CHAPTER 5.XX BAKALI ROAD, FORRESTERS BEACH

5.XX.1 INTRODUCTION

5.XX.1.1 Land to which this Chapter applies

This chapter applies to Lots 1-4 DP 1000694 Bakali Road and Lot 522 DP 1077907, Lot 51 DP 1028301, Lot 62 DP 838562, Lot 1 DP 405510, Lots 1-3 DP 101649, Lots 1-8 DP 24187, Lots 155-156 DP 531710, Lots 1-14, 18 & 19 DP 23283 The Entrance Road (Central Coast Highway), Forresters Beach as shown on the map below.

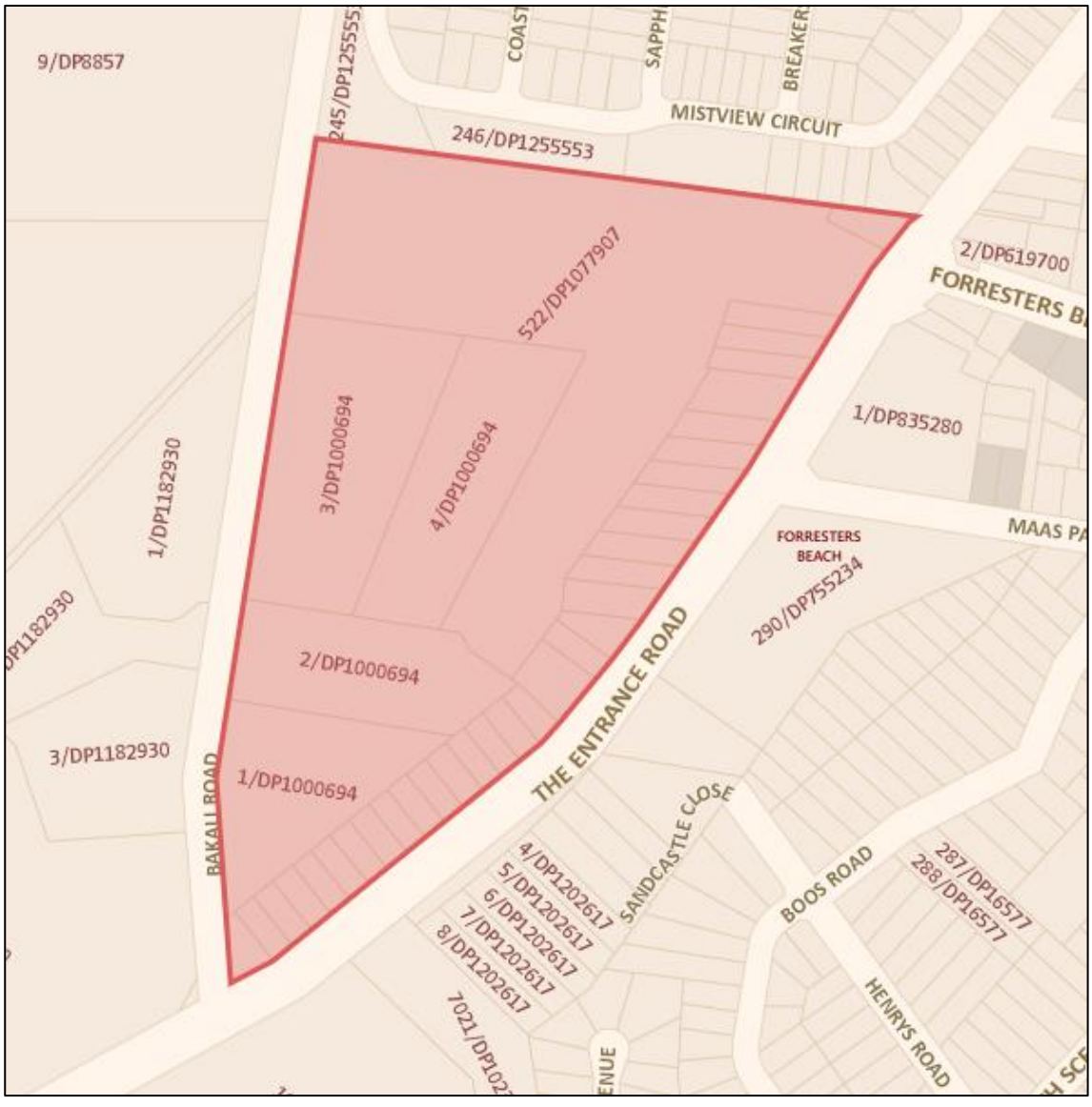

Figure 1 – *Land subject to this Chapter*

OBJECTIVES

- To ensure development is not adversely impacted by stormwater flows.
- To ensure that stormwater flows do not adversely impact properties outside the subject land.
- To ensure the safety of residents in, and around, the stormwater drainage works.
- To enable development to proceed in a manner which is sensitive to the environmental characteristics of the site and its environs.
- To protect the environment of Wamberal Lagoon from any adverse effects of development.
- To ensure development is designed in accordance with water sensitive urban design guidelines.
- To enable development to proceed in a manner which is sensitive to the ecological characteristics of the site and surrounding land.
- To protect the endangered ecological community on the western part of the land and other significant vegetation on the land from any adverse effects of development.
- To ensure any fill containing asbestos is satisfactorily removed from the site.
- To facilitate safe vehicular access to and from the site.
- To ensure development does not have an adverse impact on the safety and efficiency of the road network.
- To ensure that the character of Bakali Road is retained.
- To ensure an orderly subdivision occurs on the subject land.
- To ensure that the land to be dedicated as open space is safe and usable for the public.

5.XX.1.2 Using this Chapter

This Chapter should be read in conjunction with other relevant Chapters of this Development Control Plan (DCP) and other Policy Documents of Council, including but not limited to:

- Chapter 2.1 – Dwelling Houses, Secondary Dwellings and Ancillary Structures
- Chapter 2.4 – Subdivision
- Chapter 2.11 – Transport and Parking
- Chapter 3.1 – Floodplain Management and Water Cycle Management
- Chapter 3.5 – Tree and Vegetation Management
- Council's Civil Works Specification

Where any inconsistencies arise with the provisions contained in this Chapter, this Chapter shall prevail.

5.XX.2 DEVELOPMENT PRINCIPLES

5.XX.2.1 Flooding and Stormwater Management

OBJECTIVES

- To ensure development is not adversely impacted by stormwater flows.
- To ensure that stormwater flows do not adversely impact properties outside the subject land
- To ensure the safety of residents in, and around, the stormwater drainage works.

REQUIREMENTS

a Identify the existence of all known flow paths on the site including Council's Manly Hydraulics Laboratory (MHL) 2021 flood study for this locality. A full suite of modelling is required to assess the existing and post-development flood conditions and impacts in the future design of the subdivision, including road design and lot layout. Such modelling is to account for any hydraulic or hydrological changes which may occur on/through the site as a result of the upgrade of the Central Coast Highway.

