

Chapter 22:

Bangalow Urban Release Areas

(Rezoned 2010)

Document History

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1. INTRODUCTION

1.1 Purpose of this Chapter

This Chapter establishes Council's Policy with respect to controls and guidelines for the future form of development of the Bangalow Urban Release Areas. These areas were zoned residential as part of Amendment No 137 (30 August 2010) to Byron Local Environmental Plan 1988. This Chapter applies to the Bangalow Urban Release Areas which are:

- Area 2 & 3:** Lot 100 & part of Lot 101 DP1127017;
- Area 4 (North):** Part of Lot 22 DP 1070522 and Lot 4 DP 233810;
- Area 4 (South):** Part of Lot 2 DP 1086364;
- Area 6:** Part of Lot 1 DP 127485;
- Area 7:** Lots 25-27 & 30 DP 879204; Lots 32-34 DP 880271; Lots 35-38 & 41-50 DP 1010427; Lot 54 DP 1013908; Part Lot 77 DP 1031773.

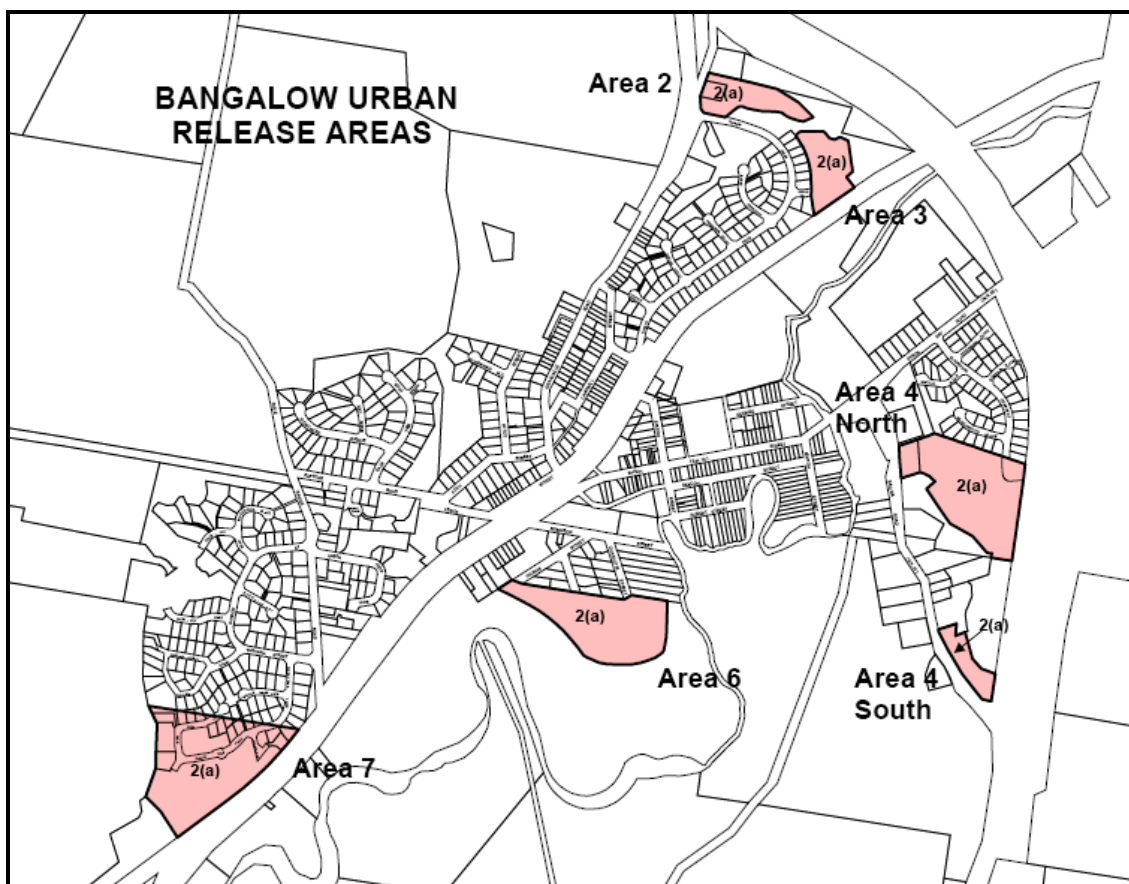
The area numbers are the numbered investigation areas from the *Bangalow Settlement Strategy 2003*. Not all areas investigated in the *Bangalow Settlement Strategy 2003* were identified as suitable for residential development; hence the missing numbers in the sequence. A map of the Bangalow Urban Release Areas is shown in Figure 1.

1.2 Objectives of this Chapter

The land use planning objectives for this Chapter are:

- a. To implement the Bangalow Settlement Strategy 2003. The strategy adopted the following vision for the development of Bangalow village;
 - a healthy environment to live, work and raise a family;*
 - a village rich in history and heritage, a socially resilient community and economically viable centre, providing a range of services to the people of the community and the surrounding area;*
 - nestled in the hills, surrounded by natural beauty and rich in ecological bio-diversity.*
- b. To establish appropriate controls and guidelines for the future development of the Bangalow Urban Release Areas;
- c. To provide an integrated framework for the development of the Bangalow Urban Release Areas including environmental protection requirements, road and pedestrian networks and residential densities;
- d. To provide for a range of residential lot sizes that will achieve affordable housing principles and improve housing choice to a broader population;
- e. To enhance biological diversity through the provision of buffers between the village and surrounding agricultural lands for environmental repair and enhancement of the creeks;
- f. To ensure that noise attenuation measures are put in place to reduce noise impact on residential areas from the Pacific Highway, with further measures being incorporated into future building design;
- g. To provide useable and well landscaped public and private open spaces to enhance the aesthetics and improve residential amenity of the locality;
- h. To ensure safe and accessible pedestrian and cycle paths are an integral part of the new residential areas and that these paths link to existing and proposed networks.

Map 1: Area plan of the Bangalow Urban Release Areas



1.3 Exempt and Complying Development & the Codes SEPP

The provisions of this Chapter of the DCP do not apply to Exempt and Complying Development that is governed by the Byron LEP 1988, or to development that is governed by [State Environmental Planning Policy \(Exempt and Complying Development Codes\) 2008](#) (the 'Codes SEPP'). Under the [Codes SEPP](#), certain development can be either exempt development or complying development.

1.4 Other NSW Government Statutes

Apart from the [NSW Housing Code and the Codes SEPP](#), various other statutory initiatives of the NSW Government may supplement, amend or override the controls in Byron LEP 1988 and this DCP. For example [State Environmental Planning Policy \(Building Sustainability Index: BASIX\) 2004](#) specifies provisions aimed at achieving sustainable residential development.

It is recommended that before preparing to undertake or to seek approval for development you should contact the [NSW Department of Planning](#) to confirm whether or not the provisions of other Planning Instruments or statutes supplement, amend or override the controls in Byron LEP 1988 and this DCP. Council's Duty Planner is also available to assist with this information.

1.5 Relationship to other Planning Documents

This Chapter will be used by Council to assess development applications that are lodged within the Bangalow Urban Release Areas. It is envisaged that the controls contained within this Chapter will be included in the Combined DCP once that document is complete.

This Chapter is to be read in conjunction with a number of other plans and instruments that may be relevant to development of the land.

At the time of compiling this Chapter these include:

- *North Coast Regional Environmental Plan*
- *Byron Local Environmental Plan 1988*
- *Byron Development Control Plan 2002*
- *Byron Development Control Plan No. 12 (Bangalow)*
- *Development Control Plan No. 17 – Public Exhibition and Notification of Development Applications*

Where an inconsistency arises between this Chapter and any environmental planning instrument applying to the same land, the provisions of the environmental planning instrument prevail to the extent of the inconsistency. An environmental planning instrument means a Local Environmental Plan, a State Environmental Plan or a Regional Environmental Plan.

