Planning Proposal for North Manyana

Prepared for Kylor Pty Ltd
January 2015

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Planning proposal for North Manyana

Final Report Version 5

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1 Introduction

1.1 Introduction

This planning proposal has been prepared in accordance with the requirements of "*A guide to preparing planning proposals*" (Department of Planning, 2009[1]) for the proposed rezoning of the "Kylor site" at North Manyana. It seeks new zoning boundaries under the Shoalhaven Local Environmental Plan (LEP) 2014 that will provide:

- approximately 1.3 ha or 1.7% – R1 General Residential;
- approximately 28.2 ha or 37.2% – R2 Low Density Residential; and
- approximately 46.4 ha or 61.1% – E2 Environmental Conservation.

The outcome sought by this proposal will have substantial public benefits over the current zoning where 54.8% is residential and 45.2% is private recreation.

This proposal is made in accordance with Section 56 (Gateway Determination) of the *Environmental Planning and Assessment Act 1979* (EP&A Act), which states:

> "(1) After preparing a planning proposal, the relevant planning authority may forward it to the Minister.
>
> (2) After a review of the planning proposal, the Minister is to determine the following:
>
> (a) whether the matter should proceed (with or without variation),
>
> (b) whether the matter should be resubmitted for any reason (including for further studies or other information, or for the revision of the planning proposal),
>
> (c) community consultation required before consideration is given to the making of the proposed instrument (*the community consultation requirements*),
>
> (d) any consultation required with State or Commonwealth public authorities that will or may be adversely affected by the proposed instrument,
>
> (e) whether a public hearing is to be held into the matter by the Planning Assessment Commission or other specified person or body,
>
> (f) the times within which the various stages of the procedure for the making of the proposed instrument are to be completed.
>
> (3) A determination of the community consultation requirements includes a determination under section 73A (or other provision of this Act) that the matter does not require community consultation.

Throughout this report requirements of the Guide are highlighted in bold.

(4) The regulations may provide for the categorisation of planning proposals for the purposes of this section, and may prescribe standard community consultation requirements for each such category.

(5) The Minister may arrange for the review of a planning proposal (or part of a planning proposal) under this section to be conducted by, or with the assistance of, the Planning Assessment Commission or a joint regional planning panel:

(a) if there has been any delay in the matter being finalised, or

(b) if for any other reason the Minister considers it appropriate to do so.

(6) The relevant planning authority may, at any time, forward a revised planning proposal to the Minister.

(7) The Minister may, at any time, alter a determination made under this section.

(8) A failure to comply with a requirement of a determination under this section in relation to a proposed instrument does not prevent the instrument from being made or invalidate the instrument once it is made. However, if community consultation is required under section 57, the instrument is not to be made unless the community has been given an opportunity to make submissions and the submissions have been considered under that section."

This planning proposal is at the first stage of the above process, that is the relevant planning authority (i.e. Shoalhaven City Council (Council) or the Southern Region Joint Regional Planning Panel) has to decide whether or not to recommend to the Minister that the proposal should proceed.

1.2 Initial consultation

In November 2012 initial consultation occurred with officers from Council, the Department of Planning and Infrastructure (DP&I) and the Office of Environment and Heritage (OEH).

An initial version of this proposal was published in February 2013 and submitted to Council on 12 February 2013. At an Ordinary Meeting on 7 May 2013, Council resolved to:

a) 'Further consider this planning proposal pending the outcome of the consultation workshop between the proponent and the community to be convened at the earliest possible time;

b) Receive a detailed briefing by the Red Head Villages Association (RHVA) and the proponent on the outcome of the consultation workshop

c) Not commence work on the planning proposal until after the finalisation of the Shoalhaven Local Environmental Plan 2013; and

d) Reconsider the matter at the next Development Committee meeting, if possible.'

The further/updated studies required, referred to in the Development Committee report comprise: a detailed flood study; updated environmental studies; a preliminary traffic impact assessment; and updated sewer and water information.

The community engagement referred to in (a) was undertaken at a community information day held in Manyana on 25 May 2013. The community was presented with five storyboards providing a background to the proposal, a summary of the results of the environmental assessments undertaken, a summary of the proposed rezoning and a description of the next steps, including a summary of the planning process. Three EMM representatives were available to answer questions and seek feedback.

A detailed briefing, describing the community information day and summarising the feedback was presented to Council by both the proponent and the RHVA as required by resolution (b). The briefing letter submitted to Council by EMM is given at Appendix A.

This updated proposal addresses all of the issues raised by Council and the common themes raised by the local community.

1.3 Background

1.3.1 Regional context

Manyana is one of a series of coastal villages between Sussex Inlet and Ulladulla on the NSW south coast. Progressively developed since the 1950s, the village is a mixture of small single-storey through to modern double-storey dwellings. The only local commercial services are a general store/petrol station and a real estate agent. It is noted that a new commercial centre is currently being developed adjacent to the south-western corner of the Site. The Manyana Centre has been approved for development in three stages, with construction of Stage 1 due to start in the near future. Stage 1 consists of seven tenancies and will include a real estate agent, chemist, take-away food outlet, small supermarket, bottle shop, newsagent and a serviced office for a doctor and financial planner.

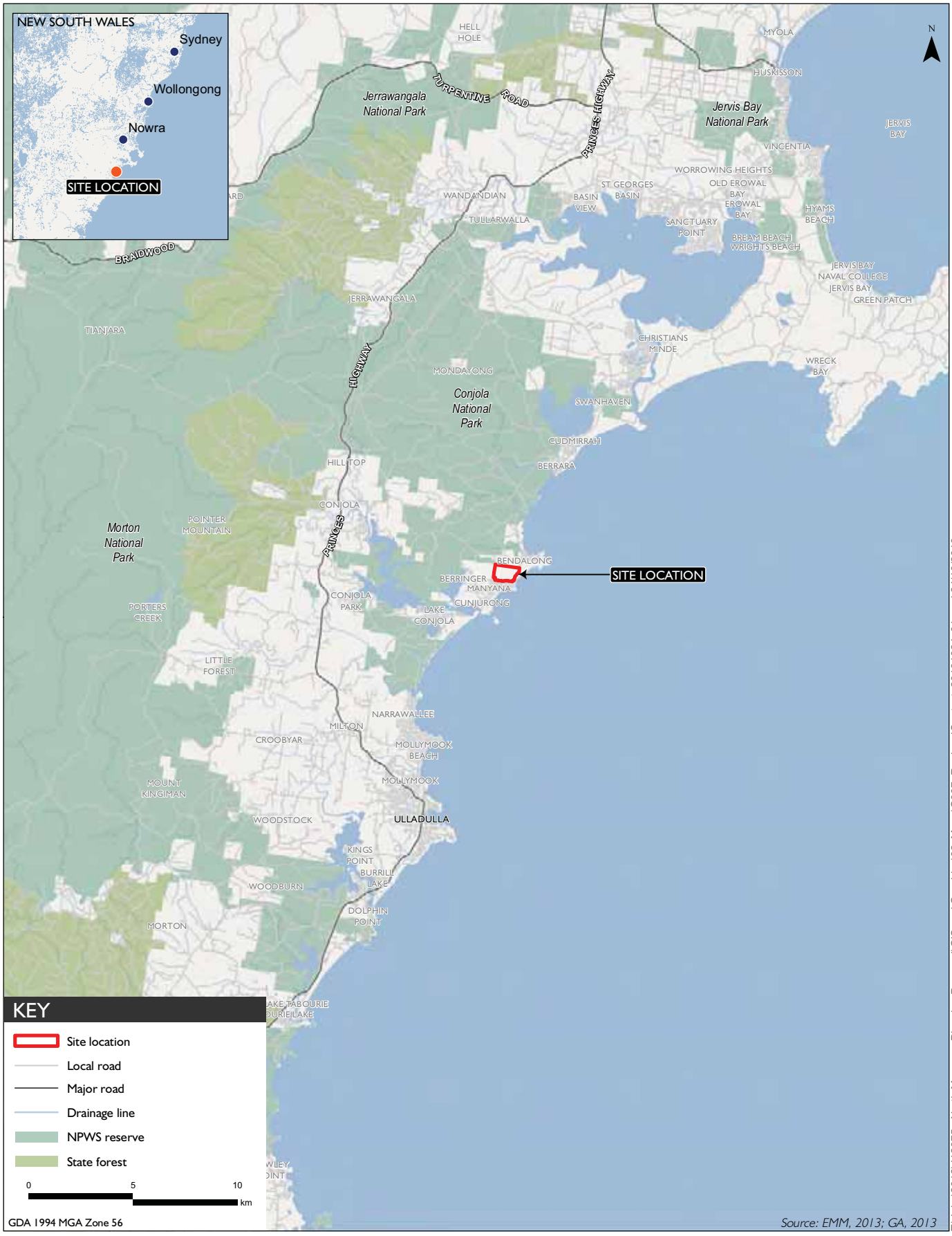
The nearest major services are at Milton-Ulladulla (including hospital, education and retail facilities), some 28 kilometres to the south-west by road. Nowra is the region's major administrative centre and is located approximately 58 kilometres to the north (see Figure 1.1).

1.3.2 The Site and surrounds

The Site comprises Lot 106 in DP 755923 and Lot 2 DP 1161638 (Inyadda Drive, Manyana) and Lot 2 in DP 1121854 (Sunset Strip, Manyana). It has an area of approximately 75.9 ha, is located to the north of Manyana village and is bounded by Inyadda Drive to the west, Sunset Strip and Maple Street to the east, the rear of residential properties fronting Curvers Drive to the south and undeveloped Crown land to the north. Inyadda Beach is located to the east of Sunset Strip and Maple Street (see Figure 1.2). The subject site is referred to hereafter as 'North Manyana' or 'the Site'.

The Site abuts existing residential development directly to the south, along Curvers Drive. Residential development in Manyana extends east from Cunjurong Point Road to Sunset Strip and south from Berringer Road / Curvers Drive to The Bounty. There is an undeveloped site located south of Berringer Road and east of Cunjurong Point Road that is zoned R2 Low Density Residential. Several smaller pockets of undeveloped residential zoned land are scattered throughout the village. In addition, land directly to the west of the Site on the opposite side of Inyyada Drive was granted consent in 2010 for the development of a caravan park for 75 long-term sites. A plan showing land use in and around Manyana, both developed and undeveloped, is provided in Figure 1.3.

The Manyana Centre, located on the corner of Curvers Drive and Inyadda Drive, will be the main commercial centre in the village.



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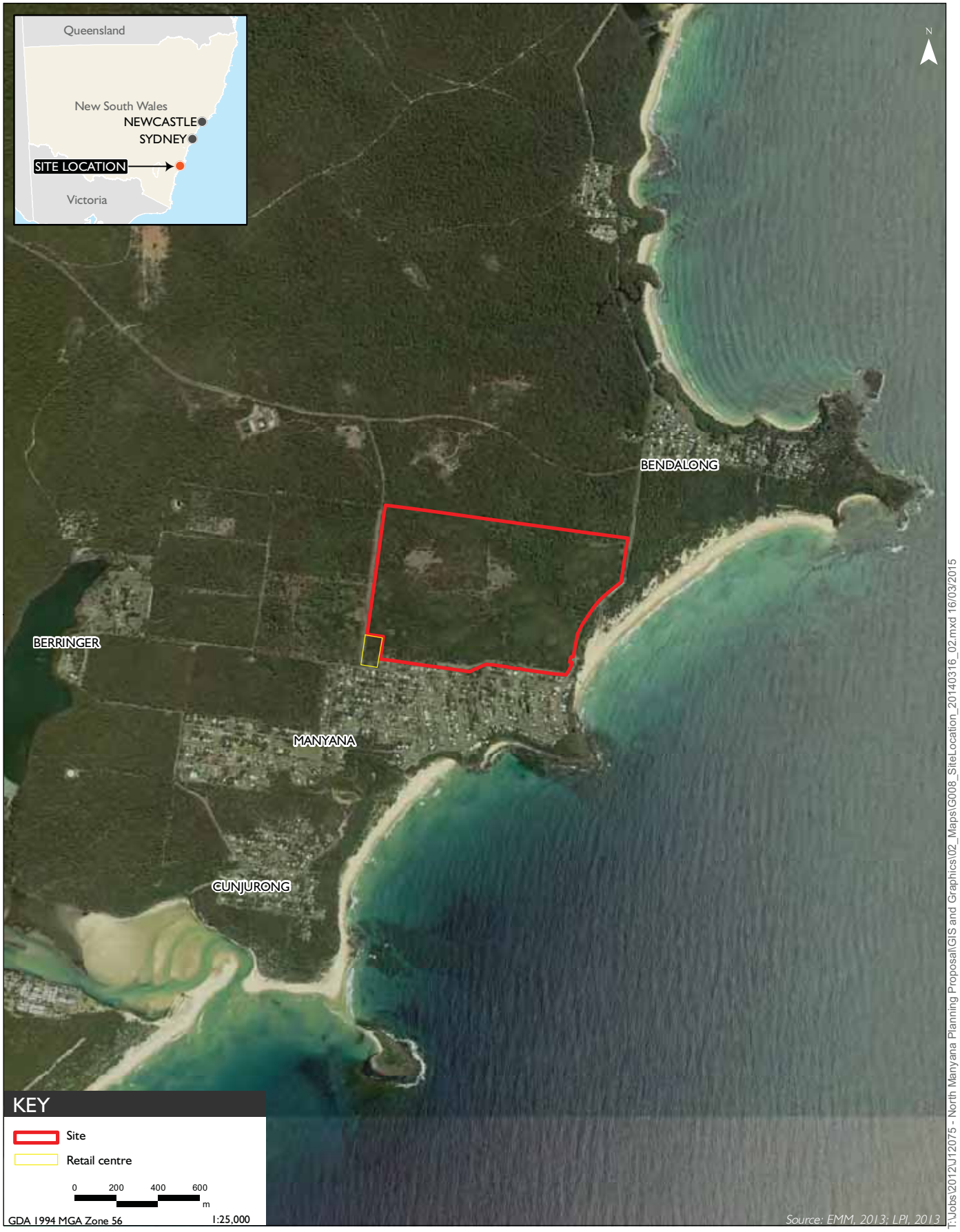
Regional context