b Filling within the flood liable areas in not permissible unless it can be demonstrated by using Water Level Difference (aflux) diagrams that the impact of filling is negligible and does not adversely impact any lots on the subject land or any upstream or downstream lots for all storm events up to the Probable Maximum Flood (PMF).

c All development is to be designed using the principles outlined in the Chapter relating to Floodplain Management and Water Cycle Management and/or Council's Civil Works Specification which includes flooding and drainage requirements.

d The land shown as Stage 3 in Figure 2 is not to be the subject of an application for subdivision until the adjacent part of the Central Coast Highway road widening works have been completed. After the Central Coast Highway roadworks have been completed, a flood study is to be undertaken to determine whether or not the overland flow through the land has been altered. The findings and assessment of this flood study will determine the extent of any subdivision within Stage 3.

e There is to be no adverse impacts on flooding levels and extents, including conveyance of flood waters and floodplain storage volume, for flood levels exceeding the Flood Planning Level.

f Even though Stage 3 will not be subdivided until the Central Coast Highway upgrade has occurred, drainage infrastructure for Stages 1 and 2 is required to be constructed as part of these Stages. Any infrastructure works required for Stages 1 and 2 is able to be constructed within land shown in Stage 3.

g Any open drainage channel shall be designed such that:

i. The maximum flow velocity at any part of the channel in a 1% AEP event must not exceed 2 m/s.
ii. A minimum freeboard of 300mm shall be applied in the 1% AEP event to the top of channel formation.
iii. Batters must not exceed 1 in 6 to allow safe egress should a person need to exit the channel at any point.
iv. There must be no sudden drops into channel invert level, including at the upstream end.
v. Any supplementary stormwater pipe system must be assumed to be 100% blocked.
vi. Flood Hazard classification must be H3 or below for at any point within the channel within 3m of any edge of flow and must not exceed H4 at either mid-channel or at any road crossing.
vii. Any proposed culvert or bridge crossings over the channel to be designed with a 50% blockage

factor.

viii. A 3m wide access width would be required for maintenance vehicles beyond the top of each side of the channel.

ix. The channel shall be vegetated.

x. Batters are to be vegetated with low-maintenance native species to provide natural riparian areas, not turfed.

xi. Hydraulic roughness parameters must take into consideration the vegetation.

xii. The channel alignment shall be natural meandering riparian zone through the site.

h The pre and post development details should demonstrate that the depth, extent and overall volume of flow would not increase and hence, there is no adverse impact on the peak flood levels and extents on the subject land.

i The proposed open overland flow channel is to be designed to avoid any excess water ponding for extended periods.