This chapter has been prepared to address Council's policies and guidelines for the development and environmental management of land within the Bangalow Urban Release Areas. This Chapter must be read in conjunction with Chapter 1 and Chapter 12 of DCP 2010 which specifies Council's objectives, guidelines and development standards not covered by this chapter. Where an inconsistency arises between this Chapter and any other Chapter applying to the same land, the provisions of this Chapter apply to the extent of the inconsistency.

1.6 Commencement date

This plan shall be effective from 19 May 2011 being the date on which Council formally notified the public in the local newspaper.

1.7 Key terms used in this Chapter

- “**DCP**” means the Byron Shire Development Control Plan that contains a number of chapters (refer to Section 1.5)
- “**SEDA**” means the Sustainable Energy Development Authority that was created by the NSW Government to reduce the level of greenhouse gas emissions in NSW
- “**Mews allotments**” are residential lots intended to be subdivided in the conventional way, but constructed in packages rather than as individual dwellings. The mews lots would typically have areas between 400m² and 500m².

The definitions of some of the other land use terms and descriptions used in this Chapter may be found in:

- Clause 5 of *Byron Local Environmental Plan 1988*
- Section 4 of the *Environmental Planning and Assessment Act 1979*
- the standard local environmental planning instrument prescribed by the *Standard Instrument (Local Environmental Plans) Order 2006*

1.8 Can the requirements of the Chapter be varied?

Every development proposal must meet the Plan and Element Objectives. This will usually be achieved by meeting the prescriptive measures for each element. The prescriptive measures are requirements that Council considers are likely to meet the objectives and performance criteria of the particular control element. Alternatively Council may be prepared to approve development proposals that are demonstrated to meet both the element objectives and the performance criteria. This provision enables the development of innovative schemes that meet the particular characteristics of an individual site. Depending on the nature of the variation, Council may choose to exhibit the application for public comment prior to determining the variation.

2. DESIGN PRINCIPLES

2.1. Desired Future Character

This section identifies the range of design principles that form the basis of this Chapter. The design principles for subdivision layout and construction have been chosen to ensure that the development of the Bangalow Urban Release Areas attains energy and sustainability principles and facilitates an amenable walkable residential environment.

Overall the Bangalow Urban Release Areas will reflect the existing village. A village strongly influenced by its elevated valley topography and proximity to Byron Creek and its environs. The new areas will respect and reflect the natural environment and the heart of the historic village. The new release areas will offer a range of residential housing which is energy efficient, liveable and environmentally sensitive in terms of key urban design objectives. This character will be achieved by way of the following:

- a. Street Design – The Bangalow Urban Release Areas will include a hierarchal streetscape layout that will define key locations and accesses. The areas will utilise existing arterial road networks. Minor streets that provide access to a limited number of residences will be treated to accommodate local traffic but provide preferential treatment to pedestrian movement and cycling. Streets will have a strong visual character, adopt Water Sensitive Urban Design (WSUD) principles, incorporate appropriate indigenous plant species and contribute to the overall “character” of the village. Street trees will become a dominate element in the streetscape. Healthy, established urban trees provide a long term legacy for the community. Many of the most memorable streets and localities can attribute their noteworthy status to the presence of large healthy trees. The street network will be designed to be permeable and minimise cul-de-sacs. Streets will be orientated to maximise views to the rural hinterland and connections to parks.
- b. Natural Environment - The preservation and enhancement of the natural environment is paramount for the Bangalow Urban Release Areas. Remnant bushland, wetland and riparian vegetation are to be retained where possible and enhanced as significant natural features within the land. Environmental buffers will be established between natural areas and urban subdivision as an integral part of the development. These buffers will be planted with species indigenous to the Bangalow area.
- c. Water Sensitive Urban Design - Development will incorporate an integrated approach to Water Sensitive Urban Design (WSUD) principles including swales, bio-retention systems and infiltration areas to improve water quality and maximise opportunities for at source controls. This approach includes incorporating WSUD in all areas of the public realm including streetscapes and public open spaces.
- d. Pedestrian and Cycling Linkages - Development of the areas will include a comprehensive series of safe pedestrian and shared ways that pass through parks creating opportunities for impromptu meeting places and to allow for movement to key locations within and beyond the areas. Pedestrian nodes and pedestrian crossings will be defined by landscape treatments. Pathways will include shade trees, seating nodes, feature planting and signs to encourage and enhance the use of the pathway system. Pathway treatments will be appropriate to the intended use and setting.
- e. Solar Access - Allotments will be arranged to promote solar benefits. Dwelling houses will be sited and designed to reflect the climate of the region and promote a

distinctive image that complements the north coast lifestyle and contributes to a sense of place. A range of housing options (e.g. medium density, dual occupancies, mews, integrated housing and single detached dwellings) will be provided to encourage a vital mixture of household types and lifestyles. A range of lot sizes will be provided that will be responsive to topographic constraints and to affordable housing principles.

- f. Communal Gardens – Provision of communal gardens on private land is encouraged within all of the Bangalow Release Areas to help facilitate local production of food. Land should be allocated for communal gardens in any size to provide local residents with opportunities for social interaction and to reduce food miles.

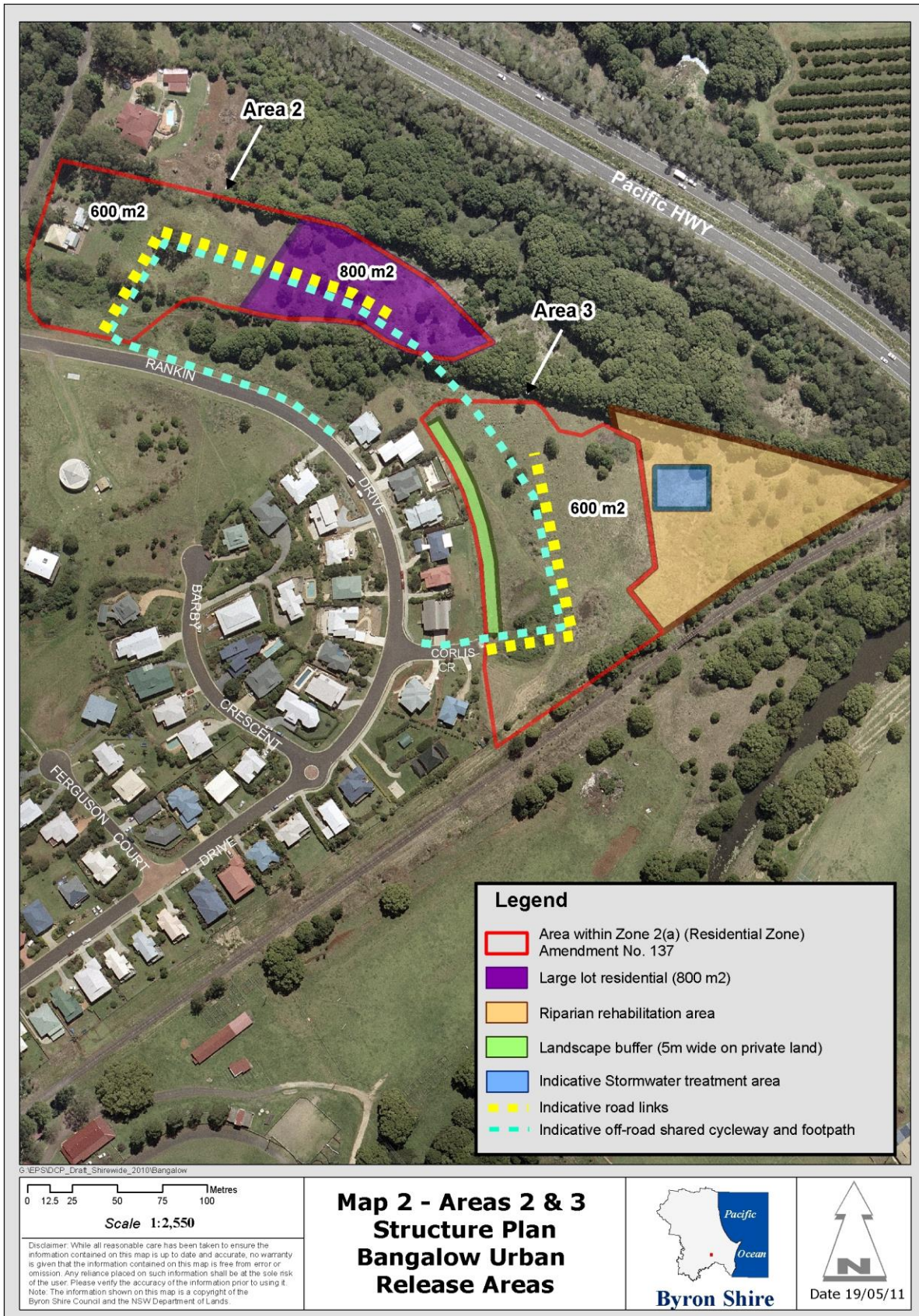
2.2. Urban Release Plan – Structure Plans

