm activity. It is the line from which a physical processes allowance will be applied from.

**‘Finished Floor Level’** (or **FFL**) is the height above ground at which habitable floor levels in a commercial or residential building are constructed (datum AHD).

**‘Likelihood’** means the probability that something will occur. Likelihood is generally expressed qualitatively or quantitatively.

**'Net lettable area'** is defined as: "...the area of all floors within the internal finished surfaces of permanent walls but excludes the following areas:

- (a) all stairs, toilets, cleaner's cupboards, lift shafts and motor rooms, escalators, tea rooms, and plant rooms, and other service areas;
- (b) lobbies between lifts facing other lifts serving the same floor;
- (c) areas set aside as public space or thoroughfares and not for the exclusive use of occupiers of the floor or building;
- (d) areas set aside for the provision of facilities or services to the floor or building where such facilities are not for the exclusive use of occupiers of the floor or building."

### **Application:**

This policy applies to all land identified by the Shire as being subject to coastal erosion and inundation risk as outlined by Special Control Area No.9 (SCA9) in Shire of Broome's Local Planning Scheme No. 6 (LPS6).

The provisions of SCA9 only consider inundation from storm surge and an elevated ocean level. It does not include any consideration of catchment-based storm water runoff.

The provisions of SCA9 do not apply where a development is proposed on land entirely outside the mapped SCA9 extent, even if a portion of the lot upon which the development is proposed is included.

The boundary of SCA9 is provided in **Appendix 1**.

This policy does not apply to coastal structures identified in SPP2.6 Section 7 (e.g. Public recreation facilities with finite lifespan, Coastally dependent and easily relocatable development, Surf Lifesaving Clubs).

### **Exempt Development:**

In accordance with clause 5.2.9.2 of LPS6, all future development within SCA9 requires development approval with the exception of the following:

1. temporary or non-permanent structures not used for human habitation;
2. extensions to an existing single, grouped or multiple dwelling where the gross floor area of the proposed extensions is no more than 50m<sup>2</sup>; and

3. change of use to a 'Permitted' use where no new structures are proposed.

### **Background:**

The Coastal Planning Policy has been developed to assist with the implementation of Special Control Area No.9 – Coastal Hazard Risk Area (SCA9).

SCA9 identifies areas in Broome townsite that are at risk from coastal hazard risk within the 2110 planning timeframe. The land subject to coastal hazard risk is either:

- Low lying areas susceptible to inundation from a storm surge event with a one-in-five hundred probability of being exceeded in any given year (500yr ARI event); or
- Coastal areas within the coastal processes allowance setback extent for erosion, calculated for the 2110 planning timeframe.

The planning requirements set out in this policy are informed by the Shire's Coastal Vulnerability Study (CVS) and subsequent Coastal Hazard Risk Management and Adaptation Plan (CHRMAP). The CVS considers the coastal inundation and erosion hazards across the Broome townsite, whilst the CHRMAP provides a holistic approach to manage and mitigate coastal hazard risk, and has been developed in consultation with the local community and key stakeholders.

The Broome Townsite CHRMAP identifies nine coastal compartments based on geomorphological characteristics, coastal processes and geographical locations of interest (**Appendix 2**).

The adaptation requirements for each coastal compartment have been developed in accordance with the risk management and adaptation hierarchy as set out in SPP2.6. This policy provides guidance in the implementation of the CHRMAP adaptation strategies included in **Appendix 3**.



## Storm Surge Inundation

### Adaptation Requirements for Properties Affected by Storm Surge Inundation

- 1.1. Where development is affected by storm surge, the applicant is required to ensure minimum Finished Floor Level for all habitable rooms or net lettable areas for commercial / retail / community buildings as outlined in Broome Town Centre (Coastal Compartment No.7) and Dampier Creek Inner (Coastal Compartment No.8).

#### Broome Town Centre (Coastal Compartment No.7)

The Broome Townsite CHRMAP identifies that a seawall is to be constructed in Broome Town Centre by 2070 to protect against storm surge inundation of the Chinatown Peninsula. This recommendation is made under the assumption that sea level rise of 0.4m will occur within the 2070 planning timeframe in accordance with SPP2.6 recommendations.

The finished Floor Level recommendation for habitable rooms or all net lettable area for commercial/ retail/ community buildings in the Chinatown Peninsula is therefore based on the 500yr-ARI storm surge level defined for the 2070 timeframe, which includes 0.4m sea level rise.

The area of Chinatown designated for inundation protection is shown in **Appendix 4** with the 2070 design FFL recommendation. For areas outside the protected area, the 2110 design FFL is required.

- 1.2. **Broome Town Centre Chinatown Peninsula Protected Area:** The Finished Floor Level for all habitable rooms (dwellings) or all net lettable area for commercial/ retail/ community buildings to achieve a minimum FFL of 6.45m AHD.
- 1.3. **Broome Town Centre Outside Protected Area:** The Finished Floor Level for all habitable rooms (dwellings) or all net lettable area for commercial/ retail/ community buildings to achieve a minimum FFL of 7.03m AHD.

## **Dampier Creek Inner (Coastal Compartment No. 8)**

The 2110 timeframe is used as the baseline to determine the required Finished Floor Level in the Dampier Creek Inner Compartment. No protection structure is proposed for the compartment and a strategy to Accommodate storm surge is recommended in the CHRMAP.

- 1.4. **Dampier Creek Inner:** The Finished Floor Level for all habitable rooms (dwellings) or all net lettable area for commercial/ retail/ community buildings to achieve a minimum FFL of 7.03 AHD.

## **Dampier Creek East (Coastal Compartment No. 9)**

- 1.5. **Dampier Creek East:** Avoid development of land prone to storm surge inundation.

