Department of Premier and Cabinet
OFFICE OF SECUURTY AND EMERGENCY MANAGEMENT

Tasmania
Explore the possibilities

Coastal Hazards workshop	
Aim	To agree on the hazard banding for coastal hazards and to identify the core policy issues relating to each hazard band.
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Apologies	Eric Woehler(Birds Tasmania), Chris Rees(UTAS), Greg Walker(LCC), Shona Prior (DPAC-TCCO), Barry Magnus (WWC & AIBS), Melanie Brown (LGAT)
Background	See background papers.
Discussion and outcomes relating to the hazard banding	The workshop participants discussed the mapping of coastal inundation and coastal erosion along with the development of the policy. The following items reflect the key points from the workshop: The hazard banding for coastal hazards (erosion and inundation) reflects our current understanding of coastal process and Government policy on climate change (sea level rise, change in storm frequency). Broadly each hazard band reflects: • The high hazard band is the area most at risk from permanent inundation or a hazardous erosion event. • The medium hazard band is temporary inundation and coastal recession in 2050. • The Low hazard band is temporary inundation and coastal recession in 2100. Application of the hazard banding is slightly different from other hazard areas (landslide) in that the hazard is a dynamic. the low band in effect covers the combined low-medium-high area. Figure 1 below shows the relationship between the different hazard bands and the Mean High Tide (Blue), land surface (Brown line) and each hazard band.

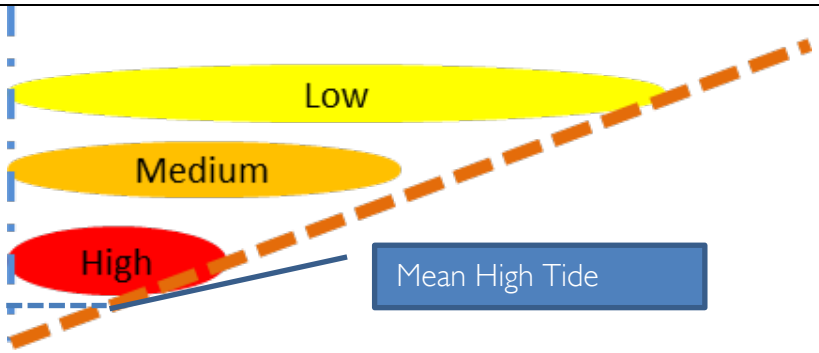

Figure 1 Coastal Hazards Hazard Banding

This overlap recognises that by 2050 the area affected by the high band will have either been submerged (inundation) or moved to impact further inland. The extent of this change is however unknown beyond our current modelling. Figure 2 illustrates how the hazard bands may change by 2050 for erosion and inundation.

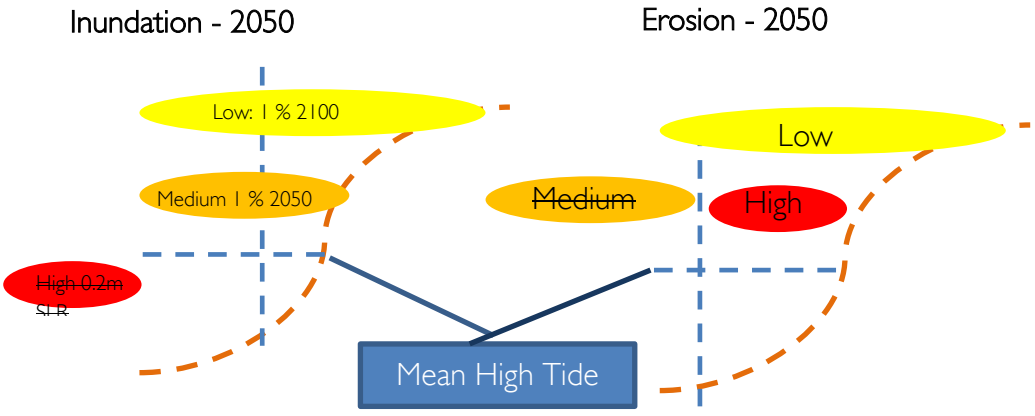

Figure 2 Change in coastal hazard banding by 2050

Figure 3 illustrates how the hazard bands may change by 2100 for erosion and inundation.

