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## 1 INTRODUCTION

### 1.1 INTENT OF THE AREA PLAN

The intention of this Area Plan is to guide development to help implement the *Marks Point and Belmont South Local Adaptation Plan*.

### 1.2 BACKGROUND

Council adopted the *Lake Macquarie Waterway Flood Study and Risk Management Plan* in 2012. The *Study* found that sea and lake levels in Lake Macquarie will rise because of climate change. Over time, this will lead to increased flooding and permanent inundation of the lake foreshore for low-lying suburbs.

Council adopted the *Marks Point and Belmont South Local Adaptation Plan* in March 2016. Council and representatives of the local community prepared the Plan to address the risk of permanent inundation by raising land above projected permanent inundation levels and infrastructure above flood hazard levels over time.

### 1.3 RELATIONSHIP WITH OTHER PARTS OF THE LMDCP 2014

Where the provisions of this Area Plan are inconsistent with the controls in other relevant parts of LMDCP 2014, the provisions of this Area Plan prevail.

### 1.4 EXTENT OF AREA PLAN

The Area Plan applies to land shown in Figure 1 below that is also shown on 'Lots Affected by Lake Flooding controls' on Council's 'Flood Control Lots' map. The 'Flood Control Lots' map is indicative only and property information should be checked to confirm if a lot is a Lake flood control lot.



Figure 1 - Extent of Area Plan

### 1.5 EXISTING CHARACTER

The communities of Marks Point and Belmont South are located on the low-lying eastern sand barrier between Lake Macquarie and the Pacific Ocean. The communities have frontage to the Lake.

Modern planning and construction is gradually replacing the original timber and fibro fishing shacks with a mixture of large freestanding homes, unit blocks and townhouses. This gives the area a variety of housing options. Development is generally limited to two storeys.

### 1.6 ENVIRONMENTAL ATTRIBUTES AND CONSTRAINTS

#### Lake flooding

The level of the lake rises when heavy rains fall on the lake and in the surrounding catchments. The *Flood Study and Risk Management Plan* shows that 1% AEP floods in Lake Macquarie could reach 1.5 metres AHD. This serious but rare flood has a 1% chance of occurring in any year.

#### Nuisance flooding

Many low-lying foreshore areas around the lake drain poorly and heavy rain can cause localised nuisance flooding as stormwater pipes and gutters back up and overflow. This is a frequent hazard but rarely causes major damage.

#### Sea level rise and permanent inundation

In 2008, Council adopted a policy that required the consideration of future sea level rise when planning for lake flooding and coastal erosion. The Swansea Channel connects Lake Macquarie to the ocean, so lake levels will rise by as much as ocean levels. As lake levels rise, the level of future floods will also rise. Higher lake levels will permanently inundate some low-lying areas around the foreshore, including parts of Marks Point and Belmont South.

### 1.7 DESIRED FUTURE CHARACTER

The *Local Adaptation Plan* seeks to protect Marks Point and Belmont South from up to 90cm of sea level rise. Filling land, building revetments on the foreshore and raising infrastructure are some of the key actions that will help achieve this outcome.

Detailed information is needed about how and when to raise land and infrastructure. When this detail is available, the content of this Area Plan is likely to change.

Until we know more, this Area Plan provides interim guidance on how to develop and build in Marks Point and Belmont South.

## 2 GARAGES

#### Objectives

- a. To provide greater flexibility in applying minimum floor levels for garages on small, narrow and constrained blocks.
- b. To encourage flood resilient and adaptable building design.
- c. To ensure garages have practical driveway access.

#### Controls

1. Blocks less than 40 metres deep with frontage to both the Lake and a road can vary the minimum garage floor level heights if the applicants can demonstrate to the satisfaction of Council that not doing so would result in impractical driveway access.
2. Blocks less than 35 metres deep with frontage to a road can vary the minimum garage floor level heights if they can demonstrate to the satisfaction of Council that not doing so would result in impractical driveway access.

3. For Council to approve a variation to the garage floor level height, the applicant must provide evidence that:
  - i. The garage is constructed of flood compatible materials,
  - ii. A suitably qualified engineer has certified that the building can withstand floodwater and buoyancy up to the minimum flood planning level for a garage (as set by the minimum floor level for a garage), and that
  - iii. The garage is designed to adapt to rising lake levels over time in accordance with the principles and performance criteria set out in the *Flood Resilient Housing Guidelines*.

**Note:** The Minimum floor level heights for a garage associated with a dwelling can be found in Section 2.9 Lake Flooding and Tidal Inundation (Incorporating Sea Level Rise) of Part 3 – Development within Residential Zones or other relevant Part of the LMDCP 2014.

### 3 CUT AND FILL

#### Objectives

- a. To implement the Marks Point and Belmont South Local Adaptation Plan and minimise the impacts of future inundation due to sea level rise.
- b. To ensure connections between new buildings and the surrounding area are functional.
- c. To ensure that development does not concentrate surface water flows onto adjoining properties.

#### Controls

1. The development site can be filled to mitigate the adverse effects of projected sea level rise on development.
2. Fill is permitted up to:
  - i. One metre above ground level (existing), or
  - ii. The depth that results in a finished surface level of 1.5 metres AHD.

**Note:** The Local Adaptation Plan aims for all land in Marks Point and Belmont South to be at least 1.5m AHD in the future to avoid permanent inundation up to 90cm of sea level rise. Until detailed information is available about how to coordinate raising land and infrastructure, this control permits up to 1m of fill on all 'flood control lots' to mimic the existing topography. This requirement may change in the future when more work is done on how to raise land and infrastructure.

3. Stormwater must be captured within the site, drained to the street or other approved stormwater drainage network.
4. The site must be filled to maintain cross fall for drainage.
5. An engineer must design all drainage infrastructure and all retaining structures that:
  - i. are greater than 1m in height, or
  - ii. of any height if located on a boundary.

Certificate details for the retaining structure, as well as the associated drainage infrastructure, shall be lodged with the development application.

6. Where earthworks batters are used, they must not exceed a gradient of 1V:2H, and need to be integrated with drainage to the street or other approved stormwater drainage network.
7. Fill must not adversely affect stormwater management, drainage, or the flow of water from roads, natural or constructed watercourses, or foreshore areas.
8. Fill must not impede or block the overland flow of stormwater from adjoining properties. Any impediment of overland stormwater flows must be managed on the subject development site.

9. Filled areas must maintain functional connections to and minimise impacts on adjoining:
  - i. footpaths,
  - ii. roads,
  - iii. essential services (water, electricity, sewer, and stormwater),
  - iv. neighbouring blocks, and
  - v. other local features.
10. Any fill used must be certified Virgin Excavated Natural Materials, certified Excavated Natural Material or uncontaminated engineered fill.
11. Any fill material used must ensure easy drainage of water, such as top filled sand.
12. In addition to site filling, development should comply with the floor height provisions set out in Section 2.9 Lake Flooding and Tidal Inundation (Incorporating Sea Level Rise) of Part 3 – Development within Residential Zones or other relevant Part of the LMDCP 2014. Any development that does not comply with the floor height provisions needs to meet the principles and performance criteria set out in the Development Guidelines for Resilient Housing for Lake Macquarie.
13. Non-adaptable slab on ground development is not permitted.

**Note:** Filling is optional. This Area Plan provides guidance for those who wish to fill.

**Note:** When planning a new development, bear in mind that the Local Adaptation Plan aims to fill to at least 1.5m AHD up to 90cm of sea level rise. Filling during construction or major renovations may be easier and cheaper than filling retrospectively, particularly under dwellings and other major structures.