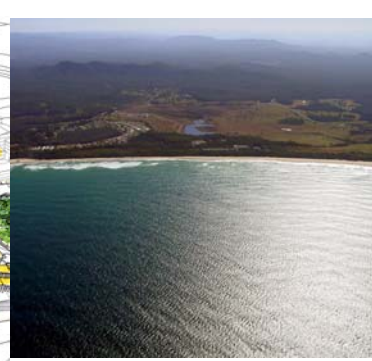


Greater Lake Cathie and Bonny Hills

URBAN DESIGN MASTER PLAN



HASTINGS COUNCIL



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1.0 INTRODUCTION

1.1 BACKGROUND

The coastal area of the Hastings Local Government has experienced high growth rates for 30 years, and Council's Hastings Urban Growth Strategy 2001 (HUGS) proposes how continuing growth can be accommodated for the next 20 years.

To the south of Port Macquarie are the coastal towns of Lake Cathie and Bonny Hills, with a combined population in 2001 of around 4,100, (excluding 200 in Bonny View rural residential area). Under the strategy this population could increase to 9,900 by 2021, using a combination of:

- current residential land reserves which are waiting for increased sewage treatment plant capacity, and
- selected re-zonings from within urban investigation areas identified in the Strategy.

THE STUDY AREA

The study area encompasses land within the Lake Cathie-Bonny Hills localities, as shown on the attached map.

The master plan area encompasses:

- the current urban land, and
- the current residential land services, and
- all of the urban investigation areas, and
- other land immediately adjoining these areas to the extent there are potential environmental impacts on or by proposed urban development.

1.2 PURPOSE

The goal from the HUGS is to

'... create sustainable living for the current and future residents of Hastings which respects the environment and the economic/social wellbeing of the community'.

The purpose of this document is to provide a draft urban design

master plan comprising an overall integrated land use and movement plan. The master plan is to include

- land use zones for the urban investigation areas (UIAs) that integrate with existing urban areas,
- development staging for the current urban reserves and future stage one releases, access links with possible future urban releases in the balance of the UIAs,
- management of hazards and conservation of land with environmental values.

In general terms, the master plan aims to provide for sustainable development. Such principles are contained in the Sustainable Urban Settlement: Guidelines for Regional NSW 2000 document. The settlement guidelines document defines sustainable development as that development which "protects and enhances the environment, creates and supports jobs and ensures a good quality of life for us and future generations".

The master plan also takes reference from the recently adopted State Planning Policy No 71. This policy aims to protect and manage the natural, cultural, recreational and economic attributes of the coast of NSW, including coastal foreshores, native fauna and flora, (including those of marine environments), rock platforms, beach amenity, visual amenity, aboriginal cultural heritage values, public beach access, wildlife corridors, threatened species, scenic qualities of environments and disability access to foreshore areas.

1.3 POPULATION GROWTH & COMMUNITY NEEDS

The population of the Hastings local government is now 64,500 (2001 Census) and is expected to grow to 97,800 by 2021, an increase of 33,000 people. The proportion of this growth planned for Area 14 is as follows:

1996	3200
2001	3900
2006	5400
2011	6900
2016	8400
2021	9900

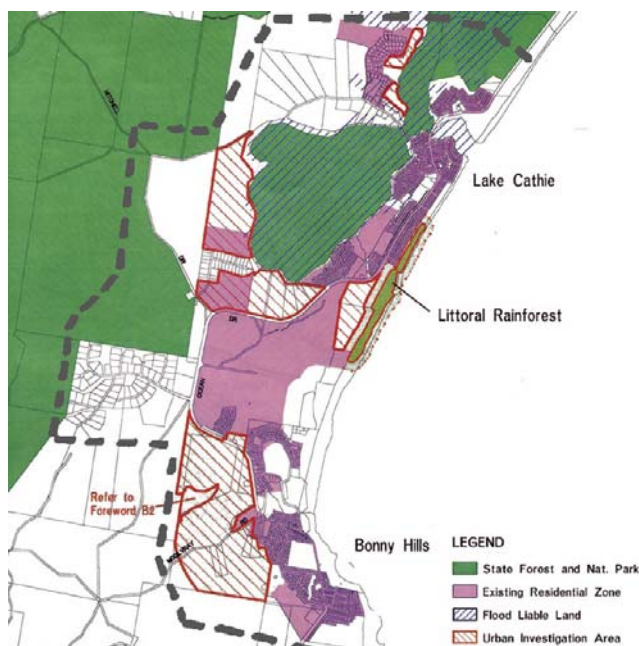
This master plan anticipates a final population of 10,000 and has been designed with this target population in mind. How long it takes for the final population to be achieved will be influenced by a number of factors, eg:

- Whether Area 14 captures a larger proportion of housing demand than anticipated
- The rate at which expanded infrastructure such as water treatment can be implemented
- The rate at which land is released for subdivision.

POPULATION CHARACTERISTICS

The population in the master plan area differs slightly from the NSW average in relation to the following

- Older age profile – less people in 15-34 age group, more in the 60 +
- Significant in-migration of families and retirees (over 40% from Sydney) & out-migration of post-secondary school young people
- Similar proportion of children to rest of NSW (so the schools are full)
- Individual incomes generally lower than for NSW as a whole



FACILITIES - COMMUNITY ISSUES AND VALUES

A number of facilities have been identified which will be needed to meet the current and future needs of the community. Some of these facilities require a catchment population of 6000-7000 before they can be operated efficiently (indicated by *).

EDUCATION

- One state primary school*
- One smaller non-government primary school*

The education department owns two sites within Lake Cathie and Bonny Hills. Both these sites are relatively small and highly vegetated. They are at the extreme ends of the Master Plan area and will not be centrally located to the majority of the future population. It is recommended that a large site with good vehicular access, co-located to open space, sport and recreation facilities within close proximity to the residential areas for future development. Should a second school site be justified due to demands from increasing population then the Lake Cathie Site is preferred.

COMMUNITY FACILITIES

- Community / Cultural Branch library (1200m2)*
- Multi-purpose community centre (1000m2)*
- Both require access to adjoining outdoor space.

CHILD CARE

As the population increases additional childcare facilities will be needed. The master plan should allow for a centre with 30 to 50 childcare places, within the main centre and adjoining the community services uses.

SPORT & RECREATION

Local sporting facilities are at capacity and have no land available for expansion. There is both a local and regional demand for facilities for the following sports:

- Soccer
- Rugby League
- Baseball
- Cricket
- Tennis
- Netball

Most of these facilities can be accommodated in a situation where the schools and the Council share land and sporting facilities. An area where suitable flat land. This land should adjoin the site for the state school and have good access from the through street system and Ocean Drive. Sufficient land is available to allow for off street parking, bus set-down and club / change room / toilet facilities.

OPEN SPACE

Passive recreation is accommodated within the large areas of open space (possibly co-located with regional sportsfields), in smaller local parks, and in buffer areas adjoining sensitive ecological areas.

ECONOMIC NEEDS

A community of this size will require facilities and areas of land that will support the development of local employment within those industry sectors that are the most vital to the economy of the area.

Those sectors are:

- Retail
- Community services
- Tourism
- Business, Property and Financial Services

Centres will need to include provision for commercial buildings and community facilities that will become the workplaces for local

businesses and community services staff.

Centres will include:

- Speciality and supermarket shopping
- Medical and other professional services
- Library
- Community Centre
- Office space
- A range of tourist accommodation
- Tourist related retail
- Tourist related services (eg travel, hire, personal)

These should be a number of centres, with a total retail floor space of around 10,000sqm. One centre should be and act as the main centre for the growing settlement. Higher order retail uses should be located with community facilities and schools.

Main Centre/ High order retail	6,000-7,000sqm
Other Centres	<2, 000sqm each

It is anticipated that approximately 30% of employment created within the new development will service the day-to-day needs of the residential population. The remainder will service the tourism industry or contribute to the broader economy of the area.

INDUSTRIAL LAND

A number of economic activities will not be easily accommodated within the new or existing centres. These include local servicing activity such as mechanical repairs, building and maintenance related trades, laundry and dry cleaning. A single industrial sub-division of several hectares is required, with good road access.

1.4 COMMUNITY ISSUES & VALUES

The background documentation and consultation have confirmed the key issues and values held by the community in relation to the master plan area.

Those qualities most valued by the community were:

- The village atmosphere
- Wildlife and the natural environment
- Clean beaches & foreshores
- Views & vistas
- Existing safe road system
- Lifestyle & community spirit
- Lake Cathie

The most significant issues for the community, in priority order, were:

- Maintaining a village atmosphere & environmental values
- Sensitive water management
- Environmental management & wildlife corridors
- Adequate infrastructure for development
- Remedy existing infrastructure deficiencies
- Urban / community / environment relationships
- Integrated community centre
- Ensure road system adequacy
- Danger of overdevelopment

While there are varying opinions within the local community as to the precise form that future development should take, there is broad support for an urban design master plan that will result in:

- A village atmosphere

- Conservation and care of the natural environment
- Infrastructure to meet the health, transport, recreational and other needs of the community

These issues and values have directly informed the design outcome.

1.5 PROCESS

The preparation of the master plan was an interactive process with Hastings Council, HUGS Committee, State Government agencies and the local community. Key stages in the master plan preparation were a conceptualisation workshop and a four day design workshop.

REVIEW

Planning studies, policy documents and statistical data

- HUGS 1999 & 2001
 - ABS Census
 - Community, cultural and recreational facilities
 - Lake Cathie Master Plan 2000
- Refer to section 1.7

CONCEPTUALISATION WORKSHOP

The conceptualisation workshop included site visits, visual assessment, meetings with Council and HUGS Committee members. Preparation of specialist reports.

DESIGN WORKSHOP

During this 4 day on-site workshop, government departments and agencies were consulted (state & local), including:

- Roads and Traffic Authority
- Environmental Protection Agency
- NSW Coastal Council
- Koala Preservation Society
- Economic Development Board
- Area Health Service
- Dept of Education & Training
- Planning NSW
- Hastings Council Departments (Planning, Community & Cultural Development, Libraries, Parks, Infrastructure)

These groups participated in discussions addressing the following issues.