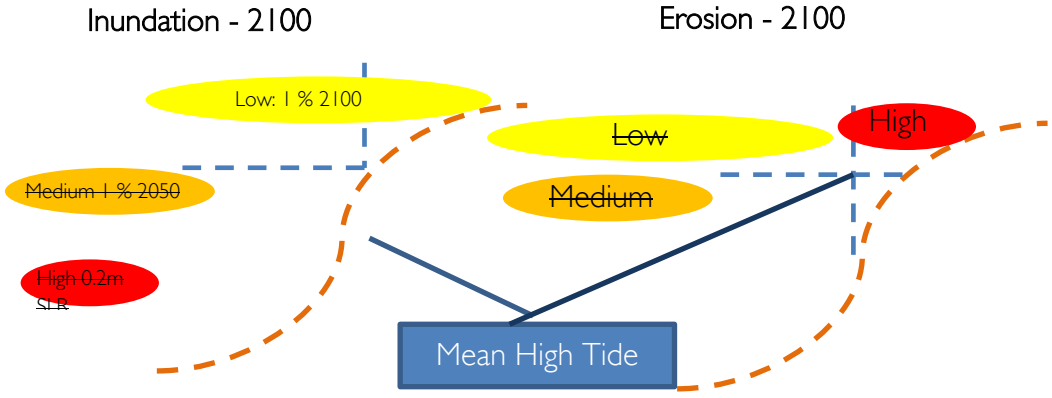

Figure 3 Change in coastal hazard banding by 2100

	Given the change in how the hazard bands will be considered for the inundation and erosion the proposed hazard banding is outlined below. Hazard Banding - Coastal Inundation The coastal inundation hazard bands are: • Storm Surge in 2100 (1% AEP) is the low hazard area (spatial extent and height AHD). • Storm Surge in 2050 (1% AEP) is the medium hazard area (spatial extent and height AHD). • Sea Level rise in 2050 (0.2 m from 2010 Mean High Tide) is the high hazard area (spatial extent and height AHD). • Coastal inundation investigation area is the area without a suitably accurate digital elevation model that requires further investigation on elevation. (spatial extent and height AHD) Each hazard band has three componets including a spatial extant and a vertical elevation in metres AHD, and the hazard matrix. The discussion noted that in areas which more detailed studies (typically estuaries) then this work can be adopted over the state modelling. Some examples include the • tidal – river flow models exist such as the Upper Tamar river or Georges River, or • coastal inundation modelling. Then this modelling should take precent over the state modelling in these areas. Hazard Banding - Coastal Erosion The coastal erosion hazard bands are: • Acceptable = the area beyond coastal recession by 2100 and not subject to controls. • Low = the area vulnerable to coastal recession by 2100 • Medium = the area vulnerable to recession to 2050 • High = the area vulnerable to hazardous erosion in 2010 • Coastal erosion investigation area= the area in which the underlying base data is poorly understood and requires further investigation. Each hazard band is made up the spatial extent and a geomorphic description for each component. ***Outcomes for the hazard banding:*** • Support for a change in the way hazard bands for inundation and erosion are discussed. • Support for the revised coastal inundation hazard banding. • Support to use the 10m contour and elevations in non lidar areas. • Noted that in estuaries such as Georges or Tamar River to use more detailed river flooding mapping where it exists. • Change the name of the hazard bands to reflect the temporal nature of the hazard for example the high band will become the Sea Level Rise from

	MHT to 2050 (0.2m AHD) • Support the coastal erosion hazard banding. • Support the General investigation areas as a way to identify areas where the underlying data is not adequate. • Note that in the general investigation area the development proponent would be required to demonstrate the erosion potential for storm, or recession to 2050 and 2100.
Hazard matrix	The broad outcomes relating to the hazard matrix are: Need for a better definition/ explanation of compelling reasons • In general avoid the hazard – unless there are compelling reasons • The balancing of environmental (values and hazards), economic and social values with coastal hazard mitigation is part of the planning system as a whole through the coastal framework and coastal policy. Low band – broad agreement on the provisions for use and development Medium band Specific changes in attachment 1.