North Manyana Rezoning Proposal

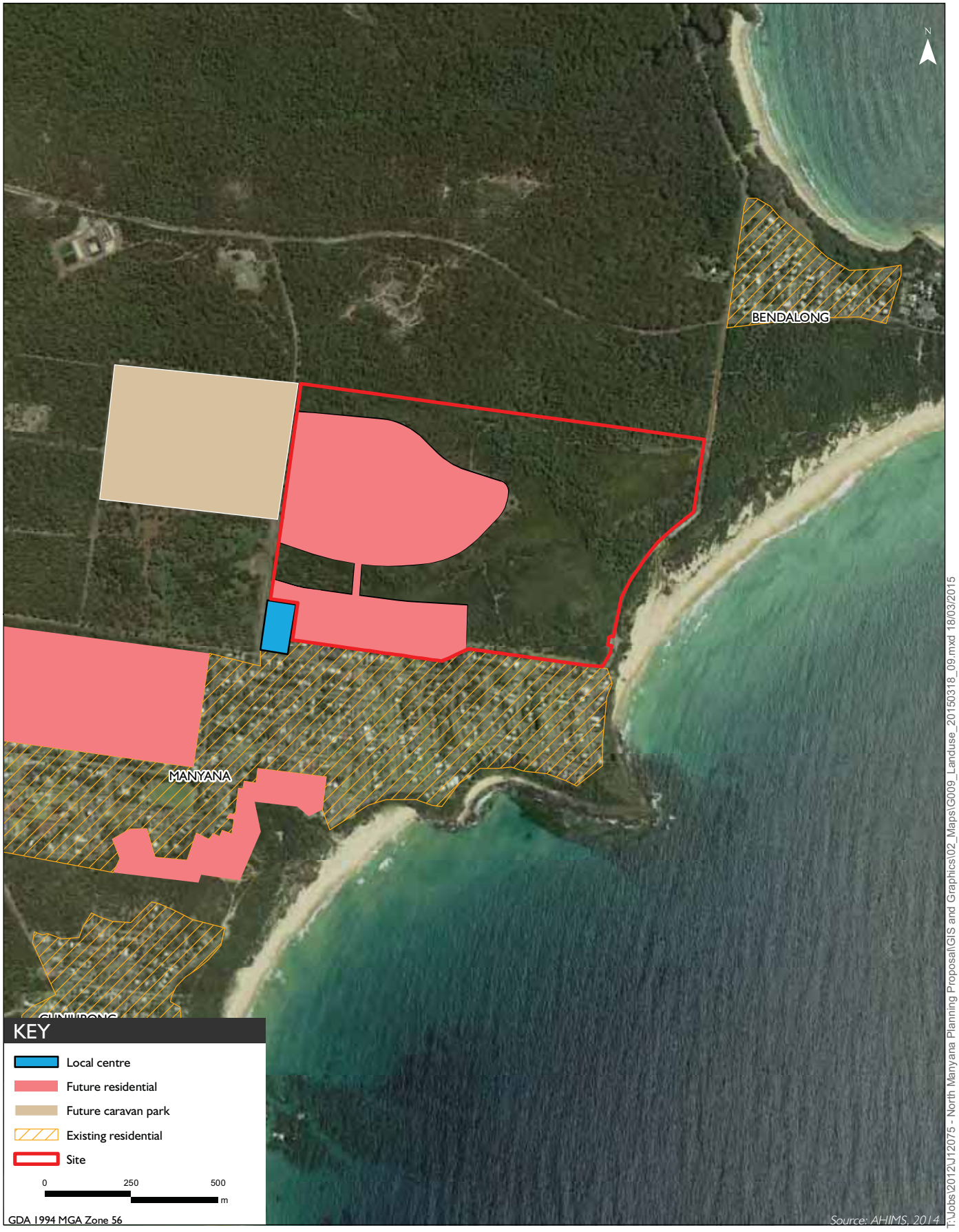
Figure 1.1



Site location

North Manyana Rezoning Proposal

Figure 1.2



Existing and future land use

North Manyana Rezoning Proposal

Figure 1.3

1.4 History of land use and zoning

1.4.1 Land use

The North Manyana site was cleared for farming between the 1950s and 1970s, as shown in Figure 1.4. It is now mainly revegetated with the majority of regrowth occurring since bushfires in 2001. Trail motorbike enthusiasts have cleared and re-contoured two large areas within the Site without the owner's approval. The only other visible development is a transmission line easement running along the eastern boundary and the grave belonging to the original grantees of the property.

Undeveloped Crown land adjoins the Site to the north, and contains a sewage treatment plant while land to the south is developed with residential properties and a future commercial site fronting Curvers Drive.

1.4.2 Zoning History

The original development proposal for the Site, presented to Council in 1979, was for a country club and golf course and 72 tourist villas. The proposal received support and in 1985 approval was given through an amendment to Schedule 9 of Shoalhaven Local Environmental Plan (SLEP) 1985, which stated:

> *"Land in the vicinity of Village of Cunjurong, as shown edged heavy black on Sheet 2 of the map marked 'Shoalhaven Local Environmental Plan No. 1: - the erection of 72 units of chalet accommodation, serviced by a package sewage treatment plan, generally in accordance with the plans prepared by Phillip Abram, Architect, bearing reference 80 31-1 Proposed Manyana Country Club, as submitted to the Council and the provision of pedestrian access from that land to the adjoining beach by access points located and designed to the satisfaction of the Soil Conservation Service of New South Wales."*

Kylor Pty Ltd purchased the Site in 1987 and submitted a proposal for a 200-site caravan park. The caravan park, defined as a rural tourist facility, did not comply with the zoning and was refused by Council.

A study undertaken in 1989-1990 found that the land would be suitable for residential zoning and large parts were rezoned in 1991. This is the current zoning and it is shown in Figure 1.5.

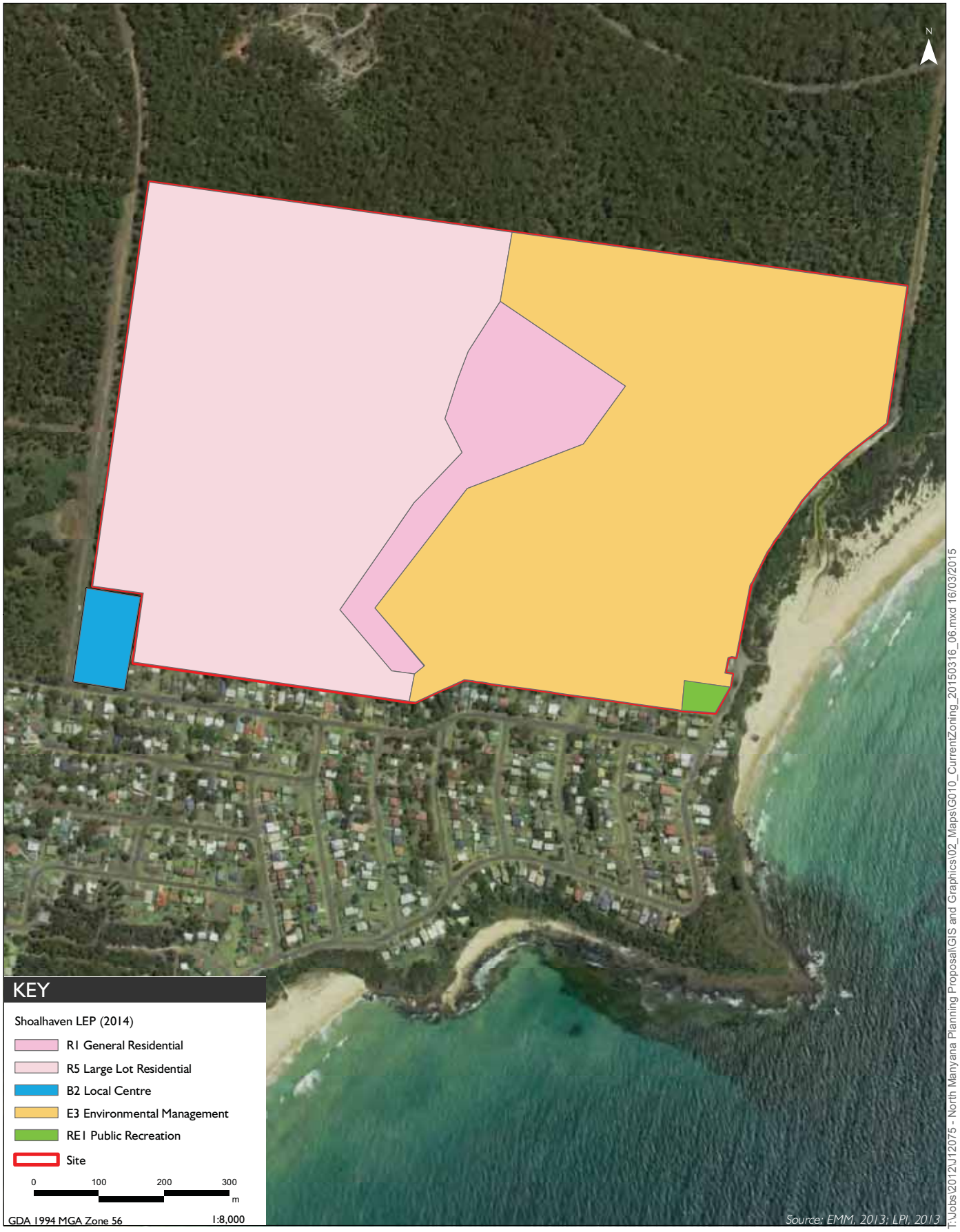
A development concept was prepared in 1995, consisting of large lot residential (2,000 m^2 blocks), a tourist facility and a 9-hole golf course. This proposal was subsequently approved by Council. Consent conditions included provision of a sewage treatment plant. An EIS for the treatment plant was submitted in 2001 but this application was refused as the NSW Director-General of Planning's requirements for the proposal had expired.

In 2004, planning consultants ERM were engaged by Kylor to investigate the potential for increased residential densities on the Site. Subsequently, a proposal was submitted to Council to adjust the zone boundaries in the 2(a2) and 2(c) areas. In November 2004 Council resolved to pursue an LEP and Parsons Brinkerhoff was engaged to prepare a report about the proposed rezoning.

Following the provision of this report, Council made a resolution in October 2006 to request a Section 65 certificate, which was forwarded to the then Department of Planning in March 2007. The request was declined in April 2007, and in July of the same year Kylor withdrew its rezoning proposal to pursue development based on the existing zoning.

Photo taken 1950

Photo taken 1971



Current zoning

North Manyana Rezoning Proposal

Figure 1.5

1.4.3 Current situation and future planning

The current zoning is a response to two main factors. Firstly, the 'country club' proposal which envisaged a golf course in the eastern part of the Site with residential uses running along its western boundary. Secondly, the absence of a reticulated sewerage system which meant that large residential lots were needed to enable on-site sewage effluent disposal using septic tanks or similar. The resulting zoning pattern under LEP 2014 is E3 Environmental Management in the east, R1 General Residential in the centre and R5 Large Lot Residential in the west.

The Conjola Regional Sewerage Scheme (CRSS) was completed in early 2008 and provides nine villages, including Manyana, with reticulated sewerage facilities. The initial calculations for the sewerage scheme anticipated that North Manyana (referred to as 'Kylor' in the Recycled Water workshop overheads, 2007 Appendix B) could support 346 dwellings. The availability of sewerage removes the need for large lots.

The current zoning reflects a specific response to a former development concept which is no longer relevant. The golf course and large residential lots would result in extensive clearing of native vegetation: they do not reflect environmental constraints. The Site is now sewered removing the need for large lots. Development of the Site based on current zoning would be a wasteful form of land use because of underutilization of available sewerage infrastructure and an unnecessarily low residential density resulting in the need to clear approximately four times the area required for the same number of conventionally sized residential lots.

1.5 Balancing environmental and development values

The current zoning of North Manyana is inappropriate for three reasons. First, it is based on land use concepts - a golf course and associated housing - that are no longer proposed (the R1 General Residential zone). Second, it relies on sewage effluent disposal methods that are redundant- on-site disposal on large lots (the R5 Large Lot Residential zone). Third, it is wasteful of valuable coastal land and unresponsive to environmental constraints – the density is unnecessarily low and the central location of the R1 General Residential zone maximises disturbance and fragmentation.

It is clear that a better arrangement of land uses is possible. This planning proposal presents an alternative land use based on an analysis of environmental constraints and consideration of relevant planning instruments and policies. The proposed land use (discussed in Chapter 2) provides large environmental conservation areas in the east and centre of the Site and along riparian corridors. An area for residential development which replaces the current R1 General Residential and R5 Large Lot Residential zones is proposed in the remaining relatively unconstrained area. The means by which various environmental factors have been taken into account in devising the proposed land use are explained in Table 1.1 below.

Table 1.1 Environmental factors and their implications for development

Constraint	Brief description of constraint	Implications for development
Ecology	Loss of threatened ecological communities	A review of recent development approvals in the region with similar ecological constraints has shown that, on average, an offset to impact ratio of 4.3:1 has been typically used to compensate for the loss of threatened ecological communities. This ratio has been used as a guide to the area required for conservation of the Site (refer Table 5.1 in Appendix C). The design also allows for the retention of large, contiguous areas, reducing edges and their related effects and making future conservation more effective.
	Prevention / reduction in the movement of fauna	The following measures have been adopted: • Avoid development in riparian areas and associated vegetation and fauna habitat; • Provision of buffers around threatened ecological communities; and • Retention, where possible, of wildlife movement corridors and provision of new movement paths.
Bushfire risks	Proximity of development to bushfire hazard vegetation	Provision of asset protection zones (APZs) around the proposed residential zone boundaries.
		APZs will generally be different for each side of a building because one side may face up-slope and the other down-slope. Potential APZs are applied to the down-slope side of a building which has a greater bushfire hazard. These are the largest potential APZs for the buildings and represent the greatest developable area constraint because they cover areas which cannot be built on.
Aboriginal heritage	Impact on Aboriginal artefact sites / deposits	Large areas of Aboriginal stone artefacts sites would be retained in the environmental conservation zone. However, development would affect parts of sites Manyana 1, Manyana 5 and CS19 and the inferred low density artefact distribution associated with those sites. These impacts would be acceptable because these sites are generally of low heritage significance and similar sites would be conserved elsewhere. Prior to any impact on Aboriginal sites or defined areas of archaeological deposit associated with those Aboriginal sites, an AHIP will be obtained from OEH. The AHIP would be for all parts of the development envelope.
Historic heritage	Impact on Goodsell's grave site and historic ruins	Conservation of the Goodsell grave site within a suitable open space curtilage will occur. Detailed assessments of the other remains will be undertaken prior to a final decision being made on their future.
Drainage and flooding	Flooding along creek corridors.	The 100 year average recurrence interval floodplain, taking into account ocean storm surge and climate change induced sea level rise, has been defined (see Appendix D). This area has been excluded from development.
Scenic protection	Impact of development on visual amenity of the Site and surrounds	Buffer strips, which will be landscaped, have been left along Inyadda and Curvers Drives and the eastern half of the Site will not be developed. Residential development will be controlled by a master plan which will specify building design, siting, materials and colours, as well as landscaping provisions in public areas.

1.6 Demand for residential land

A comprehensive analysis of the future demand for residential land at Manyana has been undertaken and is presented in Appendix E. It shows that demand will be principally driven by the Sea Change phenomenon - the movement of people from larger cities to less developed coastal areas. The main categories of people moving are retirees and younger families, and in Manyana's case, the main sources are Sydney and Wollongong with a minor contribution from the ACT.