- movement
 - street network
 - public transport

- pedestrian/ cycle access
- built form interfaces
- environment and heritage
 - fauna/ flora
 - bushfire
 - aboriginal archeology
 - visual assessment
 - built form interfaces
- infrastructure
 - water
 - sewerage
 - soils, geotechnical, land slip
 - hydrology, drainage, flooding
- community and cultural needs
 - community facilities
 - education
 - retail, employment
 - cultural

Public Meeting / Community Visioning Workshop (6 Nov 2002)

This participants of this workshop included:

- individual community members
- representatives of local organisations
- Lake Cathie & Bonny Hills Progress Associations.

The workshop focussed on the same issues as used in the design workshop. At the conclusion was a formed HUGS Committee Review to obtain specific feedback about proposed master plan responses.

1.6 MASTER PLAN STRUCTURE

Section Two provides a site and context analysis for the Lake Cathie and Bonny Hills including the needs of the community of 10,000.

Section Three identifies the core urban design principles that underpin the master plan. These principles are drawn from the



HUGS document, NSW government policy and good urban design practice. The rationale for the master plan approach is included.

Section Four outlines requirements for the future urban structure of the emerging township of greater Lake Cathie and Bonny Hills. It incorporates new villages and village centres, the extent of urban expansion areas, new pedestrian and vehicular connections and open space and landscape provisions.

Section Five describes the vision for each of the villages within the greater Lake Cathie Bonny Hills township. Each village is described with a short vision statement, the design criteria that informs the design outcome and diagrams which describe the preferred design outcomes.

Section Six provides recommendations for the implementation for this masterplan and additional issues that council needs to address.

1.7 RESOURCE DOCUMENTS

The following documents were referred to in the preparation of this master plan.

- Sustainable Urban Settlement: Guidelines for Regional NSW (2000)
- Hastings Urban Growth Strategy (HUGS) (2001)
- Draft Hastings Urban Growth Strategy (1999)
- Hastings Effluent Management Strategy (1998)
- Draft Roads and Traffic Study (2001)
- Census data for Local CCD's
- Hastings Water Supply Strategy (1999)
- Hastings Urban Stormwater Management Plan (2000)
- NSW Coastal Policy (1997)
- Lake-Cathie Lake-INNES Estuary Management Plan (1994)
- Previous studies relating to Lakeside Woods
- Lake Cathie Village Master Plan, 2000 (Lake Cathie Progress Association)
- Hastings Community Plan, 1999 (Hastings Council)
- Hastings Community Profile, 2001 (Hastings Council)
- Hastings Council Urban Growth Options Assessment, 1999 (ERM-Mitchell McCotter)
- Hastings Open Space, Community, Cultural and Recreational Study, 2002 (BBC Consulting Planners)
- ABS Census 2001 (First Release), Hastings (A) LGA, Small Area Data
- Hastings Community Services Directory, 2002 (Port Macquarie Neighbourhood Centre Inc)

1.8 LIMITS TO MASTER PLAN PREPARATION

The nature of this document is a draft master plan. It does not include detailed local environmental studies for each particular site. While some analysis work has been undertaken on some sites, this work has been completed by private landowners and is not formally available for this study.

Naturally occurring and readily identifiable constraints affect the outcome of the master plan. These include

- location of SEPP 14 and 26 areas
- topography, slope analysis
- vegetation with environmental and visual significance
- preferred dimensions of vegetation corridors
- land for overland flow and stormwater
- treatment buffers to vegetation areas generally.

The project team has undertaken various studies and assessments of the master plan area including

- visual assessment
- aboriginal archeology
- environmental assessment.

These studies have been undertaken by specialists with experience in this region. The outcomes of these studies affect the master plan.

Also affecting the master plan is that some final land uses can not be determined at this time. For example, a new school has been proposed and an additional non-government school could be incorporated. The Education Department owns two properties, one in Lake Cathie and the other in Bonny Hills. Neither are seen as appropriate for the emerging township. At present, the Education Department has no formal commitment to the school location recommended in the draft master plan. Similarly the final requirements for regional open space need further work by Hastings Council.

Further work at subsequent LES and DA stages may also affect the master plan by enlarging the developable areas or buffer dimensions, or increasing or reducing drainage corridors.

This master plan is a draft document and does not confer development heights. The master plan has been conceived as a robust plan that can accommodate these anticipated circumstances.

1.9 PROJECT TEAM

The project team for the project as follows:

DEICKE RICHARDS, URBAN DESIGNERS

Peter Richards, Don McAllister, Arno King, Renae Paulsen, Stacey Holland, Tom Kaye
 Project leadership, urban design, landscape architecture, planning.

Peter Robinson Associates

Peter Robinson
 Urban design, statutory planning.

Ardill Payne and Partners

Evan Elford
 Engineering, infrastructure

John Smout

Social and Cultural Planning

Bio Link

Dr Steve Phillips Wildlife Ecologist
 Flora, fauna, bushfire management

Jacqueline Collins

Aboriginal archaeology

Patrick Partners

Mike Cullen
 Economics, urban planning.

2.0 SITE AND CONTEXT ANALYSIS



2.1 VISUAL ASSESSMENT

REGIONAL CONTEXT

The region around Port Macquarie is a remarkable and beautiful part of the Australian coastline. The landscape includes long beaches, rocky and sandy foreshores, extensive water bodies such as lagoons, lakes, rivers and creeks, dense vegetation including littoral rainforest and rising, steep hills. This setting is a distinct part of the region and is particularly spectacular in the area around Laurieton to the south of the master plan area.

From the air the district is a mosaic of hills, water, forest grassland and urbanisation. Many of the areas are large in size and create strong, contrasting patterns on the landscape. Within the master plan area, there are a variety of landforms, from flat coastal plains to steep hills and mountains. The surrounding hills and mountains provide and rugged and highly aesthetic backdrop. These mountains include North and Middle Brother and Jolly Nose.

The master plan area also has a diversity of vegetation and vegetation types of contrasting character. These include rainforest and littoral rainforest, woodland, grass and sedgeland, heathland and areas dominated by fern species. Open grazed grasslands provide a further contrasting vegetation type.

These landscape values are significant in this area and sensitive design responses will contribute strongly in creating a distinctive sense of place. These values could also be readily degraded by poor or unplanned development.

LANDSCAPE CHARACTER: LAKE CATHIE

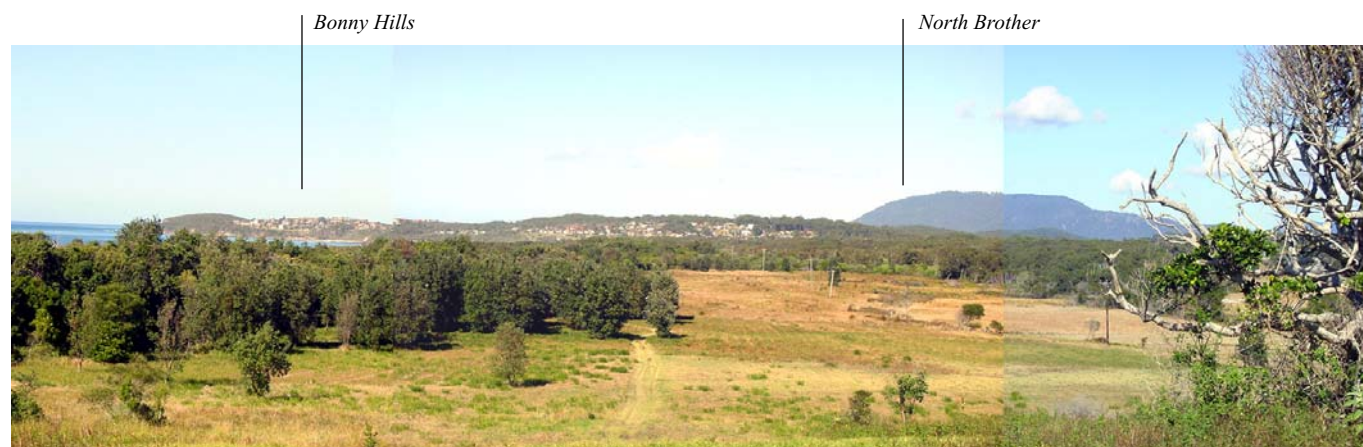
The Lake Cathie village is bounded to the east by the sandy, open coastline and to the west by Lake Cathie itself and the Innes River. Around the lake is an extensive Melaleuca wetland that forms a strong visual backdrop to the town and the lake. The lake and river are distinctive features of the area. The focus of the Lake Cathie settlement is the estuary where the lake and river meet the ocean.

The settlement has two small, but undistinguished centres on Ocean Drive. Streets and car parking areas lack tree planting and have poor pedestrian amenity. To the south is a flatter coastal plain, between Ocean Drive and the lake, are newer areas with brick homes. Lake Cathie also extends to the west past the lake to an isolated, large lot subdivision between the lake and the Innes River. This area is relatively low lying and contains significant stands of vegetation creating a forested setting.

LANDSCAPE CHARACTER: BONNY HILLS

Bonny Hills is a few kilometres to the south of Lake Cathie and is joined by a long sweeping beach. In contrast to Lake Cathie, the landform at Bonny Hills is more varied, often hilly to steep and is located close to the coast on cliffs and rocky promontories. Bonny Hills has a forested hills backdrop with a mountain backdrop rising above. Ocean Drive continues through Bonny Hills and rises and falls with the topography. The Bonny Hills promontory is visible from elevated parts of the master plan area, looking south.

On the northern entrance into Bonny Hills, Ocean Drive follows a ridge line to a height of 28 AHD. The vegetation along this part of the street is very visible and contributes to the character of the area. Immediately to the south of this ridge, within the master plan area is a large area of both cleared and vegetated land. Below the ridge line, the vegetation is less visually significant. This area connects to the forested backdrop of the master plan area and has no connection to areas to the west for possible future development. There are a few views from this area and the main access is from Migilvray Road, an unformed dirt road.