Coastal Inundation	
Low Band	Yellow on the coastal inundation hazard map.
Hazard exposure	This area is vulnerable to a 1% AEP storm tide event in 2100 Or Is protected by coastal defences for inundation.
Control Level	Whilst non-construction requirements are not necessary for most uses, controls may be necessary to reduce the risks associated with vulnerable and hazardous uses or post –disaster and catastrophic risk-based use to ensure that risks are tolerable. Development should consider the management of landfill, changes to natural drainage paths, wastewater, or stormwater on and from the site.
Strategic Planning	Where broader planning considerations support the development of the area. However the rezoning or substantial intensification in use or development would require consideration of the hazard.
Guidance on Use	**Residential, other, occasional or temporary use** in existing areas is retained and maintained. While the intensification or rezoning of land will require a hazard management that outlines how the proposed change in use will manage the risk from a 1% AEP storm tide event by 2100. The hazard management plan should be endorsed by a relevant authority (council) and addresses the hazard within the context of the community. **Vulnerable and hazardous use**s are discretionary in this area based on a hazard management plan that demonstrates how the hazard will be managed. The hazard management plan should be endorsed by a relevant authority (council) and addresses the hazard within the context of the community. **Post–disaster and catastrophic risk based use** are discretionary in this area, subject to demonstrating the community benefit of being located in this area, and the completion of a hazard management plan that demonstrates how the hazard will be managed.
Guidance on Development Standards and Building Control	**Ancillary structures, minor extensions** are permitted at the existing floor height. **Coastal development, Infill/ new buildings, habitable buildings and large extensions, and minor utilities**, are permitted subject to the completion of a hazard management plan to demonstrate how the form of a resulting development will manage the risk from a 1% storm tide event by 2100. The hazard management plan should outline how the developments will maintaining access and services to the property, minimising the impact on neighbouring properties and the environment. **Major subdivision, major works** should be completed in accordance with the hazard management plan required for the intensification of use or change in use.. **Building control** should consider this area as part of the coastal flood area, requiring all floor heights to be 300mm above the 1% AEP in 2100.

Coastal Erosion	
Low Band	Yellow on the coastal erosion hazard map.
Hazard exposure	This area has been identified as vulnerable to a coastal recession by 2100 based on current sea level rise models, soil type, and the geomorphology of the area. Or Is protected by coastal defences for erosion.
Control Level	Whilst non-construction requirements are not necessary for most use and development, controls may be necessary to reduce the risks associated with vulnerable and hazardous uses or post –disaster and catastrophic risk-based use to ensure that risks are tolerable.
Strategic Planning	Where broader planning considerations support the development of the area, the low band should not change existing zoning. However the rezoning or substantial intensification of use or development would require consideration of the hazard.
Guidance on Use Standards	**Residential, other, occasional or temporary use** in existing areas is retained and maintained. While the intensification or rezoning of land will require a hazard management that outlines how the proposed change in use will manage the risk from coastal recession to 2100. The hazard management plan should be endorsed by a relevant authority (council) and addresses the hazard within the context of the community. **Vulnerable and hazardous use**s are discretionary in this area based on a hazard management plan to address how the use and development will adapt to coastal erosion. **Post–disaster and catastrophic risk based use** are discretionary in this area, subject to demonstrating the community benefit of being located in this area, and the completion of a hazard management report that demonstrates how the hazard will be managed.
Guidance on Development Standards and Building Control	**Coastal development, ancillary structures**, **minor extensions, infill/ new buildings, habitable buildings, large extensions, and minor utilities** do not have specific development standards, but will be required to meet appropriate building controls. though the consideration of the site as a "P"site for footing and foundation under AS2870 **Major subdivision and major works** should be completed in accordance with the hazard management plan required for the intensification or change in use. **Building controls** should consider this area a "P"site for footing and foundation design under AS2870