Sydney/Wollongong is a major and growing metropolitan area. It had a population of 4.48 million in 2011 and is forecast to grow significantly to 6.05 million by 2031. Shoalhaven LGA has also grown in tandem with Sydney/Wollongong's growth as well as attracting broader growth due to the Sea Change phenomenon generally. The LGA had a population of 98,344 in 2013. It will continue to attract people as access to Sydney improves and local employment, education, health and entertainment facilities grow, with a forecast increase to 134,761 people by 2036. This is an increase of 36,400 people or 15,460 households.

Council has prepared forecasts of the future distribution of population and household growth across the LGA. These show that the Manyana district will grow by 523 people or approximately 220 households by 2036. These forecasts do not include new holiday homes which currently make-up about half of the dwelling stock meaning the total demand for new houses could be approximately double the demand for permanent accommodation or around 440 new houses.

The above forecasts for Manyana assume continuation of current trends. However, the market analysis shows that the housing market in Manyana is underperforming relative to both comparable coastal areas and its latent potential. Manyana has significant accessibility, amenity and land price advantages that are not being realised and is being held back by the absence of essential retail and community facilities, a constraint that will be overcome in the near future.

Manyana's development potential results from a combination of its relatively close proximity to Sydney, its high amenity and the availability of residential land close to ocean beaches, the presence of iconic surfing locations, its competitively priced residential land and available water and sewerage capacity. These attributes can be enhanced by development of a quality master planned residential estate featuring a range of house and land packages, with good recreation facilities and strong links to the new commercial centre. These actions combined with a well targeted marketing campaign to lift the area's profile and image would "put Manyana on the map" increasing the overall strength of the local housing market. There are a number of similar examples along the east coast such as the Salt development which has given the Kingscliff-Bogangar area in Tweed Shire a major lift.

As explained in later sections of this report, the concept plan for the Site incorporates all of the above actions. This means that the current demand forecasts for the Manyana district should be seen as the minimum likely future rate of demand for residential land.

In summary, it is evident that the proposal is consistent with demand forecasts even under a "business as usual" scenario. With the planned design and marketing measures incorporated into the proposal, the overall housing market in Manyana should be strengthened considerably.

2 Objectives and intended outcomes

2.1 Objectives and intended outcomes

The current residential zones are inappropriately located and excessive in area. It is clear that a more environmentally responsive and better designed land use plan is possible for North Manyana. This proposal presents a concept for a large site in single ownership based on a sound understanding of environmental constraints, land market conditions and strategic objectives for the area. The objectives of this planning proposal are to:

- provide a land use outcome that either avoids areas of environmental value or appropriately compensates for any losses, and which reflects strategic planning priorities;
- help satisfy demand for competitively priced residential land which effectively uses available infrastructure;
- provide a standard of residential development that will lift Manyana's image and profile in the marketplace;
- support and reinforce the new Manyana commercial centre, enabling it to provide a greater range of commercial and community facilities than would otherwise be possible; and
- resolve the future of North Manyana which has had a long and unsuccessful planning history resulting in inappropriate zoning.

The intended outcome is a high quality master planned residential estate that will support a better range of local services and is sited so as to minimise environmental disturbance.

2.2 Concept plan

To achieve the objectives and intended outcomes set out in Section 2.1, a concept plan which underpins the planning proposal has been produced. The plan is based on the opportunities and constraints identified in various planning policies and supporting technical studies (see Table 1.1). The concept plan including a detail plan of the Northern Precinct Park, sections and a perspective illustration are shown in Figures 2.1 to 2.4.

1 LOCAL PARKS
2 LANDSACAPE BUFFER
3 ENTRY POINTS
4 SHAREWAY
5 INDICATIVE ASSET PROTECTION ZONE
6 BUILDING LINE SETBACK
ENVIRONMENTAL PROTECTION
RESIDENTIAL
COMMERCIAL
OPEN SPACE
ROADS
SHAREWAYS

CONCEPT PLAN - FIGURE 2.1

GROUP GSA | EMM EMGA Mitchell McLennan | CONCEPT PLAN | 0 50 100 150 200 250 metres | NOVEMBER 2014

1 ENTRY BOULEVARD
2 NEIGHBOURHOOD PARK
3 NORTH SOUTH LINK ROAD
4 TRAFFIC CALMING
5 SHAREWAY
6 INDICATIVE HOUSE LOTS
7 MEWS
8 INDICATIVE STREET TREE PLANTING

NORTHERN PRECINCT PARK - FIGURE 2.2

GROUP GSA | EMM EMGA Mitchell McLennan | NORTHERN PRECINCT PARK | OCTOBER 2013

TYPICAL SECTION 1 - INNYADA DRIVE (WESTERN BOUNDARY) LOOKING NORTH

TYPICAL SECTION 2 - SOUTHERN BOUNDARY LOOKING EAST

DETAILED SECTIONS - FIGURE 2.3

PERSPECTIVE VIEW - FIGURE 2.4

GROUP GSA | EMM EMGA Mitchell McLennan

PERSPECTIVE VIEW
From Innyada Drive along eastern boundary looking south - east

OCTOBER 2013

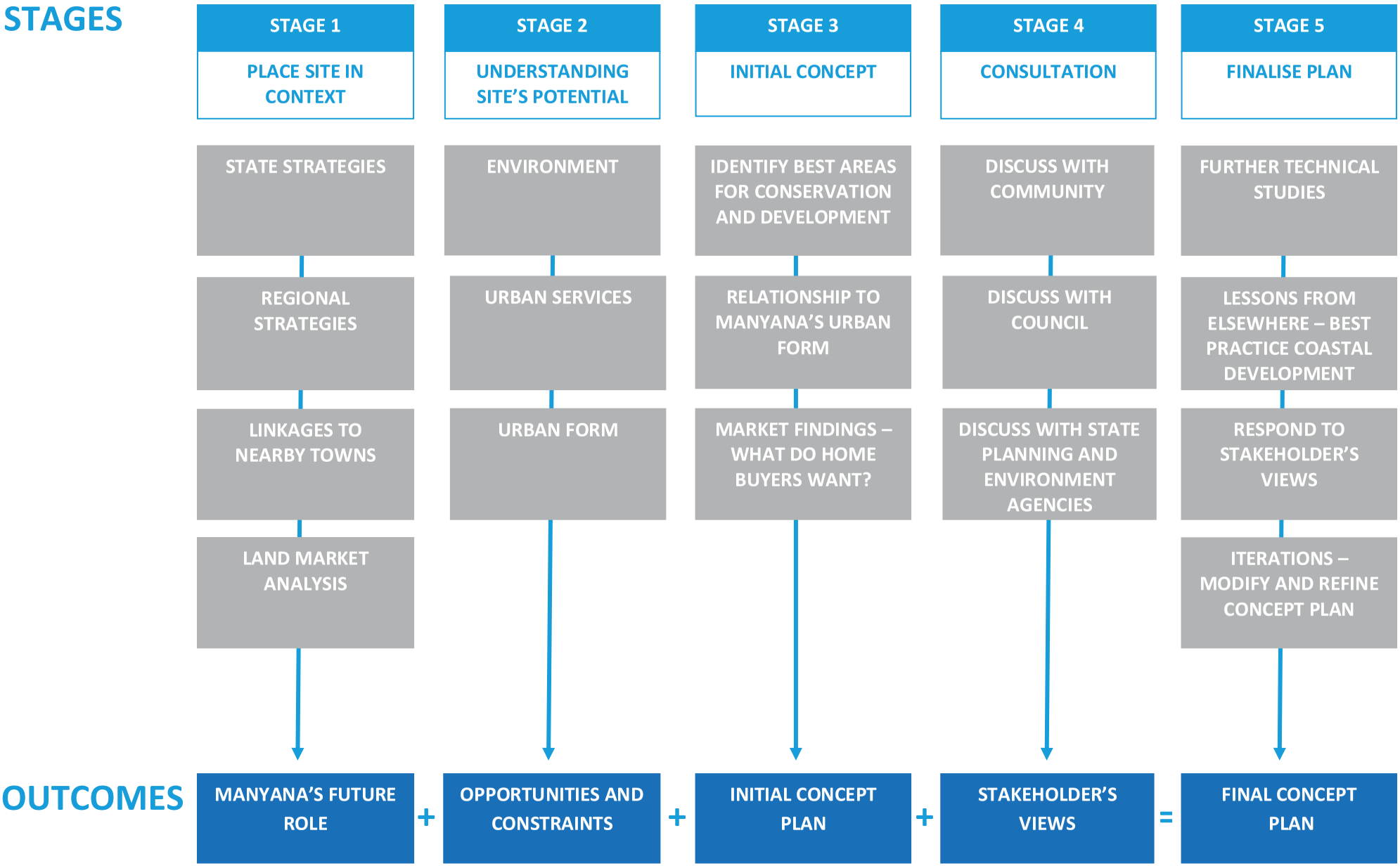


Figure 2.5 Concept planning process

2.2.1 Vision and principles of the concept plan

The concept planning process began with a series of technical studies covering strategic planning, environment, urban infrastructure and land market considerations. This revealed the opportunities and constraints applying to the Site and enabled identification of the areas most suited to development and conservation. Following this an initial land use concept was prepared. It was submitted for consideration by key stakeholders: the community, Council, DP&I and OEH. The basic plan was then subject to more detailed technical evaluation and refinement to address feedback received, and a final concept plan was prepared. A flowchart showing the concept planning process is given in Figure 2.5.

The concept plan is the best possible outcome for the Site. It restricts the majority of residential development to the western portion while retaining the balance (around 54.9% near the coast) for environmental conservation related purposes. In turn, this will minimise site disturbance as well as providing substantial development setbacks from the coastal interface.

The key principles underlying the concept plan are:

- responding to the environmental constraints and opportunities present – the land with the highest ecological value will be conserved, while that with the least constraints will be developed;
- protecting the site's ecological features and landscape character, and maximising public access to the coast;
- responding to the emerging urban form of Manyana by siting development so that it supports the new commercial centre and creates better pedestrian and cycle links to key attractions; and
- providing a mix and standard of development which best responds to Manyana's market potential and which will lift the village's overall image and profile.

2.2.2 Landscape character and open space

The coastal landscape character will be protected and will provide the context for new residential development. The concept plan seeks to preserve the coastal landscape character by:

- locating residential development on the western side of the Site;
- minimising visual impacts by providing vegetated buffers along Inyadda Drive and the southern site boundary, locating the majority of development away from the coast and retaining large areas of vegetation;
- providing substantial setbacks to the coastal interface;
- incorporating a 30 metre (m) building line along the western and southern boundaries to provide a buffer to existing residential development and the main entry road into Manyana (Inyadda Drive);
- creating design controls that limit the height of dwellings to two storeys and ensure that future dwellings respect the coastal character in regard to colour, materials and siting that will be implemented by the master planning process;
- integrating existing large trees into any future design where possible and ensuring sensitive landscaping of both public and private domains using mainly native and indigenous species;

- providing opportunities for enhanced pedestrian access in and around the Site to service both existing and new residents;
- avoiding development in riparian and other bushland areas;
- providing open space and/or vegetated buffers around threatened ecological communities; and
- reducing the bushfire risk to existing and new residential properties through the incorporation of appropriate APZs.

2.2.3 Sustainability

The concept plan will minimise negative environmental impacts through sustainable planning and design practice and sound urban management. Environmental best practice and ESD principles will be incorporated into the design and management of residential areas and open space, including:

- adopting a subdivision layout and architecture based on climate responsive design and passive solar design principles including optimised north orientation for maximised solar access for living spaces and for solar hot water systems, response to topography and prevailing winds, use of insulation, glazing and shading and maximising lot efficiency though incorporation of largely regular blocks;
- water efficient measures that use recycled water for non-potable uses, such as toilet flushing and irrigation;
- energy conscious building design; and
- providing a site layout with easy pedestrian access to open space, proposed commercial services and the beach.

2.2.4 Key elements of the concept plan

i Overall concept plan

The concept plan both reflects desirable features of existing development and provides a more distinctive and consistent character built on the coastal theme of the village, particularly as an iconic surfing location. It supports Manyana's emerging urban form but also protects adjoining residential areas with generous, landscaped buffer. Environmentally valuable areas are retained and will become open space.

ii Residential development

The 29.5 ha of proposed residential zones (R1 General Residential and R2 Low Density Residential) (see Figure 3.1) are divided into two segments, one in the north-west of the Site and located entirely located within the current R5 Large Lot Residential zone. The second runs along the southern boundary, in land currently zoned R5 Large Lot Residential, R1 General Residential and E3 Environmental Management. In total these developable areas are approximately 12.1 ha smaller than those of the two current residential zones and approximately 2 ha of the proposed residential area comprises open space.

The R2 Low Density Residential zone (under the Shoalhaven LEP 2014) is the most suitable zoning for the majority of the proposed residential area. This zone allows a minimum lot size of 600 m^2 which is consistent with development elsewhere in Manyana but most lots will be larger than this. The residential land market report suggests that larger lots are favoured in the area. The concept plan envisages that most lots will be between 600-700m^2, with a small number up to 900m^2. Conversely, to enhance the focal role of the new commercial centre, a small area of R1 General Residential is proposed in the south-west corner of the Site. This will encourage smaller lots in the immediate area around the commercial centre to provide for attached and medium density housing.

It is estimated that the proposed rezoning would provide a yield of between 250 and 320 residential lots. This would be within the sewerage provision made for the Site in the CRSS (which nominated 346 lots- see Appendix B) and below the demand figure (405 lots) given in Council's Draft Growth Management Strategy (DGMS). The estimated yield under the concept plan compares with a yield based on existing zoning of approximately 150–190 lots although these would cover a larger area given the much larger minimum lot size allowed in the R5 Large Lot Residential zone.

iii Open space

a. Ecological offsets

The proposed zoning would allow for the development of 29.5 ha or 38.9% of the Site, of which 9.2 ha contains ecological communities listed under the NSW Threatened Species Conservation Act (TSC Act). To compensate, the concept plan also provides offsets mainly across the eastern part of the Site, achieving offset to impact ratios of approximately 4.3:1 for these communities which meets the ratio typically applied in the locality. The offsets would also retain the riparian areas which provide both valuable habitat and wildlife movement corridors across the Site.

The proposed rezoning would result in fewer ecological impacts than the current zoning. The current zoning allows development of 54.8% of the Site of which 14.2 ha contains threatened ecological communities. Also, the riparian wildlife corridors would be severed by the current residential zones. Within the proposed concept, the ability to provide large offsets within the Site would ensure that the types of the threatened ecological communities being compensated are much closer to those being removed than if the offsets were provided remotely.

Retention of a single large area which contains a mosaic of threatened ecological communities will minimise edge effects and simplify future conservation.

b. Open space within residential development

In addition to the large areas of open space that will be zoned E2 Environmental Conservation, the concept plan incorporates two neighbourhood parks in the northern residential precinct and a linear park along the southern boundary of the southern residential precinct. This local open space covers approximately two ha of residential zoned land.