View south from 40 AHD hill top towards Bonny Hills and North Brother



View to Bonny Hills from east

The homes in this area also differ from those at Lake Cathie. They are generally newer, medium to large in size and double storey in height with many homes built up the hills to take advantage of the sea views. Tall eucalyptus trees on the hillsides, reserves and many private properties contribute to the leafy character of the area.

LANDSCAPE CHARACTER: THE AREA BETWEEN THE VILLAGES

The area between the villages comprises flatter low lying land and rolling hills that slope down to the Lake Cathie and to the coast. The land is largely cleared with some stands of old growth forests. Ocean Drive curves inland in this location creating a large parcel of land directly adjacent to the coastline. This area provides a distinct natural separation to both villages.

Other features of the landscape include the highly visible littoral rainforest along the coast extending south from the Lake Cathie village, a number of knolls, the vegetation around Lake Cathie, a band of trees to the south of Lake Cathie village and other groves of remnant trees.

The land form to the west slopes up from the road and provide a rising, vegetated backdrop to the master plan area generally above 10 metres AHD. Houston Mithcell Drive follows a ridge down to Ocean Drive and the trees along this entrance into the site are within this backdrop. Areas to the west of Ocean Drive, including those



View to Lake Cathie estuary and lake from north-east

residential areas accessed off Bonny View Drive are within this area. Residential intensification should be limited as it is important to maintain this vegetated, visual backdrop.

Views across the site vary depending on location and elevation of the viewpoint, however there are key areas which contribute to the character of the area by providing backdrops for many views. The sandy, open beach and ocean beyond are viewed from two areas: the area to the west of Bonny Hills and the hill top adjacent to the littoral rainforest. From the hill tops of this area there are commanding views to the ocean, Bonny Hills, North Brother and Jolly Nose. This is particularly evident from the 40 AHD hill-top near to the littoral rainforest. (refer pictures)

Lake Cathie and the surrounding wetland vegetation are visible from areas to the north of Ocean Drive (adjacent to Lake Cathie). From elevated areas to the north of the study area, there are views to the vegetation surrounding Lake Cathie and to recent residential development adjacent to the lake.

There are many views to the various parts of the study area from Ocean Drive. The road both bounds the study area and crosses through it to the north. Key views also occur at junctions with other roads. These include the intersection with Houston Michell Drive which is a major entry point to the district.

Jolly Nose



View south and west from 40 AHD hill top towards Jolly Nose



Existing significant vegetation

The hilly nature of Bonny Hills provides a number of viewpoints over the surrounding area. These views are from residences, businesses and public lands, but also from many roadways. There are views to the master plan area from the ocean and also the beach. This is significant as north of the master plan area however many of these views from the beach are screened by the band of littoral rainforest.

Maintaining views from hilltops from public areas, rather than private spaces would respect the landscape setting of the master plan area.

GATEWAYS

Strong and regular patterns in the landscape can enhance values to the viewer and make the place more memorable. These patterns are often most distinctive where there are strong contrasts or edges, eg. forests immediately adjacent to a town, open grassland against forested mountains. When seen from a road or path these contrasts can be read as a gateway. The traveller clearly passes from one zone to another. Commonly, contrasts of natural vegetation or farmland with urban form create these edges.

Within Lake Cathie and Bonny Hills, there is potential to redefine and create stronger edges to the villages and new development. It is important to maintain a distinctive open landscape between the two villages to reinforce the identity of each centre and new ones.

2.2 ENVIRONMENTAL CONTEXT

The environmental context of the master planning area has been assessed in terms of ecological sustainable development (ESD). This is one part of sustainable development and was defined separately by the Australian Commonwealth Government in 1990 as “using, conserving and enhancing the communities resources so that ecological processes on which life depends are maintained, and the total quality of life, now and in the future, can be increased”.

Ecologically sustainable development is therefore that development which aims to meet current needs while conserving ecosystems for the benefit of future generations. Environmental resources which form the basis of our economy should be maintained and where possible, improved in terms of range, variety and quality.

The natural environment of the master plan area has been altered quite dramatically by various land uses such as logging, agriculture

and urban development. The altered natural environment can be measured by cleared areas of land, habitat fragmentation, the disruption of natural ecological processes and an increased frequency in the use of fire as a land management tool.

Despite these alterations, there are a number of outstanding and important natural attributes in the master plan area. These include a spectacular coastline and significant wetland environments, important vegetation communities and a diverse array of native plants and animals, some of which are threatened species.

WETLAND COMMUNITIES

The significant wetland areas include four gazetted wetland areas:

- No. 509 (part) which includes Lake Cathie/ Lake Innes water bodies and associated vegetation communities,
- No. 510, a small wetland with regionally significant vegetation communities (identified by Ecovision in a 1998 study),
- No. 511 within the Oceanwoods estate at Bonny Hills and
- No 512 (part) which drains south from Bonny Hills to the immediate west of the southern UIA.

Ecovision (1998) also lists the following communities as regionally important wetland:

- swamp mahogany (4002),
- swamp mahogany (4012) and
- health-leaved banksia swamp (5503).

VEGETATION COMMUNITIES

Important vegetation communities listed under SEPP26 include:

- Littoral rainforest (No 116).

Ecovision (1998) also lists five other regionally significant vegetation communities. These are:

- Brush box (3002),
- Flooded gum (3004),
- Wet blackbutt (3006)
- Fore dune complex (9010) and
- Headland complex (9030).

Two locally significant communities include

- Wet pink bloodwood (3005) and
- Melaleuca seiberi swamp (4009).

These communities are shown on Map 1. Threatened flora as listed in the NSWNPWS Wildlife Atlas is also likely to be found in the master plan area with more detailed survey work.

WILDLIFE HABITAT

There are fourteen threatened species in the master plan area that have differing requirements for survival. These requirements vary depending on feeding, nesting and roosting habits. Wetland environments, hollow trees, woodland canopies, dense rainforest and specific key vegetation species are all important. Hollow trees are a particularly important and finite resource that need be preserved. For example, eucalypt hollows take from 100 to 300+ years to develop.

The threatened species include:

Amphibians

- Wallum froglet

Birds

- Glossy black cockatoo
- Square-tailed Kite
- Powerful Owl
- Osprey
- Grass Owl

Mammals

- Eastern blossom bat
- Little bent-wing bat
- Greyheaded flying fox
- Coastal planigale
- Koala
- Squirrel glider
- Yellow-bellied glider
- Eastern chestnut mouse

The Wallum froglet is an acid frog that relies on wetland environments such as in the Queens Lake area and the Lake Innes Nature Reserve.

The Glossy Black Cockatoo relies on hollow trees for nesting and feeds almost exclusively on Forest and Black She-oaks (*Allocasuarina* spp). The Square-tailed Kite forages over forest and woodland canopy in the area. The Powerful Owl is a sedentary species that occupies permanent roost sites in eucalyptus forests and woodland. Nest and breeding sites require a large hollow or limb of a tree. The Osprey relies on coastal waterbodies and adjoining forest communities for nesting and feeding. The Grass owl forages over grassy plains and swamp areas and roosts and nests on the ground in wetland environments.

One of the threatened mammals is the eastern blossom bat. This species needs dense foliage in rainforest, wet sclerophyll forest and paperbark swamps for daytime roosting and coastal heathland for night foraging. The *Banksia integrifolia* is an important food source. The coastal strip between Lake Cathie and Bonny Hills is suitable habitat for this species. The Little bent-wing bat also uses dense vegetation, as well as caves for roosting. This bat can be found across the coastal lowlands of the master plan area, including the general vicinity of the Bonny Hills sewage treatment plant.

The Grey-headed flying-fox is an important species for pollination in the area. It feeds on floral resources from eucalypts, paperbarks and turpentines. The Coastal planigale is a small marsupial occurring in localised populations. Koalas are also found in the area, feeding on Eucalyptus in localised populations. A small breeding population exists in the Bonny Hills area. Key resources for the koala are the Tallowood, Swamp Mahogany, Forest Red Gum and Grey Gum.

In northern NSW, the Squirrel Glider occurs in coastal forest and some wet forest, feeding on nectar, pollen, eucalypt sap and insects and nesting in bowl-shaped tree hollows. The Yellow-bellied Glider occurs in tall mature wet eucalypt forest, feeding predominantly on eucalypt sap and roosting in large hollows of smooth barked trees. The Eastern Chestnut Mouse favours dense, wet heath and swampy areas found around Bonny Hill.

In order to maintain important habitat areas and also significant stands of vegetation communities in the master plan area, at least one north-south corridor and at least two east-west corridors should be established. Buffer areas should also be provided. Refer Map 2.



Aboriginal artefacts found in the master plan area

2.3 ABORIGINAL HERITAGE

Preserving cultural heritage of Aboriginal people in NSW is part of developing sustainable communities in NSW. Aboriginal sites and places of significance to Aboriginal people in NSW are protected by state legislation. Under the National Parks and Wildlife Act (1974), an Aboriginal object is defined as “any deposit, object of material evidence, not being a handicraft made for sale, relating to indigenous and non-European habitation of the area that comprises New South Wales, being habitation both prior and concurrent with the occupation of that area by persons of European extraction” (Section 5[1]).

Archeological and ethno-historical evidence shows it is likely Aborigines led a reasonably sedentary lifestyle in the Lake Cathie/ Bonny Hills area. This evidence includes the 16 known sites that have high Aboriginal social significance. They include

- 11 open camps/ stone artefact scatters,
- 3 isolated stone artefacts and,
- 2 shell middens.

All but three of these occur in the ‘Ocean Fields’ area between Ocean Drive and Rainbow Beach.

All of the open camps and middens lie within one kilometre of the coast and most commonly occur on sand-based ground close to watercourses, particularly the freshwater channel of Duchess Creek. Two small artefact scatters (#30-6-111 and #30-6-112) have also been recorded in alluvium fringing the coastal sand plain.

The largest sites in the area include a coastline midden above a rock platform at Middle Rock Point (not registered), and scatters containing over 100 visible artefacts near the mouth of Cathie Creek (not registered), on a quarried dune immediately inland of Duchess Creek (#30-6-109) and on the footslope of a bedrock hill on the southern edge of the Duchess Creek basin (#30-6-116).