### **Additional Design Requirements**

- 1.6. Additional design requirements may be required depending on the difference between the storm surge inundation level and the recommended FFL for all habitable rooms or net lettable areas for commercial / retail / community buildings.
- 1.7. Design responses are not to have a detrimental impact on the amenity of adjoining properties or the amenity of the locality generally. This includes adversely impacting storm surge inundation levels on adjoining properties.
- 1.8. The minimum FFL for all habitable rooms or net lettable areas for commercial / retail / community buildings is to be achieved through either fill/ retaining (to a maximum of 0.5m above natural ground level) or building design (i.e. elevated 'Queenslander' style stilt housing).
- 1.9. Filling of the site between 500mm and 1 metre above natural ground level is to be considered where it can be demonstrated that it addresses the requirements of clause 1.7.
- 1.10. Mechanical and electrical infrastructure (e.g. pump stations, emergency generators) are to be elevated above

the required FFL and / or protected from the impact of storm surge inundation.

- 1.11. Buildings are to be designed to withstand structural loads associated with a storm surge inundation.
- 1.12. Foundations and footings are to be certified by a coastal engineer as adequate to withstand potential erosive action during coastal inundation.
- 1.13. Lower levels of buildings prone to storm surge inundation are to be permeable to allow water to flow through. This would not apply if the design response includes fill to the extent that the FFL of the building is located above the identified level of inundation.

## Erosion

The current coastal erosion allowance from an extreme storm impacting the coast has been assessed by applying wave and water level conditions from a design storm consistent with the 1% ARI (100-yr) event, and adopting present sea level conditions, as recommended in SPP2.6. The current coastal erosion allowance is depicted as a yellow line in Appendix 5.

## Adaptation Requirements for Properties Affected by Coastal Erosion

- 1.14. Unless provision is made within the CHRMAP for protection, no permanent structures to be located within the coastal erosion processes setback area for the 2110 planning period. A copy of the coastal erosion processes affecting Broome Townsite can be located in **Appendix 5**.
- 1.15. Structures, including residential development, that have a lifespan less than the 100-year coastal erosion planning timeframe may be permitted providing they are consistent with the CHRMAP adaptation strategies in Appendix 3 and removed once the current risk of erosion poses an unacceptable risk to a development or structure.
- 1.16. In instances where a protection option is not proposed, any approval is to be conditioned requiring all structures be removed at the cost of the land owner once the current risk

of erosion poses a risk to a development or structure, as defined by the following triggers:

- *When the distance from the most landward part of the Horizontal Shoreline Datum (HSD) to the most seaward point of a development or structure is less than the S1 allowance in the respective section of coast.*
- *Where a public road is no longer available or able to provide legal access to the property.*
- *When water, sewage or electricity to the lot is no longer available as they have been removed/ decommissioned by the relevant authority due to coastal hazards.*

1.17. Development in areas where a protection option is identified within the CHRMAP are only required to be setback landward of the current coastal erosion allowance.

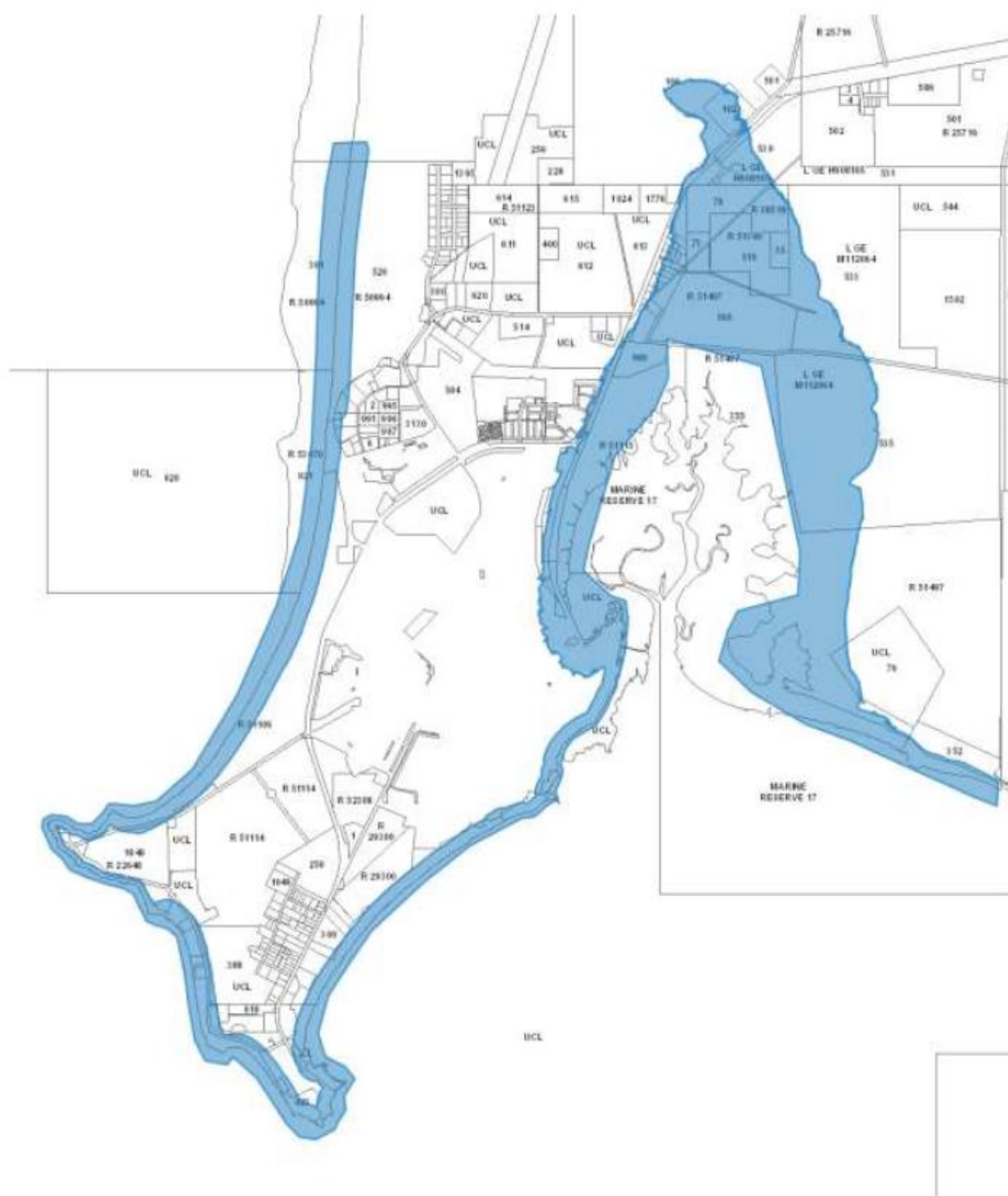
### **Notification on Title**

1.18. In its determination of development applications for land within SCA9, a notification is to be placed on the Certificate of Title, pursuant to section 70A of the Transfer of Land Act 1893:

*VULNERABLE COASTAL AREA - This lot is located in an area likely to be subject to coastal erosion and/or inundation over the 100 planning timeframe (2110).*



## Appendix 1: Extent of Special Control Area No.9



## Appendix 2: Coastal Compartments



## Appendix 3: CHRMAP Adaptation Strategies

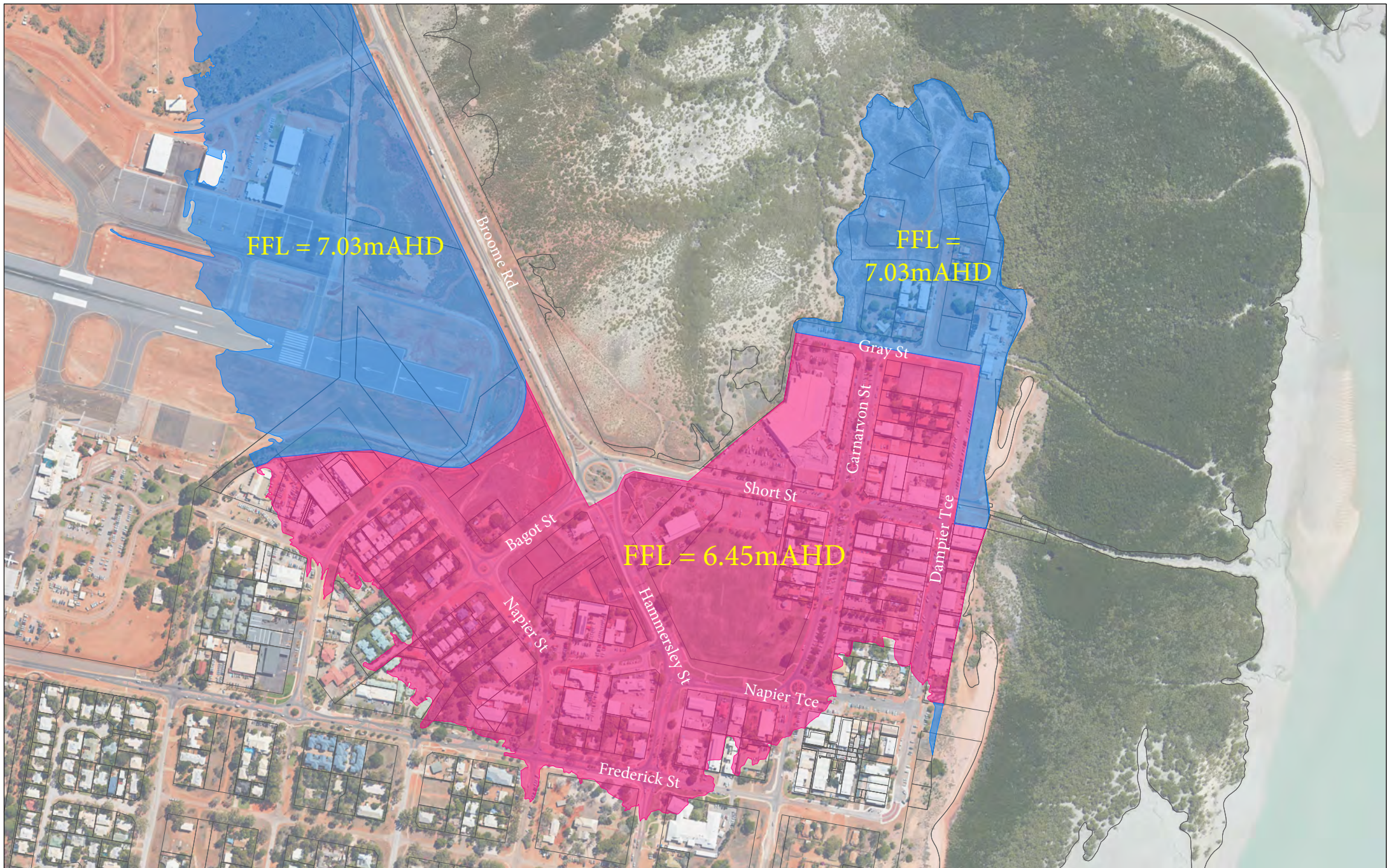
Coastal Compartment	Adaptation Strategy Recommendations
<b>Cable Beach</b>	<p>For areas north and south of central tourist area</p> <p>Planning Approach</p> <ul style="list-style-type: none"> <li><b>Avoid.</b> Any future planning approaches will need to be sited landward of the identified 2110 planning period coastal erosion hazard.</li> </ul> <p>For central section (Surf Club, Zanders café, Amphitheatre etc)</p> <p>Recommendations</p> <ul style="list-style-type: none"> <li>Further studies on a coastal protection option for up to 500m of the main foreshore area is recommended and supported through the CHRMAP with a view to adopting a <b>Protect</b> strategy for this section of coast. Will require a detailed erodibility study to determine the underlying geotechnical properties of the foreshore beneath the dune. Following the erodibility assessment, requirement for concept engineering, consultation with community/stakeholders and further economic analysis of option/s.</li> </ul> <p>Planning Approach (general)</p> <ul style="list-style-type: none"> <li><b>Avoid</b> further development of vacant land within the identified coastal erosion hazard area for areas north and south of the central tourist hub;</li> <li><b>Planned / Managed Retreat</b> for existing assets located on land prone to coastal erosion within the 2110 planning timeframe for land not proposed to be protected by a seawall; and</li> <li><b>Accommodate</b> land uses exempted by Part 7 of SPP 2.6 Schedule 1 e.g.. Community use of foreshore.</li> </ul> <p>Planning Approach for areas behind a coastal protection structure (type of coastal protection, alignment and timing to be confirmed in future studies)</p> <ul style="list-style-type: none"> <li><b>Protect</b> existing assets through a coastal protection structure.</li> </ul> <p>Shire Structures</p> <ul style="list-style-type: none"> <li><b>Managed Retreat</b> for current structures and properties within the erosion hazard area.</li> </ul>
<b>Gantheaume Cliffs</b>	<p>Planning Approach</p> <ul style="list-style-type: none"> <li><b>Avoid</b> further development within the identified 2110 coastal erosion hazard on vacant land; and</li> <li><b>Accommodate, Managed Retreat</b> for existing assets located on land prone to coastal erosion within the 2110 planning timeframe (e.g. Broome Turf Club).</li> </ul> <p>Shire Structures in foreshore areas</p> <ul style="list-style-type: none"> <li><b>Managed Retreat</b> for coastal structures and roads.</li> </ul>
<b>Reddell Beach</b>	<p>Planning Approach</p> <ul style="list-style-type: none"> <li><b>Avoid</b> further development within the identified 2110 coastal erosion hazard on vacant land; and</li> <li><b>Accommodate, Managed Retreat</b> for existing assets located on land prone to coastal erosion within the 2110 planning timeframe.</li> </ul> <p>Shire Structures in foreshore areas</p> <ul style="list-style-type: none"> <li><b>Managed Retreat</b> for coastal structures and roads.</li> </ul>
<b>Entrance Point</b>	<p>Recommendations</p> <ul style="list-style-type: none"> <li>Recommended the Kimberley Port Authority undertake a detailed erodibility study to determine the underlying geotechnical properties of the foreshore area.</li> </ul> <p>Planning Approach</p> <ul style="list-style-type: none"> <li><b>Avoid</b> further development within the identified 2110 coastal erosion hazard on vacant land; and</li> </ul>