The pocket parks form a focal point for the northern residential precinct, being surrounded on all sides with housing and roads offering excellent visual amenity for the residents and providing casual surveillance of the activities within the park. It is envisaged that the Goodsell grave site will be sensitively incorporated into the smaller park.

The linear park along the southern site boundary provides a substantial buffer to existing residential properties fronting Curvers Drive while formalising public pedestrian access through this space between the commercial centre and the beach.

The concept plan also features a 15m wide vegetated buffer along the western boundary of the Site (incorporated within the 30m building line), to protect the visual amenity of Inyadda Drive.

iv Street network

A simple network of streets is proposed, with only two access points to Inyadda Drive. This will assist in reducing the impacts of additional traffic within the village of Manyana itself. The streets will have generous verges, with appropriate native or indigenous street trees to maintain a coastal village character.

v Infrastructure

The Site will be served by appropriate water and wastewater infrastructure and utilities (see Section 6.9).

3 Explanation of proposed provisions

3.1 Proposed zoning

Under the LEP 2014, the Site is zoned R5 Large Lot Residential, R1 General Residential, and E3 Environmental Management. The existing zoning is shown in Figure 1.5.

This planning proposal proposes to rezone the Site to R1 General Residential, R2 Low Density Residential and E2 Environmental Conservation. The proposed zoning is shown in Figure 3.1.

The proposed new zones will be as follows:

- approximately 1.3 ha or 1.7% – R1 General Residential;
- approximately 28.2 ha or 37.2% – R2 Low Density Residential; and
- approximately 46.4 ha or 61.1% – E2 Environmental Conservation.

The objectives of the R1 General Residential zone are:

- "To provide for the housing needs of the community;
- To provide for a variety of housing types and densities;
- To enable other land uses that provide facilities or services to meet the day to day needs of residents; and
- To identify land suitable for future urban expansion."

The only land use permitted without consent in the R1 General Residential zone is home occupations.

Land uses permitted with consent in the R1 General Residential zone comprise:

> "attached dwellings; boarding houses; boat launching ramps; boat sheds; building identification signs; business identification signs; child care centres; community facilities; dual occupancies; dwelling houses; emergency services facilities; environmental protection works; exhibition homes, exhibition villages; group homes; home-based child care; home businesses; home industries; hostels; jetties; multi dwelling housing; neighbourhood shops; office premises; places of public worship; recreation areas; registered clubs; residential flat buildings; respite day care centres; roads; semi-detached dwellings; seniors housing; sewerage systems; shop top housing; tourist and visitor accommodation; veterinary hospitals; water supply systems."

Farm stay accommodation and any other development not specified as permissible with or without consent is prohibited in the R1 General Residential zone.

The objectives of the R2 Low Density Residential zone are:

- "To provide for the housing needs of the community within a low density residential environment;
- To enable other land uses that provide facilities or services to meet the day to day needs of residents; and

- To provide an environment primarily for detached housing and to ensure that other development is compatible with that environment."

The only land use permitted without consent in the R2 Low Density Residential zone is home occupations.

Land uses permitted with consent in the R2 Low Density Residential zone comprise:

> "bed and breakfast accommodation; boarding houses; boat launching ramps; boat sheds; building identification signs; business identification signs; child care centres; community facilities; dual occupancies; dwelling houses; environmental protection works; exhibition homes; flood mitigation works; group homes; health consulting rooms; home-based child care; home businesses; home industries; jetties; neighbourhood shops; places of public worship; recreation areas; respite day care centres; roads; sewerage systems; water supply systems."

Any other development not specified as permissible with or without consent is prohibited in the R2 Low Density Residential zone.

The objectives of the E2 Environmental Conservation zone are:

- "To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.
- To prevent development that could destroy, damage or otherwise have an adverse effect on those values.
- To protect water quality and the ecological integrity of water supply catchments and other catchments and natural waterways.
- To protect the scenic, ecological, educational and recreational values of wetlands, rainforests, escarpment areas and fauna habitat linkages.
- To conserve and, where appropriate, restore natural vegetation in order to protect the erosion and slippage of steep slopes."

There are no land uses permitted without consent in the E2 Environmental Conservation zone.

Land uses permitted with development consent in the E2 Environmental Conservation zone are:

> "aquaculture; bed and breakfast accommodation; boat sheds; dwelling houses; eco-tourist facilities; emergency services facilities; environmental facilities; environmental protection works; home businesses; recreation areas; research stations; roads; sewerage systems; water recreation structures; water supply systems."

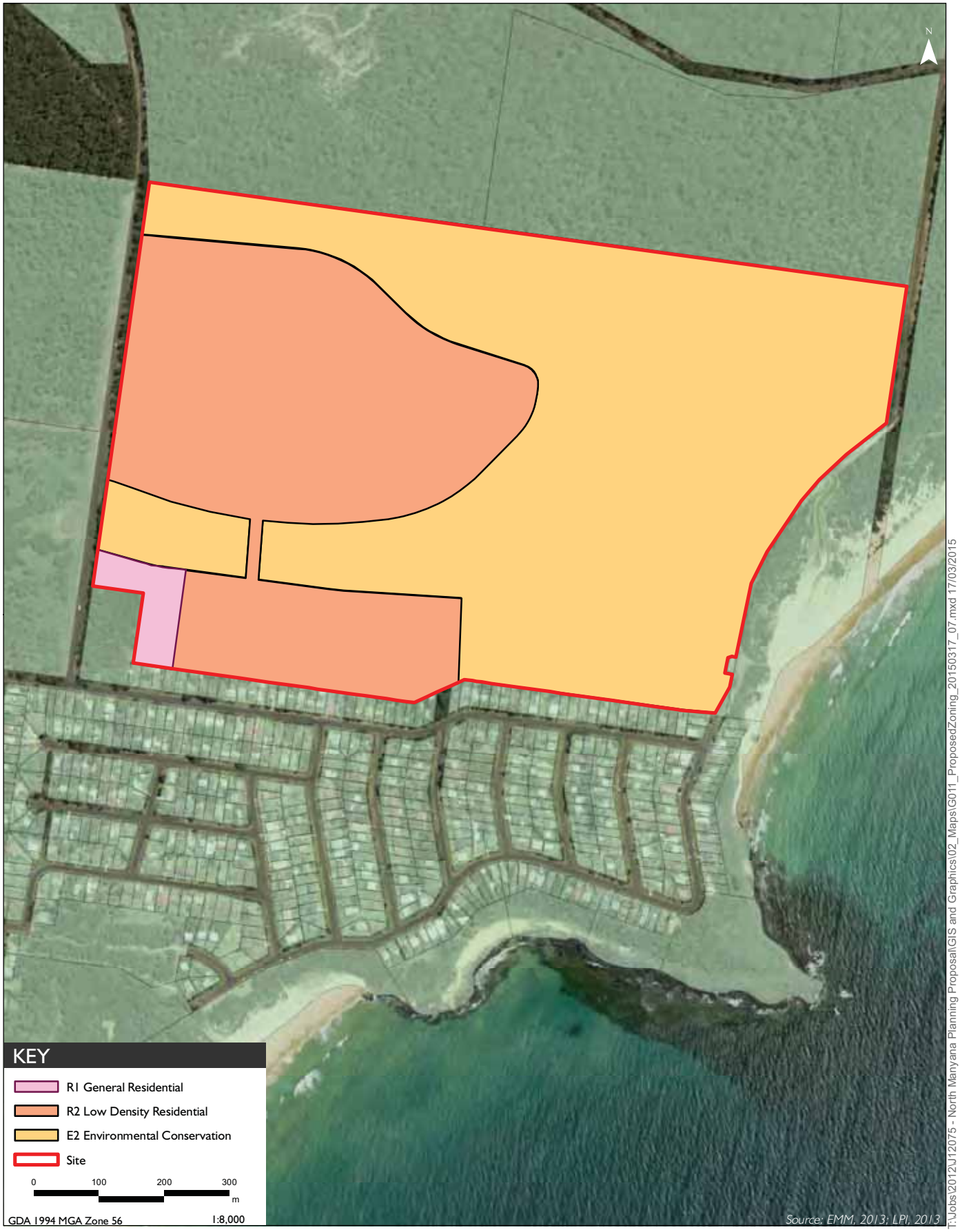
The following uses are prohibited in the E2 Environmental Conservation zone:

> "business premises; hotel or motel accommodation; industries; multi dwelling housing; recreation facilities (major); residential flat buildings; restricted premises; retail premises; seniors housing; service stations; warehouse or distribution centres; any other development not specified in item 2 or 3."

Any other development not specified as permissible with consent is prohibited in the E2 Environmental Conservation zone.

3.2 Development types and standards

Development would accord with the standards set out in relevant planning instruments and policies. In addition, a development control plan (DCP) will be prepared. A DCP generally means a document consisting of written information, maps and diagrams that outlines proposals for development of the Site. One of the key features is that a DCP results in a code that specifies housing types, building design, siting, materials and colours, as well as landscaping provisions for all public areas.



Proposed zoning

North Manyana Rezoning Proposal

Figure 3.1

4 Justification

4.1 Need for the Planning Proposal

Is the planning proposal a result of any strategic study or report?

The planning proposal is the result of extensive studies that have been undertaken on the Site over the past decade.

Is the planning proposal the best means of achieving the objective or intended outcomes, or is there a better way?

The making of LEP 2014 was a possible means of updating the existing planning controls for the Site. However, this process dealt primarily with the translation of existing controls into the standard template form as required by the DP&I (now DP&E). Council decided that strategic changes to the zoning of the Site would be considered after completion of LEP 2014. In this context the planning proposal is the best means of achieving the intended outcomes.

Will the net community benefit outweigh the cost of implementing and administering the planning proposal?

Costs

- The costs to Council and other affected agencies of implementing and administering this planning proposal are negligible because nearly all costs are being met by the applicant. The applicant has funded substantial strategic and environmental studies previously, as well as this planning proposal; and

- development under the current zoning would have significant ecological impacts. It allows development of 41.6 ha or 54.8% of the total area. Of this area, 14.2 ha contains scheduled threatened ecological communities. It would also allow lower density residential development of the entire western part of the Site, which would inhibit the movement of wildlife to habitat in the west.

Benefits

- Efficient development of the Site with a smaller development footprint than is currently permitted and that is much more sensitively located with respect to environmental constraints and proximity to services;

- the proposal makes use of a site that has been zoned for residential development for more than twenty years. It is centrally located with respect to retail services and urban infrastructure, and an increase in the local population would enable a greater range of community and retail services to be provided, thus benefiting all residents;

- the proposal would facilitate a greater range of improved housing types and housing affordability;

- the Site is serviced by the CRSS which is a substantial public investment in infrastructure and which is only used to approximately 25% of its capacity. The proposal will enable more complete use of this prior public investment and will generate a higher return for the community through higher rates income;

- the proposed zoning would have a relatively low ecological impact. It provides for the development of 29.5 ha or 38.9% of the Site, of which 11.7 ha contains threatened ecological communities. This is 2.5 ha less than the current zoning would impact;

- the proposal provides compensatory offsets to achieve offset to impact ratios of approximately 4.3:1 for threatened ecological communities. Also, being able to provide adequate offsets within the Site would ensure that the types of the threatened ecological communities being compensated for are much closer to those being cleared than if the offsets were provided remotely. Retention of a single, large patch which contains a mosaic of threatened ecological communities would also minimise edge effects and simplify future conservation;

- the proposal will result in private coastal land being rezoned from an environmental management zone to an environmental conservation zone; and

- the proposal will reduce current risks to life and property by incorporating contemporary bushfire asset protection measures.

5 Relationship to strategic planning framework

5.1 Relationship to strategic planning framework

Is the planning proposal consistent with the objectives and actions contained within the applicable regional or subregional strategy?

5.1.1 South Coast Regional Strategy

The primary purpose of the South Coast Regional Strategy (SCRS DoP 2006) is to ensure adequate land is available and appropriately located to sustainably accommodate the projected housing and employment needs of the region's population over the next 25 years.

The aims of the Strategy are to:

- "protect high value environments including pristine coastal lakes, estuaries, aquifers, threatened species, vegetation communities and habitat corridors by ensuring that no new urban development occurs in these important areas and their catchments;
- cater for a housing demand of up to 45,600 new dwellings by 2031 to accommodate the additional 60,000 people expected in the Region over the next 25 years;
- increase the amount of housing in existing centres to ensure the needs of future households are better met, in particular the needs of smaller households and an ageing population;
- prioritise and manage the release of future urban lands to ensure that new development occurs in and around existing well serviced centres and towns;
- use the recommendations of the Sensitive Urban Lands Panel to guide the finalisation of the development form and environmental conservation of the 17 'sensitive urban lands';
- manage the environmental impact of settlement by focusing new urban development in existing identified growth areas such as Nowra-Bomaderry, Milton-Ulladulla, Batemans Bay and Bega;
- only consider additional development sites if it can be demonstrated that they satisfy the Sustainability Criteria given in Appendix 1 of the SCRS;
- no new towns or villages will be supported unless compelling reasons are presented and they can satisfy the Sustainability Criteria;
- no new rural residential zones will be supported unless as part of an agreed structure plan or settlement strategy;
- ensure an adequate supply of land to support economic growth and provide capacity to accommodate a projected 25,800 new jobs, particularly in the areas of finance, administration, business services, health, aged care and tourism;
- limit development in places constrained by coastal processes, flooding, wetlands, important primary industry resources and significant scenic and cultural landscapes; and

- protect the cultural and Aboriginal heritage values and visual character of rural and coastal towns and villages and surrounding landscapes."

The concept plan for North Manyana provides high standards of urban design and is responsive to environmental constraints. Specifically, it accords with relevant aims of SCRS by helping to satisfy housing demand, using existing infrastructure and services, and avoiding 'sensitive lands' and other environmental constraints such as flood prone areas.

The SCRS states that smaller and more isolated villages should be a low priority for development and should not be considered for additional land release rezonings given the lack of potential of these settlements to reach critical thresholds for service delivery. Despite Manyana being identified as a coastal village, the proposal makes use of a site that is already zoned for residential development and has or soon will have key services - town water and sewerage, and essential retail and community services. The Site is centrally located with respect to retail services and urban infrastructure, and an increase in the local population will enable a greater range of services to be provided, thus benefiting all residents.

5.1.2 Draft Growth Management Strategy

Is the planning proposal consistent with the local council's Community Strategic Plan, or other local strategic plan?

The Draft Growth Management Strategy (DGMS) (Version 1) is the main strategic document which guides the future growth and development of Shoalhaven LGA. The DGMS does not itself rezone or change the use of land but it identifies broad areas with development potential and provides strategic directions to guide planning outcomes for these areas.