j The proposed open overland flow channel is to be dedicated to Council as a drainage reserve.

k Any flows entering the wetland on Lot 522 DP 1077907 or west of Bakali Road are to be reduced in velocity to pre-development velocities to prevent scouring.

l Design of appropriate surface finishes to control erosion and scour within the swale and open channel.

m There are to be no adverse flood impacts on lots adjacent to the proposed open channel comprising a drainage reserve. The floor levels of land in the vicinity of the proposed drainage reserve are to be specified in any proposed subdivision plan.

n A sensitivity analysis for blockage of any major piped system is to be submitted with the development application for subdivision.

o A sensitivity analysis for variation in vegetation cover within any open channel system is to be submitted with the development application for subdivision.

p A flooding analysis for the final subdivision arrangement, inclusive of the sensitivity analyses and inclusive of climate change for the purposes of setting flood planning levels within the development, is to be submitted with the development application for subdivision. The analysis must demonstrate no adverse effects outside of the property boundaries.

q There is to be no overland flow conveyance via the internal road reserve system.

r Signage is required to restrict access to the open channel.

s Public access is to be restricted to the existing drainage swale by appropriate fencing and warning signs.

t Development is not to affect the safe occupation or evacuation of the area. Flood mitigation measures are to ensure safe passage of persons and emergency management within the flood liable area.

u Installation of inter-allotment drainage at the rear of existing lots fronting the Central Coast Highway to collect discharge from these sites.

v That part of the internal road traversing Stage 3 to access Stage 2 is to be included as part of Stage 2 and be flood free.

w Any culvert required under the internal road is required to enter the channel equidistant from either side of the channel.

5.XX.2.2 Water Quality

OBJECTIVES

- To enable development to proceed in a manner which is sensitive to the environmental characteristics of the site and its environs.
- To protect the environment of Wamberal Lagoon from any adverse effects of development
- To ensure development is designed in accordance with water sensitive urban design guidelines.

REQUIREMENTS

a Appropriate stormwater treatment to ensure no increase in pollutants including management of runoff quality and quantity to the sensitive receiving waters consistent with Council's development controls.

b The development of the land is not to increase runoff beyond the pre-development discharge rates. Pre and post development water quality modelling are required to ensure there are no detrimental water quality effects on the downstream wetland.

c Suitable end treatments to ensure no adverse effect on downstream properties as a result of pipe/open channel improvements on the development site.

d Nutrient filter measures must be implemented to filter nutrients so as to prevent them from entering Wamberal Lagoon. Details must be provided with the development application for subdivision.

e Any stormwater detention ponds are to be designed to also allow for water infiltration which will allow replenishment of groundwater. Include measures to maintain the infiltration of stormwater runoff to the subsoil zone. The details should include a geotechnical report advising of the soil's capacity to accept proposed stormwater infiltration on the site.

f A geotechnical report is to accompany the development application for subdivision which addresses geotechnical constraints and specifies guidelines for pavements, footings and earthworks.

g Any detention basin is not to be located in mid-channel. It is to be located off-line, out of the flow path.

5.XX.2.3 Environment

OBJECTIVES

- To enable development to proceed in a manner which is sensitive to the ecological characteristics of the site and surrounding land.
- To protect the endangered ecological community on the western part of the land and other significant vegetation on the land from any adverse effects of development
- To ensure any fill containing asbestos is satisfactorily removed from the site.

REQUIREMENTS

a The subject land has not been bio-certified under the *Biodiversity Conservation Act 2016*, so the proposed lot yield achievable under the R2 Low Density Residential zone may not be realised.

b The Endangered Ecological Community on the western part of Lot 522 DP 1077907 is the subject of a Vegetation Management Plan under a Planning Agreement relating to the land. This area, zoned C2 Environmental Conservation, is to be placed under an 88B restriction as to its use and enforced under Section 88E of the Conveyancing Act, 1919.

c The Endangered Ecological Community on the northern part of Lot 3 DP 1000694 and the avoidance areas on Lot 3 DP 1000694 and Lot 1 DP 1000694 are to be placed under an 88B restriction as to their use and managed under a Vegetation Management Plan that would be enforced under Section 88E of the Conveyancing Act 1919.

d A Vegetation Management Plan is to be prepared for the wetland at the northern part of Lot 3 DP 1000694 and the avoidance areas on Lot 3 DP 1000694 and Lot 1 DP 1000694 as indicated in the attached Site Plan (Figure 1) and be submitted with the development application for subdivision.

e The Vegetation Management Plans for Lot 3 DP 1000694 and Lot 1 DP 1000694 are to be based on a detailed flora and fauna assessment of the area. It is to address:

i. ownership of the land;
ii. regeneration of native vegetation;
iii. threats and ameliorative measures for the protection of threatened species;
iv. how the area will be managed from the impact of weeds and other edge effects;
v. native plantings including compensatory planting;
vi. schedule of works and responsibilities.