Cultural records show that there may be other sites of significance in the area. One of these is skeletal remains that may still survive in the vicinity of the present Bonny Hills tennis courts.

Identified conflicts with proposed future urbanism include

- Stone artifact sites on eastern lowland in northern part of the ocean fields area
- Birpai Local Aboriginal Land Council custodian Lindsay Moran would like to see this area preserved for educational purposes
- Lower hill slope in the southern section of the Ocean Fields area (NPWS Site 30-6-116) Bunyah LALC would not consent to destruction of this site

Refer Map 2.

2.4 INFRASTRUCTURE

WATER SUPPLY

Lake Cathie and Bonny Hills are currently serviced by a main from Flagstaff Hill Reservoir in Port Macquarie. Hastings Council is in the process of upgrading its water supply infrastructure for the region. Works have been completed on Cawarra Dam and a new trunk feeder main is planned from the dam to Area 14 (the master plan area) in order to accommodate population growth as set out in HUGS.

SEWERAGE

The master plan area is currently serviced by sewer reticulation. The existing sewerage treatment plant is being upgraded to handle the capacity of the projected population. Additional sewer mains, pump stations and rising mains will be installed in new areas. The plant currently discharges effluent disposal to a dunal area and council are assessing alternative/ supplementary disposal methods.

STORMWATER

There are a number of sensitive environments into which stormwater will discharge. Treatment measures to strip nutrient loads from the stormwater should be included. Such measures may include grass swale or dry grassed detention basins in public open space areas. These areas can also assist in controlling stormwater runoff quantity as well as quality, so that the final discharge reflects the previously undeveloped state of the land more closely.

Stormwater treatment measures that are 'at source' should be investigated also to reduce the 'end of line' measures required. Such measures may include stormwater tanks on houses for detention and storage and gravel infiltration pit/ trenches at the end of house drainage lines.

Each lot may be assessed for possible stormwater treatment measures taking into account such things as slope and soil type. For example, in the lower lying parts of the master plan area, acid sulfate soils may affect stormwater drainage pipes and outlet structures as well as sewer mains and pump stations. In this case, stormwater pipes it would be advisable to discharge stormwater pipes into open grass swales higher up slopes if possible. For sewer mains and pump stations, a comprehensive acid sulfate management plan would be needed and approved before development.

ROADS

The master plan area generally has good access. As identified in the Draft Roads and Traffic Study 2001, Ocean Drive has less than 10,000 vehicles per day. Future roads should be designed to cater for their ultimate loads and hierarchy. The only road that may need an upgrade in the region is Houston Mitchell Drive which is narrow and winding in places. However, this is just outside the master plan area and traffic modelling may conclude that the majority of future traffic loads concentrate on Ocean Drive, reducing the need for an upgrade to Houston Mitchell Drive.

New roads should incorporate a network of interconnected collector roads feeding into local centres and areas with community facilities including recreation areas. These should be located and designed to distribute local traffic and to reduce the amount of major turning movements and queueing in key intersections including across traffic on Ocean Drive. All streets should have the potential for development frontage.

POWER

Country Energy are aware of upgrade requirements to service increased populations and will provide them as required.

TELEPHONE

Existing services will need to be augmented. This will not be an impediment to development. Telstra would need to be approached before any development occurs to put in place planning procedures.

2.5 PLANNING AND DEVELOPMENT CONTEXT

The master plan area of Area 14 has land with extensive zonings of 2(a1) in both the existing settlements and the vacant land between them. Both Lake Cathie and Bonny Hills villages are built out with the last parcels at the south of Lake Cathie currently under construction.

There are extensive Environmental Protection Areas, National Park and State Forest. On the western edges near Lake Cathie are underdeveloped areas of 2(a4) that remain for larger lot rural residential uses. The rest of the land is 1(a) and is currently used as open farmland and areas of large lot rural residential.

Like many regional centres, there are no zonings for medium density residential development.

3.0 SITE CONSTRAINTS AND OPPORTUNITIES

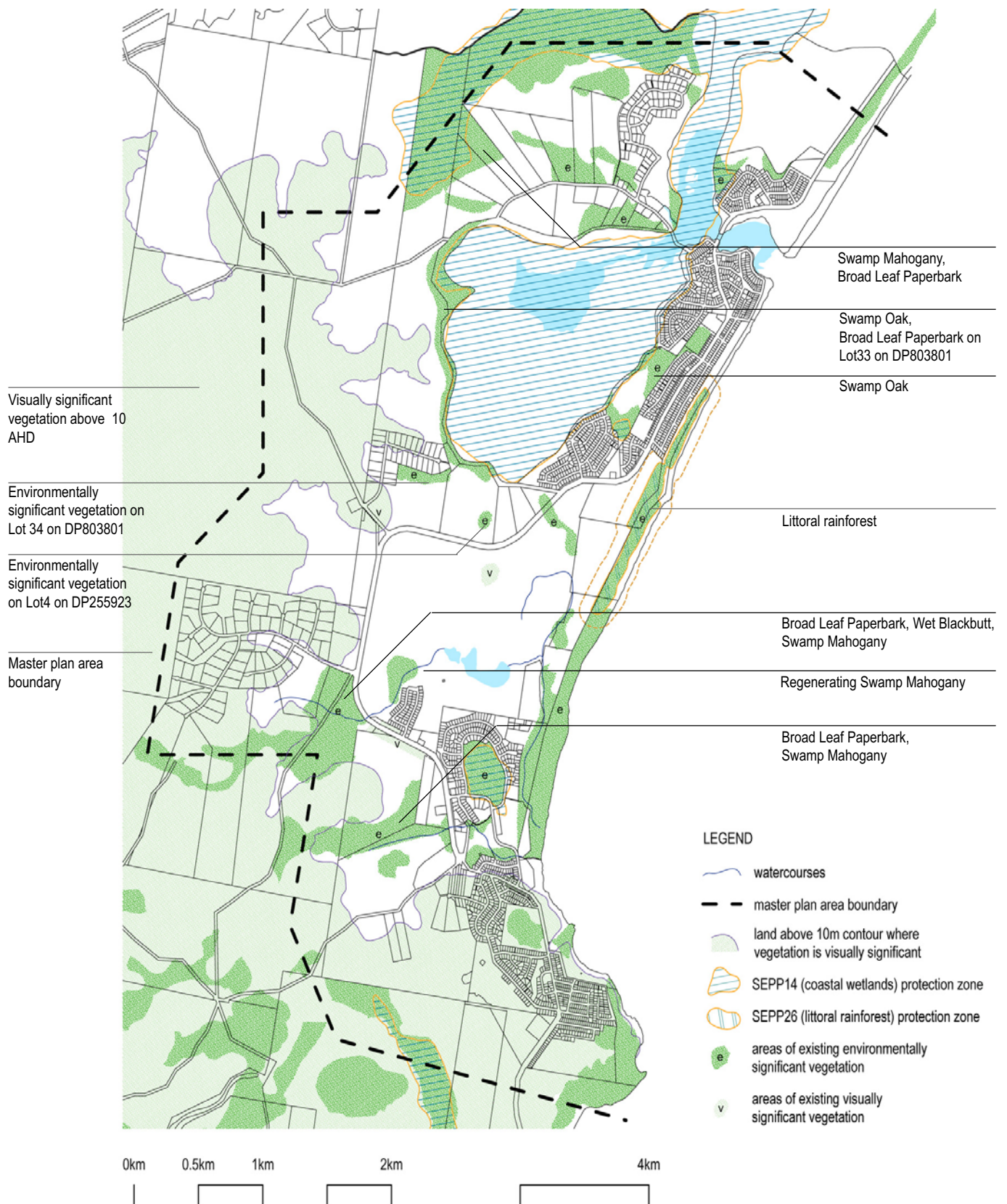
3.1 MASTER PLAN AREA

VISION

The development of Greater Lake Cathie and Bonny Hills (Area 14) respects the unique qualities of the site, particularly;

- environmental qualities
- visual qualities, views from the site to regional landmarks and views onto the site.

DESIGN CRITERIA	PREFERRED OUTCOMES
ENVIRONMENTAL QUALITIES Retention of native vegetation is maximised. Representative samples of native vegetation communities for significant wildlife habitat are retained with particular emphasis on areas that contain mature trees of the following species; • <i>E. tereticornis</i> • <i>E. robusta</i> • <i>E. microcorys</i> and • <i>C. intermedia</i> trees, and • stands of <i>Allocasuarina torulosa</i> and/or <i>A. littoralis</i>. • All eucalypts with a dbh in excess of 80cm dbh and suitable candidate trees in the 60 – 80cm size class. (including <i>Corymbia</i> spp. but excludes <i>E. seeana</i> which commences hollow development at a smaller dbh and thus requires specific assessment) The littoral rainforest is rehabilitated adjacent in the vicinity of the southern end of Lake Cathie village VISUAL QUALITIES Vegetation with visual qualities is retained forming a backdrop to the masterplan area.	The following specific stands of vegetation are retained. • the forested corridor on Lot 33 DP803801 • forested corridor on Lot 34 DP803801 • old growth Tallowwoods on Lot 4 DP255923. Additional survey work is undertaken that determines specific locations of these species at subsequent development application stages. Reassessment of proposed future land releases in the vicinity of Oceanwoods estate at Bonny Hills given the presence of <i>Core Koala Habitat</i> in the vicinity of the Rainbow Beach Caravan Park. • Preparation of a Koala Plan of Management to address presence of <i>Core Koala Habitat</i> arising from presence of <i>potential koala habitat</i> and sightings of a female Koala with young at two locations (Lot 4 DP255923 and Lot 34 DP803801) within the Masterplan Area. Assertive action to remedy processes of community attrition (particularly from northern end but also from seaward side) under auspices of a site specific management plan. A community-based management committee is established to oversee development and implementation of proposed management plan. The following vegetation is retained with a minimum dimension of 50 metres • stand of Eucalyptus....on lot • vegetation above 10 AHD on the western side of the masterplan area including stands of Eucalyptus... along Houston Mitchell Drive Significant views towards and from within the master plan area from hill tops and streets to the coast, Bonny Hills, Jolly Nose, North Brother and Lake Cathie are retained and enhanced within the master plan. • locations of public spaces and parklands • locations of, alignment of streets • placement of buildings



MASTER PLAN AREA CONSTRAINTS MAP (MAP 1)

3.0 SITE CONSTRAINTS AND OPPORTUNITIES

3.2 URBAN EXPANSION AREA

VISION

The development of Greater Lake Cathie and Bonny Hills (Area 14) respects the unique qualities of the site, particularly;

- environmental qualities, corridors and linkages
- appropriate buffers to wetlands, Littoral rainforest, and for bushfire
- topography, hill tops, ridgelines and valleys, low lying land
- visual qualities, views from the site to regional landmarks and views onto the site.