The Urban Release Plan – Structure Plans (See Maps 2 - 6) identify the proposed key components of the Bangalow Urban Release Areas and were formulated having regard to the constraints and opportunities of the land. The key components comprise:

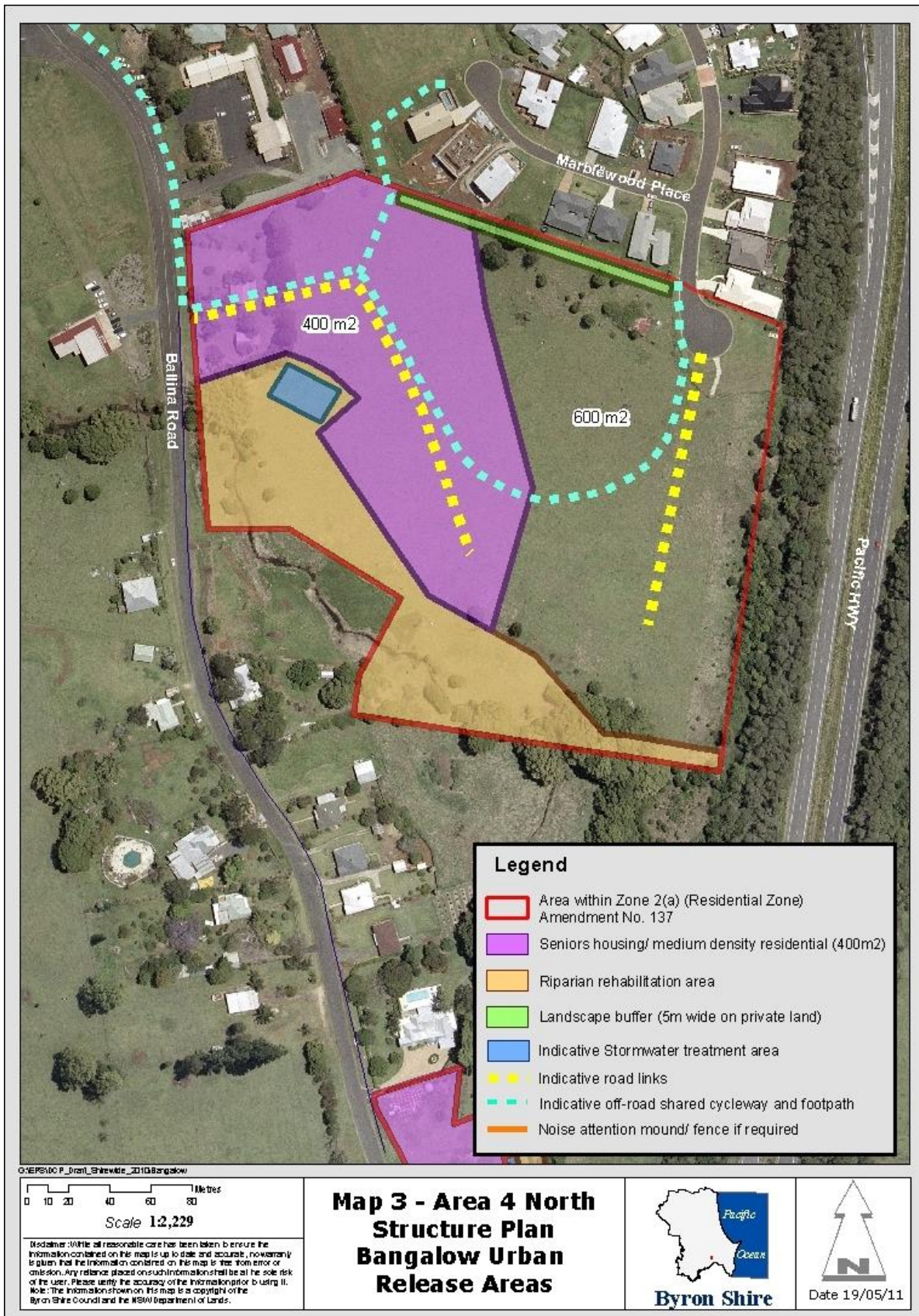
- Residential precinct boundaries;
- Indicative road links to the existing street network;
- Pedestrian and shared path linkages;
- Conservation and rehabilitation areas;
- Visual buffers; and
- Active and passive open space.

The Structure Plans set the broad framework or “blueprint” for the future development of the Bangalow Urban Release Areas. All development applications must include an assessment of conformity with the framework established by the Structure Plan.

Map 2: Structure Plan for Areas 2 & 3



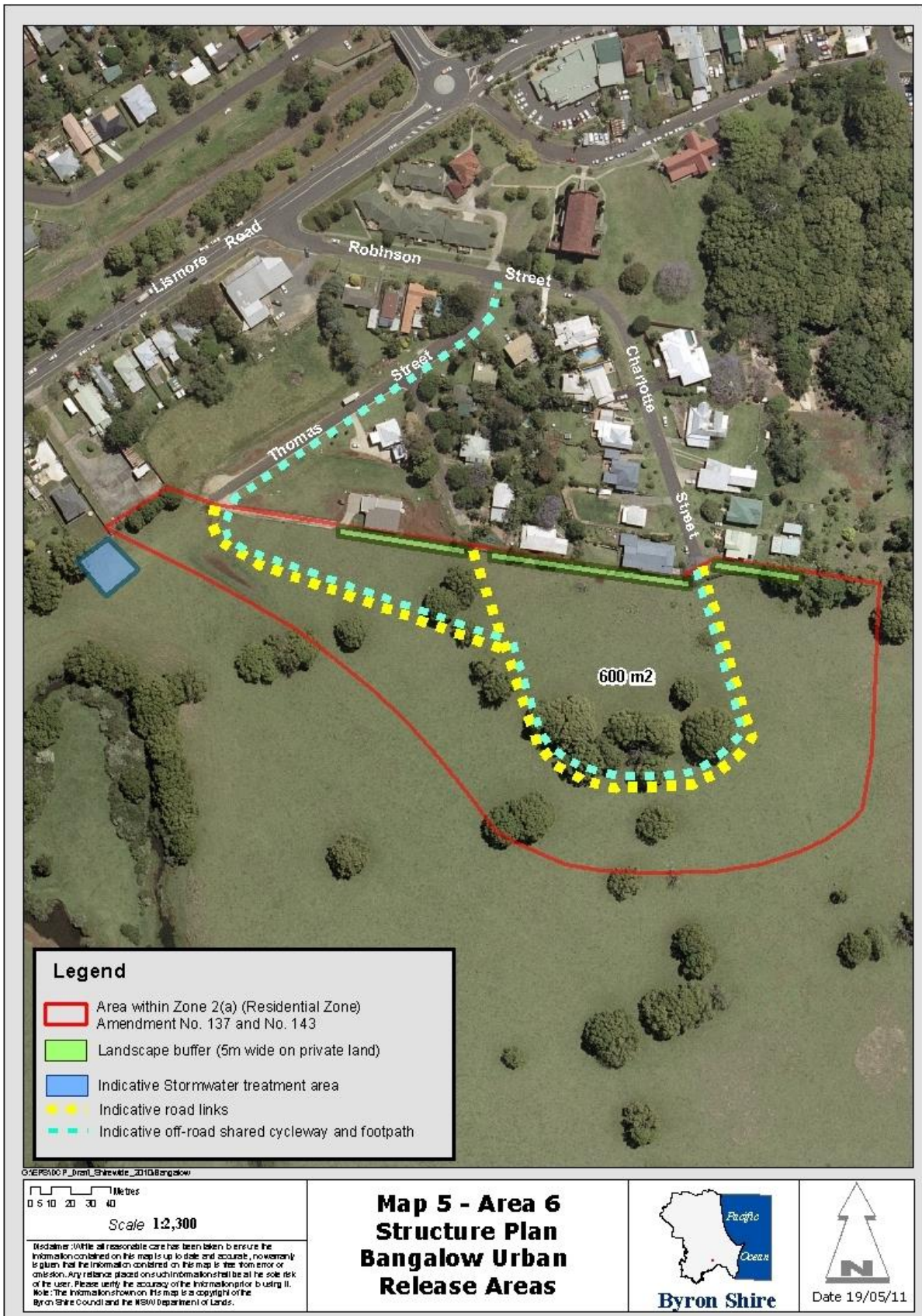
Map 3: Structure Plan for Area 4 (North)