Coastal Inundation	
Medium Band	Orange on the coastal inundation hazard map.
Hazard exposure	This area is vulnerable to a 1% AEP storm tide event in 2050. Noting that this area is also vulnerable to 0.8m sea level rise by 2100
Control Level	Planning controls are necessary for all use and development to ensure that risks are managed. Any vulnerable or hazardous use will only be allowed in exceptional circumstances.
Strategic Planning	Where there is no compelling reason to include land identified in this band for development, it should be zoned for open space, rural, or environmental purposes. Compelling reasons may include that it is an existing residential area [*further development will be infill*], or a coastal dependent industry. Alternatively, a risk assessment may be required to demonstrate that a proposed zoning is reasonable and that the mitigation measures can be implemented.
Guidance on Use Standards	**Residential, occasional or temporary and other uses** are retained and able to be maintained in existing areas. The rezoning or intensification of land will require the completion of a hazard management plan to demonstrate how the risk from permanent inundation by 2100 and a 1% AEP storm tide event in 2050 will be managed. The hazard management plan should be endorsed by a relevant authority (council) and addresses the hazard within the context of the community. **Vulnerable and hazardous uses**, **post–disaster and catastrophic risk based use** are discretionary subject to demonstrating the community benefit of being located in this area. Supported by a hazard management plan to demonstrate how the form of a resulting development will adapt to the permanent inundation by 2100 and a 1% AEP storm tide event in 2050 while minimising the impact on neighbouring properties and the environment. The hazard management plan should be endorsed by a relevant authority (council) and addresses the hazard within the context of the community.
Guidance on Development standards	**Ancillary structures** , **minor extensions**, **and minor utilities** are permitted. **Coastal development, Infill/ new buildings, habitable buildings, large extensions,** are discretionary subject to the completion of a hazard management plan to demonstrate how the form of a resulting development will manage the risk from permanent inundation by 2100 and a 1% storm tide event by 2050. The hazard management plan should outline how the developments will maintaining access and service (water and wastewater) to the property, minimising the impact on neighbouring properties and the environment. **Major subdivision and major works are discretionary are** generally prohibited (except for the purpose of public open space, coastal development, and infrastructure) in this area unless there is an overriding community benefit. The development should be supported by a hazard management plan that demonstrates: • how the development will manage the risk from permanent inundation and a 1% storm tide event by 2100. • How the development will not increase the risk to public assets **Building control** should consider this area as part of the coastal flood area, requiring all floor heights to be 300mm above the 1% AEP in 2100.

Coastal Erosion	
Medium Band	Orange on the coastal erosion hazard map.
Hazard exposure	The area is vulnerable *to coastal recession to 2050 based on current sea level rise models* and the geomorphology of the area.
Control Level	*Planning controls are necessary for all use and development to ensure that risks are tolerable. Any vulnerable or hazardous use will only be allowed in exceptional circumstances.*
Strategic Planning	*Where there is no compelling reason to include land identified in this band for development, it should be zoned for open space, rural, or environmental purposes.* Compelling reasons may include that it is an existing residential area [*further development will be infill*] or a coastal dependent industry. Alternatively, a risk assessment may be required to demonstrate that a proposed zoning is reasonable and that the mitigation measures available can be implemented.
Guidance on Use Standards	**Residential, occasional or temporary and other uses** are retained and able to be maintained in existing areas. The rezoning or intensification of land to allow this type of use will require the completion of a hazard management plan to demonstrate how the form of a resulting development will adapt to being impacted by coastal recession in 2050 while minimising the impact on neighbouring properties and the environment. The hazard management plan should be endorsed by a relevant authority (council) and addresses the hazard within the context of the community. **Vulnerable and hazardous uses**, **post–disaster and catastrophic risk based use** are discretionary subject to demonstrating the community benefit of being located in this area, and the completion of a hazard management plan that demonstrates how the hazard will be managed. The hazard management plan should be endorsed by a relevant authority (council) and addresses the hazard within the context of the community.
Guidance on Development standards	**Ancillary structures** , **minor extensions** , **and minor utilities** are permitted . **Coastal development, Infill/ new buildings, habitable buildings, large extensions,** are discretionary subject to the completion of a hazard management plan to demonstrate how the form of a resulting development

will manage the risk from coastal recession.

The hazard management plan should outline how the developments will maintaining access and services to the property, minimising the impact on neighbouring properties and the environment.