In relation to projected residential growth, Section 3.5.3 of the DGMS states that some additional development may occur in outlying villages. In the smaller coastal villages additional growth is predominately expected to occur through infill development. Residential development forecasts are provided for various localities and for Manyana an increase of 405 dwellings by 2031 is specified.

Manyana is identified as a coastal village in the DGMS. Section 7.13.6 examines the growth potential of the locality and states that:

> "future growth in Manyana will be through the utilisation of the existing residential zoned land which has not yet been developed, over which existing subdivision approvals exist. **This includes the large undeveloped parcels of land on the northern edge of Manyana (Lot 106 DP755923, Lot 2 DP1161638 and Lot 1 DP 1161638 - Kylor Land)**. These are to be zoned R5 Large Lot Residential, R1 General Residential and a small parcel zone B2 Local Centre. There have also been a number of development applications which have been approved through the previous part 3(A) process, including approvals on Lot 172 DP 755923 and Lot 705 DP613881 and 682 DP 568678, which have not yet been developed and this is expected to fulfil the growth demands of the settlement in the short to medium term.
>
> There are limited services and facilities available in Manyana and a number of environmental constraints and given that there is land currently available for growth and development no investigation areas have been identified in this location. The provision of higher order services in Manyana and the improvement of transport networks in the future may allow for an increase in urban footprint in long term." (Emphasis added)."

5.1.3 Consistency with State Environmental Planning Policies

i State Environmental Policy No. 44 – Koala Habitat

State Environmental Planning Policy No.44 (SEPP 44) aims to encourage the proper conservation and management of koala habitat, to protect permanent populations over their present range and to reverse population decline. SEPP 44 defines Koala habitat as:

- "potential Koala habitat - areas of native vegetation where the trees of the types listed in Schedule 2 constitute at least 15% of the total number of trees in the upper or lower strata of the tree component; and

- core Koala habitat - an area of land with a resident population of koalas, evidenced by attributes such as breeding females (that is, females with young) and recent sightings of and historical records of a population."

In accordance with Section 15(a) of SEPP 44, the Site was surveyed to identify areas of potential koala habitat and core koala habitat. The survey did not identify any koalas and therefore the Site does not contain core Koala habitat.

One of the vegetation types found on the Site contains Forest Red Gum (*Eucalyptus tereticornis*), a feed tree species listed in Schedule 2 of SEPP 44. However this species is uncommon on the Site with only one tree recorded. As such, the Site does not contain "potential Koala habitat."

ii State Environmental Planning Policy No. 71 – Coastal Protection

The Site is located in the coastal zone and is therefore subject to the provisions of State Environmental Planning Policy No. 71 – Coastal Protection (SEPP 71). The aims of the policy are:

"(a) to protect and manage the natural, cultural, recreational and economic attributes of the New South Wales coast, and

(b) to protect and improve existing public access to and along coastal foreshores to the extent that this is compatible with the natural attributes of the coastal foreshore, and

(c) to ensure that new opportunities for public access to and along coastal foreshores are identified and realised to the extent that this is compatible with the natural attributes of the coastal foreshore, and

(d) to protect and preserve Aboriginal cultural heritage, and Aboriginal places, values, customs, beliefs and traditional knowledge, and

(e) to ensure that the visual amenity of the coast is protected, and

(f) to protect and preserve beach environments and beach amenity, and

(g) to protect and preserve native coastal vegetation, and

(h) to protect and preserve the marine environment of New South Wales, and

(i) to protect and preserve rock platforms, and

(j) to manage the coastal zone in accordance with the principles of ecologically sustainable development (within the meaning of section 6 (2) of the *Protection of the Environment Administration Act 1991*), and

(k) to ensure that the type, bulk, scale and size of development is appropriate for the location and protects and improves the natural scenic quality of the surrounding area, and

(l) to encourage a strategic approach to coastal management."

The proposal is compatible with most of the above objectives, specifically a, b, c, d, e, f, g, j, k and l. The remainder are not applicable and the proposal is not inconsistent with any objective.

Clause 7(b) of SEPP 71 requires consent authorities to take into consideration the matters outlined in clause 8 when assessing applications for development within the coastal zone. Those matters in clause 8 that are relevant to the proposal are as follows:

"(a) the aims of this Policy set out in clause 2,

(b) the suitability of development given its type, location and design and its relationship with the surrounding area,

(c) any detrimental impact that development may have on the amenity of the coastal foreshore, including any significant overshadowing of the coastal foreshore and any significant loss of views from a public place to the coastal foreshore,

(d) the scenic qualities of the New South Wales coast, and means to protect and improve these qualities,

(e) existing wildlife corridors and the impact of development on these corridors,

(f) likely impacts of development on the water quality of coastal water bodies,

(g) only in cases in which a development application in relation to proposed development is determined:

(i) the cumulative impacts of the proposed development on the environment, and

(ii) measures to ensure that water and energy usage by the proposed development is efficient".

This proposal is not a development application and, therefore, the above provisions do not apply. Nevertheless, all of the specified matters have been taken into account during preparation of the concept plan.

Clause 18 of SEPP 71 requires preparation of a master plan for any development application stage to subdivide residential zoned land into twenty five or more lots. At the present time no decisions have been taken about the staging of future residential development. However, staging is likely and it is envisaged that a master plan will be prepared for the Site regardless.

5.2 Other relevant policy / legislation

5.2.1 Shoalhaven Local Environmental Plan 2014

LEP 2014 commenced on 22 April 2014. On this basis, the planning proposal has been designed to meet relevant provisions of this document as demonstrated in Table 5.1.

Table 5.1 LEP 2014

Section of LEP	Applicable section	Comment
	R1 General Residential zone	This zone will apply to a small area of the south-west corner of the Site to allow for medium density attached dwellings around the future commercial centre.
	R2 Low Density residential zone	This is the appropriate zoning to allow for low density residential development over the majority of the Site.
	E2 Environmental Conservation zone	No development would occur in the Environmental Conservation zone.
	Schedule 1.7 Additional Permitted Uses Use of certain land located at Manyana	The option of locating a small bowling club within the proposed development envelope may be considered at the DA stage. It would be permitted under this Schedule.
	Public Recreation RE1	This zoning applies to the land used for the Surf Lifesaving Club which has already been transferred for that purpose.
5.11	Bush fire hazard reduction	Bushfire hazard reduction will be undertaken in accordance with the relevant provisions.
7.5	Biodiversity (local)	Both “habitat corridor” and “significant vegetation” areas are present on the Site. These and other valuable areas have been largely retained in the concept plan.
7.7	Scenic Protection	A 30 m wide strip of land along the western Site boundary is identified as a Scenic Protection area. The concept plan includes a 15m wide landscape buffer within the 30m building line to screen development.
7.10	Acid sulphate soils	The entire site is identified on the relevant map as having ASS that are classified as Class 5 which is the least restrictive class. Further investigations will be undertaken at the DA stage as necessary.
4.1	Minimum Lot Size	Residential development will comply with the requirements of the Residential zones.

5.2.2 Consistency with Ministerial Directions

The proposal’s consistency with applicable Ministerial or s.117 directions is set out in Table 5.2.

Table 5.2 Ministerial (s.117) Directions

Direction	Comment
1. Employment and Resources	
1.1 Business and Industrial Zones Industries	Not applicable
1.2 Rural Zones	Not applicable
1.3 Mining, Petroleum Production and Extractive	Not applicable

Table 5.2 Ministerial (s.117) Directions

Direction	Comment
1.4 Oyster Aquaculture	Not applicable
1.5 Rural Lands	Not applicable
2. Environment and Heritage	
2.1 Environment Protection Zones	**Objective** The objective of this direction is to protect and conserve environmentally sensitive areas. **What a relevant planning authority must do if this direction applies**: (5) A planning proposal that applies to land within an environment protection zone or land otherwise identified for environment protection purposes in a LEP must not reduce the environmental protection standards that apply to the land (including by modifying development standards that apply to the land). This requirement does not apply to a change to a development standard for minimum lot size for a dwelling in accordance with clause (5) of Direction 1.5 *"Rural Lands"*. The proposal will result in an increase of approximately 12.1 ha in land zoned for open space or environmental conservation. It is noted that 2 ha of the proposed residential zone will also be used for open space purposes. Part of the Site is identified as 'ecologically sensitive' under the SLEP 1985. A detailed flora and fauna survey has been undertaken as part of this study and the identified sensitive areas would either be avoided or any clearing would be compensated for by offsets. The planning proposal will not result in a reduction in environmental protection standards rather it will strengthen them by retaining ecologically valuable land in an environmental conservation zone. As such the proposal is fully consistent with Direction 2.1.
2.2 Coastal Protection	**Objective** (1) The objective of this direction is to implement the principles in the NSW Coastal Policy. **What a relevant planning authority must do if this direction applies** (4) A planning proposal must include provisions that give effect to and are consistent with: (a) the *NSW Coastal Policy: A Sustainable Future for the New South Wales Coast 1997*, and (b) the *Coastal Design Guidelines 2003*, and (c) the manual relating to the management of the coastline for the purposes of section 733 of the *Local Government Act 1993* (the *NSW Coastline Management Manual 1990*). The planning proposal is consistent with the relevant coastal policies and guidelines. The concept plan sets all residential development well back from Inyadda Beach with the minimum being more than 100m west of the frontal dune.

Table 5.2 Ministerial (s.117) Directions

Direction	Comment
2.3 Heritage Conservation	**Objective** (1) The objective of this direction is to conserve items, areas, objects and places of environmental heritage significance and indigenous heritage significance. **What a relevant planning authority must do if this direction applies** (4) A planning proposal must contain provisions that facilitate the conservation of: (a) items, places, buildings, works, relics, moveable objects or precincts of environmental heritage significance to an area, in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value of the item, area, object or place, identified in a study of the environmental heritage of the area, (b) Aboriginal objects or Aboriginal places that are protected under the *National Parks and Wildlife Act 1974*, and (c) Aboriginal areas, Aboriginal objects, Aboriginal places or landscapes identified by an Aboriginal heritage survey prepared by or on behalf of an Aboriginal Land Council, Aboriginal body or public authority and provided to the relevant planning authority, which identifies the area, object, place or landscape as being of heritage significance to Aboriginal culture and people. As detailed in Section 6.5, a comprehensive Aboriginal cultural heritage analysis has been undertaken for the Site. Impacts will occur on some identified sites but these are considered to be acceptable because these sites are of low heritage significance and because large areas of Aboriginal stone artefact sites would be retained in the E2 zone. Prior to any impact on Aboriginal sites or defined areas of archaeological deposit associated with those Aboriginal sites, an AHIP would be obtained from OEH. In relation to historic cultural heritage, the Goodsell grave site will be conserved within a suitable open space curtilage and further assessment and archival recording of the other historic ruins would be undertaken before a decision is taken about the future of these ruins. The planning proposal is, therefore, consistent with this direction.
2.4 Recreation Vehicle Areas	Not applicable

Table 5.2 Ministerial (s.117) Directions

Direction	Comment
3. Housing, Infrastructure and Urban Development	
3.1 Residential Zones	**Objectives** (1) The objectives of this direction are: (a) to encourage a variety and choice of housing types to provide for existing and future housing needs, (b) to make efficient use of existing infrastructure and services and ensure that new housing has appropriate access to infrastructure and services, and (c) to minimise the impact of residential development on the environment and resource lands. **What a relevant planning authority must do if this direction applies** (4) A planning proposal must include provisions that encourage the provision of housing that will: (a) broaden the choice of building types and locations available in the housing market, and (b) make more efficient use of existing infrastructure and services, and (c) reduce the consumption of land for housing and associated urban development on the urban fringe, and (d) be of good design. (5) A planning proposal must, in relation to land to which this direction applies: (a) contain a requirement that residential development is not permitted until land is adequately serviced (or arrangements satisfactory to the council, or other appropriate authority, have been made to service it), and (b) not contain provisions which will reduce the permissible residential density of land. The planning proposal is consistent with Direction 3.1, in particular it will provide a range of housing types with high quality design and make efficient use of land and infrastructure particularly the sewerage system.
3.2 Caravan Parks and Manufactured Home Estates	Not applicable
3.3 Home Occupations	**Objective** (1) The objective of this direction is to encourage the carrying out of low-impact small businesses in dwelling houses. **What a relevant planning authority must do if this direction applies** (4) Planning proposals must permit home occupations to be carried out in dwelling houses without the need for development consent. The proposal will allow home occupations that are permissible within the R1 and R2 zones.

Table 5.2 Ministerial (s.117) Directions

Direction	Comment
3.4 Integrating Land Use and Transport	**Objectives** (1) The objective of this direction is to ensure that urban structures, building forms, land use locations, development designs, subdivision and street layouts achieve the following planning objectives: (a) improving access to housing, jobs and services by walking, cycling and public transport, and (b) increasing the choice of available transport and reducing dependence on cars, and (c) reducing travel demand including the number of trips generated by development and the distances travelled, especially by car, and (d) supporting the efficient and viable operation of public transport services, and (e) providing for the efficient movement of freight. The planning proposal is consistent with Direction 3.4 where applicable. Given its proximity to the new commercial centre, the proposal would encourage walking and cycling. The resultant increase in Manyana's population will support a greater range of local services thus reducing the need to travel to Milton-Ulladulla and other towns. It will also improve the viability of a public bus service between Manyana and Ulladulla.
3.5 Development Near Licensed Aerodromes	Not applicable
3.6 Shooting Ranges	Not applicable
4. Hazard and Risk	
4.1 Acid Sulfate Soils	**Objective** (1) The objective of this direction is to avoid significant adverse environmental impacts from the use of land that has a probability of containing acid sulfate soils. **What a relevant planning authority must do if this direction applies** (4) The relevant planning authority must consider the Acid Sulfate Soils Planning Guidelines adopted by the Director-General of the Department of Planning when preparing a planning proposal that applies to any land identified on the Acid Sulfate Soils Planning Maps as having a probability of acid sulfate soils being present. (5) When a relevant planning authority is preparing a planning proposal to introduce provisions to regulate works in acid sulfate soils, those provisions must be consistent with: (a) the Acid Sulfate Soils Model LEP in the Acid Sulfate Soils Planning Guidelines adopted by the Director-General, or (b) such other provisions provided by the Director-General of the Department of Planning that are consistent with the Acid Sulfate Soils Planning Guidelines. (6) A relevant planning authority must not prepare a planning proposal that proposes an intensification of land uses on land identified as having a probability of containing acid sulfate soils on the Acid Sulfate Soils Planning Maps unless the relevant planning authority has considered an acid sulfate soils study assessing the appropriateness of the change of land use given the presence of acid sulfate soils. The relevant planning authority must provide a copy of any such study to the Director-General prior to undertaking community consultation in satisfaction of section 57 of the Act. (7) Where provisions referred to under paragraph (5) of this direction have not been introduced and the relevant planning authority is preparing a planning proposal that proposes an intensification of land uses on land identified as having a probability of acid sulfate soils on the Acid Sulfate Soils Planning Maps, the planning proposal must contain provisions consistent with paragraph (5). As detailed in Section 3.1.2, the planning proposal is consistent with Direction 4.1.