DESIGN CRITERIA

CORRIDORS AND HABITAT LINKS

All significant areas of native vegetation are incorporated – in their entirety - into a system of open space reserves, habitat links and/or corridors.

Environmental corridors link areas of significant environmental vegetation and habitat

ENVIRONMENTAL AND BUSHFIRE PROTECTION BUFFERS

All significant areas of native vegetation have ecotonal buffers of 60 metres (including any OPA requirements associated with the provision of APZs).

Cleared lands within buffers are regenerated and/or rehabilitated.

Littoral Rainforest has a 80m landward buffer from gazetted boundary with a 20 metre development setback from buffer for bushfire planning purposes (buffer can accommodate 10m OPA).

Bushfire buffers elsewhere are

- development setback (APZ) of 30m along the western boundary, increased to 50m along the northern boundary.
- development setback (APZ) from the proposed corridor on Lot 33 DP803801 of 30m (20m IPA, proposed corridor can accommodate 10m OPA).
- development setback (APZ) from the proposed corridor on Lot 34 DP803801 of 30m (IPA + OPA).

TOPOGRAPHY

Ridgelines are maintained and emphasised in the masterplan.

Significant hill tops are retained at their current elevation.

Significant views and viewpoints from the site are respected.

PREFERRED OUTCOMES

Environmental Corridors are established as per Map 2 and include the following:

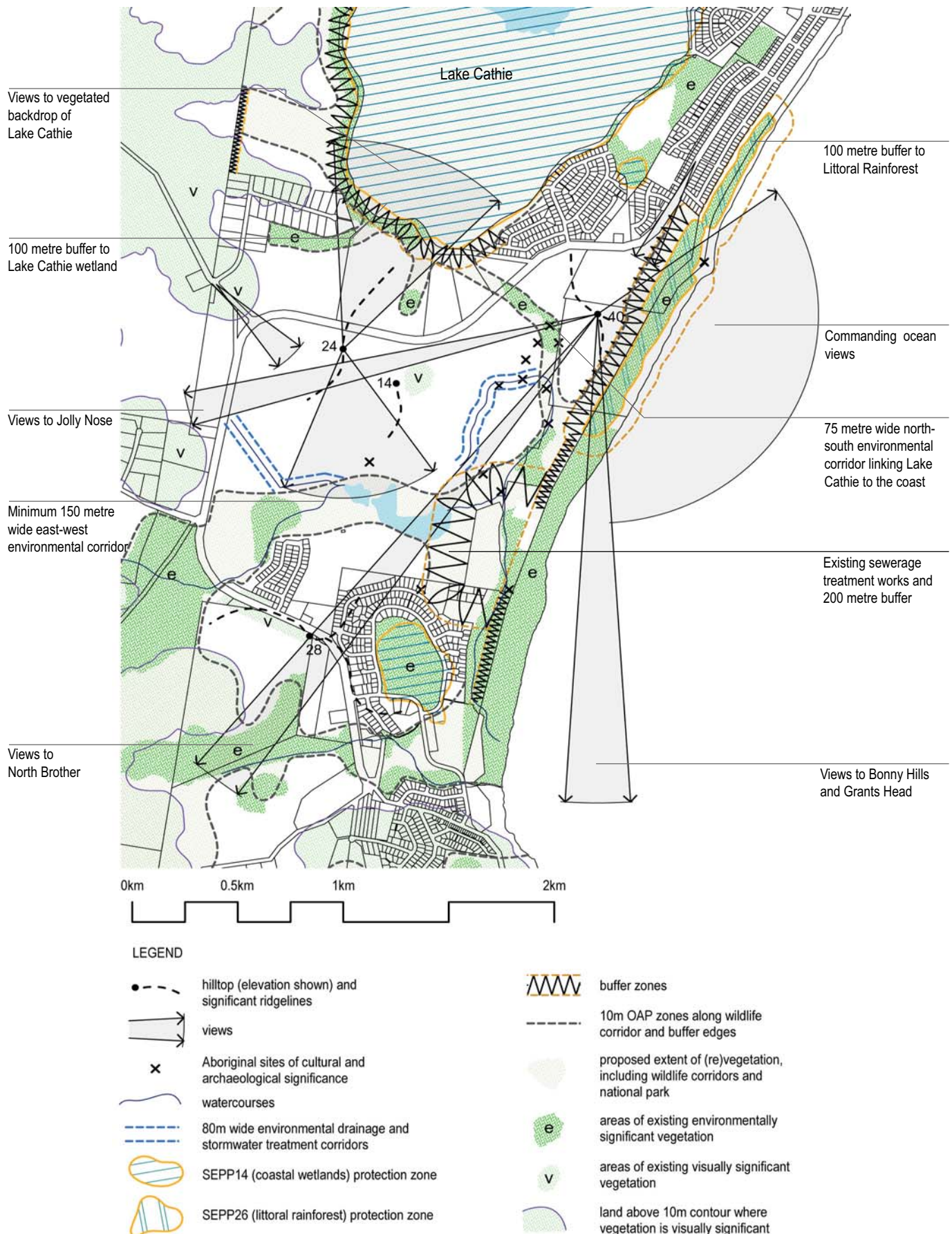
- establishment of a designated east-west corridor with a minimum width of 150m (including an OPA of 10m either side) on Lot 63 DP845590 from the intersection of Bonny View Drive and thereafter to the coast in the vicinity of Lot 11 DP629025.
- establishment of a designated north-south corridor with a minimum width of 75m (excluding any development setbacks for bushfire planning purposes) on Lot 63 DP845590 in the general vicinity of Lot 4 DP255923 and thereafter to the coast in a southeasterly direction along existing drainage lines.

Map 2 indicates preferred locations of environmental and bushfire protections buffers.

40AHD, 28AHD, 24AHD and 14AHD hilltops and important ridgelines are shown on Map 2.

Topographic features are incorporated into the masterplan, specifically in relation to:

- locations of public spaces and parklands
- locations of, alignment of streets
- placement of buildings



4.0 URBAN DESIGN PRINCIPLES

4.1 POLICY FRAMEWORK

The preferred urban development goals which underpin the design rationale for this area can be determined from a number of documents including the Hastings Urban Growth Strategy (HUGS) Coastal Council Design Guidelines, Sustainable Urban Settlement: Guidelines for Regional NSW 2000 and the State Environmental Planning Policy 71.

The goal from the HUGS is to

‘... create sustainable living for the current and future residents of Hastings which respects the environment and the economic/social wellbeing of the community’.

The NSW Coastal Council Guidelines advocate for the sensitive design in coastal areas. This includes the consolidation of settlements that are compact rather than sprawling. Stand alone developments are not supported. The NSW government supports:

“Advocacy for: mixed use centres containing a variety of services and activities such as business, shops, community services and entertainment facilities”.

The Sustainable Urban Settlement: Guidelines for Regional NSW 2000 describes sustainable communities as the most important feature of a sustainable local environment. The settlement guidelines describe how to develop a community culture in the following way.

- plan a village-sized settlement that is large enough to support the proposed services, but not so large as to endanger the environment - a community of 5000 will support a primary school and neighbourhood shopping centre,
- plan each settlement with a centre which has the service residents can get to by using walkways, cycleways or public transport (unlike 1950s-style dormitory suburbs where residents have to use cars or public transport to get to faraway services and workplaces)
- ensure the environment is not damaged and is if possible, improved,
- create or protect habitat areas, such as greenbelts, and integrate them into the future urban area
- ensure waste products such as sewage are treated and recycled locally rather than sent to another area.

4.2 URBAN STRUCTURE

Sustainable Urbanism is achieved through the creation of neighbourhoods. Neighbourhoods cluster to support towns and town centres. The principles for neighbourhoods and the layout of neighbourhoods are as follows

Neighbourhoods have the following characteristics:

- Size and shape generally defined by a five minute walk from the neighbourhood centre to its perimeter, typically 400 metres;
- The centre acts as a community focus with a compatible mix of uses, which provide for a variety of daily needs and may include community facilities and urban open spaces such as a town square;
- To assist retail exposure and accessibility, the centre is located on or at the intersection of important local streets served by public transport;
- An interconnected street network with strong links between town and neighbourhood centres that has good accessibility, route choice and detailing to make walking and cycling pleasant, efficient and safe; and
- A range of residential densities that increase toward the neighbourhood and town centres.

Town Structure has the following characteristics:

- Reformed by clustering of neighbourhoods, typically with six neighbourhoods needed for the adequate population to sustain a town centre with public transport and a wide range of goods and services;
- The town centre is central to the clustering of neighbourhoods, well linked and within reasonable walking distance of most residence;
- Major new transport routes are based upon desired town and neighbourhood structure;
- For commercial viability and accessibility, the town centre is located to the intersection of arterial routes and has a major public transport stop wherever possible; and
- A range of housing types with residential densities that increase towards the centre and can, over time support sufficient population to foster self-containment.

Community Structure has the following characteristics:

- Co-location of community facilities within or close to centres.
- Multi-use of open space and built facilities to accommodate a range of community activities within one location or precinct.
- Integration of functions within locations, i.e. medical, community, retail, and integration between functions with synergies, i.e. library with community centre or school.
- Universal access to all buildings, facilities and areas – achieved by application of Building Code of Australia disability access provisions.
- CPTED principles applied to design of all public areas, including, centres, parks, cycle and walking paths, recreational, sporting and community / cultural facilities.
- Public art to be incorporated where appropriate in sites of significance or meaning for the local community.

