

# PRACTICE NOTE 1 - COASTAL ENVIRONMENT OVERLAY INTERPRETATION

This practice note has been prepared as an information source to assist with the interpretation and application of the Coastal environment overlay code. It focuses only on elements of storm tide inundation.

It is a supporting document that seeks to build further understanding and capacity around the policy position of the Coastal environment overlay. It has been designed to adequately manage assessment of development, particularly around risk to development in coastal hazard areas.

## Coastal Environment Overlay - Fast Facts

1. Incorporates matters of the State Planning Policy: *“The state’s interest in natural hazards, risk and resilience seeks to ensure natural hazards are properly considered”, including “avoiding or mitigating the risks associated with natural hazards to an acceptable or tolerable level, increasing community resilience and decreasing the burden for emergency management.”*
2. The Strategic Framework establishes the overall intent for development and managing natural hazards. Specifically, Strategic Intent (3.2.4) *“Exposure of communities to natural hazards such as bushfire, landslide, flood and coastal risks such as storm surge and sea level rise, will be avoided wherever possible.”*
3. Zones are used to avoid increased development in areas of known hazard, but allow for some changes in existing urban areas (e.g. Low Density residential zone - Accepted development subject to requirements dwelling house - low risk changes).

## Mapping of Storm Tide

1. The overlay maps (maps OM-3.1 and OM-3.2) represent the 1% Annual Exceedance Probability (AEP) of a storm tide event occurring in Townsville.
2. This mapping has been produced using both state and council produced data and includes projections for sea-level rise to 2100 and an increase in cyclone intensification of 10%.
3. The defined storm tide level can be taken as a Relative Level (RL) 4.5m AHD, within 100m of the open coastline or RL 3.9m Australian Height Datum (AHD) in other areas.
4. Generally, where storm tide mapping exists, the choice of zone will reflect this constraint on development to avoid conflict and to support the strategic intent of the Townsville City Plan.

## Key Aspects of the Code

There are several key aspects of the code which reflect the policy position of the strategic framework. The most important aspects of the code are:

1. Avoid risk to persons and property from coastal hazards;
2. Urban and rural residential development does not expand into coastal hazard areas beyond areas zoned for urban and rural residential purposes;
3. Areas zoned for urban and rural residential purposes and located in a coastal hazard area - the risks of storm tide inundation and erosion are avoided, or are mitigated and managed; and
4. Inner city areas - representing areas of the CBD that may be ultimately defended through infrastructure and in the interim, will accommodate sea level rise and storm tide inundation.



### Application

The following information is provided on the basis of the land being in an urban or rural residential area only. In all other cases the policy position is: *Development does not expand into coastal hazard areas beyond areas zoned for urban and rural residential purposes.*

In applying the coastal protection overlay code, the following specific provision has been detailed as it is the most pivotal for assessment purposes in urban or rural residential areas:

**P07** *Development is located outside high or medium storm tide inundation areas and erosion areas from sea level rise identified on overlay maps OM-3.1 and OM-03.2 unless it:*

- (a) *does not result in an increase in the intensity of the development on the site; or*
- (b) *is located within the inner city area shown on Figure 8.1 - coastal hazard areas: storm tide inundation areas and provides measures to ensure critical services remain operational up to the defined storm tide event; or*
- (c) *avoids any increase in risk to people or property from coastal hazard impacts (including impacts on the development's ongoing operation).*

*Editor's note - The inner city area shown on Figure 8.1 - Coastal hazard areas: storm tide inundation areas is intended to be defended from storm surge risk by public works.*

In applying the above outcome, the following is provided:

- (a) Development can occur without resulting in an increase in the intensity of development. For this purpose, increase in intensity means reusing, one or more additional lots or new development that, for the purposes of the *Planning Act 2016*, is a material change of use or a Reconfiguration of a Lot. Development may proceed to the next point (b) and (c). Note, that under point (c), this gives an applicant the ability to reduce risk.

**OR**

- (b) Development is located in the Inner city areas, as shown on the Coastal environment overlay maps. This area may ultimately be defended with coastal defence infrastructure and therefore, development can be protected. For development applications in this area, it should be demonstrated that:
  - I. Habitable floors and residential uses are located above the defined storm tide event of 3.9m AHD;
  - II. Non-habitable floors or non-residential uses may be located below 3.9m AHD, but must be above the higher of 3.05m AHD to account for permanent sea level rise, or the 1% AEP flood level. Filling of the land may be acceptable to lift land levels to be above 3.05m AHD;

- III. Development located below 3.9m AHD, must be designed such that it can sustain inundation, be wet proofed and have critical services outside/above the defined storm tide level of 3.9m AHD. Critical services include essential building services, lifts, electrical supply and the like. The idea is that the building can be made resilient after an event (e.g. no structural failure and ability to recommence operation soon after an event); and
- IV. Take account of any Flood hazard present on the site or other natural hazard.