Table 5.2 Ministerial (s.117) Directions

Direction	Comment
4.2 Mine Subsidence and Unstable Land	Not applicable
4.3 Flood Prone Land	**Objectives** (1) The objectives of this direction are: (a) to ensure that development of flood prone land is consistent with the NSW Government's Flood Prone Land Policy and the principles of the *Floodplain Development Manual 2005*, and (b) to ensure that the provisions of an LEP on flood prone land is commensurate with flood hazard and includes consideration of the potential flood impacts both on and off the subject land. **What a relevant planning authority must do if this direction applies** (4) A planning proposal must include provisions that give effect to and are consistent with the NSW Flood Prone Land Policy and the principles of the Floodplain Development Manual 2005 (including the Guideline on Development Controls on Low Flood Risk Areas). (5) A planning proposal must not rezone land within the flood planning areas from Special Use, Special Purpose, Recreation, Rural or Environmental Protection Zones to a Residential, Business, Industrial, Special Use or Special Purpose Zone. (6) A planning proposal must not contain provisions that apply to the flood planning areas which: (a) permit development in floodway areas, (b) permit development that will result in significant flood impacts to other properties, (c) permit a significant increase in the development of that land, (d) are likely to result in a substantially increased requirement for government spending on flood mitigation measures, infrastructure or services, or (e) permit development to be carried out without development consent except for the purposes of agriculture (not including dams, drainage canals, levees, buildings or structures in floodways or high hazard areas), roads or exempt development. (7) A planning proposal must not impose flood related development controls above the residential flood planning level for residential development on land, unless a relevant planning authority provides adequate justification for those controls to the satisfaction of the Director-General (or an officer of the Department nominated by the Director-General). (8) For the purposes of a planning proposal, a relevant planning authority must not determine a flood planning level that is inconsistent with the Floodplain Development Manual 2005 (including the Guideline on Development Controls on Low Flood Risk Areas) unless a relevant planning authority provides adequate justification for the proposed departure from that Manual to the satisfaction of the Director-General (or an officer of the Department nominated by the Director-General). The planning proposal is consistent with Direction 4.3 because it avoids development on flood prone land i.e. in the 1 in 100 year ARI event with ocean storm surge and climate change induced sea level rise (see Section 6.4).

Table 5.2 Ministerial (s.117) Directions

Direction	Comment
4.4 Planning for Bushfire Protection	**Objectives** (1) The objectives of this direction are: (a) to protect life, property and the environment from bush fire hazards, by discouraging the establishment of incompatible land uses in bush fire prone areas, and (b) to encourage sound management of bush fire prone areas. **What a relevant planning authority must do if this direction applies** (4) In the preparation of a planning proposal the relevant planning authority must consult with the Commissioner of the NSW Rural Fire Service following receipt of a gateway determination under section 56 of the Act, and prior to undertaking community consultation in satisfaction of section 57 of the Act, and take into account any comments so made. (5) A planning proposal must: (a) have regard to Planning for Bushfire Protection 2006, (b) introduce controls that avoid placing inappropriate developments in hazardous areas, and (c) ensure that bushfire hazard reduction is not prohibited within the APZ. (6) A planning proposal must, where development is proposed, comply with the following provisions, as appropriate: (a) provide an Asset Protection Zone (APZ) incorporating at a minimum: (i) an Inner Protection Area bounded by a perimeter road or reserve which circumscribes the hazard side of the land intended for development and has a building line consistent with the incorporation of an APZ, within the property, and (ii) an Outer Protection Area managed for hazard reduction and located on the bushland side of the perimeter road, (b) for infill development (that is development within an already subdivided area), where an appropriate APZ cannot be achieved, provide for an appropriate performance standard, in consultation with the NSW Rural Fire Service. If the provisions of the planning proposal permit Special Fire Protection Purposes (as defined under section 100B of the Rural Fires Act 1997), the APZ provisions must be complied with, (c) contain provisions for two-way access roads which links to perimeter roads and/or to fire trail networks, (d) contain provisions for adequate water supply for fire fighting purposes, (e) minimise the perimeter of the area of land interfacing the hazard which may be developed, (f) introduce controls on the placement of combustible materials in the Inner Protection Area. As detailed in Section 6.5, the planning proposal is consistent with Direction 4.4 because the concept plan incorporates APZs, an appropriate road network and the area will be serviced with a water supply that is adequate for fire fighting.
5. Regional Planning	
5.1 Implementation of Regional Strategies	Planning proposals must be consistent with a regional strategy released by the Minister for Planning. As discussed in Section 5.1.1, this proposal is consistent with the South Coast Regional Strategy.
5.2 Sydney Drinking Water Catchments	Not applicable

Table 5.2 Ministerial (s.117) Directions

Direction	Comment
5.3 Farmland of State and Regional Significance on the NSW Far North Coast	Not applicable
5.4 Commercial and Retail Development along the Pacific Highway, North Coast	Not applicable
5.5 Development in the vicinity of Ellalong, Paxton and Millfield (Cessnock LGA) (Revoked 18 June 2010)	Not applicable
5.6 Sydney to Canberra Corridor (Revoked 10 July 2008. See amended Direction5.1)	Not applicable
5.7 Central Coast (Revoked 10 July 2008. See amended Direction 5.1)	Not applicable
5.8 Second Sydney Airport: Badgerys Creek	Not applicable
6. Local Plan Making	
6.1 Approval and Referral Requirements	This is an administrative requirement for Council.
6.2 Reserving Land for Public Purposes	This is an administrative requirement for Council.
6.3 Site Specific Provisions	**Objective** (1) The objective of this direction is to discourage unnecessarily restrictive site specific planning controls. **What a relevant planning authority must do if this direction applies** (4) A planning proposal that will amend another environmental planning instrument in order to allow a particular development proposal to be carried out must either: (a) allow that land use to be carried out in the zone the land is situated on, or (b) rezone the Site to an existing zone already applying in the environmental planning instrument that allows that land use without imposing any development standards or requirements in addition to those already contained in that zone, or (c) allow that land use on the relevant land without imposing any development standards or requirements in addition to those already contained in the principal environmental planning instrument being amended. (5) A planning proposal must not contain or refer to drawings that show details of the development proposal. The planning proposal is consistent with Direction 6.3.
7. Metropolitan Planning	
7.1 Implementation of the Metropolitan Plan for Sydney 2036	Not applicable

5.3 Key technical studies

The key studies that are anticipated to be required to support a DA would include:

- more detailed topographic surveys;
- further bushfire risk assessment to define detailed dimensions for the asset protection zones within and around proposed residential areas;
- further Aboriginal archaeological study as the basis for an AHIP;
- detailed landscaping plans for buffer zones along Inyadda Drive, behind Curvers Drive and in public areas of future subdivisions;
- detailed siting and design guidelines for future residential development;
- stormwater management investigations and concept design including water sensitive urban design measures;
- road layout and parking concept designs;
- soil assessment report (including determination of necessary ASS management measures);
- infrastructure servicing investigation - concept designs for the provision of water, sewerage, telephone and electricity; and
- any other studies required by a Gateway determination.

5.4 Summary

Much of the strategic and policy frameworks applying to North Manyana are broad controls that apply to coastal development generally. All of the relevant provisions have been considered in the assessment of environmental constraints given in the next chapter. Provisions specific to North Manyana are given in the DGMS. It nominates a target for future residential development - 405 lots - and suitable locations for this including the subject site. While the actual locations nominated within the Site are current residential zones, this planning proposal presents a better alternative by replacing these zones with a smaller residential area that is much more sensitively located with respect to environmental constraints and proximity to services.

6 Environmental, social and economic impacts

This chapter describes the bio-physical and cultural heritage features of the Site, and identifies various constraints and opportunities for residential development. Potential environmental effects are discussed as well as any management measures that may be necessary.

6.1 Ecological constraints

Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

In addition to a desktop review of previous ecological studies, ecological surveys of the Site were undertaken over five days in September 2012. The surveys were of flora and fauna and conducted in accordance with the Biobanking survey guidelines, targeting threatened species using a range of detection methods. The results of the surveys are given in Appendix C and are summarised in the following sections.

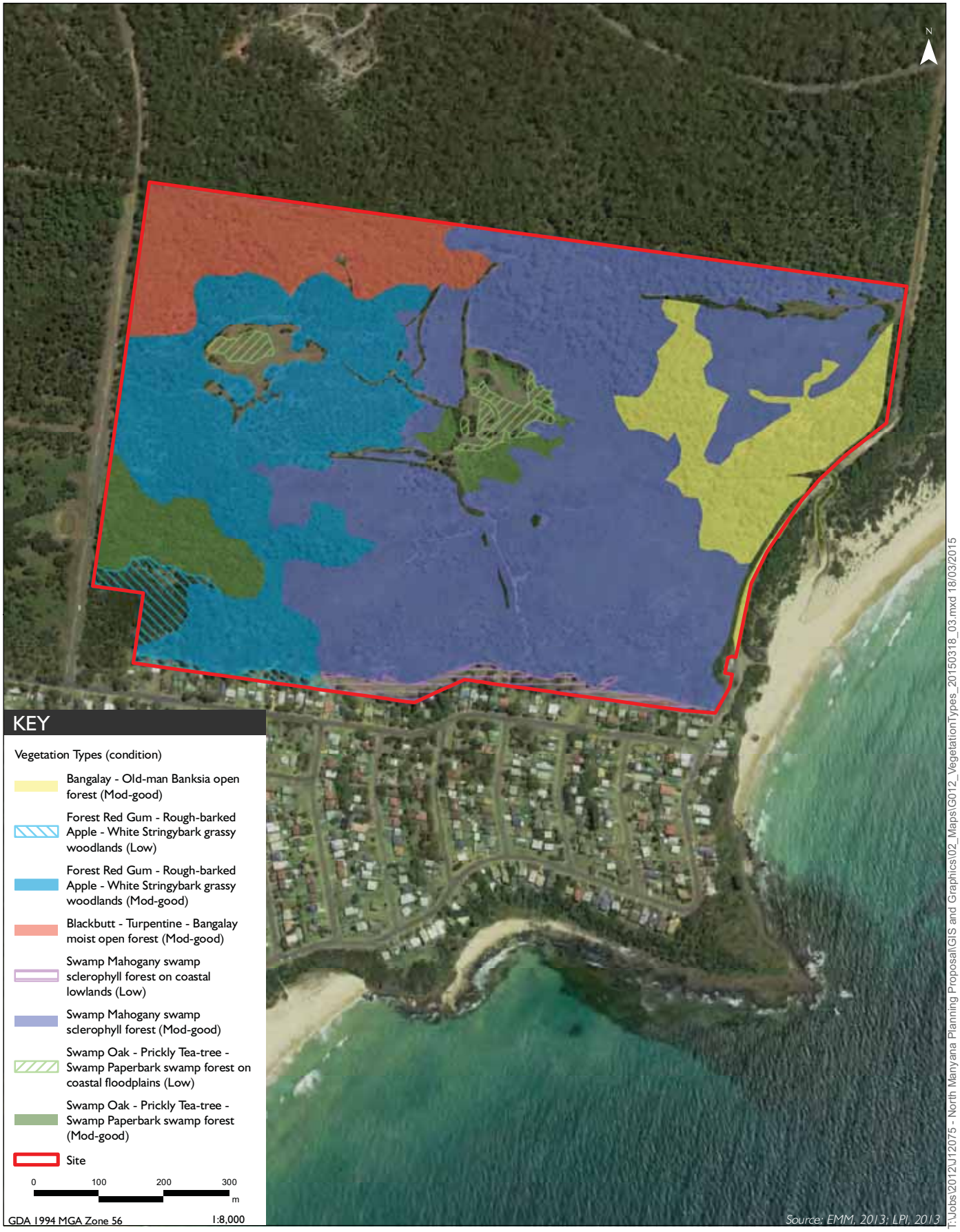
The Site survey described above was undertaken outside the flowering period of the Leafless Tongue-orchid (*Cryptostylis hunteriana*), which is known to occur nearby in Conjola National Park. Subsequently, additional surveys were undertaken to determine if this species was present at the Site, as it is not able to be detected outside its flowering period. The results of the orchid surveys are provided in Appendix F.

6.1.1 Vegetation types

The Site was last cleared between the 1950s and 1970s for agriculture (see Figure 1.4). The vegetation currently at North Manyana has regrown from soil seed banks and natural regeneration from surrounding areas and is representative of the likely original vegetation. North Manyana contains five distinct vegetation types according to the Biometric Vegetation Type Database (DECCW 2008) in varying levels of condition and these are:

- SR648 Swamp Mahogany swamp sclerophyll forest on coastal lowlands, NSW North Coast, Sydney Basin and South East Corner (Swamp Mahogany Forest);
- SR649 Swamp Oak - Prickly Tea-tree - Swamp Paperbark swamp forest on coastal floodplains, Sydney Basin and South East Corner (Swamp Oak Forest);
- SR512 Bangalay - Old-man Banksia open forest on coastal sands, NSW North Coast, Sydney Basin and South East Corner (Banksia Sand Forest);
- SR516 Blackbutt - Turpentine - Bangalay moist open forest on sheltered slopes and gullies, southern Sydney Basin (Blackbutt Turpentine Moist Forest); and
- SR544 Forest Red Gum - Rough-barked Apple - White Stringybark grassy woodlands on hills in dry valleys, southern South East Corner (White Stringybark Grassy Woodland).

The above vegetation types are shown in Figure 6.1.



Vegetation types at the site

North Manyana Rezoning Proposal: Ecological Assessment

Figure 6.1

6.1.2 Threatened species and ecological communities

Three of the vegetation types are consistent with threatened ecological communities (TEC) listed under the *Threatened Species Conservation Act* 1995 (TSC Act). These are:

- Banksia Sand Forest in the Sydney Basin and South East Corner Bioregions (represented by SR512);
- Swamp oak forest of the NSW North Coast, Sydney Basin and South East Corner bioregions (represented by SR649); and
- Swamp sclerophyll forest on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions (represented by SR648).

6.1.3 Threatened flora

No threatened flora species have been recorded at North Manyana. Suitable habitat is present for the Leafless Tongue Orchid (*Cryptostylis hunteriana).* This species is known to occur in association with other *Cryptostylis* species which were recorded in White Stringybark Grassy Woodlands and Blackbutt Turpentine Moist Forest (leaves were visible although these were not yet in flower).

Additional surveys were undertaken during the Leafless Tongue Orchid's flowering season (refer Appendix F). Members of the Cryptostylis genus were identified in various locations but they were usually just leaves and thus the species could not be determined. However, these plants were definitely not the listed Leafless Tongue-orchid. Flower stems were present on a few of these orchids, and these were positively identified as *Cryptostylis erectus*.