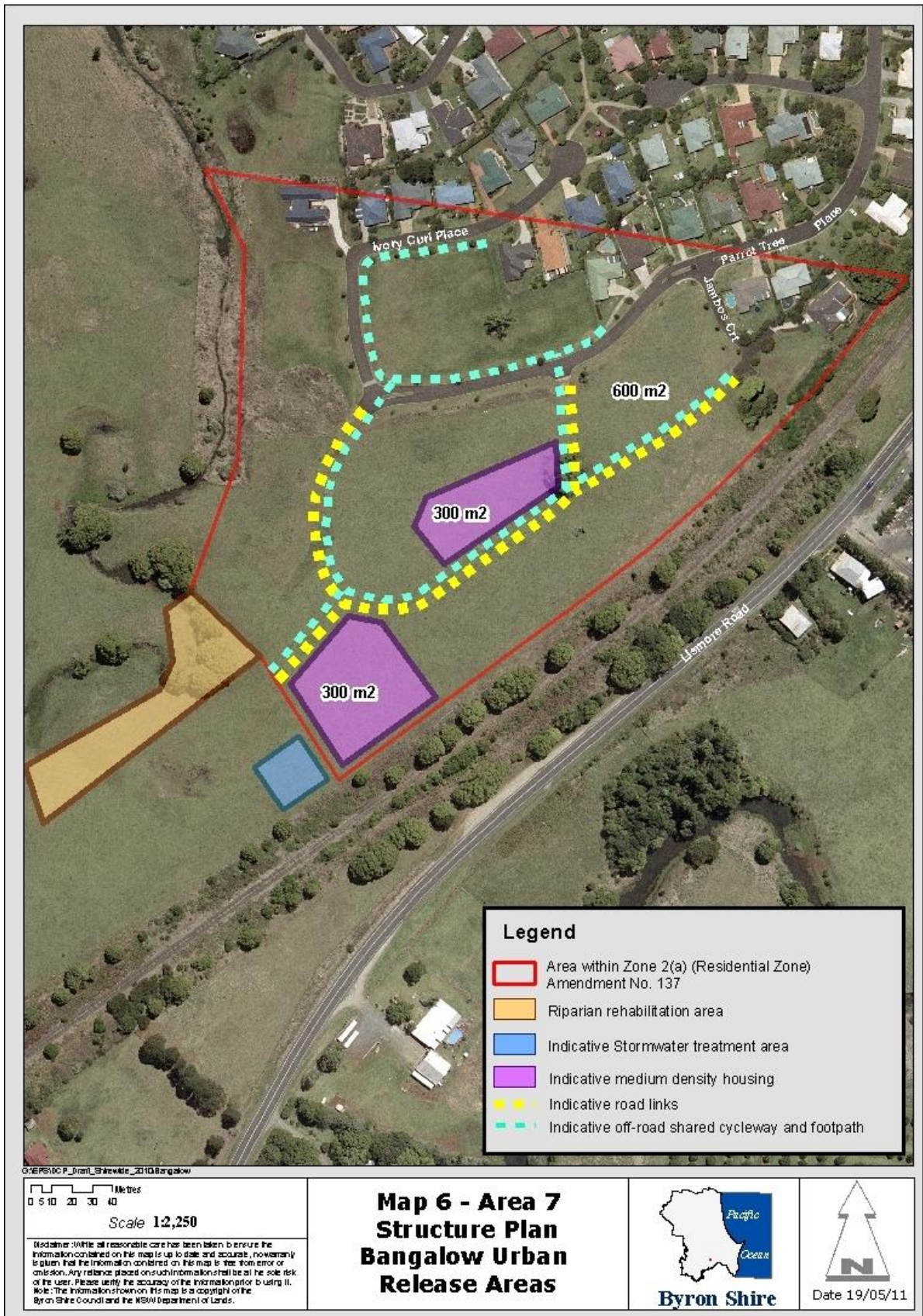
Map 4: Structure Plan for Area 4 (South)



Map 5: Structure Plan for Area 6



Map 6: Structure Plan for Area 7



3. SUBDIVISION STANDARDS

The matters detailed in Section 3 are to be addressed and complied with in the preparation of any development application for subdivision of the Bangalow Urban Release Areas.

3.1. Element - Residential Densities

Element Objectives

- *To encourage a range of housing types to ensure the objectives of Zone No 2 (a) (Residential Zone) are fulfilled,*
- *To encourage medium density residential development so as to fulfil an identified gap in the provision of this type of housing ensuring the density of housing is site responsive in terms of environmental constraints.*

Performance Criteria

Each development application for subdivision is required to individually demonstrate compliance with the density targets for each precinct. This Chapter does not prohibit nor preclude the development of other less traditional forms of housing development (eg. Community Title developments, Mews allotments) in any of the Bangalow Urban Release Areas. In proposing alternative forms and types of development, the density provisions contained in this Chapter must be achieved.

The concentration of medium density, dual occupancy and other “non-standard residential lots” is not encouraged in cul-de-sacs unless it can be demonstrated that the residential amenity of the cul-de-sac will not be detrimentally impacted upon by traffic generation and on-street car parking.

Prescriptive Measures

The residential density target for each precinct is as follows:

- Standard Residential Precincts: 600m² Lots. Land identified as being least constrained and is to be characterised by smaller residential lots. Parts of the development of this land may include dual occupancy and “non-standard” residential allotments such as “mews allotments”.
- Large Lot Residential Precinct (Area 2): 800m² lots. This land is constrained by slope and is to be characterised by larger lots. Development applications for subdivision in this area should nominate building envelopes designed to minimise cut and fill on the site.
- Medium Density Residential Precincts: 300m² to 400m² Lots. Certain land within Area 4 North and South and Area 7 has been identified as suitable for medium density development. In Area 4 North the minimum lot size is 400m² and in Area 4 South and Area 7 the minimum lot size is 300m².

3.2. Element - Lot Design

Element Objectives

- *To ensure that residential lots are capable of accommodating a range of housing types which provide pleasant streetscapes, maximise energy efficiency and mitigate environmental impacts.*

Performance Criteria

Lot sizes and configurations must be varied to provide a mix of allotment types which create an efficient allotment layout, create pleasant streetscapes and encourage a variety of housing types.

Lots must be configured to account for significant natural landscape elements or constraints and mitigate environmental impact.

Prescriptive Measures

The design of lots must be undertaken to meet the following measures:

- a. The design and orientation of all residential lots within the Bangalow Urban Release Areas is to be undertaken in accordance with SEDA's *Solar Access for Lots – Guidelines for Residential Subdivision in NSW*.
- b. Any development application for residential subdivision (not including Strata Title subdivision) within the Bangalow Urban Release Areas is to provide detail of compliance with Steps 1-6 in the SEDA guideline.
- c. A detailed geotechnical report is to be provided with each development application for subdivision of land with a slope greater than 15%. This report is to make recommendations with respect to construction methods and dwelling envelopes.
- d. Where the slope of the land is greater than 25%, concept details of proposed lots, extent of cut and fill, roads and accesses are to be provided. Building envelopes must be identified. This may need to be controlled by restrictions on the titles of individual lots.