**OR**

- (c) Development avoids any increase in risk to people or property from coastal hazard impacts (including impacts on the development's ongoing operation). In applying this provision, the following is provided:
  - I. Applicants are able to demonstrate how the development avoids increase in risk if they are not able to meet the previous two provisions (a) and (b).
  - II. Applicants may demonstrate an increase in the intensity of development as follows:
    - The subject land is at least 3.05m AHD to avoid permanent sea-level rise to 2100 (where it can be achieved through filling or is already above this volume). This will mean a tolerable level of risk is achieved as per Table 1 below; and
    - Have all habitable floors built to the defined storm tide event (3.9/4.5m AHD). This will achieve a tolerable to acceptable level of risk as per Table 2 below; and
    - Take account of the Flood hazard overlay, including lot level, loss of storage and impacts on adjoining lands as result of the filling. Accordingly, the filling cannot detrimentally impact on adjoining land;
    - Take account of local stormwater management issues (drainage);
    - Ensure structures are able to withstand an event and remain operational after an event; and
    - Be outside the Erosion Prone Area.
  - III. In determining if a development has reduced risk to persons and property, the following two tables (below – adapted from CHAS) should be used. If the development is able to satisfy the below table requirements to an acceptable or tolerable level, then development may be supported;
  - IV. Applicants should clearly demonstrate that any increase in risk is tolerable or acceptable in accordance with the tables below, including how the proposed mitigation measures will achieve this in line with the requirements of point II above.



**Table 1 - Risk Table - Risk to property from permanent inundation hazard**

Permanent Sea Level	Residential property	Commercial/industrial property	Open space/rural - other
> 5% of block inundated	Unacceptable risk	Unacceptable risk	Tolerable risk
< 5% of block inundated	Tolerable risk	Unacceptable risk	Acceptable risk

Source: Townsville City Council Coastal Hazard Adaption Strategy (CHAS)

**Table 2 - Risk Table - Risk to property from storm tide hazard**

Event Range	Residential buildings - above floor flooding	Commercial/industrial buildings - above floor flooding	Open space/rural - other
1% AEP	Unacceptable risk	Unacceptable risk	Acceptable risk

Source: Townsville City Council Coastal Hazard Adaption Strategy (CHAS)

**Notes:** Table 2 (above) shows the level of risk for categories of development where the 1% stormtide AEP can inundate above floors for residential, commercial/industrial and open space/rural/other. In this circumstance, the risk is considered unacceptable and development would not be supported. If development can demonstrate that the 1% AEP storm tide event does not inundate over floors, then the risk may be either tolerable or acceptable. In this circumstance, development may be supported.

## Frequently Asked Questions

### What is the defined storm tide event and level?

The defined storm tide event level is the 1% annual exceedance probability (AEP) storm tide event with an allowance of 0.8m sea level rise to 2100 and an increase in maximum cyclone intensity of 10% relative to present day conditions. For this planning scheme, this level is RL4.5m (AHD), within 100m of the coastline (open coastal line) or RL3.9m AHD in other areas.

The defined storm tide event level is higher within 100m of the open coast line to allow for wave set-up. The defined storm tide event level includes projected permanent sea-level inundation which is land at or below RL3.05m AHD. Land mapped by the Coastal protection overlay and located at or below 3.05m AHD may be subject to permanent sea-level inundation in addition to the potential for storm tide inundation.

### Can I build a shed (Class 10 structure) in a high or medium storm tide inundation area?

Yes. For the purposes of the Townsville City Plan, a Class 10 Structure or Building is not regulated by the Coastal environment overlay and remains accepted development. Construction of a Class 10 Structure will still require a Building Works Approval.

### I am building a house in the medium hazard storm tide inundation, do I need approval?

No. Houses are accepted development subject to requirements in the Coastal environment overlay which means you need only comply with accepted development subject to requirements code provisions and no application is required unless you cannot comply with the code provisions. If your property is stated as either code or impact in the zone table of assessment (Part 5.5) then that level of assessment will prevail and you will require approval.

### My property is affected by both the Coastal environment overlay and the Flood hazard overlay, what do I do?

The Flood hazard and Coastal environment overlay operate independently, but together, may impact on the development response. For example, if the Flood hazard overlay requires a higher standard of immunity in a development than the Coastal environment overlay (or viceversa), then the higher level prevails in all cases.

### I want to subdivide my land and it is affected by the Coastal environment overlay – high hazard storm tide. Can I still subdivide?

A subdivision of land may still occur in the high hazard storm tide inundation where the risk from permanent sea-level inundation is determined to be either tolerable or acceptable, as per Table 1 of this practice note. Land at or below RL3.05m AHD is considered at risk from permanent sea level inundation and is not supported.

