TWEED SHIRE COUNCIL

Coastal Hazards - Tweed Development Control Plan
Section B25

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Figure Index

Appendices

1. Introduction

1.1 Aim of this Section

- To provide guidelines for the development of the land having regard to minimising the coastal hazards risks (a function of likelihood and consequence) to development on land in proximity to the Tweed Coast.
- To establish if the proposed development or activity is appropriate to be carried out, and the conditions of development consent that should be applied if it is to be carried out, having regard to the coastal hazard lines established in the Tweed Coastline Hazard Definition Study 2001 (as amended).
- To minimise the risk to life and property from coastal hazards associated with development and building on land that is in proximity to the Tweed Coast.
- To maintain public access to public land on the Tweed Coast.

1.2 Land to which this Section Applies

This Section applies to all land within the Tweed Shire located seaward of the 2100 Hazard Line and shown on Figures 1.1 to 1.26 inclusive (Appendix A).

1.3 How this Section Relates to other Sections and Environmental Planning Instruments

This Section is generally consistent with the other Sections of this DCP. Where there is an inconsistency then the higher standard/requirement shall prevail.

This Section contains development objectives, provisions and guidelines in respect of existing and proposed developments generally within the Tweed Council coastal areas.

Where any inconsistency arises between this plan and any environmental planning instrument applying to the same land the provision of the environmental planning instrument prevails. An environmental planning instrument means a State Environmental Planning Policy, Regional Environmental Plan and Local Environmental Plan.

1.4 When the Development Control Plan Came into Effect

This plan is called Coastal Hazards - Tweed Development Control Plan Section B25. The DCP was adopted by Tweed Shire Council on [insert date] and came into effect on [insert date].

1.5 How to Use this Section

Where a development is proposed in respect of land to which this Section applies Council shall consider the provisions of this Section in determining the application.

Compliance with the provisions of this Section does not necessarily imply that the Council will grant consent to the application. Council must, in relation to development applications, also take into consideration those matters listed under Section 79C of the *Environmental Planning and Assessment Act, 1979*.

In preparing an application for development there are a number of specific steps that should be followed:

Step 1: Check the zoning of the site under Tweed LEP 2000 to ensure that the proposed development is permissible and to determine what related provisions apply.

Step 2: Establish what other Sections of this DCP or Policies apply to the site.

Step 3: Follow the applicable guidelines in this Section and refer to other applicable Sections and Policies to prepare your application. It is these components that Council will use to assess any development proposal.

Step 4: Discuss your final application with Council staff prior to lodging it. Then lodge your application.

1.6 Definitions

Immediate Hazard Line is a line fixed by resolution of Council, in respect of a line shown on Figures 1.1 to 1.26 inclusive.

Immediate Hazard Zone land seaward from the Immediate Hazard Line as shown on Figures 1.1 to 1.26 inclusive**.**

2050 Hazard Line is a line fixed by resolution of Council, in respect of a line shown on Figures 1.1 to 1.26 inclusive.

2050 Hazard Zone land seaward from the 2050 Hazard Line and landward of the Immediate Hazard Line as shown on Figures 1.1 to 1.26 inclusive.

2100 Hazard Line is a line fixed by resolution of Council, in respect of a line shown on Figures 1.1 to 1.26 inclusive.

2100 Hazard Zone land seaward from the 2100 Hazard Line and landward of the 2050 Hazard Line as shown on the Figures 1.1 to 1.26 inclusive.

Coastal Hazards detrimental impacts of coastal processes on the use, capability and amenity of the coastline. The NSW *Coastal Protection Act 1979* and supporting guideline for Preparation of Coastal Zone Management Plans identifies seven coastal hazards:

- Beach erosion
- Shoreline recession
- Coastal lake or watercourse entrance instability
- Coastal inundation
- Coastal cliff or slope instability
- Tidal inundation,
- Erosion caused by tidal waters, including the interaction of those waters with catchment floodwaters.

Erosion Escarpment the vertical or near vertical drop in the profile of a beach caused by tidal or storm erosion.

Maintenance **does not** include any increase in floor area or the movement of walls, replacement of one type of wall with another (such as replace a timber frame wall with brickwork), building decks, moving kitchens to other areas or changing the roof shape, pitch or height.

Major investment in relation to building work and renovations is defined as the expenditure on improvements, changes, additions or renovations of more than 20% of the cost (or current value) of the building. The cost of the investment and the cost of the building shall be calculated by Council and shall be compared at equivalent current prices.

Professional engineer means a person:

(a) who is a registered professional engineer in the relevant discipline who has appropriate experience and competence in the relevant field; or

(b) who is:

i. A Corporate Member of the Institute of Engineers, Australia; or

ii. Eligible to become a Corporate Member of the Institute of Engineers, Australia, and has appropriate experience and competence in the relevant field.

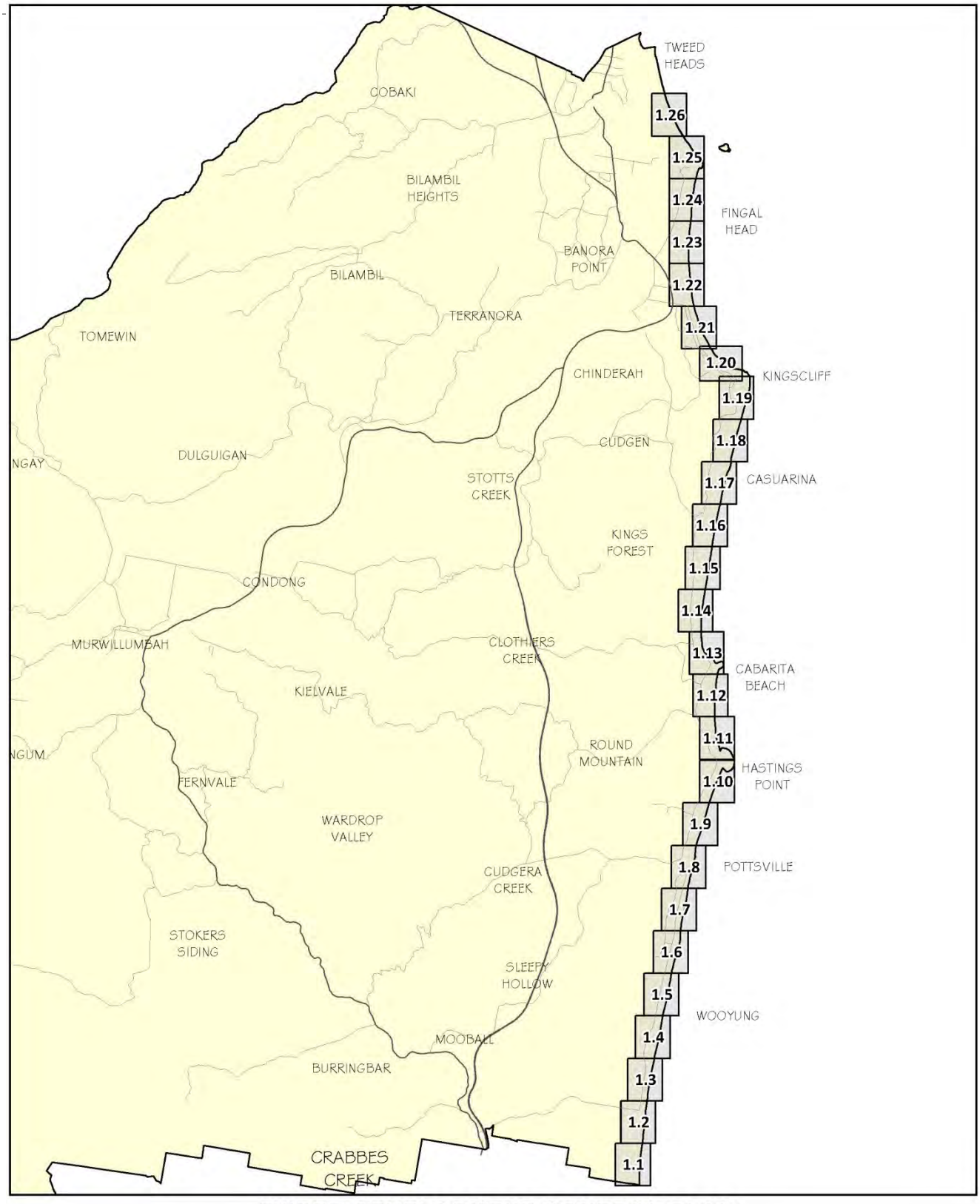
Suitably qualified person means any of the following:

(a) Professional engineer as defined above,

(b) Licensed Builder,

(c) Level 1, 2 or 3 Accredited Certifier – (Building Surveyor), or

(d) Registered Architect.



TWEED DEVELOPMENT CONTROL PLAN
Section B25 - Coastal Hazards
Map Index - Figure 1.1 to 1.26

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TWEED SHIRE COUNCIL

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Author: Jacqueline Batchelor - Planning Reforms Unit
Date Printed: 30 August, 2011

Figure 1 Index for Coastal Hazard Maps for Tweed Shire (for figures 1.1 to 1.26 inclusive refer to Appendix A)

2. Background to Coastal Hazards

2.1 Tweed Coastline Management Plan (2005)

Tweed Shire has a 37 kilometre coastline that stretches from the border with Byron Shire Council in the south, to the Queensland border at Point Danger in the north. For the purposes of coastal hazard planning, it includes a seaward boundary of the near-shore marine areas and a landward boundary that includes all lands likely to be impacted by coastline hazards plus relevant Crown lands.

The old NSW Government Coastline Management Manual (1990), now replaced by the "Guidelines for Preparation of Coastal Zone Management Plans (DECCW 2010)", and the NSW Coastal Policy (1997) provided the coastline management framework. Planning factors such as social, economic, recreational, aesthetic and ecological issues are to be taken into consideration along with coastline hazard and beach amenity requirements, when making decisions regarding coastal management and development.

The Tweed Coastline Management Plan was prepared in accordance with the Coastline Management Manual (1990) and other State Government policies. The Tweed Shire Coastline Management Plan provides Council with an integrated management planning framework that aims for a balance between the long term use of the coastline and its conservation.

The coastline hazards and underlying coastal processes affecting the Tweed coast have been identified and defined by the *Tweed Shire Coastline Hazard Definition Study* (TSC, 2001). The Study delineates the landward extent of the hazard zones for the Immediate, 50 year and 100 year planning timeframes. Of the natural processes investigated, the significant issue identified and mapped for the Tweed Coastline Management Plan project is the potential for beach erosion and shoreline recession. These hazard lines and zones were updated in 2010 to incorporate the NSW Governments sea level rise planning benchmarks. Figure 2 is a diagram showing how these lines are determined.

Following adoption of the 2001 Hazard Study, Council commissioned the *Tweed Shire Coastline Management Study* and *Tweed Shire Coastline Management Plan*. The Management Plan was adopted by Tweed Shire Council in June 2005.

The Coastline Management Plan was developed to provide strategic and practical guidance for future management of the coastline. To achieve a more sustainable use of the Tweed coastline as a whole, it is a high priority for Council to continue its integrated planning and management of the individual beaches and the coastline reserve as well as privately owned land in proximity to the coast.

2.2 Coastline Management

Coastal erosion is a natural phenomenon of beaches. Beaches respond to environmental factors such as variations in sand supply; changes in climate and prevailing wave regime; and changes in the weather—especially prevailing winds, severe storms and tropical cyclones. As environmental conditions change the beach profile changes as sand is moved onshore or offshore seeking an equilibrium profile. However, in some cases there may be a trend of ongoing erosion resulting in long-term shoreline recession. (QLD DERM, 2009).

It is likely that a number of these factors will be influenced by climate change and associated sea level rise. The impact of climate change on sandy shorelines will most likely be experienced as more severe coastal erosion during extreme events and increased shoreline recession as a result of predicted sea level rise. Eroded coastlines will increasingly fail to rebuild fully following these extreme events (and under the influence of sea level rise), resulting in permanent losses of land to the sea (QLD DERM, 2009).

Coastal erosion from natural processes does not permanently affect the form of the beach and hence its value as a public asset. The problems associated with coastal erosion only occur once shoreline recession threatens property. The problem is not so much that the beach system is eroding landward but that development has occurred within the zone of natural coastline fluctuations in response to factors such as climate variability, regional processes and sea level rise.

Urban development is expected to continue to be a major activity in proximity to the coast and needs to be carefully planned and managed to minimise impacts on coastal resources and limit urban settlement within areas that may be at risk from coastal hazards over the planning horizon. This DCP seeks to conserve the Tweed coast by managing urban growth.