Given that the Leafless Tongue-orchid was not identified on the Site in suitable habitat during targeted surveys it is considered unlikely to occur. This is particularly the case as nearby known populations were in flower during the survey period and are all known to occur in habitat which is not found at the Site.

The regionally significant Blue Box (*Eucalyptus baueriana)* is common within the Site, particularly within the White Stringybark Grassy Woodlands and occasionally in the Swamp Mahogany Forest.

6.1.4 Noxious weeds

Sixteen weed species were recorded at North Manyana. Of these species, three are declared as noxious weeds in the Shoalhaven Council control area. These were Bitou Bush, Blackberry (*Rubus fruiticosus*) and Lantana. These species are Class 4 noxious weeds meaning the growth of the plants must be managed in a manner that reduces numbers, spread and incidence, and continuously inhibit reproduction. In addition, these plants must not be sold, propagated or knowingly distributed.

6.2 Fauna

6.2.1 Threatened fauna

Fourteen fauna species listed as threatened under the TSC Act were recorded at North Manyana during the ecological surveys. These were:

- Eastern Bentwing-bat (*Miniopterus schreibersii*);
- Eastern False Pipistrelle (*Falsistrellus tasmaniensis*);
- East-coast Freetail Bat (Mormopterus norfolkensis) (recorded by ERM);
- Gang Gang Cockatoo (*Callocephalon fimbriatum*);
- Glossy Black Cockatoo (*Calyptorhynchus lathami*);
- Greater Broad-nosed Bat (*Scoteanax ruepellii*);
- Hooded Plover (*Thinornis rubricollis*) (recorded on dunes to the east of the study area);
- Little Bentwing Bat (*Miniopterus australis*);
- Little Lorikeet (*Glossopsitta pusilla*);
- Osprey (*Pandion haliaetus*);
- Pied Oyster Catcher (*Haematopus longirostris*) (recorded on dunes to the east of the study area);
- Sooty Owl (*Tyto tenebricosa*) (heard calling near the northern boundary of the Site);
- Sooty Oyster Catcher (*Haematopus fuliginosus*) (recorded on dunes to the east of the study area); and
- Square-tail Kite (*Lophoictinia isura*).

North Manyana provides foraging habitat for the identified threatened fauna species but the Site provides only limited opportunities for nesting and roosting for many of these species. No trees were identified with hollows suitable for the Sooty Owl, and few hollow-bearing trees occur that would be suitable for the Little Lorikeet and hollow-roosting bat species. Further, no caves or suitable roosting habitat for cave-dwelling bat species occur, and no raptor nests were observed.

Eight additional threatened species, which have been identified in areas surrounding North Manyana or are likely to utilise the habitat present, are also likely to occur:

- Squirrel Glider (*Petaurus norfolcensis*);
- Eastern Ground Parrot (*Pezoporus wallicus wallicus);*
- Masked Owl (*Tyto novaehollandiae*);
- Powerful Owl (*Ninox strenua*);
- Spotted-tailed Quoll (*Dasyurus maculatus*);
- Southern Brown Bandicoot (*Isoodon obesulus obesulus*);
- Long-nosed Potoroo (*Potorous tridactylus tridactylus*); and
- Yellow-bellied Glider (*Petaurus australis*).

While the presence of threatened fauna species represents a constraint to development in some parts of the Site, given that the Site is mainly be used as foraging habitat for identified and potentially occurring species, its significance to the local populations of such species is low. This is particularly the case when the amount and quality of habitat in surrounding areas, particularly to the north of the Site is considered.

6.2.2 Implications of ecological constraints

Three of the vegetation communities present are considered to represent threatened ecological communities listed under the TSC Act. Several threatened bird and bat species, were recorded during the surveys. These species would use the Site for foraging habitat. However as the Site generally lacks mature vegetation and important habitat features such as hollow-bearing trees, it only provides limited roosting and nesting habitat for these species.

In ecological terms the southern and western parts of the Site have the lowest value. They contain communities that are found elsewhere and are common in the locality, and are in the poorest condition due to disturbance (see Figure 6.2).

EMM

Areas of lowest ecological value

North Manyana Rezoning Proposal

Figure 6.2

6.3 Physical constraints

Are there any likely environmental effects as a result of the planning proposal and how are they proposed to be managed?

6.3.1 Topography

The Site slopes from the west, generally falling in a north-easterly direction. In the west there is a gently rising low spur, with shallow first order streams running either side towards the ocean. There is a low lying heath and back dune area in the east (see Figure 6.3).

Overall, the Site's topography does not constrain development. The only limitation is that some areas are flat and low-lying, suggesting drainage could be poor. This constraint is considered further in Section 6.4 below.

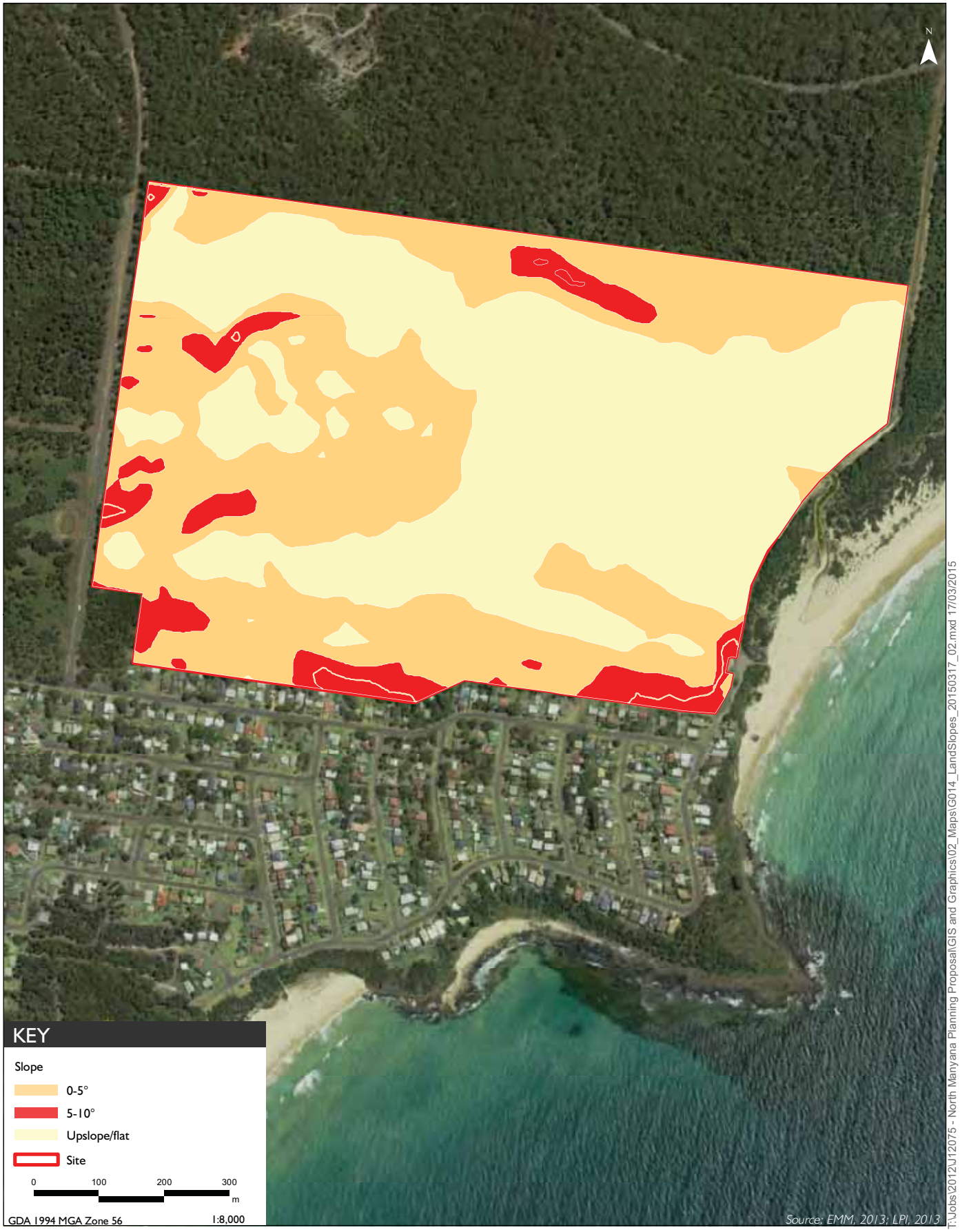
6.3.2 Soils and geology

The eastern back dune area is predominantly sandy while the heath overlays a wet clayey loam soil. More elevated areas in the western part of the Site and on the southern and northern margins have a dark brown clay loam underlain by clays to two metres and then conglomerate bedrock.

The backdune area at the eastern edge of the Site is underlain by Holocene sands. Martens (2000) refers to a 300mm veneer of sand over the eastern edge as a 'Holocene transgressive sand sheet'.

Cainozoic conglomerates underlie most of the Site but no outcrops were found during fieldwork. Large rocks have been imported to fill old wheel ruts where vehicles may have been bogged. Blocks of silcrete were observed in at least two disturbed areas, being the western clearing and on a track crossing the southern creek.

The eastern/central part of the Site is classified as having some potential for ASS, although these are identified as Class 5 ASS, the least restrictive class. Such soils can cause water quality or building foundation problems if exposed to the atmosphere. Conditions of this sort are considered to be a constraint requiring management rather than being prohibitive to development. Detailed surveys would be required to accurately locate and characterise these types of soils. In addition, particular controls would need to be applied to any residential development in affected areas. These investigations will be conducted during subsequent development applications for subdivision approval.



Land slopes

North Manyana Rezoning Proposal

Figure 6.3

Riparian corridors

North Manyana Rezoning Proposal

Figure 6.4

6.4 Drainage and flooding

Three creeks traverse the Site joining at a coastal lagoon that is an “ICOL”- an intermittently closed and open lagoon. The creeks are defined as “non-perennial” in the Department of Land and Property Information’s (LPI) hydrology datasets.

A detailed flood study has been undertaken by Martens and Associates Pty Ltd (see Appendix D). It incorporates three flow events, namely:

- the 1 in 20 year annual recurrence interval (ARI) storm;
- the 1 in 100 year ARI storm; and
- the probable maximum flood (PMF).

Using the above flows the extent, depth and velocity of the consequent flood events were determined under a range of plausible conditions, being:

- the lagoon entrance closed;
- the lagoon entrance open; and
- both of the above and incorporating estimated seal level rise in the years 2050 and 2100.

Flood hazard maps for all of the above scenarios have also been prepared.

For the purposes of this study “flood constrained land” considered unsuitable for development is based on realistic worst case conditions. This event has the following characteristics: 1 in 100 year flow with lagoon mouth closed and a 1 in 20 year ocean flood level increased by 0.9m to account for climate change. The extent of this flood is shown in Figure 6.5.

It would be possible to reduce the extent of flooding by undertaking earthworks to improve flow efficiency in the eastern end of the drainage system. The approximate extent of the reduced flood plain is shown in Figure 41 in Appendix D. However, as these works would have ecological consequences they are not included in the proposal.

Probable maximum flood extent

North Manyana Rezoning Proposal

Figure 6.5

6.5 Bushfire risk

6.5.1 Introduction

The most significant constraint to development in terms of bushfire is the width required for APZs which represent the area of land which cannot be built on. An APZ is the distance that buildings must be set back from bushfire prone vegetation and is used to separate buildings from bushland and provide a low fuel buffer and safe fire fighting access.

6.5.2 Method

This bushfire assessment has been undertaken in accordance with the *Planning for Bush Fire Protection Guideline* (PBP) (RFS 2006). APZs are determined by referring to Tables A2.5 and A2.7 in PBP. The zones are based on a composite index of three factors- vegetation formations, slope and fire danger index.

i Vegetation classification

Dr David Keith compiled broad scale native vegetation classifications and maps for NSW between 2001 and 2004 (the Keith formations, Keith 2004). PBP uses the Keith formations to classify bushfire hazard vegetation (the PBP classifications).

Vegetation was surveyed on the Site and for 140 m in all directions from its boundaries, and classified according to the PBP classifications. The PBP vegetation classifications for the survey area are forest, woodland and tall heath (see Figure 6.6).

ii Slope classification

Slope is an important contributor to a bushfire's rate of spread. A bushfire will spread more quickly up a steep slope compared to a gradual slope or flat land. Slopes were determined using a digital terrain model (2 m height resolution). The slopes were classified according to PBP, that is:

i) all upslope vegetation (considered 0°);

ii) >0 to 5° downslope vegetation;

iii) >5 to 10° downslope vegetation;

iv) >10 to 15° downslope vegetation; and

v) >15 to 18° downslope vegetation.

Slope classes across the Site are flat to moderate, that is classes i, ii and iii as shown in Figure 6.3.

iii Fire danger index

The 'fire danger index' (FDI) for Shoalhaven LGA is 100 (Table A2.3 in PBP).

6.5.3 Asset protection zones

The above information was used to calculate the maximum necessary APZs for the whole Site. The following information is preliminary and represents the closest safe distance to a dwelling. APZs will generally be different for each side of a building because one side may face up-slope and the other down slope. Potential APZs are shown in Figure 6.6 for the down-slope side of a building, which is the most dangerous side in terms of bushfire hazard. These are the largest potential APZs for future buildings and represent the greatest constraint to development because they are sections of residential lots which cannot be built on.