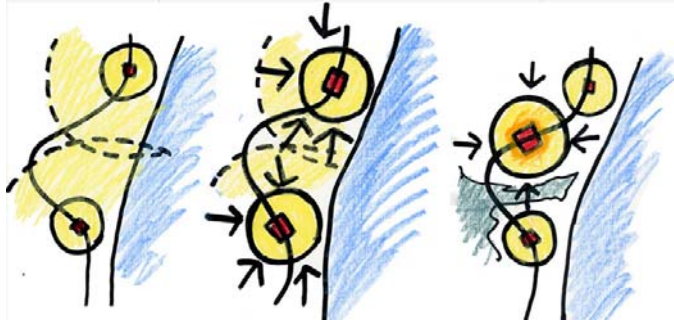


Legend

- 1 Neighbourhood Centre
- 2 Main roads linking to adjacent neighbourhoods
- 3 Higher density residential
- 4 Park
- 5 Residential
- 6 400m radius from centre
- 7 Environmental Open Space

4.3 URBAN DESIGN RESPONSE : FUTURE SCENARIOS

In order to conceptualise an appropriate urban form for Area 14, three alternative future strategies were developed.



Future One demonstrates unplanned residential expansion of the two existing villages, most probably of low density. The higher order community needs are not integrated and the resultant housing being sprawling detached housing offers little housing choice. Pockets of medium density housing could be incorporated, but at edges where views are available rather than supporting centres.

Future Two sees the growth of Area 14 as urban consolidation and extension of both Lake Cathie and Bonny Hills. Development in the potential growth area between the villages will focus towards these settlements. While both settlements have the potential to expand towards the west, on land closer to the existing village centres, this land is on the edges of the villages, within areas of environmentally and visually significant vegetation. Also, existing developments in these locations are of low density and street connections from these areas to existing places within Area 14 are poor. Therefore, it would be unlikely that higher residential densities and housing choice could occur in these locations if developed.

This future would create considerable change and development pressure for each village with the need to incorporate larger shopping uses, community facilities and medium density housing within the current urban pattern. Redevelopment will require consolidation of lots. Without new centres of any size, the growth areas on the edges of the existing villages would remain as sprawling lower density detached housing and offer little housing choice. This future does not reach the development potential of land that is well located for good urban design outcomes and does not provide a sustainable outcome for the new growth areas.

The third possible future sees the new growth areas as the location of the higher order needs for the growing community configured as another village or villages between the two existing settlements. New growth would focus upon these locations. Within new growth areas, there is more potential for the integration of larger scale retail uses, and a variety of housing densities.

This third possible future is considered to be preferred for the following reasons:

- Lake Cathie and Bonny Hills are separated. There is enough land that is well integrated and connected to the overall urban structure of Area 14 to accommodate new discrete, neighbourhoods or villages between them.
- There are environmental corridors restricting the area of expansion around Lake Cathie and Bonny Hills.
- Larger portions of the site are in single ownerships. This allows appropriate areas of land for large scale uses; supermarkets, community

facilities, schools, regional sporting facilities, to the incorporated and their inter relationships will readily achieved.

- The land is undulating and elevated facilitating high quality urban design outcomes.
- The existing settlements will have less pressure and need for major redevelopment, allowing them to easily retain their existing character.
- Street systems can be designed to accommodate a variety of lot sizes and housing types.



Cluster of neighbourhoods forming a town. Major centre identified. Streets directly connect neighbourhood centres. Large open spaces and bushland frame town. Linear open space corridors through town. Schools located away from centres, on open space corridors



Laurieton, Hastings. Town centre main street mixing retail, commercial, and community facilities.



Main Street, Sawtell, south of Coff's Harbour

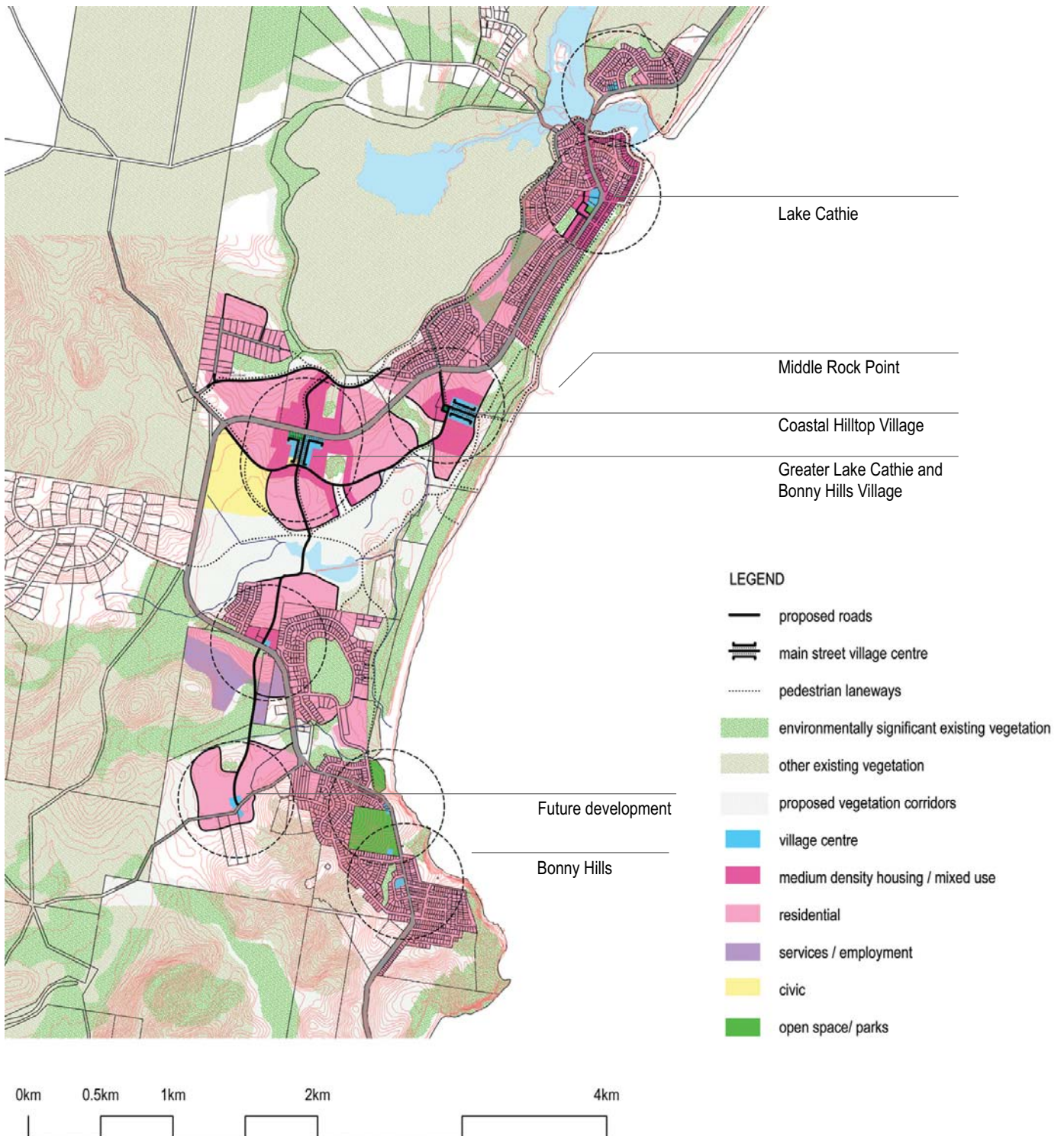
5.0 GREATER LAKE CATHIE AND BONNY HILLS TOWNSHIP

VISION

Greater Lake Cathie and Bonny Hills (Area 14) will grow into a township as a series of distinctive villages, respecting the unique qualities of the existing settlements and with great sensitivity to the natural environment.

Facilities in the new release areas will add to those already available, to meet housing, employment, health, education and recreation needs of a growing community to 10,000 people.

DESIGN CRITERIA	PREFERRED OUTCOMES
VILLAGES Village Centres are located: • 800 metres to 1200 metres from the next adjacent centre • where easily accessible from the existing and future road network • in places high amenity • on flat land suitable in area for the ultimate centre size (i.e. 2ha-6 ha) • where potential for a walkable catchment of at least 400 metres is available ‘Main Streets’ are the community and economic focus at the centre of neighbourhoods. Villages have defined edges and are visually separated from existing villages with landscape elements. MOVEMENT NETWORK Collector streets, designed for < 3 000 vpd, provide direct access between village centres allowing local traffic movements between centres without using Ocean Drive. Collector streets respond to natural topographic features such as ridge lines and valleys and are aligned towards natural landmarks such as ocean, beaches, distant headlands, stands of vegetation, linear green corridors, open spaces, hilltops, mountain peaks within and beyond the site. Streets are located along interfaces between development and all natural areas including parklands. Safe, accessible, pedestrian and cycle networks provide linkages between village centres, parkland, bushland, and important community uses such as schools VEGETATION AND BUFFERS AND OPEN SPACE 100m wide landscape buffers are provided to littoral rainforest, Lake Cathie, State Forest, for vegetation stormwater treatment and parkland Old growth vegetation is maintained with vegetated links between significant stands of significant vegetation are maintained COMMUNITY INFRASTRUCTURE Community infrastructure is provided that is appropriate for the needs of a community of 10,000 people.	Refer to Urban Structure Plan 4.1 Four villages are developed at: • Lake Cathie • Bonny Hills • Greater Lake Cathie and Bonny Hills with a ‘Main Street’ located running south from and perpendicular to Ocean Drive, in the saddle between two hill tops and existing visually significant grove of eucalypts • Coastal Hilltop Village located on the eastern hill top close to the ocean, with a ‘Main Street’ oriented towards the ocean Preferred locations of collector streets are between: • Bonny Hills to the greater Lake Cathie-Bonny Hills village crossing the green open space and lake, continuing to Ocean Road and northwards towards Lake Cathie along the ridge line • greater Lake Cathie-Bonny Hills village to Coastal Hilltop village past the eucalypt grove, along the linear open space. Street angles towards North Brother and Jolly Nose near the hill top • the Houston Mitchell Drive to the greater Lake Cathie-Bonny Hills village centre past the school and sports fields precincts • from Forest Park Parkway running generally parallel to the Lake Cathie edge to Explorers Way. Landscape buffers, vegetation corridors, visually significant vegetation, and old growth forest trees are described on the Urban Structure Plan. School co-located with regional sport fields are located to the south west of the greater Lake Cathie-Bonny Hills village.