f The implementation of the Vegetation Management Plans on Lot 3 DP 1000694 and Lot 1 DP 1000694 are to be undertaken by a qualified person.

g The Vegetation Management Plans on Lot 3 DP 1000694 and Lot 1 DP 1000694 are to be in force from the date of the registration of the subdivision.

h The ecological integrity of the Endangered Ecological Community on Lot 522 DP 1077907 and Lot 3 DP 1000694 is to be maintained. No solid fencing is to be erected along the boundary between these two properties.

i All Asset Protection Zones are to be located outside the area which is subject to the Vegetation Management Plans and the 88B restriction as to use.

j Removal of any asbestos containing material by an accredited hygienist is required prior to registration of any future subdivision and the affected area must be validated following the removal.

k No services are to be constructed through the land zoned C2 Environmental Conservation.

l Any drainage works required as part of the subdivision are not to be constructed on land zoned C2 Environmental Conservation and are to have no adverse impact on the wetland vegetation.

5.XX.2.4 Traffic Access

OBJECTIVES

- To facilitate safe vehicular access to and from the site.
- To ensure development does not have an adverse impact on the safety and efficiency of the road network

- To ensure that the character of Bakali Road is retained.

REQUIREMENTS

a All vehicular access to the Central Coast Highway from the subdivision of Lots 1-4 DP 1000694, Lot 522 DP 1077907, and Lot 3 DP 101649 is to be via the intersection with the Central Coast Highway, opposite Forresters Beach Road.

b The proponent is to obtain approval from Transport for NSW (TfNSW) regarding the vehicular access arrangements to the Central Coast Highway.

i any future development application relating to Stage 1 of the subdivision will include a subdivision plan and concept road design plans for a road connection which is compatible with TfNSW future Traffic Control Signals (TCS) upgrade of the intersection of the Central Coast Highway and Forresters Beach Road. The concept plan will ensure legal site access is maintained to adjoining properties and include illustrations of dedication of the land accommodating the fourth leg of the TCS into the subject property, at no cost to TfNSW or Council;

ii any future development application over land identified in this DCP Chapter will need to be supported by a Traffic Impact Assessment (TIA), prepared by suitably qualified person/s. The TIA will identify traffic impacts and mitigation measures, including concept designs for access arrangements to the Central Coast Highway. The TIA is to be to the satisfaction of TfNSW and Council.

iii prior to issue of a subdivision certificate for any development over land identified in this DCP, the developer will enter into a Works Authorisation Deed (WAD) with Transport for NSW for all works proposed on the Central Coast Highway. Works will be designed and constructed in accordance with Austroads guidelines, Australian Standards and TfNSW Supplements. All works will be at full cost to the developer.

c The proposed new road reserve connecting Bakali Road with the future subdivision is to be in the general location of the existing right-of-way and shall be a minimum width of 17.0 metres incorporating an 8.0m wide carriageway in accordance with Council's Civil Design Specification.

d The intersection of Bakali Road and the proposed new road is to be sufficient to accommodate service vehicle turning paths.

e The character of Bakali Road is to be retained by widening the centre seal only. In this way the existing trees within the road reserve are to be retained.

5.XX.2.5 Subdivision Design

OBJECTIVE

- To ensure an orderly subdivision occurs on the subject land.

REQUIREMENTS

a Supplementary to the submission requirements of Chapter 2.4 - Subdivision, the following is required to be addressed and/or provided with any subdivision application for land to which this plan applies.

b The internal road design and lot layout is to minimize the number of battle-axe allotments.

c The subdivision of the subject land is to occur generally in the chronological order set out in the Staging Plan (Figure 2), except for Stage 3 as identified elsewhere in this chapter.

d Subdivision is to comply with the requirements of *Planning for Bushfire Protection 2019*.

e The land zoned C2 Environmental Conservation on Lot 522 DP 1077907 and Lot 3 DP 1000694 is to form part of a future lot also containing land zoned R2 Low Density Residential within any subdivision of the respective lots. This will enable future residential development to occur on that part of the lot zoned R2.

5.XX.2.6 Public Open Space

OBJECTIVE

- To ensure that the land to be dedicated as open space is safe and usable for the public.

REQUIREMENTS

a Land identified as Open Space is to be flood free.

b If the open space is ultimately located adjacent to a drainage reserve, suitable safety fencing is to be provided between the open space and the drainage reserve.

c A Soil Contamination Report is to be submitted to Council and approved prior to the dedication of the Open Space to Council.

d The land to be dedicated to Council for Open Space is to be free of noxious weeds and vermin to Council's satisfaction.

Figure 1 – Site Plan

Figure 2 – Staging Plan