	<ul style="list-style-type: none"> <li>• <b>Accommodate, Managed Retreat</b> for existing assets located on land prone to coastal erosion within the 2110 planning timeframe.</li> </ul> <p>Shire Structures in foreshore areas</p> <ul style="list-style-type: none"> <li>• <b>Managed Retreat</b> for coastal structures and roads.</li> </ul>
<b>Simpsons Beach</b>	<p>Planning Approach</p> <ul style="list-style-type: none"> <li>• <b>Avoid</b> further development within the identified 2110 coastal erosion hazard on vacant land; and</li> <li>• <b>Accommodate, Managed Retreat</b> for existing assets located on land prone to coastal erosion within the 2110 planning timeframe.</li> </ul> <p>Shire Structures in foreshore areas</p> <ul style="list-style-type: none"> <li>• <b>Managed Retreat</b> for coastal structures.</li> </ul>
<b>Town Beach</b>	<p>Recommendations</p> <ul style="list-style-type: none"> <li>• Further studies on construction of the Town Beach revetment (engineering, environmental and local stakeholder issues);</li> <li>• Develop an appropriate Emergency Response Plan for the Roebuck Bay caravan park;</li> <li>• Undertake a foreshore management plan; and</li> <li>• Investigate remediation of the dune in front of the properties in Demco Drive.</li> </ul> <p>Planning Approach</p> <ul style="list-style-type: none"> <li>• <b>Accommodate</b> developable land located on land prone to coastal erosion within the 2110 planning timeframe;</li> <li>• <b>Accommodate</b> Land uses exempted by Part 7 of SPP 2.6 Schedule 1 e.g. Community use of foreshore; and</li> <li>• <b>Protect</b> existing assets through a coastal protection structure for areas landward of the planned revetment / seawall north of old jetty area.</li> </ul> <p>Shire Structures in foreshore areas</p> <ul style="list-style-type: none"> <li>• <b>Managed Retreat</b> for minor structures within the erosion hazard area;</li> <li>• <b>Accommodate</b> for minor structures in the defined storm surge inundation area; and</li> <li>• <b>Protect</b> Shire assets covered by the revetment / seawall at the eroding Pindan Cliff north of Old Jetty Groyne (Pioneer Cemetery, foreshore area in Town Beach Reserve).</li> </ul>
<b>Broome Central</b>	<p>Recommendations</p> <ul style="list-style-type: none"> <li>• A coastal protection structure to <b>Protect</b> Chinatown peninsula providing storm surge immunity and coastal erosion protection is supported through CHRMAP. Further studies required to determine type, alignment and timing. At latest the structure is assumed to be constructed for the 2070 planning period.</li> </ul> <p>Planning Approach</p> <ul style="list-style-type: none"> <li>• <b>Accommodate</b> developable land located on land prone to coastal erosion within the 2110 planning timeframe;</li> <li>• <b>Accommodate</b> land prone to storm surge flooding through Special Control Area and specific requirements for planning approval of properties within the defined storm surge inundation area; and</li> <li>• <b>Accommodate</b> Land uses exempted by Part 7 of SPP 2.6 Schedule 1 e.g. Community use of foreshore.</li> </ul> <p>For areas within the Chinatown peninsula</p> <ul style="list-style-type: none"> <li>• <b>Protect</b> Existing assets.</li> </ul> <p>Shire Structures in foreshore areas</p> <ul style="list-style-type: none"> <li>• <b>Managed Retreat</b> for minor structures within the erosion hazard area; and</li> <li>• <b>Accommodate</b> for minor structures in the defined storm surge inundation area.</li> </ul>