3.3. Element - Buffers and Environmental Corridors

Element Objectives

- *To enhance biological diversity and ensure that adjoining riparian corridors are rehabilitated as the urban areas expand.*
- *Provide visual screening for existing residential development.*

Performance Criteria

The following types of buffers and environmental corridors apply to the subdivision of lots within the Bangalow Urban Release Areas:

- a. **Environmental Buffers** – The rezoning process for the release areas included the protection and buffering of the natural environment. These are to be provided as formal buffer areas.
- b. **Visual Buffers** – In certain areas existing houses have not been designed to account for the now proposed adjoining residential development. As such a narrow planted visual buffer must be provided between the existing and proposed residential development.
- c. **Riparian Corridor** – A riparian corridor must be rehabilitated adjacent to the new residential areas.

Prescriptive Measures

The following measures apply to buffers and environmental corridors.

- a. Environmental Buffers, Visual Buffers and Riparian Corridors must be established in accordance with the Structure Map;
- b. All planting is to be of species indigenous to the site or local area in accordance with Chapter 1 Part H – Landscaping;
- c. The Visual Buffer should consist of a screen of shrubs and/or trees. Trees must be selected with varying mature heights as appropriate to achieve the required visual barrier between existing and proposed development while not unduly restricting

solar access to buildings and private open space. The buffer area must be established as an integral part of the development of land adjoining that buffer area at no cost to Council;

- d. Environmental Buffers and Riparian Corridors will be subject to the following requirements:
- The corridor or buffer area must be established as an integral part of the development of land adjoining that corridor at no cost to Council;
 - An outline of a Vegetation Rehabilitation and Management Plan for the corridor must be prepared and submitted with the relevant development application. Planting and maintenance details are to be submitted as part of this material;
 - Installation and maintenance of erosion and sedimentation controls;
 - Weed eradication and control; and
- e. Protective fencing is to be erected around individual and vegetation clusters to limit disturbance caused by earthworks during the construction of the subdivision. The protective fencing is to be installed to a minimum distance of the 'drip line' and maintained for the duration of the civil works.

3.4. Element - External Road Works

Element Objectives

- *To ensure that the immediately surrounding roads are upgraded to an appropriate level of service as the new areas are developed.*

Performance Criteria

The external roads in the immediate vicinity of each release area are to be upgraded to ensure the old roads merge with the new roads and will provide the required level of service to link to the nearby road network.

Prescriptive Measures

The developers will be responsible for the construction of the following roadworks external to the release areas. Such works are to be completed as part of the subdivision of the land. All works are to be in accordance with Council's adopted Engineering Guidelines:

Areas 2 and 3:

1. The section of Granuaille Crescent from Granuaille Road to Rankin Drive is to be resealed in accordance with the existing width and alignment.

Area 4 North:

1. Ballina Road is to be upgraded between the proposed new intersection and Bangalow Road to accommodate the additional traffic generated from the new subdivision.

Area 6:

1. Thomas Street and Charlotte Street are to be upgraded to Council's standards to accommodate future traffic generated from the new subdivision,

3.5. Element - Internal Road Works

Element Objectives

- *To create liveable streets with unique characters and a new enhanced provision of landscaping.*
- *To create a street network that is permeable for motorists, cyclists and pedestrians.*
- *To create streets that give preference to pedestrians and cyclists over cars.*

Performance Criteria

The following design principles apply to the design of the new internal roads:

- a. The street network is to be inter-connected so that neighbourhoods provide directional choice for users.
- b. Connectivity of open and public space for cycle and pedestrian access be to link neighbourhoods by the shortest possible route (especially in the case of cul-de-sacs) and not necessarily dependent on the road network.
- c. Culs-de-sac: if they are to be used their length is to be limited so the end point is visible from the access point to prevent drivers inadvertently turning into a dead-end.
- d. Where land slopes at a grade of 6% or more the predominant street alignment must be perpendicular to contours so as to avoid high and low side lots.
- e. Terminate streets with views that make the most of the special features of a site or enhance its character (such as a park, a stand of mature trees, distant hills, water or significant building).
- f. Footpaths must be 1.5 metres wide to allow pedestrians (including those with prams and ambulant disabled people) to walk two abreast and pass each other.
- g. Provide for cycle and pedestrian access directly to open space areas to encourage public use.
- h. The design of street lighting and landscaping is to be integrated to avoid conflicts, such as tree canopies that block light spill to the street.
- i. The street is to be design so it is very apparent where each activity is to occur: from walking for pedestrians, to where parking is encouraged and where the vehicle carriageway occurs (See sample photo below). The street is to be designed to give preference to pedestrians and cyclists over cars. This is to be done by:
 - 1) Providing delineated on-street parking. Ingle parking bays should be avoided as they tend to be inefficient and more difficult to park in.
 - 2) Providing wide verges to reinforce the pedestrian zone.
 - 3) Planting street trees at regular spacing within the carriageway and / or verge.
 - 4) Street layouts to feature street furniture and landscaping such as raingardens be incorporated to slow vehicles

These design principles are based on the Landcom Street Design Guidelines, please refer to these guidelines to clarify the design criteria.

Area 7:

The streets in Area 7 should continue the existing street design with regards to the concrete edging, grass swales etc. This existing street design will be enhanced following the principles above with better defined car parking areas, pedestrian separation and more extensive landscaping.



This example shows a suitable verge width inclusive of street trees which act as a buffer between users of the footpath. (Source: Landcom Street Design Guidelines)