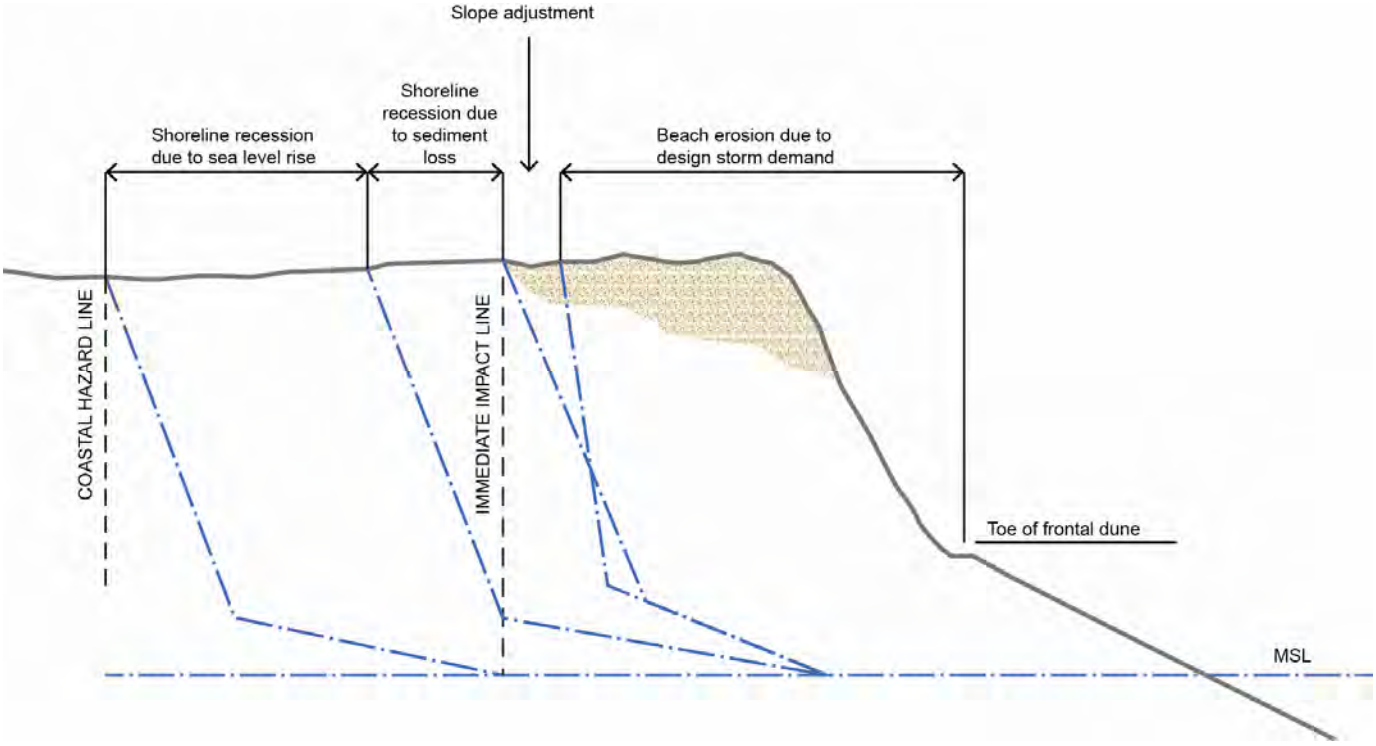


Figure 2 Schematic of Determination of Coastline Management Line

The shoreline recession allowances due to sediment loss and due to sea level rise are a function of the number of years adopted for the planning period. For the “immediate” planning period, the allowances are zero.

Source: Pittwater DCP 21 Appendix 6 Coastline Risk Management Policy for Development in Pittwater

3. Development Controls

3.1 Immediate Hazard Zone

3.1.1 Land Affected by this Part

Any development on land seaward of the Immediate Hazard Line referred to on Figures 1.1 to 1.26 inclusive**.**

3.1.2 Residential, Commercial, Retail, Tourism and Industrial Development

- Council will not permit new buildings to be constructed on land within the Immediate Hazard Zone.
- Existing buildings which have been identified as being within the Immediate Hazard Zone will not be permitted to carry out major investments in renovations except as permitted below in 3.1.3. Planned retreat of the building is recommended.
- A development that would require additional permanent built structures or extensions to existing built structures will not be permitted.
- Development will not be permissible if it will result in people permanently living or working within the Immediate Hazard Zone unless that work is undertaken on a short-term or intermittent basis.
- Where a site has existing buildings or structures seaward of the Immediate Hazard Line and the property is the subject of a development application, Council may seek to have those structures removed, as a part of the development or redevelopment of the site.
- Any permissible development will be subject to a Coastal Risk Management Report.

3.1.3 Renovations, Alterations and Maintenance

- Alterations to existing buildings must be limited to minor works only, and must be capable of swift removal or demolition if coastline hazards threaten the development. No additions will be permitted.
- Renovations will be considered provided that they do not increase the risk to property or buildings or increase the level of coastline hazard to the subject land or any other land.
- Maintenance of buildings is permitted, provided that the maintenance work carried out does not change the nature of the structural element being maintained.

3.1.4 Car Parking

- Open car park areas and carports (i.e. at least three sides are open) will be considered at existing ground level.
- Basement (i.e. below natural ground level) and new enclosed garages will not be permitted.

3.1.5 Other Development

- Development that is temporary, or can be relocated or sacrificed (such as decks), non-habitable, detached, light weight structures associated with outdoor living areas, storage or landscaping may be considered within the Immediate Hazard Zone where these do not prejudice relocation of other buildings on the site.
- Other uses may be considered that by their nature have to be within the Immediate Hazard Zone. e.g. surf life saving and marine rescue observation structures, picnic tables, access structures or similar.
- Development that is of a community nature, which relates to the use of the beachfront, may be considered, provided that any structures are easily removable or sacrificial and do not require a major extension to a service main.

- Development for the purposes of coastal access stairs, fences, cycleways, walking trails, picnic facilities or other facilities will be designed to be removable (or sacrificial) in the event they are damaged by wave action, inundation from the sea, and/or erosion.

3.1.6 General

- Development must be carried out in a manner that maintains the safety of the public and not damage public or private property.
- The development must not involve any physical works that will exacerbate the seven coast line hazards as defined in the NSW *Coastal Protection Act 1979*.

3.2 2050 Hazard Zone

3.2.1 Land Affected by this Part

Any development on land located seaward of the 2050 Hazard Line and landward of the immediate impact line referred to on Figures 1.1 to 1.26 inclusive**.**

3.2.2 Residential, Retail, Commercial, Tourism and Industrial development

- Development in this precinct is encouraged to be built as a modular, detachable, relocatable design. This will benefit future relocation or removal of development in the future if under threat from coastal hazards.
- No building is to be located within 20 metres of the current erosion escarpment.
- If Development within the 2050 Hazard Zone is granted consent (subject to a Coastal Risk Management Report) then any consent granted will be subject to the proviso that if the erosion escarpment comes within 20 metres of any building then the use of the building will cease. A Section 88E (*Conveyancing Act, 1919*) instrument will be used to achieve this outcome.
- If the permitted use or occupation of the building does cease then the owner of the land will be responsible for the removal of any or all buildings from the site, to a location on the site further than 20 metres from the erosion escarpment where possible, or off site where not possible. As part of the development application lodged with Council, the developer of the land must indicate whether buildings are to be relocatable or demolished, should the use of the building cease. A Section 88E (*Conveyancing Act, 1919*) instrument will be used to achieve this outcome.
- Where vacant urban sized lots exist that are more than 50% within this precinct preference will be given to lightweight, modular and demountable buildings.
- Where a site has existing buildings or structures seaward of the 2050 Hazard Line and the property is the subject of a development application, Council may seek to have those structures removed, as a part of the development or redevelopment of the site.
- All structures constructed within the 2050 Hazard Zone shall:
    a. Be compatible with the coastal hazards identified;
    b. Be set back as far landward as practicable;
    c. Not give rise to any increased hazard to other public or private property;
    d. Be designed to structurally withstand the designated hazard at the risk level required;
    e. Be designed with consideration given to the effects of larger events than the designated hazard;
    f. Be constructed in a manner or to a level which caters for the coastal hazards of wave runup and overtopping and inundation from increased water levels.
- Foundations for new development are to be designed by a professional engineer.

- Where structural consideration of the loads generated by coastal hazards is required the engineer shall take into account the forces generated by waves and increased water levels, possible dune slumping, loss of foundation support due to erosion, slope readjustment, and changing water table as well as the normal structural and foundation considerations.
- Any permissible development will be subject to a Coastal Risk Management Report.

3.2.3 Additions, Renovations Alterations and Maintenance

- Additions or alterations to existing buildings will be considered on their merits. Consideration will be given to the location of the erosion escarpment, the type of building involved and access to the site. Additions or alterations will be considered where there will be no adverse effect on the ability of the building or buildings to be removed in an emergency.
- A development application which proposes a 50% or greater increase in the gross floor area compared with that of the existing building will not be approved unless that portion of the existing building seaward of the 2050 Hazard Line is removed.
- Any alteration or renovation of a building seaward of the 2050 Hazard Line, where more than 50% of the existing building (GFA) is to be demolished (and re-built seaward of the 2050 Hazard Line), will not be permitted.
- Any addition, alteration, or renovation of a building in the 2050 Hazard Zone shall be restricted to the following:
    a. where the gross floor area of the existing building is less than 100 m^2 – extensions that will make the gross floor area no greater than 100 m^2, and
    b. where the gross floor area of the existing building is 100 m^2 or more - 15% of the gross floor area of the existing building at the date of commencement of this DCP.
- There shall be no addition or alteration of a building within 20 metres of the current escarpment.

3.2.4 Car Parking

- Open car park areas and carports (i.e. at least three sides are open) will be considered at existing ground level.
- Basement car parking will not be permitted.

3.2.5 Other Development

- Development that is temporary, or can be relocated or sacrificed (such as decks), non-habitable, detached, light weight structures associated with outdoor living areas, storage or landscaping may be considered within the 2050 Hazard Zone where these do not prejudice relocation of other buildings on the site.
- Only uses are permitted that by their nature have to be within the 2050 Hazard Zone e.g. surf lifesaving and marine rescue observation structures, picnic tables or similar.
- Development that is of a community nature, which relates to the use of the beachfront, may be considered, provided that any building is easily removable (or sacrificial) and does not require a major extension to a service main.
- Development for the purposes of coastal access stairs, fences, cycleways, walking trails, picnic facilities or other facilities will be designed to be removable (or sacrificed) in the event they are damaged by wave action, inundation from the sea, and/or erosion.

3.2.6 General

- Any suitable sand excavated during the course of building and re-development work shall have all deleterious material removed and shall be placed on the adjacent beach at a location approved by the Council. It will need to be assessed as suitable by Council and placed at no charge to Council.
- Development must be carried out in a manner that maintains the safety of the public and not damage public or private property.
- The development must not involve any physical works that will exacerbate the seven coastal hazards as defined in the NSW *Coastal Protection Act, 1979*.
- The precautionary principle should be applied to development which may pose serious or irreversible environmental damage to ensure that environmental degradation can be avoided, remedied or mitigated. Development proposals shall include strategies to avoid or mitigate potential adverse environmental effects.
- Ensure that new buildings and foreshore infrastructure on the coast are positioned to avoid risk of damage from coastal processes and, where possible, avoid the need for physical structures to protect development from potential damage caused by natural physical processes on the coast.

3.3 2100 Hazard Zone

3.3.1 Land Affected by this Part

Any development on land located seaward of the 2100 Hazard Line and landward of the 2050 Hazard Line referred to on Figures 1.1 to 1.26 inclusive.

3.3.2 General

- The precautionary principle should be applied to development which may pose serious or irreversible environmental damage to ensure that environmental degradation can be avoided, remedied or mitigated. Development proposals shall include strategies to avoid or mitigate potential adverse environmental effects.
- Ensure that new buildings and foreshore infrastructure on the coast are positioned to avoid risk of damage from coastal processes and, where possible, avoid the need for physical structures to protect development from potential damage caused by natural physical processes on the coast.
- No building is to be located within 20 metres of the current erosion escarpment.
- Any permissible development will be subject to a Coastal Risk Management Report.
- Development is permitted on private land subject to design by a professional engineer to accommodate future erosion and potential inundation from increased sea levels.
- Development in the 2100 Hazard Zone must demonstrate that it has been designed to:
    a. Avoid or minimise exposure to immediate coast line hazards.
    b. Provide for the safety of residents, workers or other onsite occupants from risks associated with coastal processes.
    c. Not adversely affect the safety of the public off-site as a result of the development.
    d. Not increase coastal risks to adjoining properties or properties in the vicinity of the site.
    e. Ensure infrastructure, services and utilities on-site maintain their function and achieve their intended design performance.
    f. Accommodate natural coastal processes including those associated with projected sea level rise.

g. Protect coastal ecosystems from development impacts.

h. Maintain or improve existing public beach, foreshore or waterfront access and amenity.

- Structural elements including foundations, footings and slabs for new buildings to be designed by a professional engineer.
- Where structural consideration of the loads generated by coastal hazards is required the engineer shall take into account the forces generated by waves and increased water levels, possible dune slumping, loss of foundation support due to erosion, slope readjustment, and changing water table as well as the normal structural and foundation considerations.
- Basement car parking can be provided behind the 2050 Hazard Line and must have all access, ventilation and any other potential water entry points at safe levels as determined by a professional engineer and a clearly signposted inundation free pedestrian evacuation route from the basement or bunded area separate to the vehicular access ramps.

3.4 Beach Protection Works

Coastal protection works may be permitted subject to the provisions of Section 55M of the *Coastal Protection Act, 1979.*

3.5 Vegetation Management

- All vegetated dunes, whether existing or created as part of coastal protection measures shall be managed and maintained so as to protect the dune system from damage both during construction of the development and as a result of subsequent use during the life of the development.
- Wherever present, remnant vegetation shall be appropriately rehabilitated and maintained for the life of the development to stabilise the sand available as a buffer for future storm erosion processes and minimise the likelihood of inundation from increased water levels (as determined by a professional engineer).

4. Information to be supplied with the application

Applications in different hazard zones require different types of supporting information in relation to coastal hazards risk (Figure 3).