<b>Dampier Creek Inner</b>	<p>Planning Approach</p> <ul style="list-style-type: none"> <li>• <b>Avoid</b> further development within the identified 2110 coastal erosion hazard on vacant land; and</li> <li>• <b>Accommodate</b> land prone to storm surge flooding, through Special Control Area and specific requirements for planning approval of properties within the 2110 timeframe.</li> </ul> <p>Shire Structures in foreshore areas</p> <ul style="list-style-type: none"> <li>• <b>Managed Retreat</b> for minor structures and properties within the erosion hazard area; and</li> <li>• <b>Accommodate</b> for minor structures in the defined storm surge inundation area.</li> </ul>
<b>Dampier Creek East</b>	<p>Planning Approach</p> <ul style="list-style-type: none"> <li>• <b>Avoid</b> further development within the identified 2110 coastal erosion hazard on vacant land; and</li> <li>• <b>Avoid</b> land prone to storm surge flooding.</li> </ul> <p>Shire Structures in foreshore areas</p> <ul style="list-style-type: none"> <li>• <b>Managed Retreat</b> for minor structures and properties within the erosion hazard area; and</li> <li>• <b>Accommodate</b> for minor structures in the defined storm surge inundation area.</li> </ul>

## **Appendix 4: Broome Town Centre (Chinatown) Protection Area**







## **Appendix 5: Coastal Erosion Timeframes**



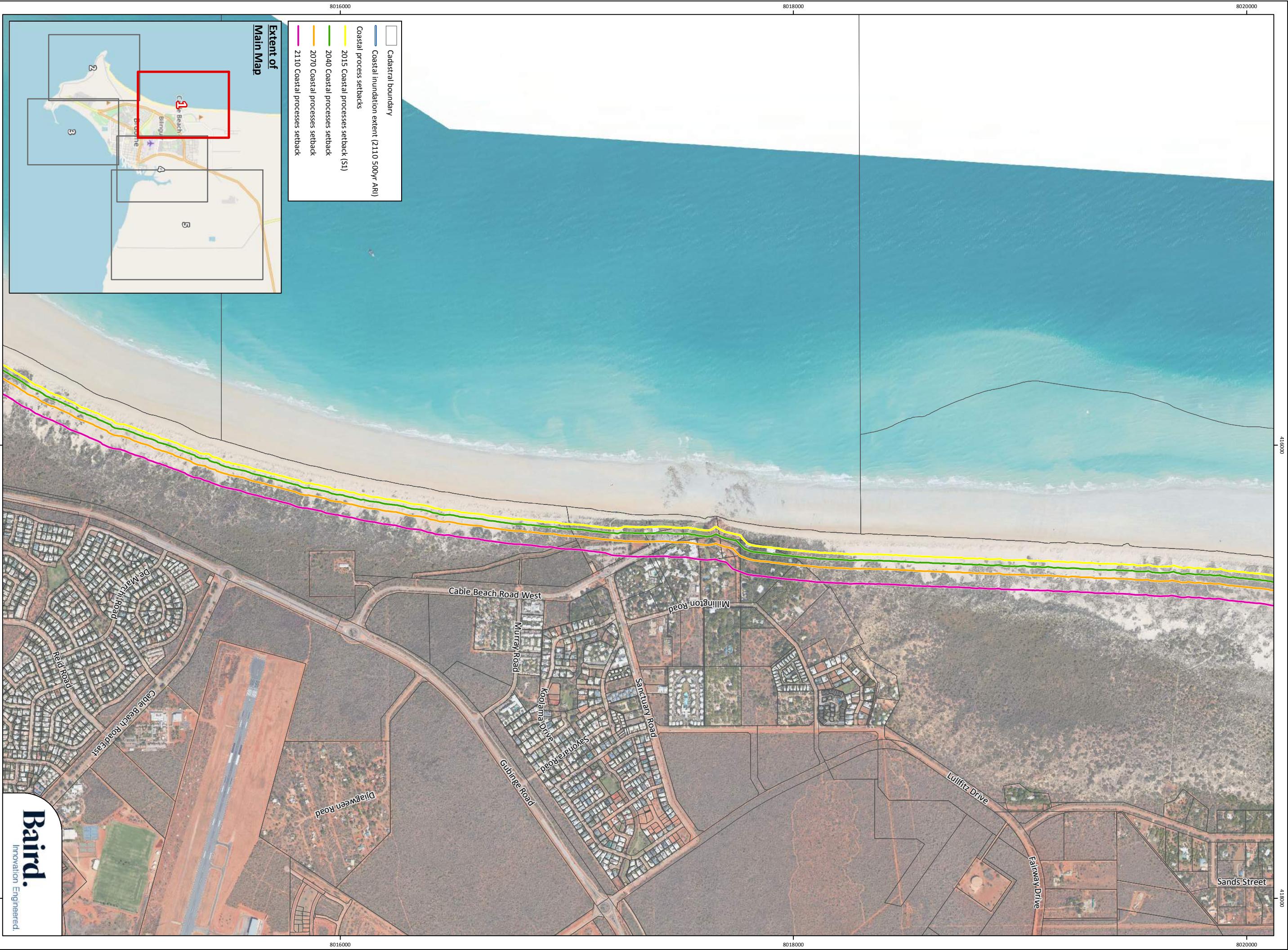


Figure 1: Coastal Hazard Mapping (Map 1 of 5)

**Project:** Broome Coastal Policy  
**Client:** Shire of Broome

**Plan Number:** EP17-099 (02)-F47  
**Drawn:** KMM  
**Date:** 23/05/2018  
**Checked:** DRAFT  
**Approved:** DRAFT  
**Date:** -/-/-