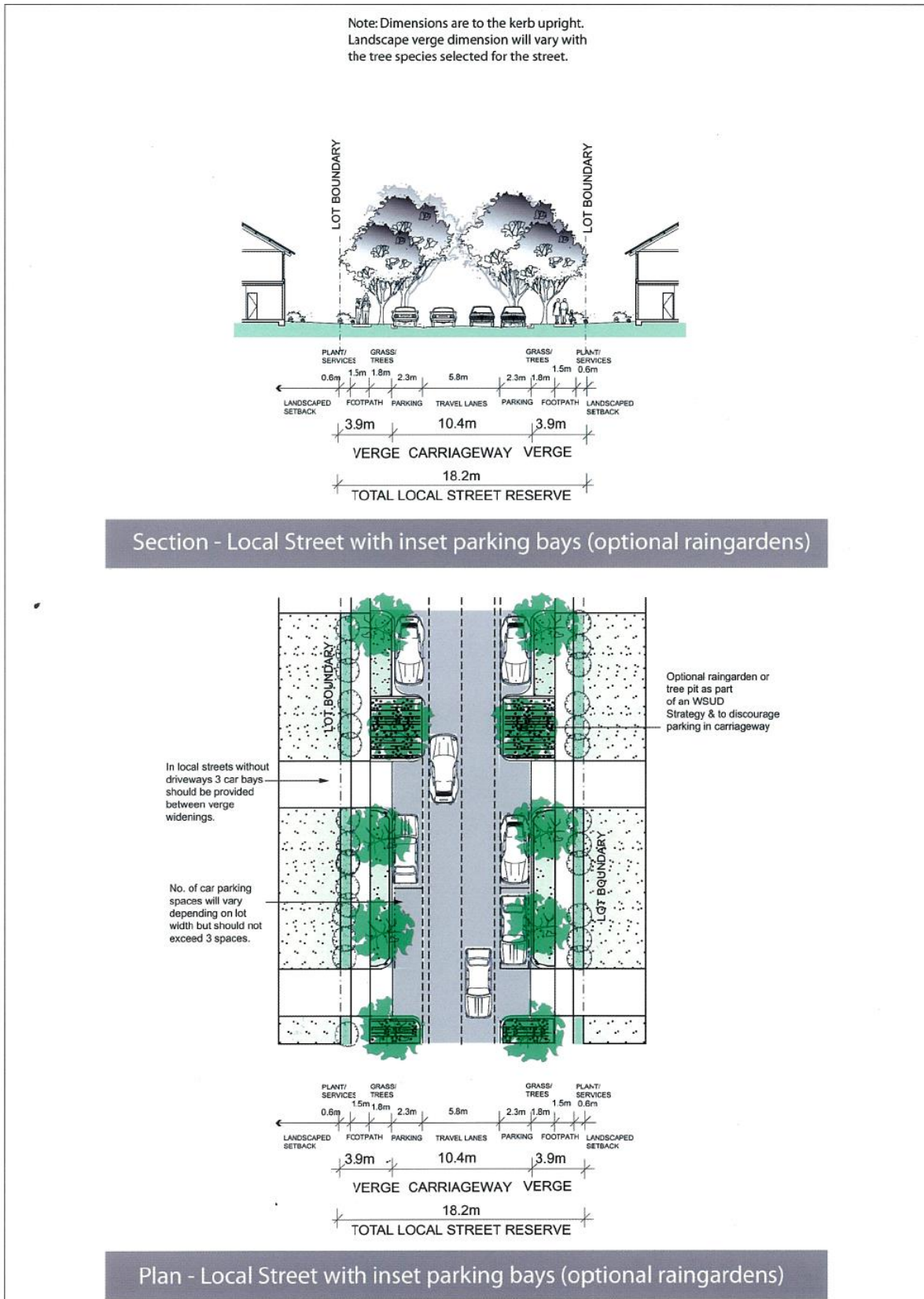
Prescriptive Measures

- a. The design and hierarchy of internal roads is to be in accordance with the requirements set out in the Northern Rivers Local Government 'Development and Design Manual' unless other details are specified below.
- b. Road widths are to be consistent with *Element B6.1 Road Design and Construction of DCP 2002* or Council's updated guidelines.

Type of Road	Minimum width of road reserve	Minimum width of carriageway
Local access road serving more than 15 lots	17 m	8 m
Minor access road serving no more than 15 lots (including 2 corner lots)	15 m	6 m

- c. The developers will be responsible for the construction of all internal roads. All roads will be dedicated to Council as public roads. Upon dedication and at the end of the maintenance period, Council will be responsible for the on-going maintenance of the roads.
- d. Formal concrete footpaths are to be provided as part of any new local road network.

Figure 1: Local Street Trees with inset parking bays with raingardens preferred
 source: Landcom



3.6. Element - Pedestrian/ Bicycle Networks

Element Objectives

- *To assist in the delivery of Council's adopted Bike Plan where possible.*
- *To provide an enhanced level of facilities for cyclists and pedestrians in the new urban release areas.*
- *To ensure cycling facilities in the new urban release areas integrate and connect with the existing and proposed Bangalow wide bicycle network.*

Performance Criteria

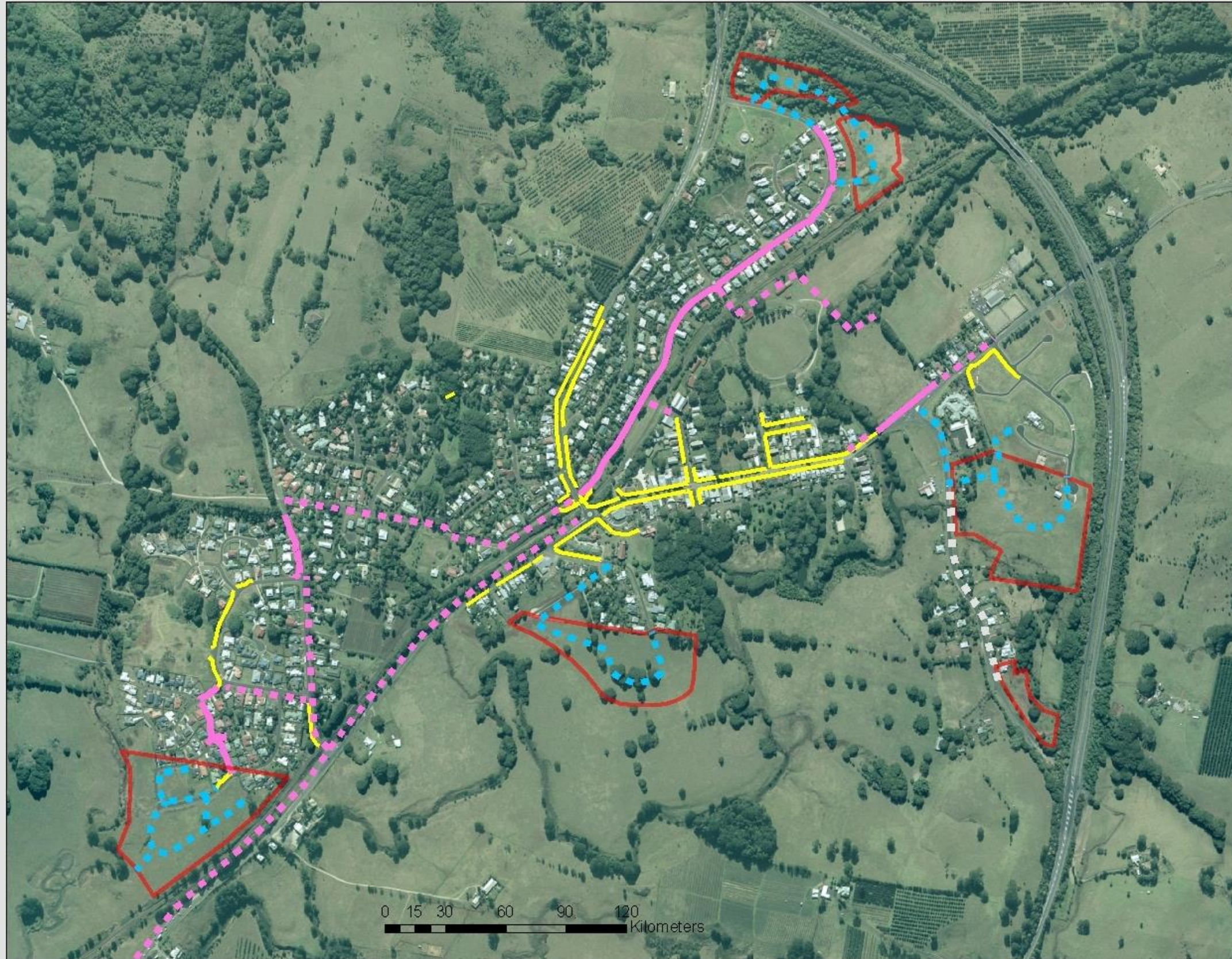
Many of the release areas will be the furthest from the village centre so it is essential that adequate bicycle networks are provided. An integrated network of pedestrian/ cycle paths must be provided throughout the Bangalow Urban Release Areas such that it provides safe, convenient and direct access to, from and within the residential areas. The major existing and proposed networks in Council's adopted Bike Plan are shown in Map 7 below. Any proposed internal pathway network must be linked to the adjacent external existing or proposed network in Bangalow.

Prescriptive Measures

The following provisions relating to pedestrian/ bicycle networks apply to the subdivision of lots within the Bangalow Urban Release Areas:

- a. Pathways are to be designed and constructed in accordance with the relevant Australian Standards including but not limited to: Austroads Guidelines and RTA NSW Bicycle Guidelines.
- b. Pedestrian/ cycle paths must link up to existing or proposed networks as delineated in Map 7.
- c. Pedestrian and bicycle routes must be continuous and well lit. Appropriate street crossings must be provided.
- d. Pathways within road reserves and at the end of cul-de-sacs must be of concrete construction. Pathways within open space and/or environmental protection areas may be sealed with a smooth even bitumen surface.
- e. The system must be designed so that conflict points with vehicles and travel distances are minimised. The pathway system may in some cases perform a drainage, service and/or access corridor function for public infrastructure supply.
- f. Pedestrian pathways are also to be provided and integrated throughout the passive open space areas. They must be designed with the minimum possible grades to permit walking and access to the maximum possible extent.