Major subdivision and major works are discretionary **are** generally prohibited (except for the purpose of public open space, coastal development, and infrastructure) in this area unless there is an overriding community benefit. The development should be supported by a hazard management plan that demonstrates:

- how the development will manage the risk from coastal recession.
- How the development will not increase the risk to public assets

Building controls should consider this area a "P"site for footing and foundation design under AS2870

Coastal Inundation	
High Band	0.2 m SLR from 2010 Mean High Tide (Red on map)
Hazard Exposure	*This area is exposed to an immediate and growing risk from* a sea level rise of 0.2m AHD by 2050,
Control level	All new use and development would require significant investigation and an engineered solution to mitigate the inundation and enable the development to achieve and maintain a tolerable level of risk. Mitigation measures will rarely achieve adequate levels of security and safety. Use and development is to achieve a tolerable level of risk having regard to : a) Development on coastal location, or b) Not of a nature where risk is relevant, or c) Temporary or expendable use.
Strategic Planning	Strategies should indicate appropriate zoning and overlays to ensure use and development is restricted. (except vital community infrastructure and coastal dependent developments that cannot be reasonably located elsewhere). Existing use and development may be retained and maintained, however the opportunity to further develop these areas should be minimised.
Guidance on Use Standards	**Residential, occasional , temporary , or other use** in existing areas is retained and maintained. Intensification of use or the rezoning of this land would require the development of a hazard management plan that is endorsed by a relevant authroity (council) that addresses the hazard within the context of the community. **Vulnerable, hazardous use**, **Post–disaster and catastrophic risk based use** are generally prohibited. If however there is an overriding community benefit or an exceptional circumstance, they may be allowed as an exceptional use, subject to the completion of a hazard management plan, which considers how the risk will be managed.
Guidance on Development Standards and Building Control	**Coastal development** is discretionary subject to a hazard management plan proportional to the risk. **Ancillary structures** are discretionary if part of an existing building, demonstrating that they will not negatively impact on neighbouring properties. **Minor extensions** are discretionary subject to a hazard management plan that demonstrates how the development will mitigate the impact of sea level rise to 2050. **Infill/ new buildings, habitable buildings and large extensions, minor utilities , major subdivision and major works** generally prohibited (except for the purpose of public open space, coastal development, and infrastructure) in this area unless there is an overriding community benefit. The development should be supported by a hazard management plan that demonstrates • how the development will manage the risk from permanent inundation and a 1% storm tide event by 2050. • How the development will not increase the risk to public assets **Building control** should consider this area as part of the coastal flood area, requiring all habitable floor heights to be 300mm above the 1% AEP in 2100.

Coastal Erosion	
High Band	Red on the coastal erosion hazard map.
Hazard Exposure	This area is exposed to an immediate and growing risk from storm based erosion..
Control Level	All new use and development would require significant investigation and an engineered solution to mitigate the inundation and enable the development to achieve and maintain a tolerable level of risk. Mitigation measures will rarely achieve comprehensive levels of security and safety.
Strategic Planning	Strategies should indicate appropriate zoning and overlays to ensure use and development is generally prohibited except vital community infrastructure and coastal dependent developments that cannot be reasonably located elsewhere. Existing use and development may be retained and maintained, however the opportunity to further develop these areas should be minimised.
Guidance on Use Standards	**Residential, occasional , temporary , or other use** in existing areas is retained and maintained. Intensification of use or the rezoning of this land would require the development of a hazard management plan that is endorsed by a relevant authority (council) that addresses the hazard within the context of the community. **Vulnerable, hazardous use**, **Post–disaster and catastrophic risk based use** are generally prohibited. If however there is an overriding community benefit or an exceptional circumstance, they may be allowed as an exceptional use, subject to the completion of a hazard management plan, which considers how the risk will be managed.

Guidance on Development Standards and Building Control	**Coastal development** is discretionary subject to a hazard management plan proportional to the risk. **Ancillary structures** are discretionary if part of an existing building, demonstrating that they will not negatively impact on neighbouring properties. **Minor extensions** are discretionary subject to a hazard management plan that demonstrates how the development will mitigate the impact storm based erosion. **Infill/ new buildings, habitable buildings and large extensions, minor utilities , major subdivision and major works** generally prohibited (except for the purpose of public open space, coastal development, and infrastructure) in this area unless there is an overriding community benefit. The development should be supported by a hazard management plan that demonstrates: • how the development will manage the risk from storm based erosion now and coastal recession. • How the development will not increase the risk to public assets **Building controls** should consider this area a "P"site for footing and foundation design under AS2870.