### If the development complies with the Coastal environment overlay will it be approved?

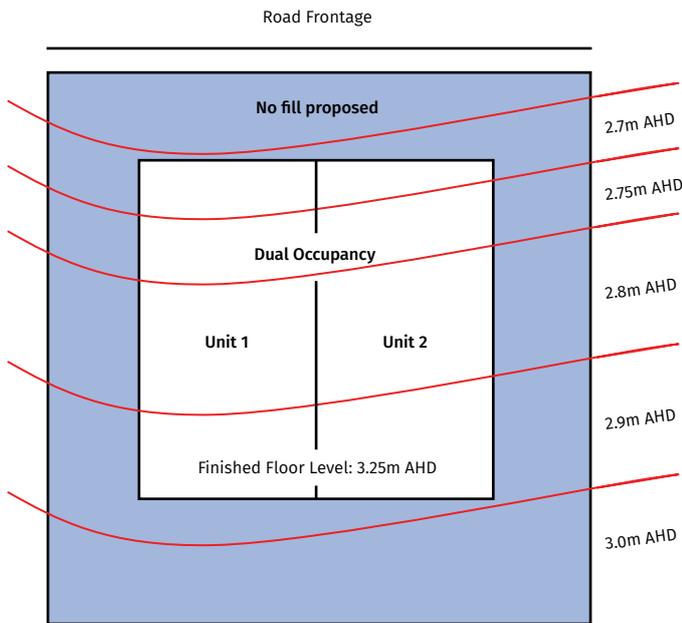
This may not always be the case as the proposed development must meet all the requirements of the Townsville City Plan. For example, a unit development may meet the Coastal environment overlay provisions but be out of character for an area (in accordance with the zone intent) and detrimentally impact on the amenity of the area.



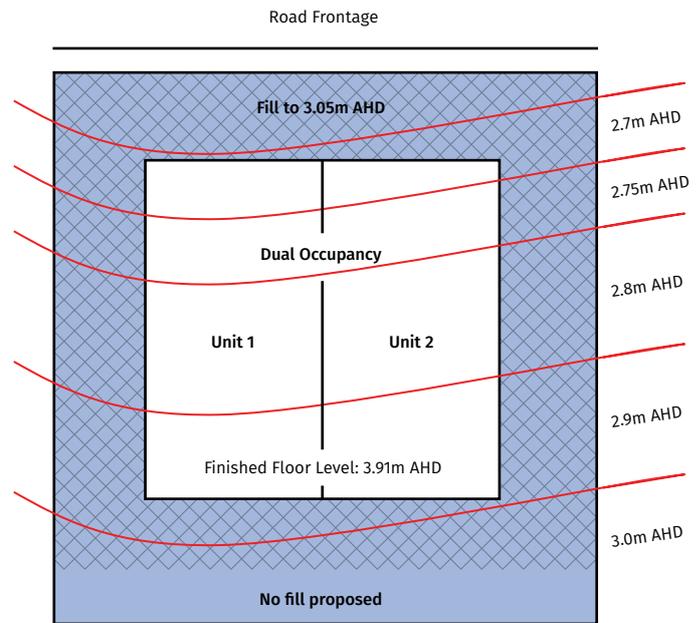
### Working Example



#### Example 1 – Unsuitable Proposal that does not meet overlay outcomes



#### Example 2 – Suitable Proposal that does meet overlay outcomes



**Explanatory Note:** Example 1 does not represent an acceptable or tolerable outcome for managing risk. The acceptable outcomes of the Overlay seeks to ensure that habitable floors are above the 1% AEP storm tide event (3.9m AHD) which will achieve an acceptable/tolerable level of risk. Further, the lot is below the estimated permanent sea-level rise value to the year 2100 of 3.05m AHD which represents an unacceptable risk.

**Explanatory Note:** Example 2 represents an acceptable/tolerable outcome of managing risk. The example demonstrates that the proposed dwelling is locating habitable floors (not slab on ground) above the 1% AEP event level which represents an acceptable or tolerable risk.

Further, the lot level has been filled to 3.05m AHD which mitigates the risk of the estimated permanent sea-level rise value to the year 2100 (to less than 5% of the lot in above example) and represents a tolerable level of risk. The placement of fill will need to consider the Flood overlay and local stormwater measures (drainage), including, being located outside of the erosion prone area.

### Legend

- Contour/Lot Level AHD
- Lot/Dwelling Boundary
- High hazard storm tide area
- Area of Fill

**DISCLAIMER:** The contents of this information sheet have been prepared to assist in the understanding of the Townsville City Plan. The information sheet is an outline only. For full details of the applicable provisions, please refer to the Townsville City Plan.

**For more information please contact Planning Services:** ☎ 13 48 10 ✉ enquiries@townsville.qld.gov.au 🌐 townsville.qld.gov.au