Map 7. Bangalow Existing and Proposed Footpaths & Cycleways



LEGEND

Existing Paths (as per Bike Strategy 2008)

- Shared cycleway and footpath
- Footpaths (not shared)

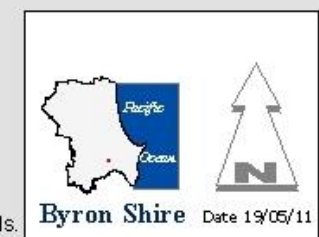
Future Paths (as per Bike Strategy 2008)

- - - Shared cycleway and footpath

Proposed Paths (as per DCP chp. 22)

- - - Cycleway/Footpath
- - - Indicative on-road bicycle route
- Area within Zone 2(a) (Residential Zone) Amendment No. 137 and No. 143

Disclaimer : While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, no warranty is given that the information contained on this map is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of the information prior to using it. Note : The information shown on this map is a copyright of the Byron Shire Council and the NSW Department of Lands.



3.7. Element - Infrastructure Provision

Element Objectives

- *To ensure all contemporary services are provided to each release area in a timely manner.*

Performance Criteria

Subdivisions must have adequate provision of contemporary services with minimal impact on the environment. Compatible public utility services must be provided in common trenching wherever practical to minimise construction costs, soil erosion and land allocation for underground services.

Prescriptive Measures

The following general provisions relating to infrastructure provision apply within the Bangalow Urban Release Areas:

- a. Infrastructure required for future development must generally comply with the requirements of the Northern Rivers Local Government Development and Design Manual.
- b. Sewerage infrastructure (location of pump stations) must be provided based on the following principles:
 - Conventional gravity system with major pump stations;
 - Major infrastructure (pump stations) being situated on public land;
 - Conventional gravity sewer mains being generally situated on private property;
 - The use of temporary infill infrastructure to service staged development and land release (if required); and
 - The use of temporary infill infrastructure measures to facilitate staged development and land release
- c. All lots used for urban purposes must be connected to the reticulated domestic water supply system.
- d. Electricity supply is to be provided to each allotment in the Urban Release Areas by the appropriate electricity supply authority via an underground reticulation system. Pad mounted sub-stations are to be located clear of future dwelling houses.
- e. Telephone services must be made available to each allotment by the appropriate telecommunications supply authority via an underground reticulation system. Provision must also be made for *Telstra Smart Community* facilities to the subdivision.

Note: For stormwater provision see the separate Element below.

3.8. Element - Stormwater Management

Element Objectives

- *To ensure contemporary provision is made to limit, control, reuse and treat stormwater.*

Performance Criteria

Effective stormwater management is critical to the future development of the Bangalow Urban Release Areas to ensure that the quantity and quality of run-off is such that it will have minimal impact upon the down stream environment.

Prescriptive Measures

Stormwater management must be designed and constructed in accordance with Council’s adopted Engineering Standards and Chapter 1 Part N – Stormwater Management. The following provisions apply to the subdivision of lots within the Urban Release Areas:

- a. A Soil and Water Management Plan (SWMP) and an Erosion and Sediment Control Plan (ESCP) are to accompany each development application for residential subdivision (excluding Strata Title subdivision). These plans are to define the specific stormwater treatment and management objectives for both the construction and operational phases of the development and are to be generally consistent with the principles and measures contained in this Section.
- b. Stormwater treatment and disposal must not rely solely on any end of line facility. A treatment train must be proposed that incorporates a range of facilities inclusive of measures, where appropriate, within the road system. Best management practices include dispersion techniques such as dissipaters, litter and debris control traps and associated trunk line drainage structures in controlling sediment and reducing phosphate/nitrate levels. Where possible and practicable, these structures are to be designed sympathetic to the surrounding environment and constructed of natural materials such as boulders and rock features and landscaped. (See examples below)
- c. Any detention areas for stormwater must be designed and fenced in accordance with Council’s adopted Guidelines
- d. The existing stormwater detention area within Area 7 is to be upgraded to comply with the above standards.-

Examples of Water Sensitive Urban Design	
	
Sapphire Beach, Coffs Harbour NSW	Sapphire Beach, Coffs Harbour NSW
	
The Boardwalk, Mt Coolum Qld	Bangalow

3.9. Element - Landscaping

Element Objectives

- To ensure high quality streetscapes.
- To ensure that street trees become the dominant element in the streetscape.

Performance Criteria

Sufficient trees must be planted in public areas to ensure that when mature the trees will be the dominate element creating an appealing visual quality to streetscapes and parklands. Trees must be located to ensure that there is a sufficient quantity and quality of soil within the anticipated root zone to support the intended mature tree.

Trees must be located to minimise infrastructure and functional conflicts. For example trees must be so located that streetlights are not being blocked by the tree canopy or car doors will not opened onto tree trunks.

The location of street trees must optimise passive watering and integrate with water sensitive urban design (WSUD) initiatives. These design principles are based on the Landcom Street Tree Design Guidelines and should be utilised to clarify the design criteria.

Prescriptive Measures

The following provisions relating to landscaping apply to the subdivision of lots within the Bangalow Urban Release Areas:

- a. A conceptual landscaping plan is to be prepared by a professional landscape architect and lodged with any development application for subdivision within the Bangalow Urban Release Areas. Such a plan is to be prepared in accordance with the landscaping requirements of this Chapter and *Chapter 1 Part H – Landscaping*.
- b. Plant species selection must be based on the indigenous species occurring on and around the land. Landscape treatments must:
 - Create a strong overall landscape character to the entire site;
 - Define individual precincts relative to their natural surrounds e.g. riparian species near drainage lines;
 - Define key vehicular routes;
 - Be designed to slow road traffic;
 - Enhance pathways and cycleways;
 - Define key vehicular and pedestrian nodes and locations;
 - Be incorporate as part of an integrated approach to WSUD;
 - Be consistent with contemporary mosquito management;
 - Provide for user comfort of public spaces e.g. with shade trees;
 - Provide for the safe use of public spaces e.g. maintaining surveillance of parks;
 - Have sufficient quantity and quality of soil within the anticipated root zone to support the intended mature tree;
 - Be designed to minimise maintenance;
 - Include the removal of any environmental and noxious weeds;
 - Improve opportunities for wildlife habitat and movement corridors;
 - Conserve and enhance riparian corridors; and
 - Provide buffers to vulnerable bushland edges.

- c. Street trees, when mature, must be a mixture of small (6-8m height with a 5m crown spread), medium (10-12m height with an 8m crown spread) and large trees (16-20m height with a 16m crown spread) depending on the space available. The canopy of the trees, when mature, must cover at least 25% of the public space (park, road or footpath).

3.10. Element - Fencing to Public Places

Element Objectives

- *To ensure high quality streetscapes.*
- *To ensure any fencing to public areas is consistent with crime prevention strategies.*

Performance Criteria

The following provisions relating to fencing to public places apply to the subdivision of lots within the Bangalow Urban Release Areas:

- a. Fencing must be integrated into the landscaping of any urban subdivision and is to be detailed in the landscaping plan. Fencing is to be compatible with and sympathetic to the desired character and context.
- b. Details of fencing to public places (including roads, open space and environmental protection areas) must be provided with any development application for urban subdivision.
- c. Highly visible fencing along roads and public places must be uniform in terms of design, height, materials and colours so that it presents attractively and consistently in the streetscape.
- d. The design and construction standard of any fencing must achieve the intended purpose of the fence. That is, if it is to be an acoustic barrier, it must be able to achieve the determined noise reduction targets.
- e. Fencing of the environmental protection zones along residential boundaries is to be such that it minimises impacts on natural habitats as far as practicable. Such impacts include disturbance resulting from weeds, domestic animals and human activities. Plans submitted will need to demonstrate that this objective is achieved. Such fencing must be built at the start of the subdivision process so as to limit encroachment during construction.

Prescriptive Measures

There are no Prescriptive Measures for this Element.