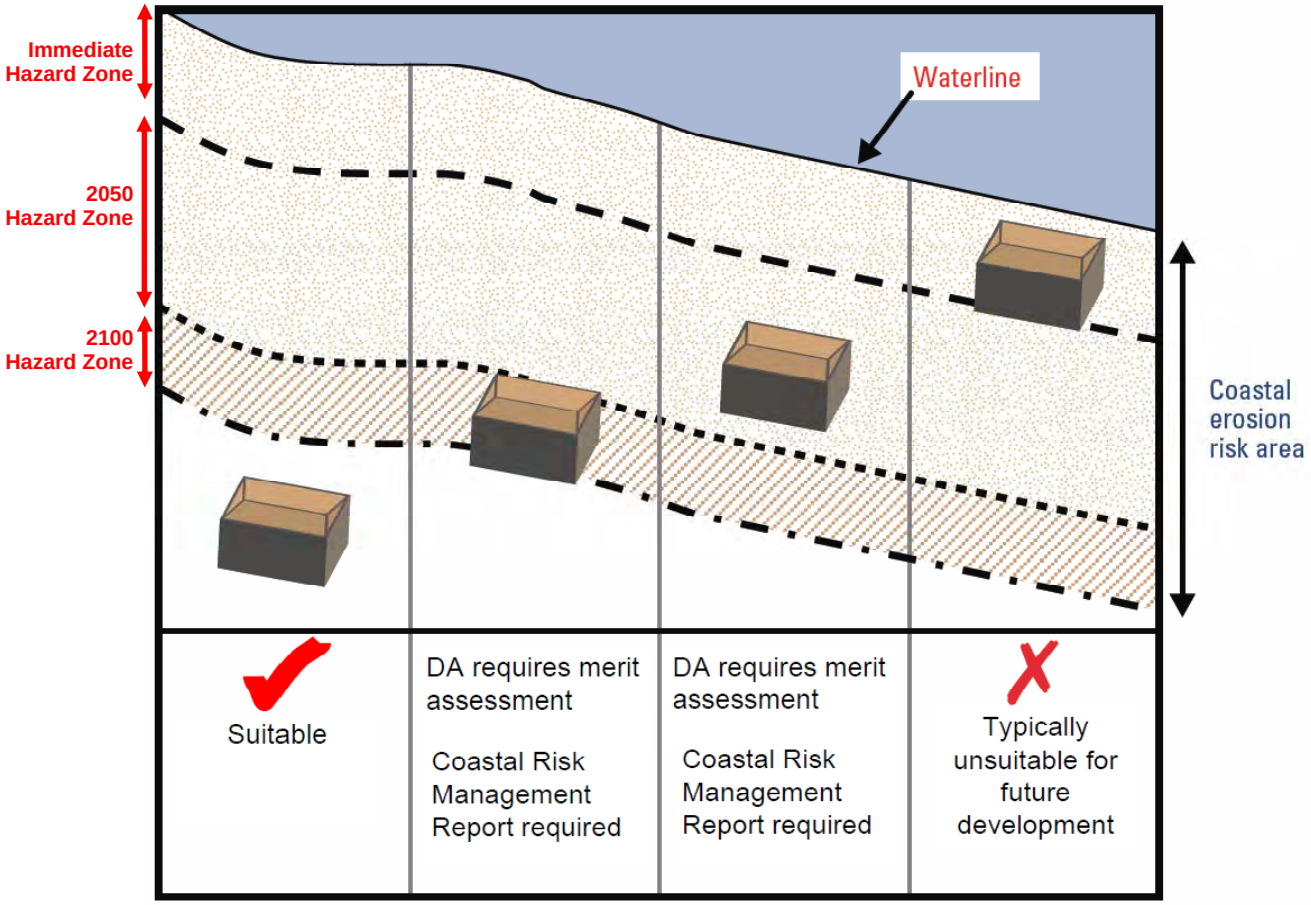


Figure 3 Typical Requirements for Development Applications

Note: Adapted from Department of Planning 2010

4.1 Specialist Reports that may be Required in all Hazard Zones

For areas seaward of the 2100 Hazard Line the following may be required. Please consult with Council prior to lodgement.

- Coastal Risk Management Report (see Section 4.4 below);
- a specialist coastal engineering report;
- geotechnical report indicating the sub-strata and the type of foundations and footings required (if proposed);
- a structural engineering report addressing the coastline hazards up to the design storm event and the ramifications and expectations for coastal events of greater magnitude;
- a structural engineering report showing:
    - the materials of construction:
    - principal dimensions of the main structural elements;
    - top and bottom levels of foundations, footings or piles; and

- illustrations of the events (erosion from the sea, inundation from increased water levels, wave action on the structure) considered in the design.

4.2 DA Information Requirements in all Hazard Zones

Applicants submitting Development Applications (DA's) for development in areas within all hazard zones must demonstrate that the proposal satisfies the controls within this DCP (as well as Council's other planning controls). In order to do so, the following information is to be submitted with the DA, as part of the Statement of Environmental Effects (SEE), as appropriate to the scale and location of the proposal. This information is in addition to Council's standard information and lodgement requirements for DA's.

Information outlining the nature and type of proposed development including:

- nature, bulk, scale and location of proposed development; and
- proposed use and occupation of buildings, and those on adjoining land.
- Plans drawn to a scale of not less than 1:1500 by a licensed surveyor, showing the following information to illustrate the position and configuration of the proposed development in relation to coastal risks including:
  - location of the existing and proposed buildings in relation to the property boundaries and the nearest coastal hazard line seaward of the development and the coastal erosion escarpment;
  - Levels of the existing and proposed buildings relative to AHD including foundation levels, floor levels, ceiling levels and overall height.
  - Existing ground levels around the perimeter of the proposed buildings relative to AHD;
  - Foundation type; and
  - Existing topographic levels of the site to a vertical accuracy of 0.1m and a horizontal spacing sufficient to pick up all the features of the land, relative to AHD.
  - Existing topographic levels of the area seaward of the site between the seaward property boundary and the line of mean high water springs, relative to AHD.

Information that demonstrates whether the development proposal:

- is consistent with the relevant coastline risk management plan; and
- is consistent with the controls in this DCP that relates to coastal issues.

4.3 Survey Details

In addition to the requirement to lodge survey details with the Development Application, the Survey Plan prepared by a Registered Surveyor must also indicate the following:

- The location of existing buildings or structures in relation to the property boundaries and hazard lines and the coastal erosion escarpment;
- The foundation levels, floor levels, ceiling heights, and overall heights of all existing buildings or structures to be retained;
- 0.1 metre contour intervals across the entire property and the area seaward of the site between the seaward property boundary and the line of mean high water springs; and
- All levels must be relative to Australian Height Datum (AHD).

4.4 Coastal Risk Management Report

A Coastal Risk Management Report is to be submitted for all development on land that is seaward of the 2100 line. This report is to be prepared by suitably qualified coastal engineering and structural engineering consultants and must consider and address the Coastal Risk Management Report Guidelines.

4.5 Possible Development Scenarios

In order to make this DCP easier to interpret, a range of possible development scenarios are shown in Figure 4 and Figure 5 to demonstrate development that may be acceptable in the 2050 and 2100 Hazard Zone. The scenarios shown are the following:

1. New deck and small additional room on an old house which spans two hazard zones.
2. An addition (> %50 of GFA), with partial demolition of that part of the dwelling seaward of the 2050 Line and house shifted landward to be completely in the 2100 Hazard Zone.
3. Two small houses (in two hazard zones) demolished and a single dwelling with equivalent GFA constructed in a landward position entirely within the 2100 hazard Zone with a large deck and pool on the seaward side.
4. Landward addition to an existing dwelling in the 2100 Hazard Zone.
5. Renovation with no additions in the 2100 Hazard Zone.
6. Demolition of a dwelling partly in the 2100 Hazard Zone and new dwelling mostly in the 2100 Hazard Zone.
7. New large deck.
8. Re subdivision of two lots (no new dwelling entitlements) and construction of moveable dwellings all within the 2100 Hazard Zone.

Figure 4 Current Residential Development Scenario

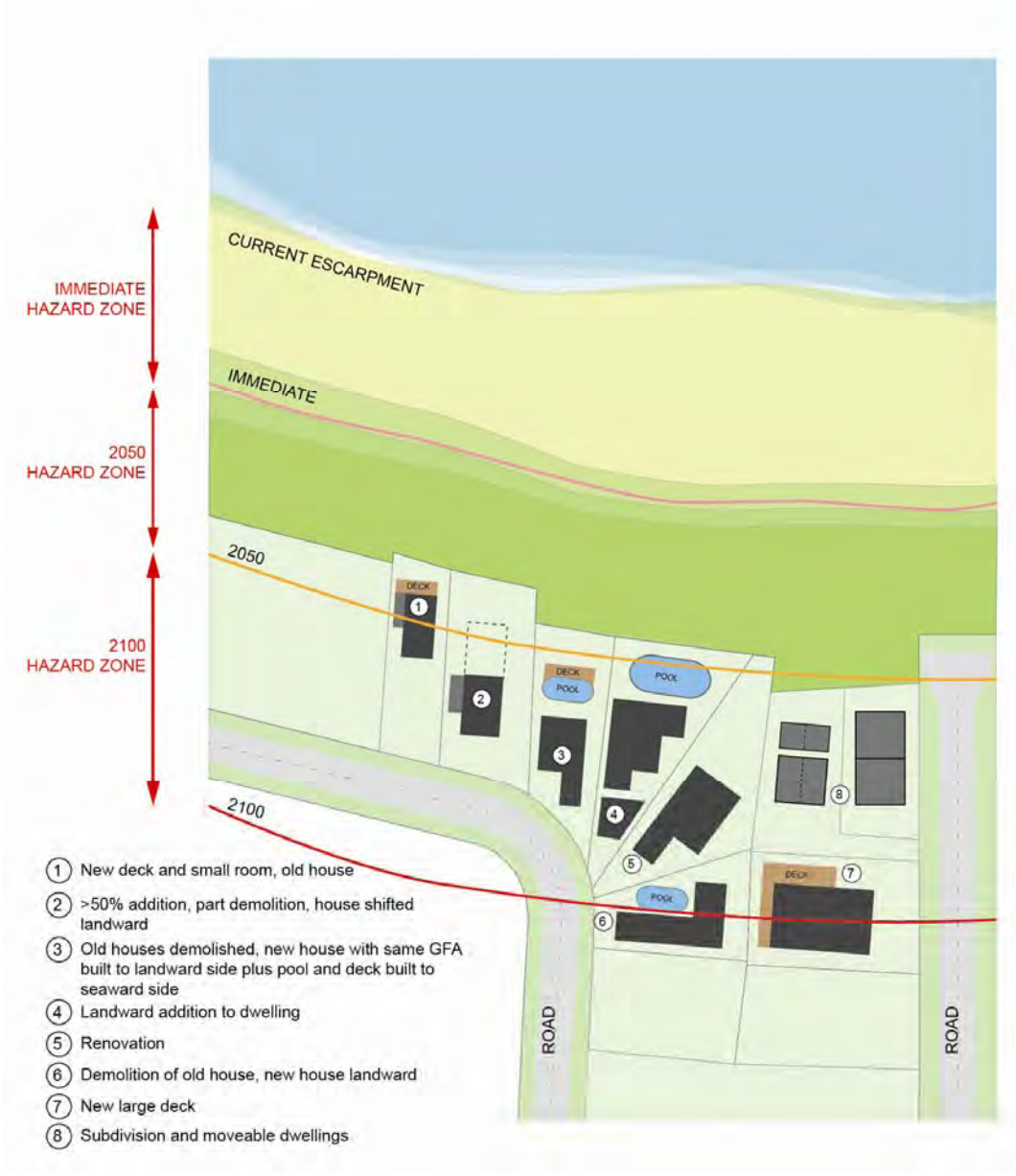
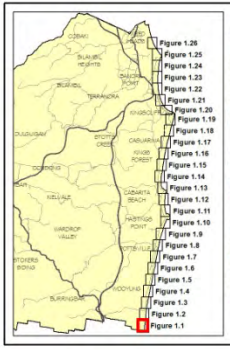


Figure 5 Possible Future Residential Development Scenarios

Appendix A

Coastal Hazard Maps



Notes:
A zone of reduced bearing capacity will exist landward of a receding erosion scarp. Definition of the extent of the zone of reduced bearing capacity will require professional assessment on a site by site basis. An additional allowance in this regard should be included in considering the immediate hazard zone.

The accuracy of predicting these hazard lines is subject to many uncertainties. The existence of bedrock, indurated sands and/or structures may impact on the realisation of the hazards.

Coastal features and structures have been observed and digitally plotted using photogrammetric techniques. Hazard lines have been determined and plotted relative to the photogrammetry data. Cadastral boundaries as shown may not have been survey corrected and are presented for guidance.

COASTAL HAZARD LINES

- 2050 Hazard line
- 2100Hazard line
- Immediate Hazard line

Cadastre: 30 August, 2011
© Land and Property Management Authority (LPMA)
& Tweed Shire Council.
Boundaries shown should be considered approximate only.

GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

TWEED SHIRE COUNCIL

TWEED DEVELOPMENT CONTROL PLAN

Section B25 Coastal Hazards

Coastal Hazard Lines Map
Figure 1.1
Sheet 1 of 26

N

0 20 40 60 80 100 Meters

Scale : 1:4,000 @ A3

Projection: GDA 1994 MGA Zone 56

Map identification number: DCP_B25_CHL_1 _040_20110830

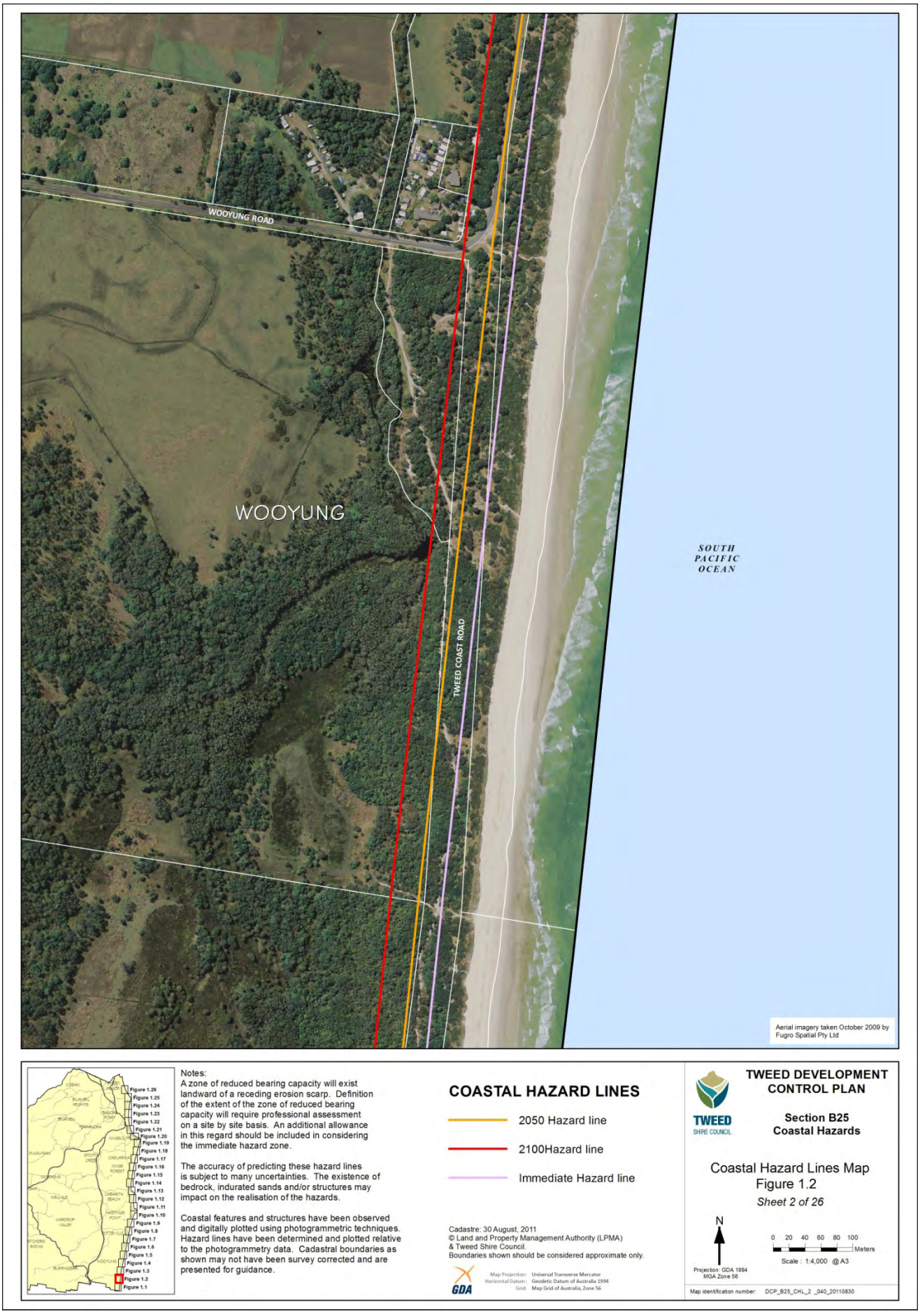

WOOYUNG ROAD
WOOYUNG
SOUTH PACIFIC OCEAN
TWEED COAST ROAD
Aerial imagery taken October 2009 by Fugro Spatial Pty Ltd
Figure 1.26
Figure 1.25
Figure 1.24
Figure 1.23
Figure 1.22
Figure 1.21
Figure 1.20
Figure 1.19
Figure 1.18
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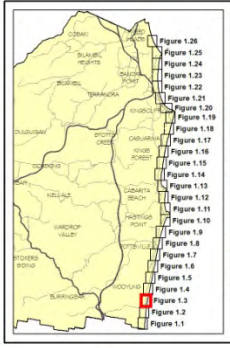
Figure 1.13
Figure 1.12
Figure 1.11
Figure 1.10
Figure 1.9
Figure 1.8
Figure 1.7
Figure 1.6
Figure 1.5
Figure 1.4
Figure 1.3
Figure 1.2
Figure 1.1
Notes:
A zone of reduced bearing capacity will exist landward of a receding erosion scarp. Definition of the extent of the zone of reduced bearing capacity will require professional assessment on a site by site basis. An additional allowance in this regard should be included in considering the immediate hazard zone.
The accuracy of predicting these hazard lines is subject to many uncertainties. The existence of bedrock, indurated sands and/or structures may impact on the realisation of the hazards.
Coastal features and structures have been observed and digitally plotted using photogrammetric techniques. Hazard lines have been determined and plotted relative to the photogrammetry data. Cadastral boundaries as shown may not have been survey corrected and are presented for guidance.
COASTAL HAZARD LINES
2050 Hazard line
2100Hazard line
Immediate Hazard line
Cadastre: 30 August, 2011
© Land and Property Management Authority (LPMA)
& Tweed Shire Council.
Boundaries shown should be considered approximate only.
GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56
TWEED SHIRE COUNCIL
TWEED DEVELOPMENT CONTROL PLAN
Section B25
Coastal Hazards
Coastal Hazard Lines Map
Figure 1.2
Sheet 2 of 26
N
0 20 40 60 80 100
Meters
Scale : 1:4,000 @ A3
Projection: GDA 1994
MGA Zone 56
Map identification number: DCP_B25_CHL_2 _040_20110830



Notes:
A zone of reduced bearing capacity will exist landward of a receding erosion scarp. Definition of the extent of the zone of reduced bearing capacity will require professional assessment on a site by site basis. An additional allowance in this regard should be included in considering the immediate hazard zone.

The accuracy of predicting these hazard lines is subject to many uncertainties. The existence of bedrock, indurated sands and/or structures may impact on the realisation of the hazards.

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COASTAL HAZARD LINES

- 2050 Hazard line
- 2100Hazard line
- Immediate Hazard line

Cadastre: 30 August, 2011
© Land and Property Management Authority (LPMA) & Tweed Shire Council.
Boundaries shown should be considered approximate only.

GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

TWEED SHIRE COUNCIL

TWEED DEVELOPMENT CONTROL PLAN

Section B25 Coastal Hazards

Coastal Hazard Lines Map
Figure 1.3
Sheet 3 of 26

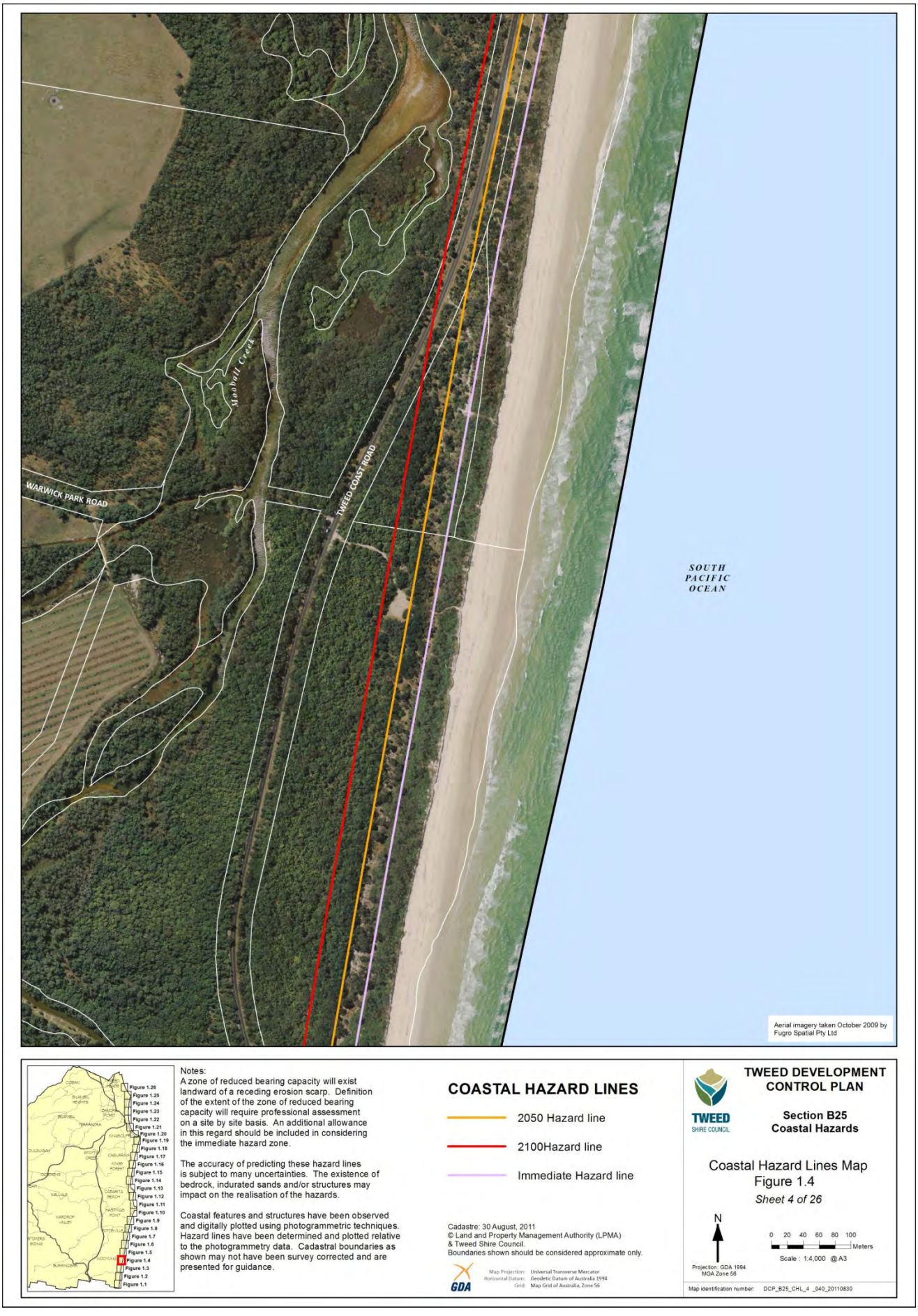
N

0 20 40 60 80 100 Meters

Scale : 1:4,000 @ A3

Projection: GDA 1994 MGA Zone 56

Map identification number: DCP_B25_CHL_3 _040_20110830


Moobball Creek
WARWICK PARK ROAD
TWEED COAST ROAD
SOUTH PACIFIC OCEAN
Aerial imagery taken October 2009 by Fugro Spatial Pty Ltd
Notes:
A zone of reduced bearing capacity will exist landward of a receding erosion scarp. Definition of the extent of the zone of reduced bearing capacity will require professional assessment on a site by site basis. An additional allowance in this regard should be included in considering the immediate hazard zone.
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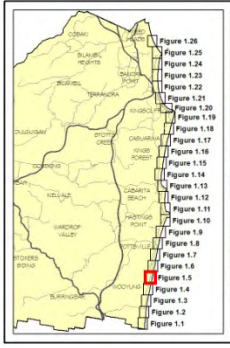
COASTAL HAZARD LINES
2050 Hazard line
2100Hazard line
Immediate Hazard line
Cadastre: 30 August, 2011
© Land and Property Management Authority (LPMA)
& Tweed Shire Council.
Boundaries shown should be considered approximate only.
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56
GDA
TWEED SHIRE COUNCIL
TWEED DEVELOPMENT CONTROL PLAN
Section B25
Coastal Hazards
Coastal Hazard Lines Map
Figure 1.4
Sheet 4 of 26
N
0 20 40 60 80 100
Meters
Scale : 1:4,000 @ A3
Projection: GDA 1994
MGA Zone 56
Map identification number: DCP_B25_CHL_4 _040_20110830



Notes:
A zone of reduced bearing capacity will exist landward of a receding erosion scarp. Definition of the extent of the zone of reduced bearing capacity will require professional assessment on a site by site basis. An additional allowance in this regard should be included in considering the immediate hazard zone.

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COASTAL HAZARD LINES

- 2050 Hazard line
- 2100Hazard line
- Immediate Hazard line

Cadastre: 30 August, 2011
© Land and Property Management Authority (LPMA) & Tweed Shire Council.
Boundaries shown should be considered approximate only.

GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

TWEED SHIRE COUNCIL

TWEED DEVELOPMENT CONTROL PLAN

Section B25 Coastal Hazards

Coastal Hazard Lines Map
Figure 1.5
Sheet 5 of 26

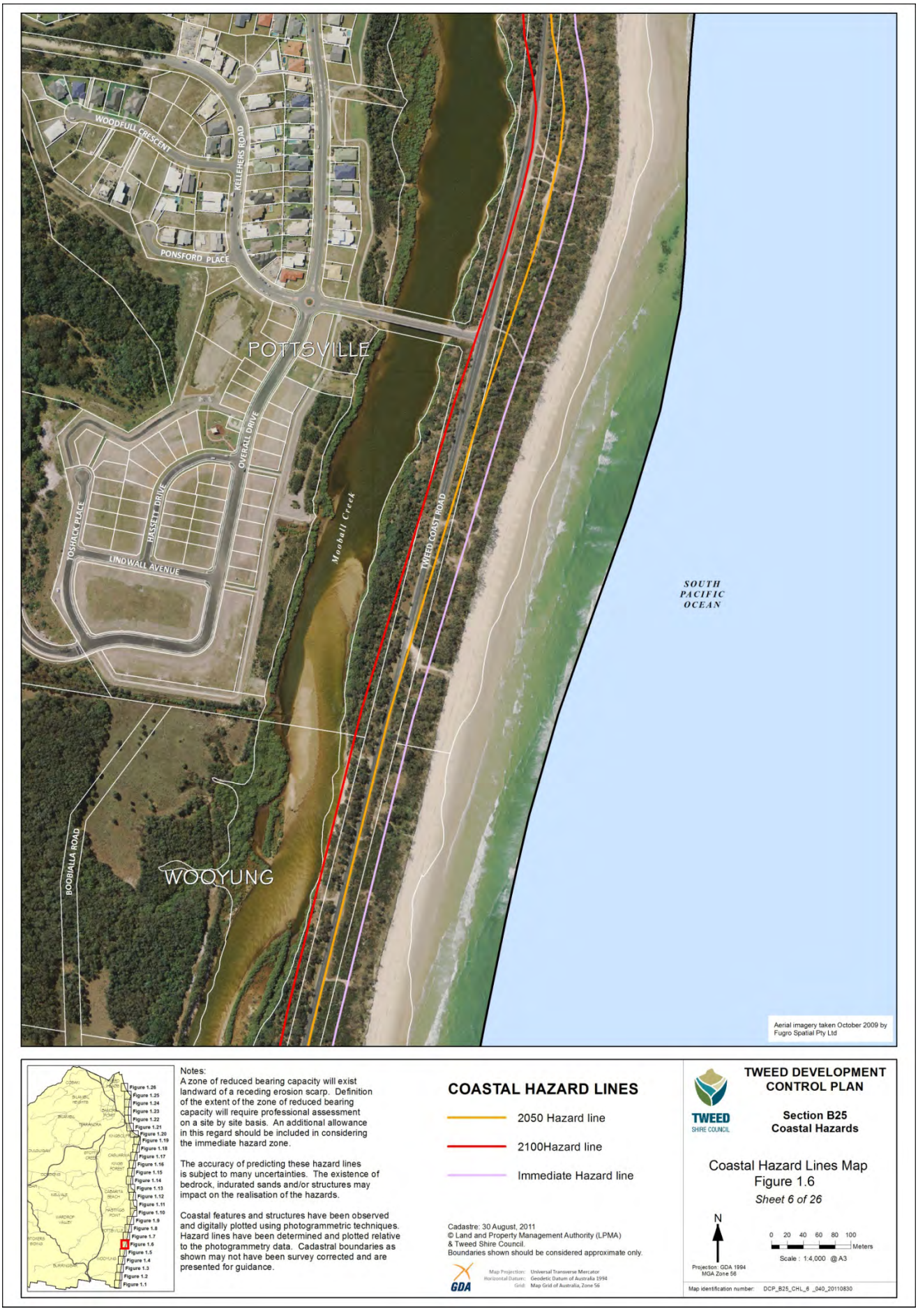
N

0 20 40 60 80 100 Meters

Scale : 1:4,000 @ A3

Projection: GDA 1994 MGA Zone 56

Map identification number: DCP_B25_CHL_5 _040_20110830


WOODFULL CRESCENT
KELLEHERS ROAD
PONSFORD PLACE
POTTSVILLE
OVERALL DRIVE
TOSHACK PLACE
HASSETT DRIVE
LINDWALL AVENUE
Mooball Creek
TWEED COAST ROAD
SOUTH PACIFIC OCEAN
BOOBIALLA ROAD
WOOYUNG
Aerial imagery taken October 2009 by Fugro Spatial Pty Ltd
Notes:
A zone of reduced bearing capacity will exist landward of a receding erosion scarp. Definition of the extent of the zone of reduced bearing capacity will require professional assessment on a site by site basis. An additional allowance in this regard should be included in considering the immediate hazard zone.
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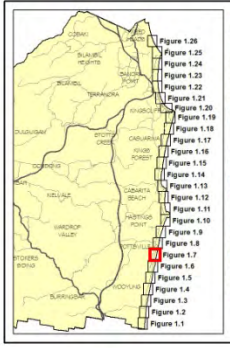
COASTAL HAZARD LINES
2050 Hazard line
2100Hazard line
Immediate Hazard line
Cadastre: 30 August, 2011
© Land and Property Management Authority (LPMA)
& Tweed Shire Council.
Boundaries shown should be considered approximate only.
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56
GDA
TWEED SHIRE COUNCIL
TWEED DEVELOPMENT CONTROL PLAN
Section B25
Coastal Hazards
Coastal Hazard Lines Map
Figure 1.6
Sheet 6 of 26
N
0 20 40 60 80 100
Meters
Scale : 1:4,000 @ A3
Projection: GDA 1994
MGA Zone 56
Map identification number: DCP_B25_CHL_6 _040_20110830



Notes:
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COASTAL HAZARD LINES

- 2050 Hazard line
- 2100Hazard line
- Immediate Hazard line

Cadastre: 30 August, 2011
© Land and Property Management Authority (LPMA) & Tweed Shire Council.
Boundaries shown should be considered approximate only.

GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

TWEED SHIRE COUNCIL

TWEED DEVELOPMENT CONTROL PLAN

Section B25 Coastal Hazards

Coastal Hazard Lines Map
Figure 1.7
Sheet 7 of 26

N

0 20 40 60 80 100 Meters

Scale : 1:4,000 @ A3

Projection: GDA 1994 MGA Zone 56

Map identification number: DCP_B25_CHL_7 _040_20110830


SEABRAE COURT
ELANORA AVENUE
Cudgera Creek
CORONATION AVENUE
PHILIP STREET
TWEED COAST ROAD
POTTSVILLE
ELIZABETH STREET
ANNE STREET
Mooball Creek
HAMPTON COURT
OVERALL DRIVE
ROYAL DRIVE
TWEED COAST ROAD
SOUTH PACIFIC OCEAN
Aerial imagery taken October 2009 by Fugro Spatial Pty Ltd
Notes:
A zone of reduced bearing capacity will exist landward of a receding erosion scarp. Definition of the extent of the zone of reduced bearing capacity will require professional assessment on a site by site basis. An additional allowance in this regard should be included in considering the immediate hazard zone.
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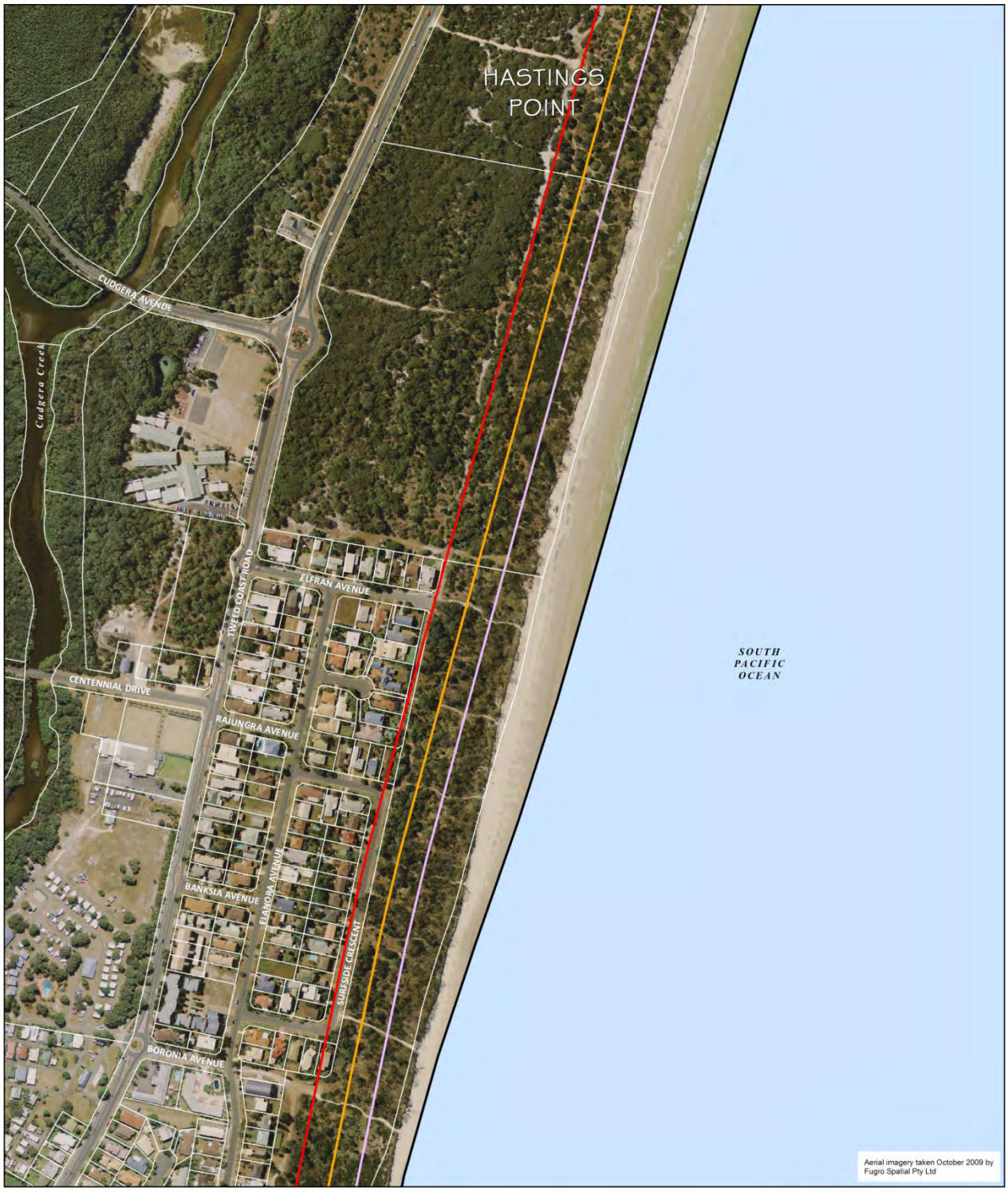
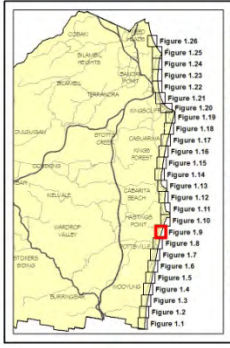
COASTAL HAZARD LINES
2050 Hazard line
2100Hazard line
Immediate Hazard line
Cadastre: 30 August, 2011
© Land and Property Management Authority (LPMA)
& Tweed Shire Council.
Boundaries shown should be considered approximate only.
GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56
TWEED SHIRE COUNCIL
TWEED DEVELOPMENT CONTROL PLAN
Section B25
Coastal Hazards
Coastal Hazard Lines Map
Figure 1.8
Sheet 8 of 26
N
0 20 40 60 80 100
Meters
Scale : 1:4,000 @ A3
Projection: GDA 1994
MGA Zone 56
Map identification number: DCP_B25_CHL_8 _040_20110830





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- 2100Hazard line
- Immediate Hazard line

Cadastre: 30 August, 2011
© Land and Property Management Authority (LPMA) & Tweed Shire Council.
Boundaries shown should be considered approximate only.

GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

TWEED SHIRE COUNCIL

TWEED DEVELOPMENT CONTROL PLAN

Section B25 Coastal Hazards

Coastal Hazard Lines Map
Figure 1.9
Sheet 9 of 26

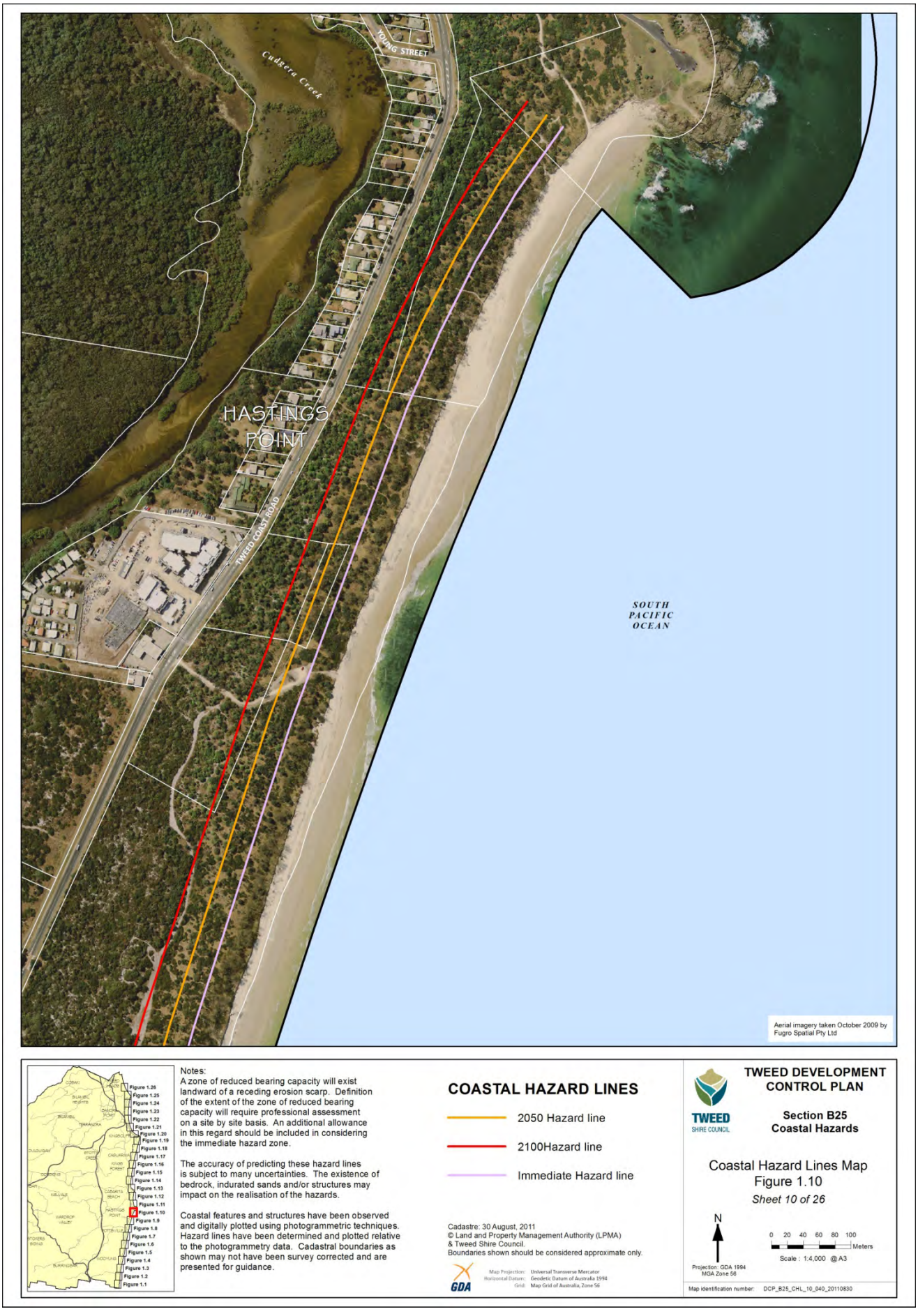
N

0 20 40 60 80 100 Meters

Scale : 1:4,000 @ A3

Projection: GDA 1994 MGA Zone 56

Map identification number: DCP_B25_CHL_9 _040_20110830


Cudgera Creek
YOUNG STREET
HASTINGS POINT
TWEED COAST ROAD
SOUTH PACIFIC OCEAN
Aerial imagery taken October 2009 by Fugro Spatial Pty Ltd
Figure 1.26
Figure 1.25
Figure 1.24
Figure 1.23
Figure 1.22
Figure 1.21
Figure 1.20
Figure 1.19
Figure 1.18
Figure 1.17
Figure 1.16
Figure 1.15
Figure 1.14
Figure 1.13
Figure 1.12
Figure 1.11
Figure 1.10
Figure 1.9
Figure 1.8
Figure 1.7
Figure 1.6
Figure 1.5
Figure 1.4
Figure 1.3
Figure 1.2
Figure 1.1
Notes:
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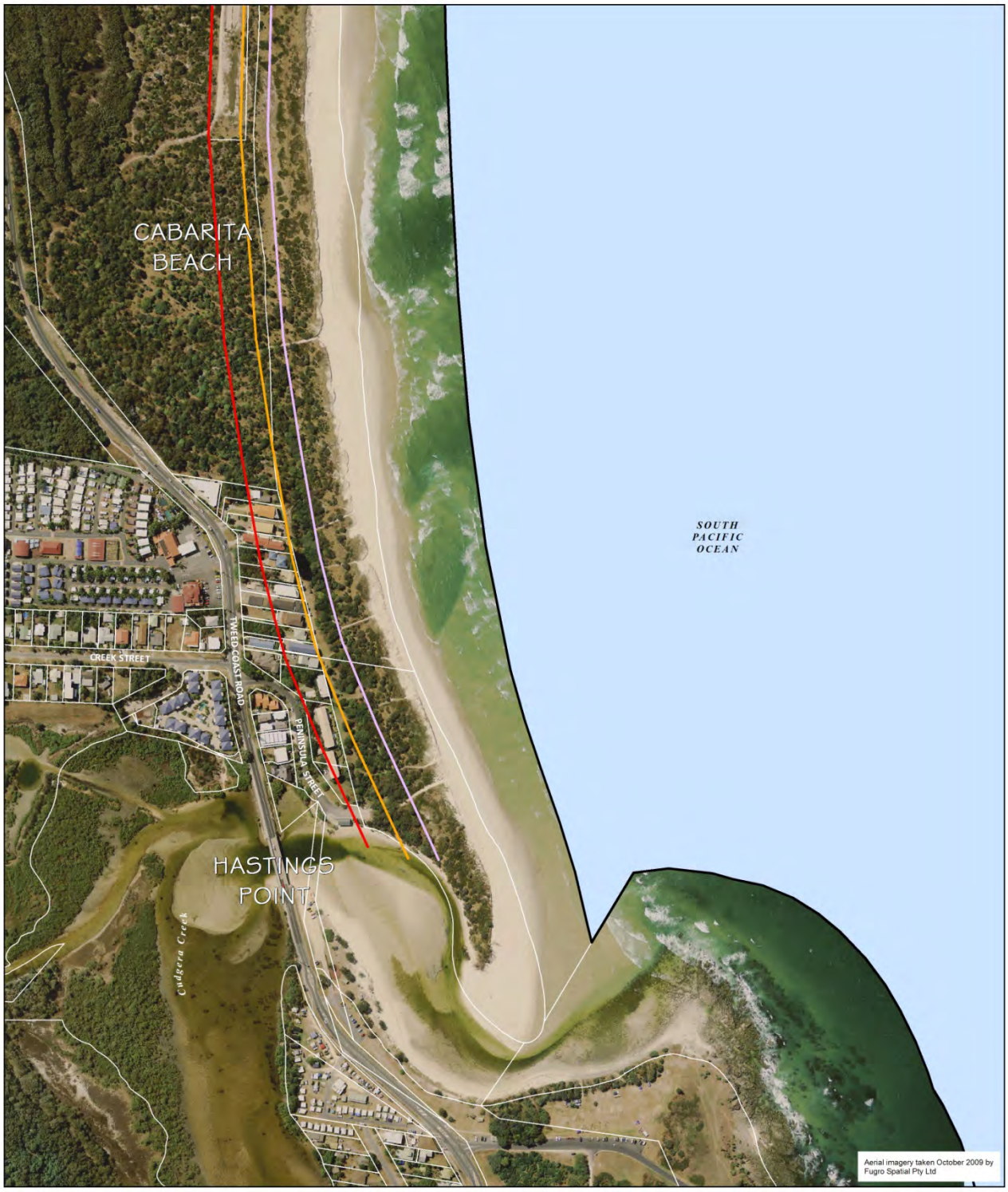
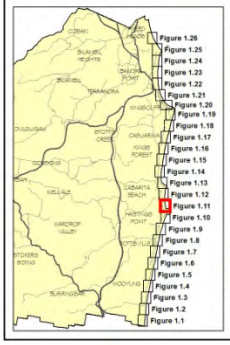
COASTAL HAZARD LINES
2050 Hazard line
2100Hazard line
Immediate Hazard line
Cadastre: 30 August, 2011
© Land and Property Management Authority (LPMA)
& Tweed Shire Council.
Boundaries shown should be considered approximate only.
GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56
TWEED SHIRE COUNCIL
TWEED DEVELOPMENT CONTROL PLAN
Section B25
Coastal Hazards
Coastal Hazard Lines Map
Figure 1.10
Sheet 10 of 26
N
0 20 40 60 80 100
Meters
Scale : 1:4,000 @ A3
Projection: GDA 1994
MGA Zone 56
Map identification number: DCP_B25_CHL_10_040_20110830





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COASTAL HAZARD LINES

- 2050 Hazard line
- 2100Hazard line
- Immediate Hazard line

Cadastre: 30 August, 2011
© Land and Property Management Authority (LPMA)
& Tweed Shire Council.
Boundaries shown should be considered approximate only.

GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

TWEED SHIRE COUNCIL

TWEED DEVELOPMENT CONTROL PLAN

Section B25 Coastal Hazards

Coastal Hazard Lines Map
Figure 1.11
Sheet 11 of 26

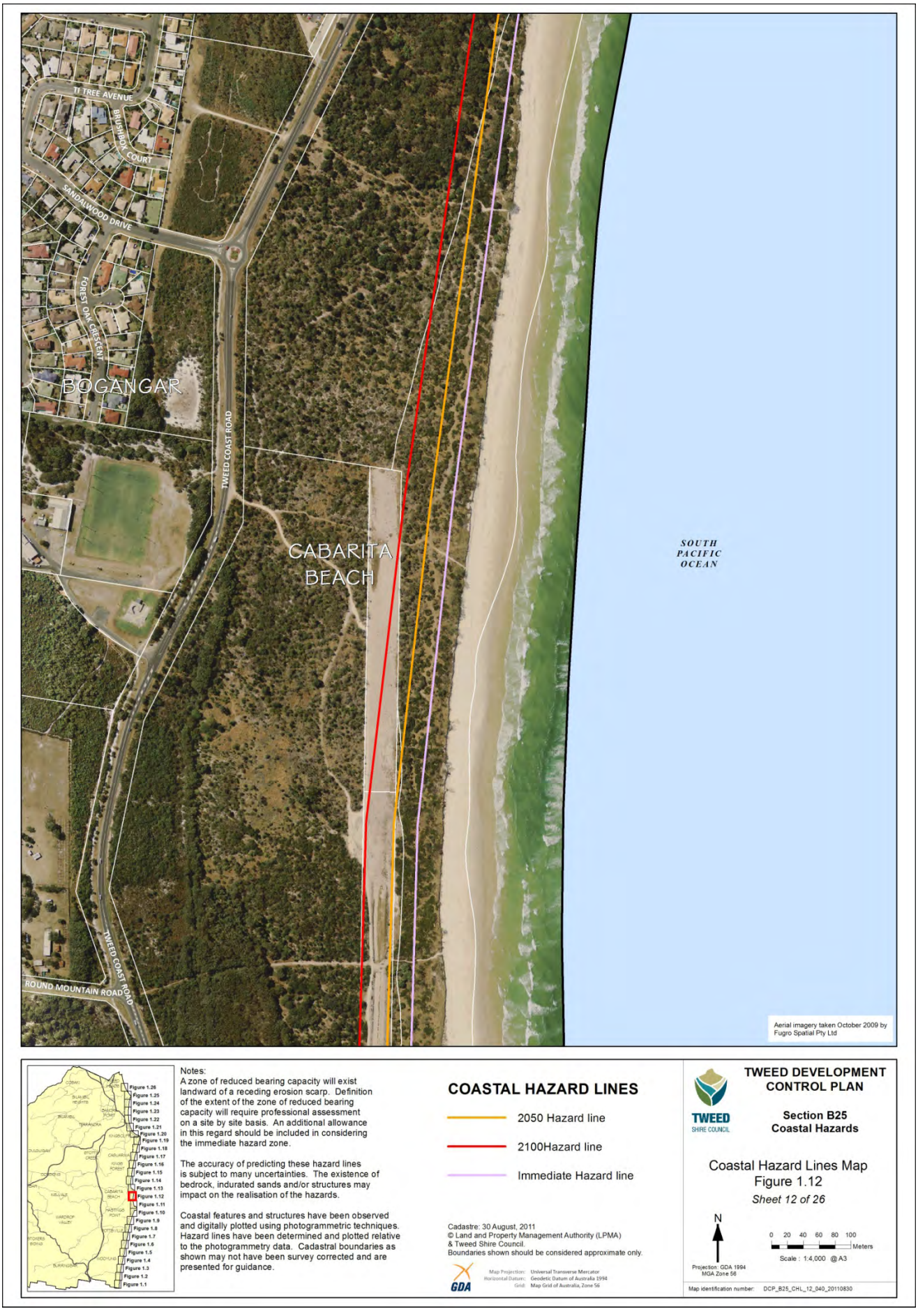
N

0 20 40 60 80 100 Meters

Scale : 1:4,000 @ A3

Projection: GDA 1994 MGA Zone 56

Map identification number: DCP_B25_CHL_11_040_20110830


TI TREE AVENUE
BRUSHBOX COURT
SANDALWOOD DRIVE
FOREST OAK CRESCENT
BOGANGAR
TWEED COAST ROAD
CABARITA BEACH
SOUTH PACIFIC OCEAN
TWEED COAST ROAD
ROUND MOUNTAIN ROAD
Aerial imagery taken October 2009 by Fugro Spatial Pty Ltd
Notes:
A zone of reduced bearing capacity will exist landward of a receding erosion scarp. Definition of the extent of the zone of reduced bearing capacity will require professional assessment on a site by site basis. An additional allowance in this regard should be included in considering the immediate hazard zone.
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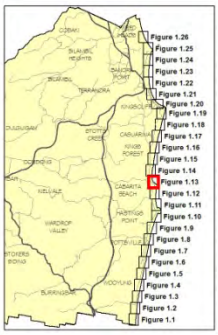
COASTAL HAZARD LINES
2050 Hazard line
2100Hazard line
Immediate Hazard line
Cadastre: 30 August, 2011
© Land and Property Management Authority (LPMA)
& Tweed Shire Council.
Boundaries shown should be considered approximate only.
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56
GDA
TWEED SHIRE COUNCIL
TWEED DEVELOPMENT CONTROL PLAN
Section B25
Coastal Hazards
Coastal Hazard Lines Map
Figure 1.12
Sheet 12 of 26
N
0 20 40 60 80 100
Meters
Scale : 1:4,000 @ A3
Projection: GDA 1994
MGA Zone 56
Map identification number: DCP_B25_CHL_12_040_20110830



Notes:
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COASTAL HAZARD LINES

- 2050 Hazard line
- 2100Hazard line
- Immediate Hazard line

Cadastre: 30 August, 2011
© Land and Property Management Authority (LPMA) & Tweed Shire Council.
Boundaries shown should be considered approximate only.

GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

TWEED SHIRE COUNCIL

TWEED DEVELOPMENT CONTROL PLAN

Section B25 Coastal Hazards

Coastal Hazard Lines Map
Figure 1.13
Sheet 13 of 26

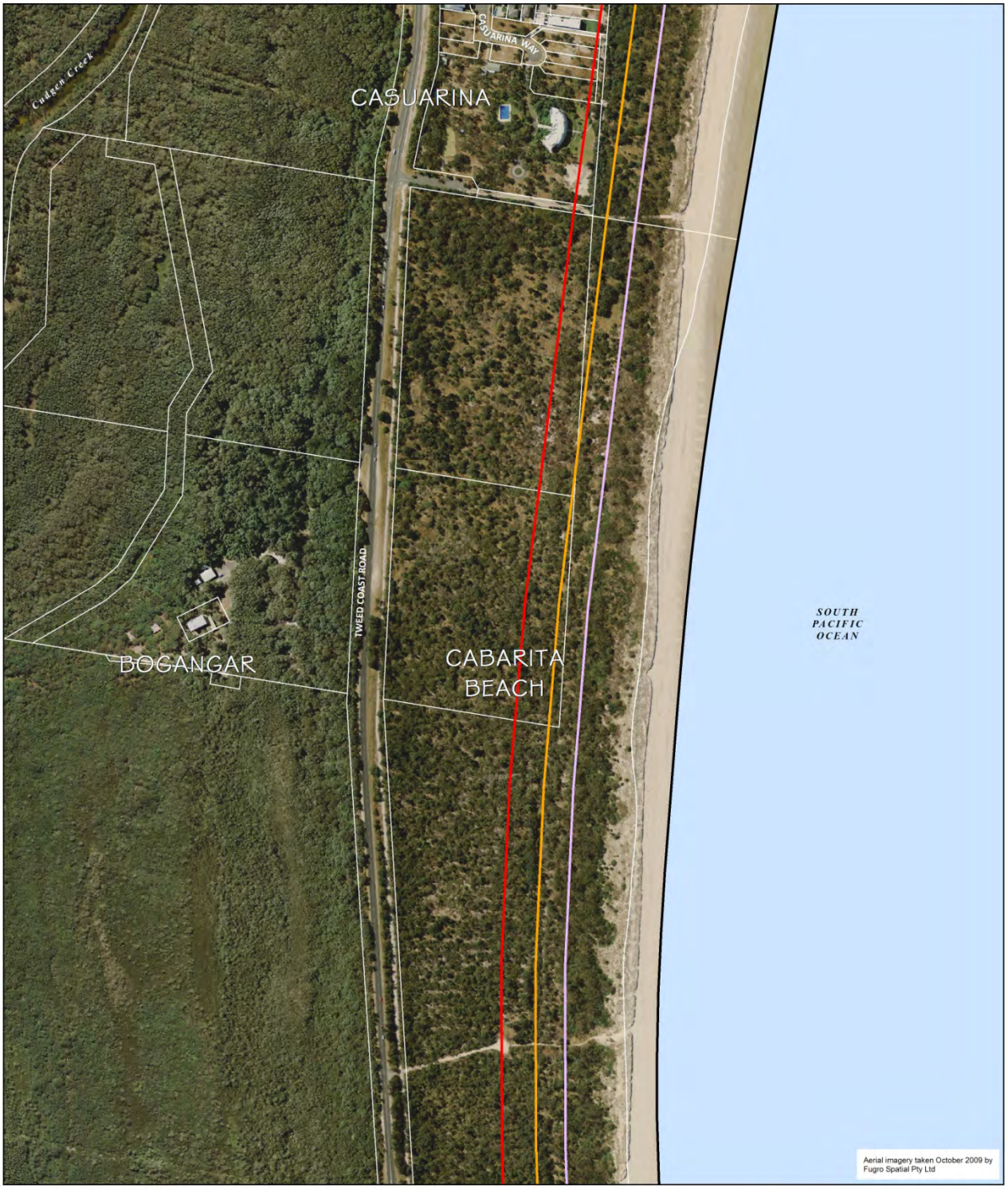
N

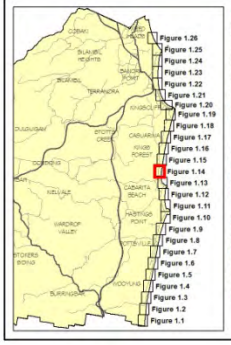
0 20 40 60 80 100 Meters

Scale : 1:4,000 @ A3

Projection: GDA 1994 MGA Zone 56

Map identification number: DCP_B25_CHL_13_040_20110830





Notes:
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COASTAL HAZARD LINES

- 2050 Hazard line
- 2100Hazard line
- Immediate Hazard line

Cadastre: 30 August, 2011
© Land and Property Management Authority (LPMA) & Tweed Shire Council.
Boundaries shown should be considered approximate only.

GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

TWEED SHIRE COUNCIL

TWEED DEVELOPMENT CONTROL PLAN

Section B25 Coastal Hazards

Coastal Hazard Lines Map
Figure 1.14
Sheet 14 of 26

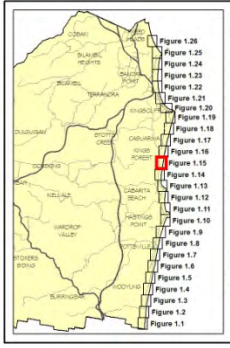
N

0 20 40 60 80 100 Meters

Scale : 1:4,000 @ A3

Projection: GDA 1994 MGA Zone 56

Map identification number: DCP_B25_CHL_14_040_20110830



Notes:
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COASTAL HAZARD LINES

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- Immediate Hazard line

Cadastre: 30 August, 2011
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Boundaries shown should be considered approximate only.

GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

TWEED SHIRE COUNCIL

TWEED DEVELOPMENT CONTROL PLAN

Section B25 Coastal Hazards

Coastal Hazard Lines Map
Figure 1.15
Sheet 15 of 26

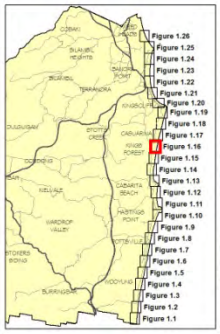
N

0 20 40 60 80 100 Meters

Scale : 1:4,000 @ A3

Projection: GDA 1994 MGA Zone 56

Map identification number: DCP_B25_CHL_15_040_20110830



Notes:
A zone of reduced bearing capacity will exist landward of a receding erosion scarp. Definition of the extent of the zone of reduced bearing capacity will require professional assessment on a site by site basis. An additional allowance in this regard should be included in considering the immediate hazard zone.

The accuracy of predicting these hazard lines is subject to many uncertainties. The existence of bedrock, indurated sands and/or structures may impact on the realisation of the hazards.

Coastal features and structures have been observed and digitally plotted using photogrammetric techniques. Hazard lines have been determined and plotted relative to the photogrammetry data. Cadastral boundaries as shown may not have been survey corrected and are presented for guidance.

COASTAL HAZARD LINES

- 2050 Hazard line
- 2100Hazard line
- Immediate Hazard line

Cadastre: 30 August, 2011
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& Tweed Shire Council.
Boundaries shown should be considered approximate only.

GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

TWEED SHIRE COUNCIL

TWEED DEVELOPMENT CONTROL PLAN

Section B25 Coastal Hazards

Coastal Hazard Lines Map
Figure 1.16
Sheet 16 of 26

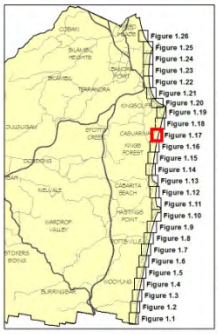
N

0 20 40 60 80 100 Meters

Scale : 1:4,000 @ A3

Projection: GDA 1994 MGA Zone 56

Map identification number: DCP_B25_CHL_16_040_20110830



Notes:
A zone of reduced bearing capacity will exist landward of a receding erosion scarp. Definition of the extent of the zone of reduced bearing capacity will require professional assessment on a site by site basis. An additional allowance in this regard should be included in considering the immediate hazard zone.

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COASTAL HAZARD LINES

- 2050 Hazard line
- 2100Hazard line
- Immediate Hazard line

Cadastre: 30 August, 2011
© Land and Property Management Authority (LPMA) & Tweed Shire Council.
Boundaries shown should be considered approximate only.

GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

TWEED SHIRE COUNCIL

TWEED DEVELOPMENT CONTROL PLAN

Section B25 Coastal Hazards

Coastal Hazard Lines Map
Figure 1.17
Sheet 17 of 26

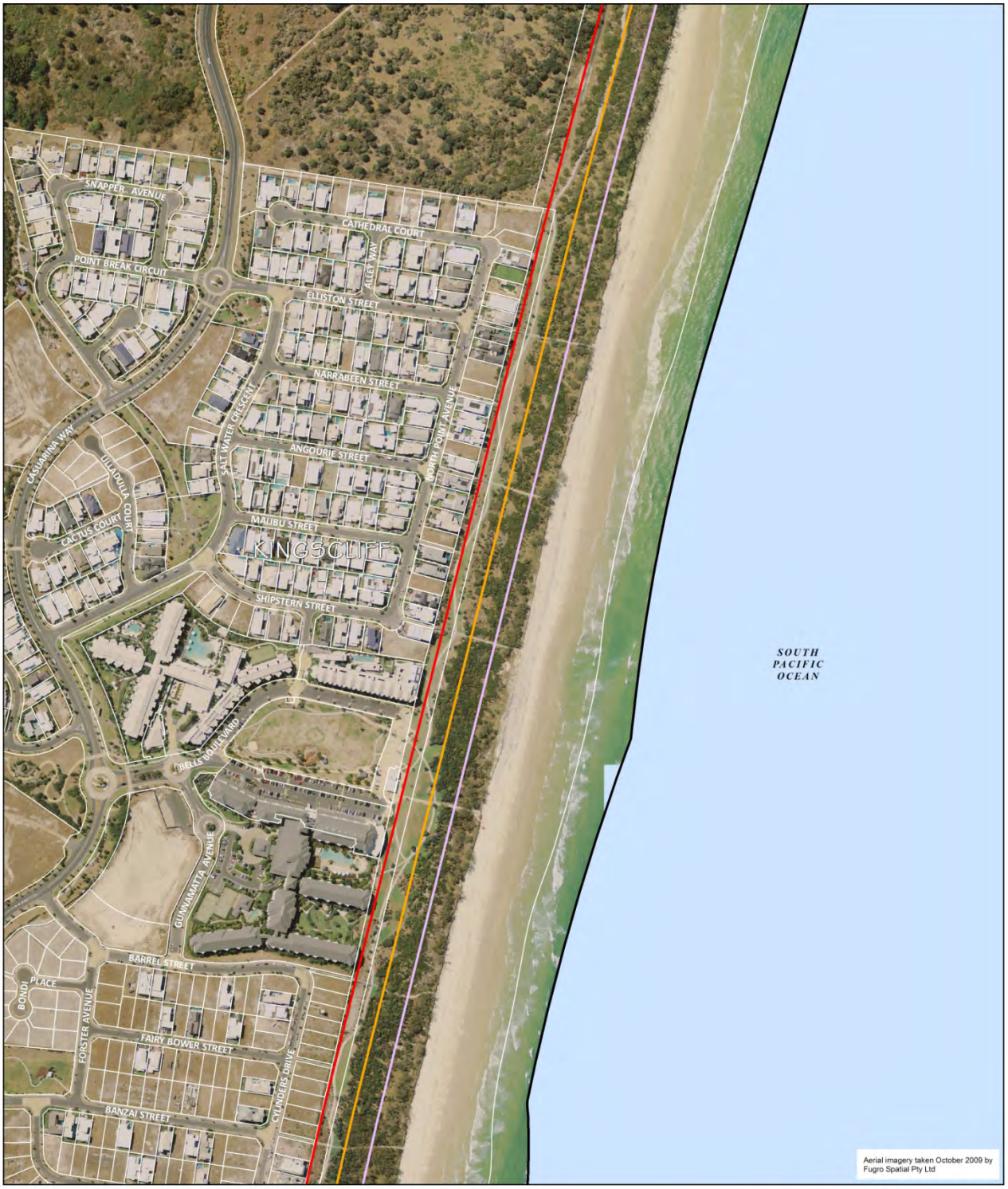
N

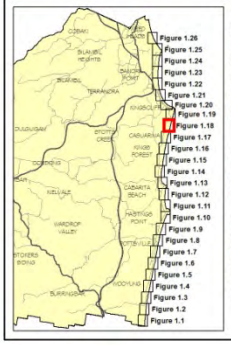
0 20 40 60 80 100 Meters

Scale : 1:4,000 @ A3

Projection: GDA 1994 MGA Zone 56

Map identification number: DCP_B25_CHL_17_040_20110830





Notes:
A zone of reduced bearing capacity will exist landward of a receding erosion scarp. Definition of the extent of the zone of reduced bearing capacity will require professional assessment on a site by site basis. An additional allowance in this regard should be included in considering the immediate hazard zone.

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COASTAL HAZARD LINES

- 2050 Hazard line
- 2100Hazard line
- Immediate Hazard line

Cadastre: 30 August, 2011
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& Tweed Shire Council.
Boundaries shown should be considered approximate only.

GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

TWEED SHIRE COUNCIL

TWEED DEVELOPMENT CONTROL PLAN

Section B25 Coastal Hazards

Coastal Hazard Lines Map
Figure 1.18
Sheet 18 of 26

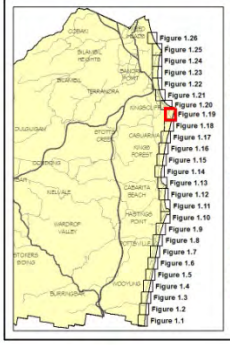
N

0 20 40 60 80 100 Meters

Scale : 1:4,000 @ A3

Projection: GDA 1994 MGA Zone 56

Map identification number: DCP_B25_CHL_18_040_20110830



Notes:
A zone of reduced bearing capacity will exist landward of a receding erosion scarp. Definition of the extent of the zone of reduced bearing capacity will require professional assessment on a site by site basis. An additional allowance in this regard should be included in considering the immediate hazard zone.

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COASTAL HAZARD LINES

- 2050 Hazard line
- 2100Hazard line
- Immediate Hazard line

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Boundaries shown should be considered approximate only.

GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

TWEED SHIRE COUNCIL

TWEED DEVELOPMENT CONTROL PLAN

Section B25 Coastal Hazards

Coastal Hazard Lines Map
Figure 1.19
Sheet 19 of 26

N

0 20 40 60 80 100 Meters

Scale : 1:4,000 @ A3

Projection: GDA 1994 MGA Zone 56

Map identification number: DCP_B25_CHL_19_040_20110830


TWEED DEVELOPMENT CONTROL PLAN
TWEED SHIRE COUNCIL
Section B25
Coastal Hazards
Coastal Hazard Lines Map
Figure 1.20
Sheet 20 of 26
COASTAL HAZARD LINES
2050 Hazard line / zone
2100Hazard line / zone
Immediate Hazard line /zone
Notes:
A zone of reduced bearing capacity will exist landward of a receding erosion scarp. Definition of the extent of the zone of reduced bearing capacity will require professional assessment on a site by site basis. An additional allowance in this regard should be included in considering the immediate hazard zone.
The accuracy of predicting these hazard lines is subject to many uncertainties. The existence of bedrock, indurated sands and/or structures may impact on the realisation of the hazards.
Coastal features and structures have been observed and digitally plotted using photogrammetric techniques. Hazard lines have been determined and plotted relative to the photogrammetry data. Cadastral boundaries as shown may not have been survey corrected and are presented for guidance.
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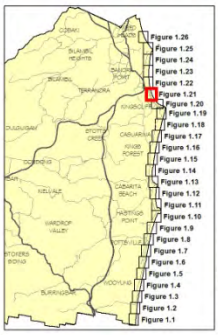
Boundaries shown should be considered approximate only.
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56
GDA
SOUTH PACIFIC OCEAN
KINGSCLIFF
MARINE PARADE
PEARL STREET
TURNOCK STREET
KINGSCLIFF STREET
BEACH STREET
SEAVIEW STREET
SUTHERLAND STREET
BOOMERANG STREET
ROB ROY CRESCENT
MOSS STREET
Cudgen Creek
Scale : 1:4,000 @ A3
Meters
Projection: GDA 1994 MGA Zone 56
Aerial imagery taken October 2009 by Fugro Spatial Pty Ltd
Map identification number: DCP_B25_CHL_20_040_20110830



Notes:
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COASTAL HAZARD LINES

- 2050 Hazard line
- 2100Hazard line
- Immediate Hazard line

Cadastre: 30 August, 2011
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& Tweed Shire Council.
Boundaries shown should be considered approximate only.

GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

TWEED SHIRE COUNCIL

TWEED DEVELOPMENT CONTROL PLAN

Section B25 Coastal Hazards

Coastal Hazard Lines Map
Figure 1.21
Sheet 21 of 26

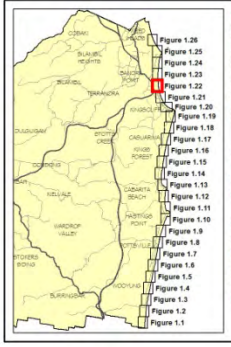
N

0 20 40 60 80 100 Meters

Scale : 1:4,000 @ A3

Projection: GDA 1994 MGA Zone 56

Map identification number: DCP_B25_CHL_21_040_20110830



Notes:
A zone of reduced bearing capacity will exist landward of a receding erosion scarp. Definition of the extent of the zone of reduced bearing capacity will require professional assessment on a site by site basis. An additional allowance in this regard should be included in considering the immediate hazard zone.

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COASTAL HAZARD LINES

- 2050 Hazard line
- 2100Hazard line
- Immediate Hazard line

Cadastre: 30 August, 2011
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Boundaries shown should be considered approximate only.

GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

TWEED SHIRE COUNCIL

TWEED DEVELOPMENT CONTROL PLAN

Section B25 Coastal Hazards

Coastal Hazard Lines Map
Figure 1.22
Sheet 22 of 26

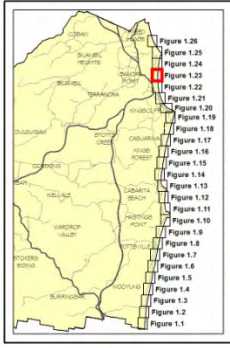
N

0 20 40 60 80 100 Meters

Scale : 1:4,000 @ A3

Projection: GDA 1994 MGA Zone 56

Map identification number: DCP_B25_CHL_22_040_20110830



Notes:
A zone of reduced bearing capacity will exist landward of a receding erosion scarp. Definition of the extent of the zone of reduced bearing capacity will require professional assessment on a site by site basis. An additional allowance in this regard should be included in considering the immediate hazard zone.

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COASTAL HAZARD LINES

- 2050 Hazard line
- 2100Hazard line
- Immediate Hazard line

Cadastre: 30 August, 2011
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Boundaries shown should be considered approximate only.

GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

TWEED SHIRE COUNCIL

TWEED DEVELOPMENT CONTROL PLAN

Section B25 Coastal Hazards

Coastal Hazard Lines Map
Figure 1.23
Sheet 23 of 26

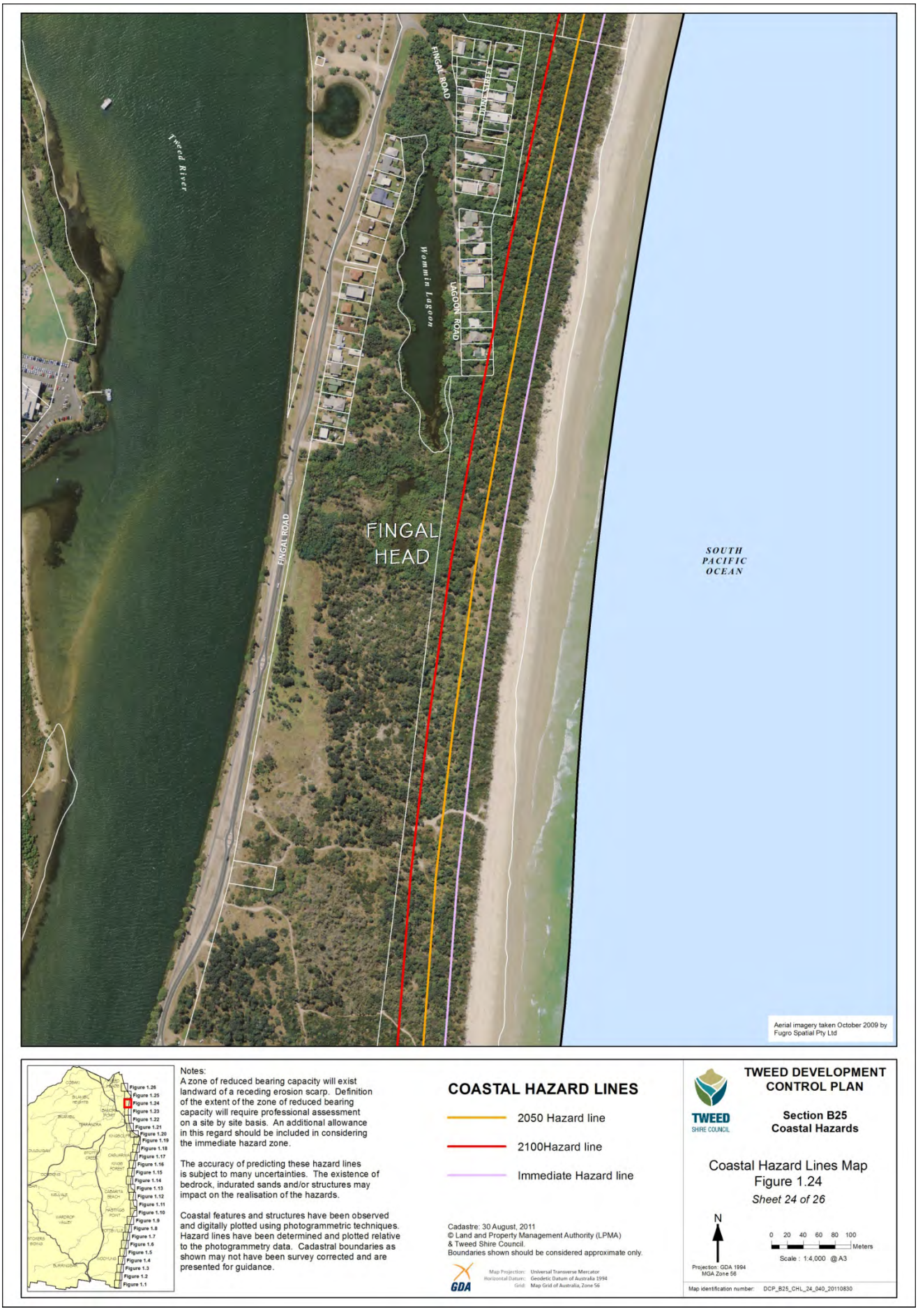
N

0 20 40 60 80 100 Meters

Scale : 1:4,000 @ A3

Projection: GDA 1994 MGA Zone 56

Map identification number: DCP_B25_CHL_23_040_20110830


Tweed River
FINGAL ROAD
FERRIS STREET
Wommin Lagoon
LAGOON ROAD
FINGAL ROAD
FINGAL HEAD
SOUTH PACIFIC OCEAN
Aerial imagery taken October 2009 by Fugro Spatial Pty Ltd
Figure 1.26
Figure 1.25
Figure 1.24
Figure 1.23
Figure 1.22
Figure 1.21
Figure 1.20
Figure 1.19
Figure 1.18
Figure 1.17
Figure 1.16
Figure 1.15
Figure 1.14
Figure 1.13
Figure 1.12
Figure 1.11
Figure 1.10
Figure 1.9
Figure 1.8
Figure 1.7
Figure 1.6
Figure 1.5
Figure 1.4
Figure 1.3
Figure 1.2
Figure 1.1
Notes:
A zone of reduced bearing capacity will exist landward of a receding erosion scarp. Definition of the extent of the zone of reduced bearing capacity will require professional assessment on a site by site basis. An additional allowance in this regard should be included in considering the immediate hazard zone.
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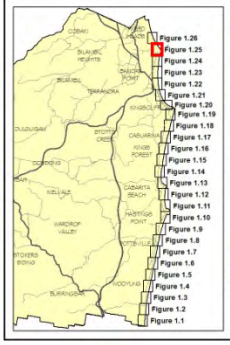
COASTAL HAZARD LINES
2050 Hazard line
2100Hazard line
Immediate Hazard line
Cadastre: 30 August, 2011
© Land and Property Management Authority (LPMA)
& Tweed Shire Council.
Boundaries shown should be considered approximate only.
GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56
TWEED SHIRE COUNCIL
TWEED DEVELOPMENT CONTROL PLAN
Section B25
Coastal Hazards
Coastal Hazard Lines Map
Figure 1.24
Sheet 24 of 26
N
0 20 40 60 80 100
Meters
Scale : 1:4,000 @ A3
Projection: GDA 1994
MGA Zone 56
Map identification number: DCP_B25_CHL_24_040_20110830



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COASTAL HAZARD LINES

- 2050 Hazard line
- 2100Hazard line
- Immediate Hazard line

Cadastre: 30 August, 2011
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Boundaries shown should be considered approximate only.

GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

TWEED SHIRE COUNCIL

TWEED DEVELOPMENT CONTROL PLAN

Section B25 Coastal Hazards

Coastal Hazard Lines Map
Figure 1.25
Sheet 25 of 26

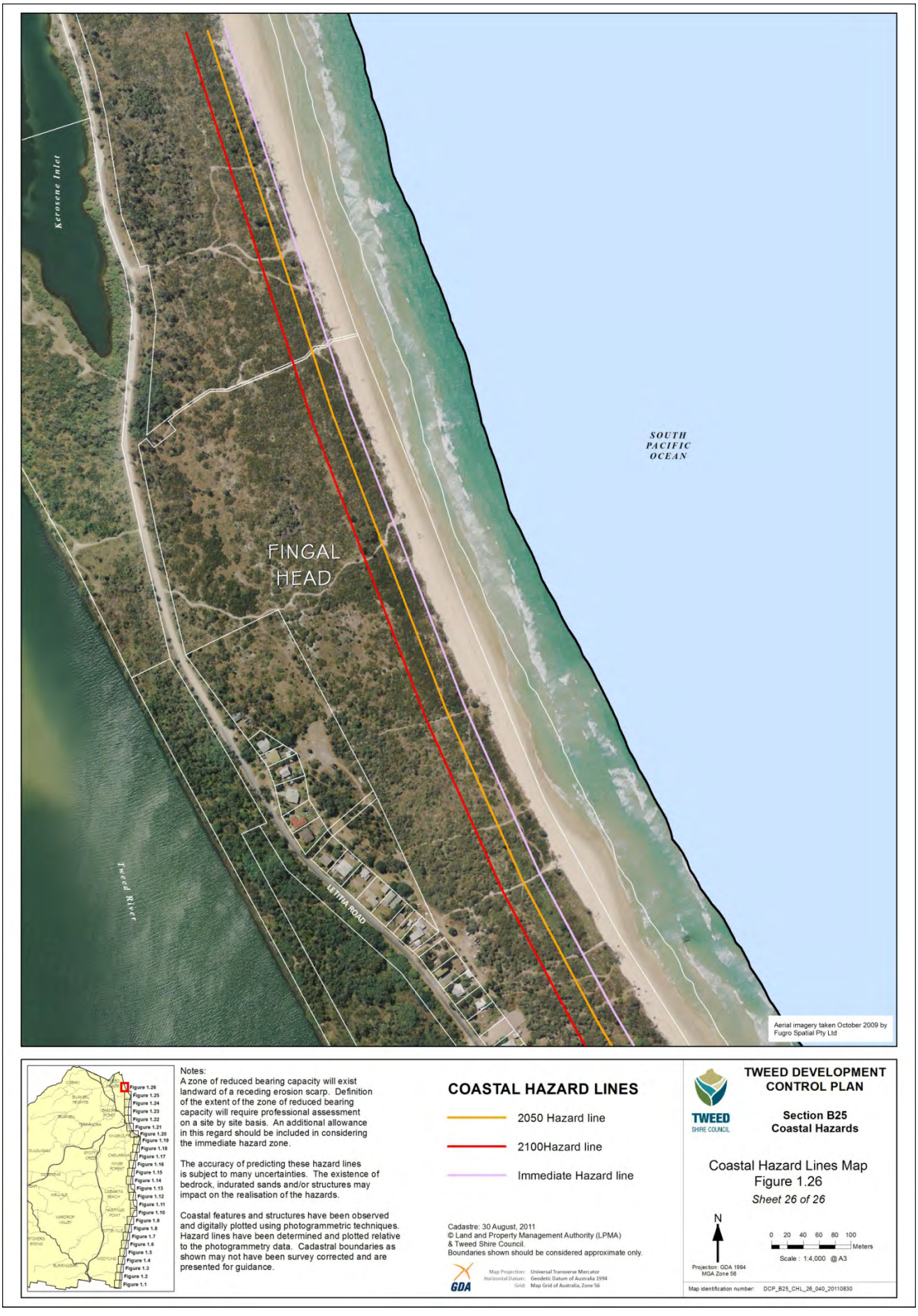
N

0 20 40 60 80 100 Meters

Scale : 1:4,000 @ A3

Projection: GDA 1994 MGA Zone 56

Map identification number: DCP_B25_CHL_25_040_20110830


Kerosene Inlet
SOUTH PACIFIC OCEAN
FINGAL HEAD
Tweed River
LETITIA ROAD
Aerial imagery taken October 2009 by Fugro Spatial Pty Ltd
Notes:
A zone of reduced bearing capacity will exist landward of a receding erosion scarp. Definition of the extent of the zone of reduced bearing capacity will require professional assessment on a site by site basis. An additional allowance in this regard should be included in considering the immediate hazard zone.
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COASTAL HAZARD LINES
2050 Hazard line
2100Hazard line
Immediate Hazard line
Cadastre: 30 August, 2011
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Boundaries shown should be considered approximate only.
GDA
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodetic Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56
TWEED DEVELOPMENT CONTROL PLAN
Section B25
Coastal Hazards
Coastal Hazard Lines Map
Figure 1.26
Sheet 26 of 26
N
0 20 40 60 80 100
Meters
Scale : 1:4,000 @ A3
Projection: GDA 1994
MGA Zone 56
Map identification number: DCP_B25_CHL_26_040_20110830

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