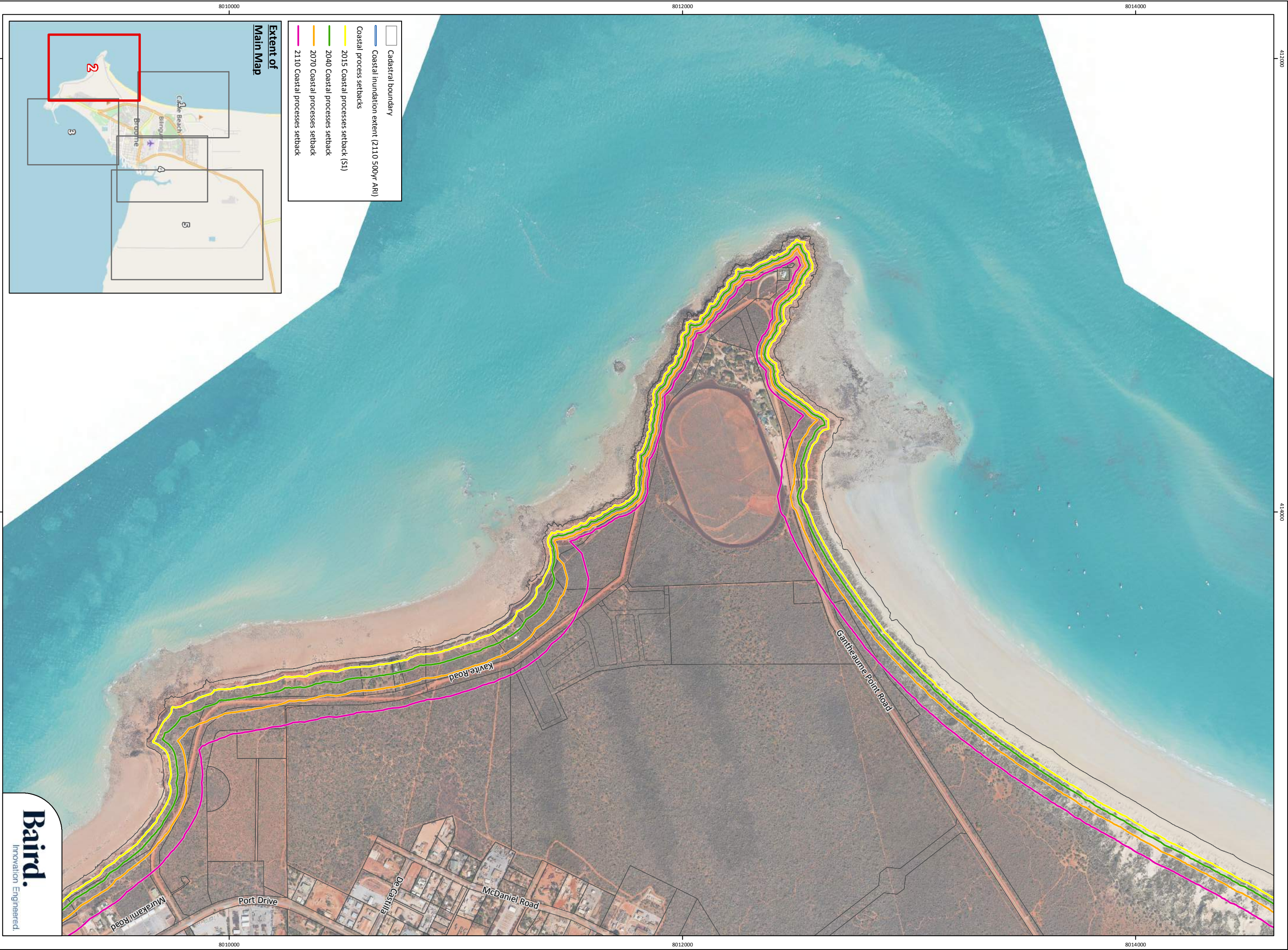


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Metres  
Scale: 1:15,000@A3  
GDA 1994 MGA Zone 51



While Emerge Associates makes every attempt to ensure the accuracy and completeness of data, Emerge accepts no responsibility for externally sourced data used





- Cadastral boundary
- Coastal inundation extent (2110 500yr AR)
- Coastal process setbacks
- 2015 Coastal processes setback (SI)
- 2040 Coastal processes setback
- 2070 Coastal processes setback
- 2110 Coastal processes setback

Extent of  
Main Map

Figure 2: Coastal Hazard Mapping (Map 2 of 5)

Project: Broome Coastal Policy  
Client: Shire of Broome

Plan Number: EP17-099 (02)-F48  
Drawn: KNI  
Date: 23/05/2018  
Checked: DRAFT  
Approved: DRAFT  
Date: -/-/-