PROPOSED URBAN STRUCTURE PLAN (MAP 3)

6.0 THE VILLAGES

6.1 LAKE CATHIE

VISION

Lake Cathie will remain as a distinctive village within the greater township. The village will be reinforced as a place for local people and visitors with a consolidated commercial centre. This centre will have improved amenity and stronger pedestrian access to the foreshore, parklands, littoral rainforest and estuary. Small scale tourist developments compatible with existing dwellings and located between the village centre, estuary and foreshore will provide economic vitality.



DESIGN CRITERIA

LAND USES VILLAGE CENTRE

The village centre is consolidated as a mixed use centre and does not compete with the proposed Greater Lake Cathie-Bonny Hills Village Centre.

Small scale tourist developments are encouraged in appropriate locations..

MOVEMENT NETWORK

Vehicle movement impacts on Ocean Drive for pedestrians are reduced.

Improved pedestrian connections are made between key destinations such as centres, community facilities, the estuary, foreshore, parkland, littoral rainforest and Middle Rock Point.

COMMUNITY INFRASTRUCTURE

New parks are created and existing parks are improved.

BUILT FORM

Built form respects the existing one and two storey scale of the present village and is appropriate for residential development.

ENVIRONMENTAL QUALITIES

Environmentally sensitive areas are maintained and rehabilitated where necessary.

PREFERRED OUTCOMES

Total commercial and retail development is less than 2000m².
Tourist accommodation uses are provided along Ocean Drive and the foreshore.
The school site is not developed for a school, but for medium density residential on areas of less environmental significance towards Ocean Drive.
A village parking plaza is developed adjacent to the tavern.

New streets improve connectivity behind the shopping centre and to surrounding residential areas.

Pathways through bushland on current school site provide access to existing community centre.
Safe pedestrian crossings of Ocean Drive are provided adjacent to the retail centre.

The Foreshore is regenerated with:

- boardwalk access as the only access to the beach, and
- a walkway/ cycleway located between houses and the littoral rainforest as a buffer, and
- environmental improvements are made to key streets and spaces on the current school site, and
- environmentally significant vegetation is retained as a parkland with pedestrian trails to link the community centre and housing beyond.

Refer section 6.6.

Preferred management responses are discussed in section 3.

6.0 THE VILLAGES

6.2 BONNY HILLS

VISION

Bonny Hills Village will expand as a cluster of neighbourhood to the north and west. New centres will provide additional retail and commercial uses. The expanded village will provide for additional employment and recreational uses.



DESIGN CRITERIA

LAND USES

Additional urban expansion is configured as neighbourhoods with centres located on corners at Ocean Drive and McGilvray Road. Centres do not compete with the proposed Greater Lake Cathie-Bonny Hills Village Centre.

Industrial land is located to the west of Ocean Drive where not visually intrusive from Ocean Drive and existing urban areas.

MOVEMENT NETWORK

Street networks are in accordance with section 5.0 Greater Lake Cathie and Bonny Hills Township.

Pedestrian connections to Duchess Creek, foreshore, parkland and crown reserve environmental linkages are maintained and improved.

COMMUNITY INFRASTRUCTURE

The crown reserve is developed as a community and visitor resource that takes advantage of its prominent elevated location.

BUILT FORM

Built form respects the existing two storey scale of the present village and is appropriate for residential development.

ENVIRONMENTAL QUALITIES

Environmental corridors are provided to link environmentally sensitive areas.

PREFERRED OUTCOMES

Total commercial and retail development is less than 2000m².

Industrial land is located below 15 AHD to the west of Ocean Drive. The light industry precinct has a variety of commercial and workplace uses.

Access to industrial areas is provided from Ocean Drive.

Pedestrian access to Duchess Creek improved.
 Pedestrian access from the existing centre to the foreshore along Bartlett Street and Hill Street are improved.
 Safe pedestrian crossings of Ocean Drive are provided adjacent to the retail centre.

The headland open space precinct is strengthened with landscape improvements including a visitor centre incorporating a small cafe.

Refer section 6.6.

Preferred corridor locations are shown on Map 2 in section 3.

6.0 THE VILLAGES

6.3 GREATER LAKE CATHIE AND BONNY HILLS

VISION

The Greater Lake Cathie Bonny Hills village will be the major village in the growing township and will contain all the higher order needs for this community of 10,000.

The village design will take advantage of topographic and landscape features responding to economic, social and spiritual needs of the community.

The village will have a centre focused on a main street and other high quality streets and public spaces.



DESIGN CRITERIA

LAND USES

The Main Street is the focus of the village centre and contains the highest intensity uses for retail, commercial and community needs.

Areas within the 400 metre radius walkable catchments of centres are developed at higher intensities, with a mix of uses including workplaces and variety of dwelling types. Land uses change at the rear of blocks.

Large scale uses such as schools and retirement villages are located >400m from centres.

MOVEMENT NETWORK

The main street is the neighbourhood collector linking Lake Cathie with the greenway north of Bonny Hills.

Ocean Drive is treated as a high amenity integrated street when passing through the village centre. Additional choices of access are provided onto Ocean Drive.

Within a 400m radius of village centres, streets are interconnected and are laid out to provide direct access and choices of routes to village centres. Streets define blocks with a maximum area of 1.2 Ha

Streets are oriented and provide access and views to open spaces and buildings within the village centre. Streets are aligned to respond to qualities of the site, ridgelines, hill tops and existing vegetation

STORMWATER DESIGN

Stormwater overland flow and treatment corridors are integrated into the street network

COMMUNITY INFRASTRUCTURE

Parks, plazas, squares and greens, each with a different character and function are incorporated. They are located on places of high amenity such as hill tops and stands of significant vegetation and in close proximity to pedestrian vehicular access routes.

BUILT FORM

Built form is appropriate to village centres and residential development.

PREFERRED OUTCOMES

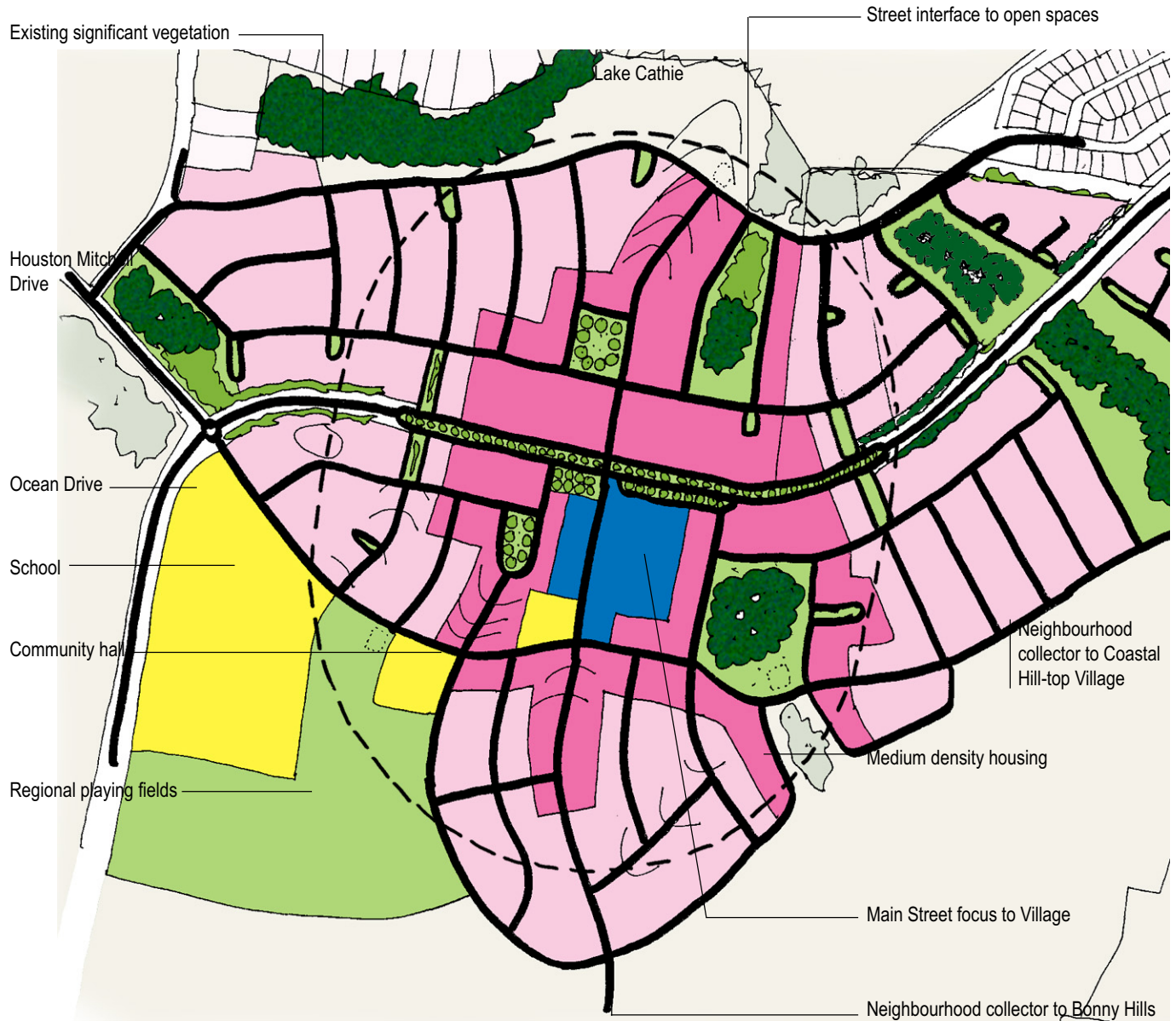
Refer greater Lake Cathie and Bonny Hills Neighbourhood Structure Plan (Map 4 opposite).

A central landscaped median is provided on Ocean Drive where Ocean Drive runs through the village centre.