3.11. Element - Noise Attenuation

Element Objectives

- *To ensure future residents are not subjected to excessive noise from the Pacific Highway*

Performance Criteria

The subdivisions are to be designed so as to be consistent with the guideline *Environmental criteria for road traffic noise* May 1999 (or replacement guideline). Note that this guideline is about to be replaced by the NSW Road Noise Policy, which is presently in draft form.

Prescriptive Measures

Applications for subdivision within Areas 2, 3, 4 (North) and 4 (South) are to be accompanied by an acoustic report identifying any necessary measures (lot layout, building location, mounding, noise barriers, building design, building materials etc) to ensure future residents are not subject to unacceptable traffic noise from the Pacific Highway. The acoustic assessment is to be undertaken by a professional acoustic engineer.

The assessment is to be based on the following criteria from the *Environmental criteria for road traffic noise* May 1999 (or replacement guideline):

Time	Maximum Noise Level
DAY (7 am–10 pm)	L _{Aeq(15hr)} 55dB(A)
NIGHT (10 pm–7 am)	L _{Aeq(9hr)} 50dB(A)

As required by the guidelines the noise level is to be measured at 1 metre from the most exposed facade to traffic noise of each future dwelling (most likely position) and at a height of 1.5 metre above the likely floor level for that future dwelling.

The assessment is to include an outline of the necessary building design restrictions and materials that would need to be used to achieve an internal noise level of 40dBA at night.

In regard to Areas 2 and 3, the future relocation of the Pacific Highway may be taken into consideration as a factor in the acoustic assessment. The weight given to this factor will depend on how imminent and certain the relocation of the highway is at the time of approval of the subdivision.

The recommended noise attenuation measures are to be integrated into the design of the subdivision.

3.12. Element - Open Space Requirements

Element Objectives

- *To help engender a sense of community.*
- *To help to promote social interaction, community health and wellbeing.*

Performance Criteria

Each of the Bangalow Urban Release Areas needs to be within 400metres radius of a neighbourhood park. Map 8 shows the existing and proposed neighbourhood parks and their service areas. Such neighbourhood parks are to include a wide range of facilities.

Neighbourhood Parks need to be designed to meet the Crime Prevention through Environmental Design (CPTED) principles and Active Living criteria. Constructed facilities and amenities are to be provided to a level that is commensurate with the demands generated by that open space area.

Prescriptive Measures

A neighbourhood park with a usable area between 0.25 Ha and 0.5 Ha must be provided within Areas 6 and 7.

Neighbourhood parks are to be provided with the following facilities as a minimum:

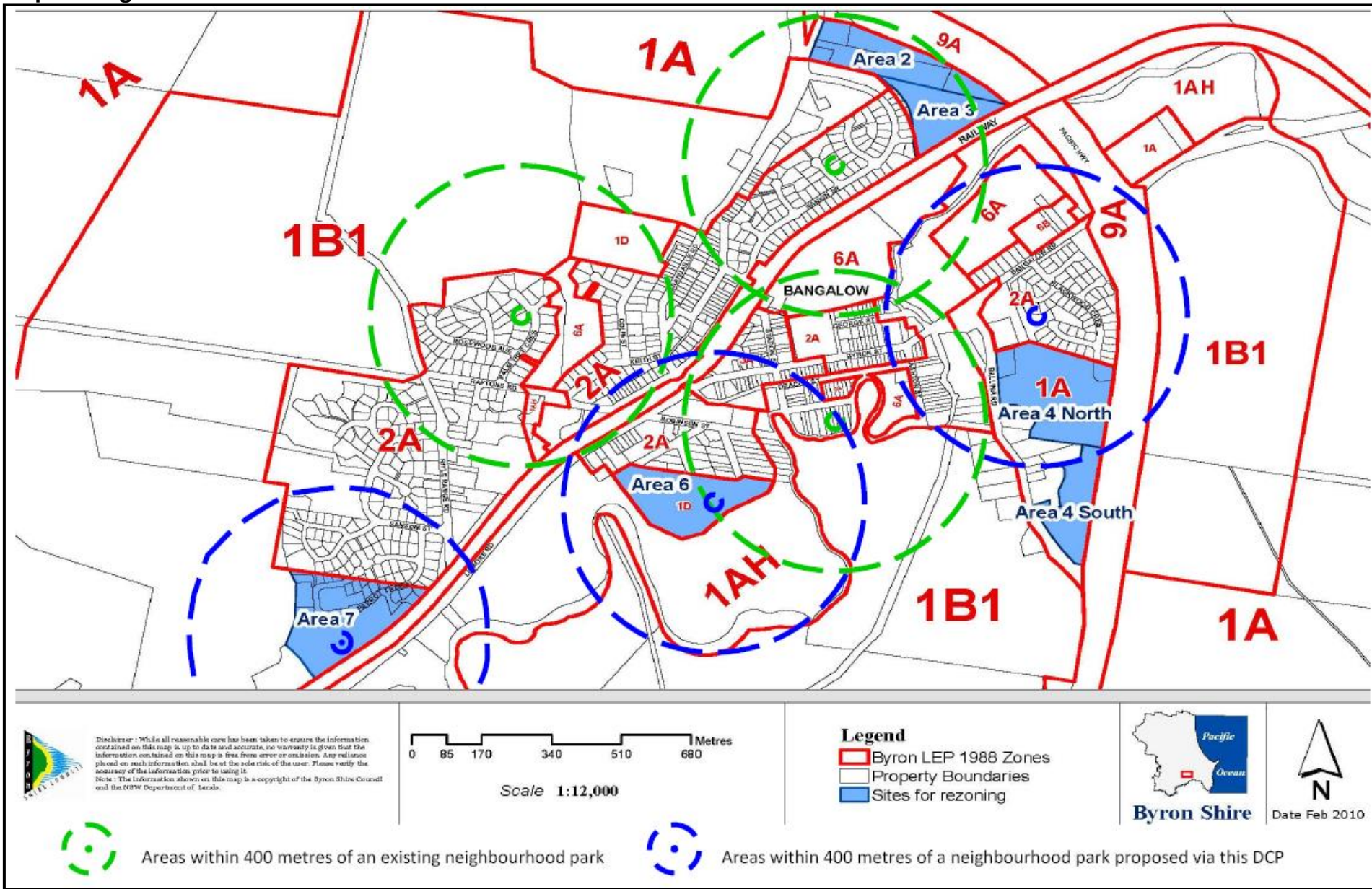
- Imaginative play and sensory stimuli areas/structures: providing opportunities for children to create their own play scenarios;
- Some form of ball play area (e.g. handball wall);
- Some conventional play equipment;

- Synthetic soft-fall surfaces in areas of high use;
- Ample supervising adult seating;
- An electric BBQ and two covered tables;
- A pathway network connecting to adjoining roads and
- Shade covers over all play equipment.

The existing neighbourhood parks in the vicinity of Areas 2 and 3 are to be upgraded to fulfil the above standards.

Developer contributions credits will be provide for the provision of new neighbourhood parks and enhancement of existing neighbourhood parks in accordance with Council's Development Contribution Plan.

Map 8: Neighbourhood Parks



REFERENCES:

1. *The Landcom Guidelines* May 2008 –
<http://www.landcom.com.au/content/publication-and-programs/the-landcom-guidelines.aspx>
2. *Environmental criteria for road traffic noise* May 1999 -
<http://www.environment.nsw.gov.au/resources/noise/roadnoise.pdf>
3. *Solar Access for Lots - Guidelines for Residential Subdivision in NSW* Sustainable Energy Development Authority (SEDA): now Department of Environment, Climate Change and Water. A copy is available from the National Library of Australia via
http://pandora.nla.gov.au/pan/42713/20040617-0000/www.energysmart.com.au/brochures/Solar_Access_for_Lots_Guide.pdf
4. *Designing out crime - Crime prevention through environmental design CPTED* (1989): Susan Geason and Paul R. Wilson, Australian Institute of Criminology.
<http://www.aic.gov.au/publications/previous%20series/crimprev/1-11/cpted.aspx>
5. *Development and Active Living: Designing Projects for Active Living* June 2010 -
<http://www.pcal.nsw.gov.au/>