Scale: 1:15,000@A3  
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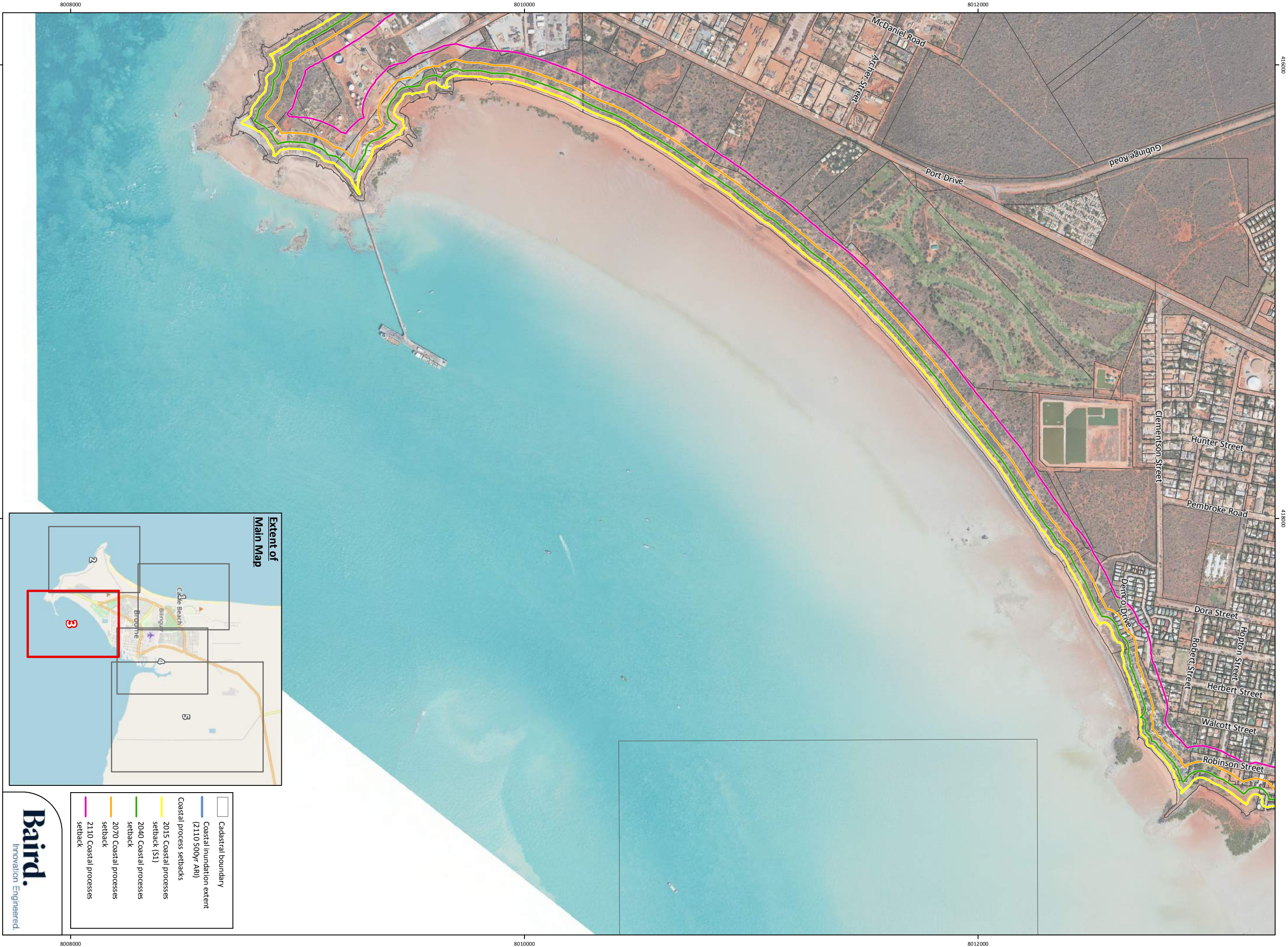


Figure 3: Coastal Hazard Mapping (Map 3 of 5)

Project: Broome Coastal Policy  
Client: Shire of Broome

Plan Number: EP17-099 (02)-F49  
Drawn: KNI  
Date: 23/05/2018  
Checked: DRAFT  
Approved: DRAFT  
Date: -/-/-

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Shire of Broome

- Cadastral boundary
- Coastal inundation extent (2110 500yr ARI)
- Coastal process setbacks
- 2015 Coastal processes setback (S1)
- 2040 Coastal processes setback
- 2070 Coastal processes setback
- 2110 Coastal processes setback

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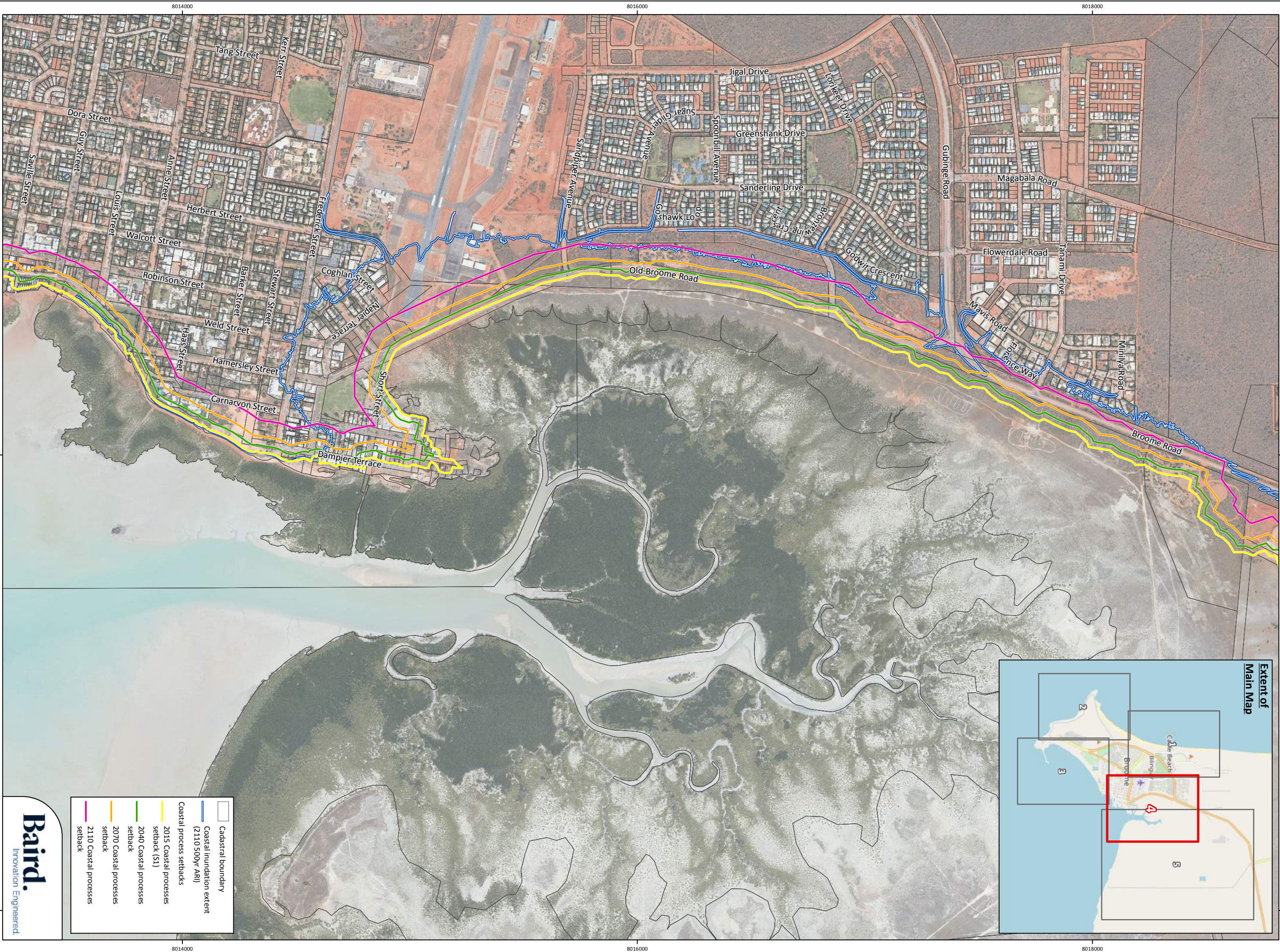