Intersections with left in and left out turns are provided in addition to the main intersection.

Streets are located in valleys with central swale medians. Linear green corridors are incorporated.

Refer to section 6.6.



GREATER LAKE CATHIE AND BONNY HILLS NEIGHBOURHOOD STRUCTURE PLAN (MAP 4)

6.0 THE VILLAGES

6.4 GREATER LAKE CATHIE AND BONNY HILLS VILLAGE CENTRE

VISION

The Greater Lake Cathie Bonny Hills village centre is the primary focus in the village and contains the highest intensity retail, commercial and community uses, such as supermarkets and community facilities. The village centre will be structured around a Main Street and other high quality streets and public spaces.



DESIGN CRITERIA

LAND USES

The Main Street is a memorable street and acts as the focus of the village centre integrating the highest intensity uses for retail, commercial and community needs.

MOVEMENT NETWORK

Streets are located along interfaces between development and all natural areas including parklands.

Safe, accessible, pedestrian and cycle networks provide linkages between village centres, parkland, bushland, and important community uses such as schools

COMMUNITY INFRASTRUCTURE

Parks, plazas, squares and greens are designed for socialising, contemplation, remembrance, and reflect the community life

Community facilities are incorporated and located in visually prominent locations, adjacent the 'Main Street', terminating vistas in parks or on plazas.

BUILT FORM

Built form is appropriate for village centres at 2-3 storey scale.

PREFERRED OUTCOMES

A Main Street with a central landscaped median.

A supermarket is located side-on to the Main Street and is sleeved by retail uses that face the main street.

Carparking accessible and visible from streets and facing entry to Supermarket, but located in courtyards behind buildings.

Refer village centre plan

A range of public spaces are located within the village centre

- Village Green
- Village Park
- Community Uses Park
- Residential Pocket Park

A range of community facilities are located within the village centre

- Library
- Community Hall
- Child Care Centre
- Community Health

Refer to diagram and section 6.6.



VILLAGE CENTRE PLAN DIAGRAM



AERIAL PERSPECTIVE OF VILLAGE CENTRE LOOKING FROM NORTH

6.0 THE VILLAGES

6.5 THE VILLAGES: COASTAL HILL TOP VILLAGE

VISION

The Coastal Hill Top Village will be a unique village that takes advantage of its striking hill top location and ocean views.

The village will focus on a very high quality and active public domain on the hill top with a village green and a small Main Street looking towards the ocean.



DESIGN CRITERIA

LAND USES

Commercial and retail uses support a tourism and visitor focus. Significant amounts of medium density residential uses including short term and long term accommodation, are provided within 400m of the village centre.

MOVEMENT NETWORK

Streets provide direct and legible street connections to Ocean Drive and the greater Lake Cathie and Bonny Hills Village Centre.

Improved and sustainable access through littoral rainforest to beach and Middle Rock Point is provided.

Pedestrian networks connect to the surrounding area.

COMMUNITY INFRASTRUCTURE

An active public domain is created on the hill top, that takes advantage of the striking hill top location.

Parks, plazas, squares and greens, each with a different function are incorporated and located on places of high amenity on hill tops and stands of significant vegetation and in close proximity to pedestrian vehicular access routes.

BUILT FORM

Built form is appropriate for medium density with a two and three storey scale.

PREFERRED OUTCOMES

Tourist and retail, hotel and medium density housing is provided in a mixed use village

Retail supports tourism, not weekly shopping with tenants including deli / general store/ bakery/cafe, restaurants, hair dresser, take away food.

Main access street from the corner of Ocean Drive and Abel Tasman drive
Street up the ridge line to a small village green

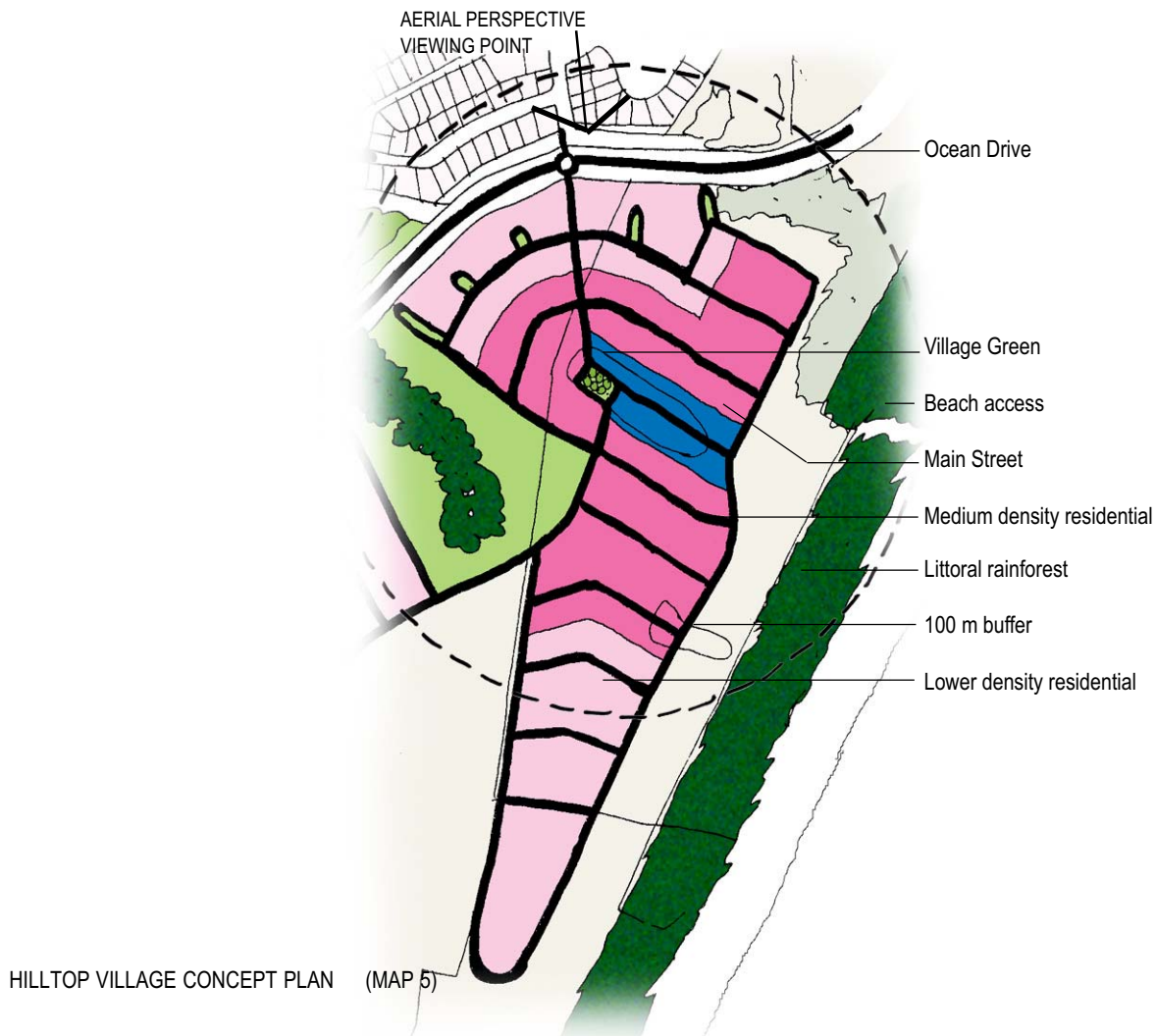
Main Street runs towards the Ocean.

Streets with fronting development along buffer to Littoral Rainforest, within buffer.

Neighbourhood collector runs westward to Greater Lake Cathie and Bonny Hills Village centre.

A village green terminates the vista up the hill to the village
village green and small main street looking towards the ocean with parking on street.

Refer sketches and section 6.6.



6.0 THE VILLAGES

6.6 BUILT FORM

VISION

The built form of the Greater Lake Cathie Bonny Hills village will have a distinctive character.

Residential densities will vary to encourage a diversity of dwelling types. Medium density housing will be provided.

Residential land will incorporate opportunities for home based employment.



DESIGN CRITERIA

VILLAGE CENTRES

Village centres contain street fronting buildings with active frontages to streets and public spaces.

MEDIUM DENSITY RESIDENTIAL/ MIXED -USE

A variety of residential uses incorporating home business is provided, achieving a density of 25 du/ha.

RESIDENTIAL

A variety of residential uses are provided achieving a density of 15du/ha.

PREFERRED OUTCOMES

Max FSR 1.2:1	Building Height 9m for 50% footprint 6m for 50% footprint		
Setbacks	Front 0-3m	Side 0-3m	Rear 12m

Car parking areas are located at rear or under buildings with a minimum setback of 12m.

Max FSR 0.8:1	Building Height 9m for 50% footprint 6m for 50% footprint		Min FSR 0.5:1
Setbacks	Front 3-6m	Side 3m	Rear 9m

Car parking areas are located at rear or under buildings.

Duplexes, row houses and apartments are preferred with a 30m maximum building frontage length.

Max FSR 0.5:1	Building Height 6m		Min FSR 0.5:1
Setbacks	Front 3-6m	Side 2-4m	Rear 6m

Living areas, balconies and terraces face streets.
Entrances area accessible and visible from the street frontage.
Front setbacks are treated as semi-private courtyards.
Car parking areas are setback 6m and garage doors take up a maximum of 40% of frontage.
Individual or duplex buildings are preferred with a maximum building frontage length of 18m.

7.0 CONCLUSIONS

7.1 POPULATION

HUGS projects the population for Lake Cathie-Bonny Hills to be increased from approximately 3900 to 9900 by 2021. This means that residential dwelling units are required for a further 6000 people. The master plan as set out in this document has the potential to provide for the following population increase.

	LDR	MDR	Commercial	Industrial
Lake Cathie	500 pop	-	no change	no change
Between the villages	74ha 2425 pop	30ha 1610 pop	9ha 300 pop	no change
Bonny Hills	45ha 1490 pop	2.3ha 125 pop	1ha 30 pop	15.9ha

An estimated total population increase of up to approximately 6100 could be accommodated in the proposed residential areas with the proposed densities.