Figure 4: Coastal Hazard Mapping (Map 4 of 5)

Project: Broome Coastal Policy

Client: Shire of Broome

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Plan Number: EP17-099 (02)-F50  
Drawn: KMM  
Date: 23/05/2018  
Checked: DRAFT  
Approved: DRAFT  
Date: -/-/-

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Scale: 1:210,000@A3  
GDA 1994 MGA Zone 51



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- Cadastal boundary
- Coastal inundation extent (2110 500yr ARI)
- Coastal process setbacks
- 2015 Coastal processes setback (S1)
- 2040 Coastal processes setback
- 2070 Coastal processes setback
- 2110 Coastal processes setback



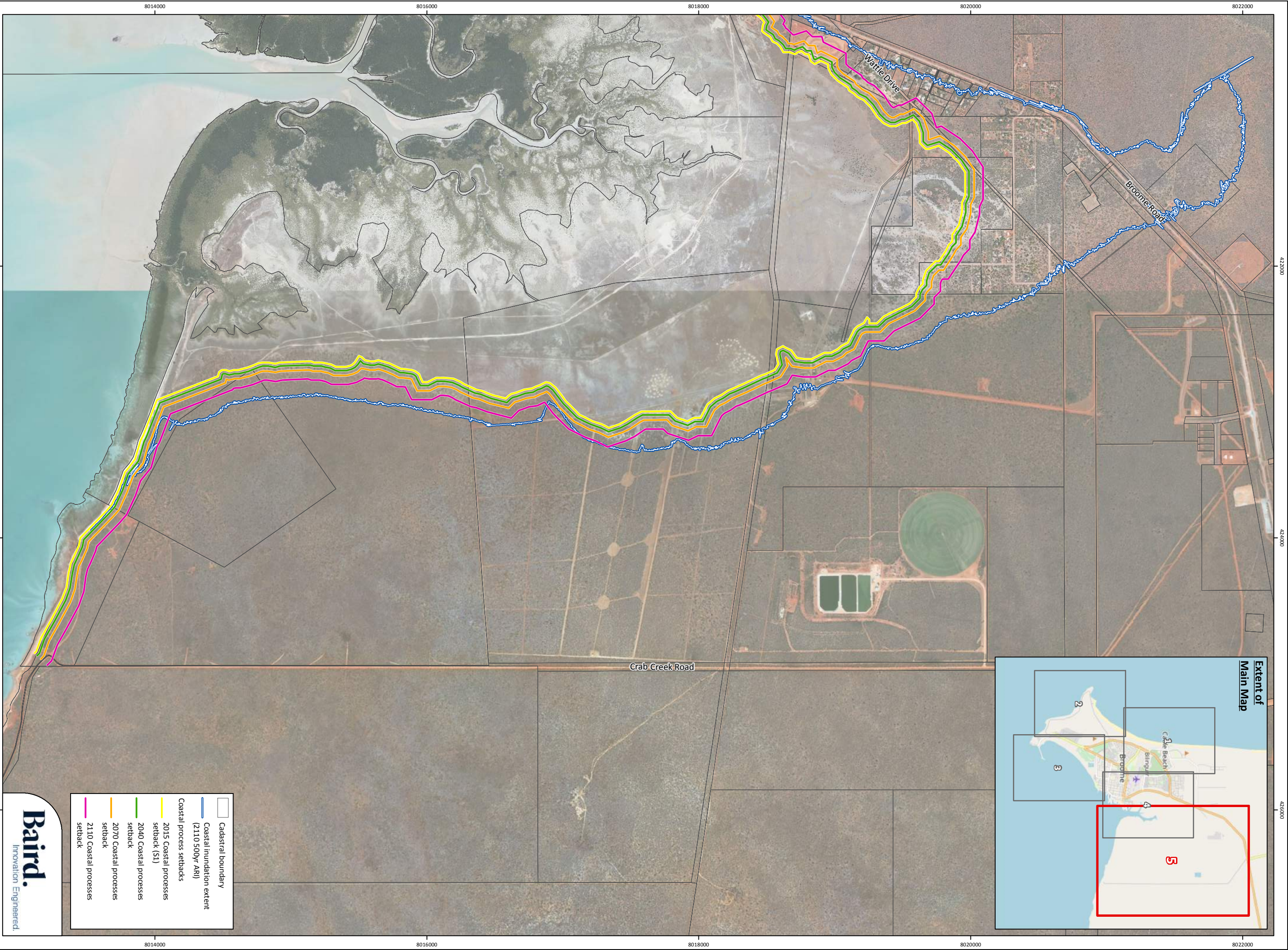


Figure 5: Coastal Hazard Mapping (Map 5 of 5)

Project: Broome Coastal Policy

Client: Shire of Broome

Plan Number: EP17-099 (02)-FS1  
Drawn: KMM  
Date: 23/05/2018  
Checked: DRAFT  
Approved: DRAFT  
Date: -/-/-



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Scale: 1:25,000@A3  
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