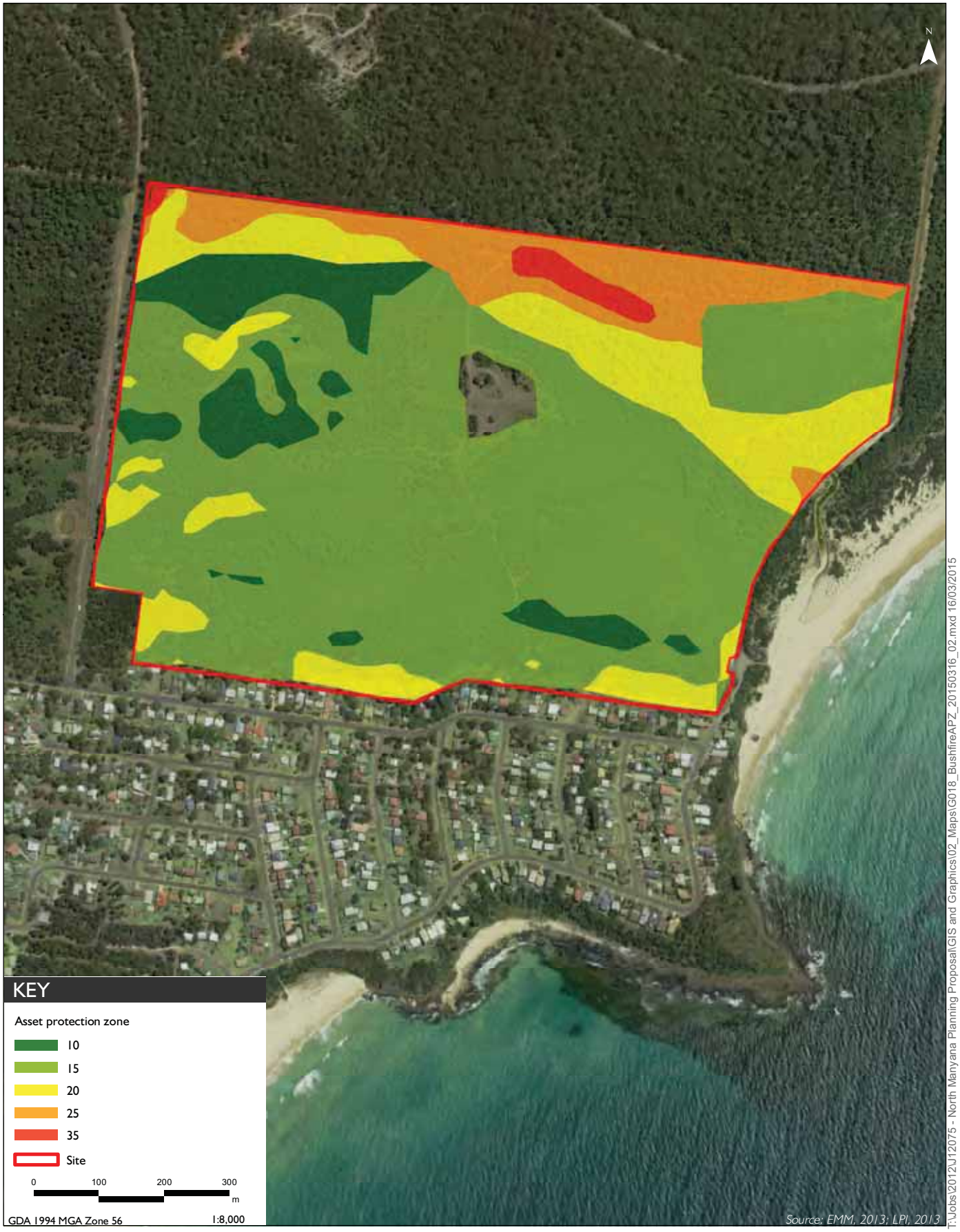
The predominant potential maximum APZ width is 15 m, which is followed by 20 m. The largest is 35 m, but this only covers a small section of the Site (see Figure 6.7). It is noted that an indicative APZ of 25m is shown on the Concept Plan in Figure 2.1, however this will vary once the calculations based on the above information are undertaken at the subdivision stage.

This means that a constraint on the developable area of a lot in, for example, the 15 m APZ polygon on Figure 6.7 would be 15 m on one or more sides of the building envelope. However, this constraint only exists if the lot fronts native vegetation. This will not be the case for most lots in a future residential area as they will be adjacent to other cleared lots. So the greatest constraint on development is APZs fronting areas of vegetation such as riparian zones and the Site's eastern area.

Bushfire risk - vegetation classifications

North Manyana Rezoning Proposal

Figure 6.6



Bushfire risk - APZs

North Manyana Rezoning Proposal

Figure 6.7

6.6 Aboriginal cultural heritage

The extent and significance of archaeological evidence relating to Aboriginal activity on the land is summarised on the basis of past archaeological surveys and a recent site inspection. The heritage significance of the Aboriginal sites is appraised on the basis of current evidence. The implications of these findings for development are discussed with comment on the statutory requirements for gaining permission to disturb Aboriginal objects.

Several Aboriginal sites are located within the Site. In slightly elevated areas west of the beach several sites occur each comprised of Aboriginal flaked stone artefacts in sparse numbers. Nearer the beach area, a midden site comprising shellfish and stone artefacts has been recorded in the sand dune associated with the small coastal lagoon.

6.6.1 Definitions

For the purposes of this discussion, the term 'Aboriginal site' refers to an area where Aboriginal objects (such as flaked stone artefacts or midden shell) can be seen. Broader areas of constraint are identified where it is inferred that Aboriginal objects may occur on the basis of comparable landform elements and typical archaeological patterning.

6.6.2 Statutory context

All Aboriginal objects are protected under Section 86 of the *National Parks and Wildlife Act 1974* (NPW Act). Substantial penalties apply in the event that an Aboriginal object is harmed either intentionally or inadvertently. Certain defences apply against a prosecution. The exercise of due diligence is identified as important as a defence against inadvertent harm. An Aboriginal Heritage Impact Permit (AHIP) is required for harm to Aboriginal objects. Application for an AHIP must be made to the OEH and be accompanied by an Aboriginal heritage assessment report together with evidence of rigorous and lengthy Aboriginal consultation conducted in accordance with OEH guidelines.

6.6.3 Previous heritage surveys

Two comprehensive heritage surveys have been conducted across the Site (Southeast Archaeology 199, ERM 2004) as well as linear surveys which covered eastern portions of the land (Attenbrow 1981). Other archaeological studies have also provided information about Aboriginal sites in the area generally.

Previous archaeological surveys identified the following items of note:

- a scatter of stone artefacts was observed along the services corridor by ERM in 2004 in the vicinity of the previously recorded midden site (Attenbrow 1981);
- artefacts across a broad elevated area in the north west of the Site and in isolated occurrences near the northern and southern boundaries (Kuskie 1997). A total of five Aboriginal sites were recorded by Kuskie, with a major extent recorded over the elevated land in the north-western part of the Site. The sites were named Manyana 1 to Manyana 5;
- relocation of a midden site previously recorded by Attenbrow, but no Aboriginal sites were found along the Inyadda Drive western boundary of the Site (Navin Officer 2001);

- in 2004 ERM revisited the Site to confirm the presence and extent of Aboriginal sites recorded by Kuskie (Refer Appendix G - Cultural Heritage Assessment, ERM 2004). The extent and significance were re-appraised in light of observed disturbance and consideration of past extensive clearing, past cultivation and ongoing disturbance of the land by motor bike riders. The locations of five sites identified by Kuskie were inspected and artefacts found at three of the sites, despite extensive vehicle track exposure. The ERM 2004 study confirmed that the entire Site is heavily disturbed by past cultivation as evident in the 1971 air photo which shows the land as cleared and cultivated. The land is also heavily used by motor bike riders with deep wheel ruts and erosion in the network of tracks which cross the Site. Rubbish dumping has also occurred in parts of the Site. Two large exposures in the north-west are the result of motor bike tracks which have included earthworks and introduced boulders as track markers. An additional artefact was found in the south-east of the Site and called Manyana 6 in the report. Manyana 6 does not appear on a search of the Aboriginal Heritage Information Management System (AHIMS) despite a site card being lodged in 2004.

  The author of this report (Neville Baker) also authored the ERM 2004 study. An inspection of the land by Baker in August 2012 confirmed that the findings of the ERM 2004 study were still relevant and applicable in regard to the location and content of Aboriginal sites across the Site; and

- two silcrete artefacts were found on the corner of Inyadda Drive and Curvers Drive. The Site was impacted (under the relevant Section 90 consent – NPW Act) during construction of the survey and is no longer present (Kelleher Nightingale (2008)).

i Studies in the local area

a. Broad site patterning

Relevant archaeological studies in the local area up to 2004 were documented in ERM 2004 (see Appendix G). Aboriginal midden sites have been recorded in association with coastal sand dunes. West of the coastal dunes, Aboriginal sites have been recorded as low numbers of stone artefacts (mostly less than five artefacts) on slightly elevated land. Most of the artefacts are locally sourced silcrete.

Since 2004, Aboriginal heritage assessments have been conducted in conjunction with sewerage construction and land development in the local area. Two relevant test excavations provided insight into the subsurface contents of local Aboriginal sites.

- Navin Officer 2005

  Test excavations were conducted on the coastal Inyadda Beach site on the north-east boundary and site CS19 just outside the south-eastern corner of the Site. Site CS19 was originally recorded along the foot track leading down to the beach entrance. Test excavations were conducted on the area where the sewage pumping station (SPS) and toilets are now located. Five test pits yielded no artefacts, but the assumed area of archaeological deposit was inferred to occur west immediately south-west of the sewerage facilities. Eight artefacts were found within this area and included a hatchet head which should still occur in the vicinity of the SPS. Any remaining archaeological deposit was considered to be associated with the slightly higher ground.

  The results of this work confirm the presence of the Inyadda Beach site reported by Attenbrow. The study does not definitively place Aboriginal site CS19 within the Site but the authors concluded that there was some potential for a very low density artefact distribution on the slightly higher ground along the southern part of the Site. This result agrees generally with the ERM 2004 report which inferred a broader artefact distribution of very low density across southern parts of the Site.

- South East Archaeology 2007

  Test excavations were conducted on 20 ha of land immediately to the south-west of the Site on land bounded by Beringer Road, Sunset Strip, The Companionway and Cunjurong Point Road. Perpendicular transects of 1 m² test pits were excavated at 5 m intervals in the south-east corner of the land where a surface site of 13 artefacts was originally recorded. A total of 173 artefacts were recovered from 31 test pits. Of the 31 test pits excavated, two had 66 and 52 artefacts respectively, while 17 test pits had zero artefacts or one artefact each. A trimmed mean value of artefact density per 1 m², excluding two outlier pits with high artefact numbers, was two artefacts per square metre. The median was one artefact per square metre. These results indicate that the Site contents comprise rare artefact clusters with a low density distribution. The artefact assemblage contained elements typical of Holocene backed artefact technology which is commonly found in open stone artefact sites in south-eastern Australia. The interpretation offered by Kuskie was:

  > 'Occupation of each of the simple slopes and spur crests appears to have primarily involved transitory movement and/or hunting and/or gathering without camping. The episodes may have involved small groups of people and been for short durations of time. The absence of permanent potable water is likely to have prevented stays of an extended duration or by large groups of people.'(South East Archaeology 1997).

This pattern is therefore most likely to occur on the Site where comparable stone artefact assemblage features were also recorded.

6.6.4 Site inspection August 2012

A site inspection was conducted on 24 August 2012 by Neville Baker (EMM principal archaeologist), Graham Connelly (Jerringa Traditional owners) and Gerald Carberry (Jerringa Local Aboriginal Land Council). The inspection sought to cover all areas to compare land condition and visible artefact exposures with those observed by Baker and Aboriginal representatives in 2004. There was more vegetation growth over the land than in 2004. Of the two major ground exposures evident on aerial photos, the eastern exposure was covered in grass, while the north-western exposure was mostly exposed through the action of motor bike riders.

Stone artefacts were observed within the two major ground exposures as well as on a track leading to the southern boundary of the land. Stone artefacts of silcrete, quartz and volcanic stone were observed. Blade scars and platform preparation typical of Holocene backed artefact technology were observed.

6.6.5 Significance of Aboriginal cultural heritage

Disturbance is pronounced across all soil exposures and tracks. Unsurfaced vehicle tracks throughout the land are heavily rutted and eroded. Areas not disturbed by motorbike trails are rare. The combination of past cultivation and recent trail bike activities has compromised any spatial patterning of Aboriginal stone artefacts occurring. Manyana 1 is therefore heavily compromised by disturbance and does not warrant the moderate degree of significance previously attributed in past reports. While there are certainly artefacts present which are of significance to the Aboriginal community as evidence of connection with previous Aboriginal occupants, these sites do not demonstrably contribute significant new information about Aboriginal life. The sites do, however, demonstrate past Aboriginal use of the land. Sites along the southern margin of the land: Manyana 4, 5, 6 and CS19 may be less compromised, but are certainly of such low density as to be of little scientific significance.

The significance of these sites, therefore, rests in their capacity to demonstrate the presence of Aboriginal people on the land and the ties that contemporary Aboriginal people have with their antecedents.

i Changing assessment as accepted practice

Change in significance assessment is a common and accepted practice in the heritage field. Bowdler identified this issue in one of the landmark publication on the matter: "Archaeological significance as a mutable quality" (in S. Sullivan and S.Bowdler (eds) *Site Surveys and Significance Assessment in Australian Archaeology* pp1-9 Department of Prehistory, Research School of Pacific Studies, Australian National University, Canberra). Bowdler proposed that archaeological significance should be assessed according to *timely and specific research questions* on the one hand and *representativeness* on the other. Bowdler noted that as our understanding of the record changes and as research questions change, then so might the assessment of significance change. What may be rare and considered highly significant on one year may be in later years considered common and less significant. Significance, being a subjectively assigned value, changes as what is considered to be known about the archaeological record changes and as relevant timely and specific research questions change.

ii Basis for initial moderate significance assessment

No *timely and specific research question* to which the Aboriginal sites on the Kylor land might contribute was identified in Kuskie's 1997 report. Nor was an argument based on *representativeness* made. Kuskie had not identified the basis for assigning the sites' research value and therefore his rating of "moderate significance". Baker concluded that a simple "discovery value" was the basis of his assessment.

iii Revision of archaeological value

On the basis of observations of the disturbed land and experience in archaeological test excavation, there is no significant research potential on the land. Furthermore, Aboriginal sites have been more extensively recorded and excavated in the local area, demonstrating no highly significant findings.

iv Socio-cultural significance

The lower classification of significance does not discount the cultural significance of the Aboriginal sites. It was found that the artefacts themselves were of socio-cultural value to the Aboriginal community. One of the Aboriginal representatives present at the 2012 inspection expressed strong interest in collecting any stone artefacts that might be impacted. However, during the most recent site survey, Baker did not discern any greater imperative to collect artefacts from this land over any other land.

Baker identified the statutory process for pursuing collection as mitigation of development impact under the *National Parks and Wildlife Act 1974*. He also acknowledged that there may be a different view from the regulator as to the need for test excavation as reflected in the following extract from the EMM planning proposal,

> Prior to commencing the lengthy AHIP application procedures, OEH should be consulted to determine whether they require further Aboriginal heritage assessment information in the form of an archaeological test excavation. Test excavations have been common in the area and not particularly informative beyond confirming the pattern suggested by surface material. However, the views of OEH on the need for test excavation are still required.

In conclusion, the revision to the level of significance of Aboriginal sites on the Kylor land from moderate to low was justified by established professional practice exemplified by Bowdler, the degree of disturbance documented, the demonstrated lack of research potential and the changing state of knowledge as to the common occurrence of Aboriginal stone artefacts in the local landscape.

6.7 Historic heritage

Three items of historical significance were found in the survey. They were as follows:

- Item 1 – The Grave Of Mary And Jesse Goodsell:

  A clearing in the western part of the Site contains the grave (273993E, 6095765N AMG). The grave is well-maintained with a brick wall about 40 cm high surrounding the burial plot on which a brass plaque dates to 1924.

- Item 2 – Historic Structural Remains:

  The remains of a stone walled structure possibly belonging to one of the buildings visible in the 1950 and 1971 aerial photographs survives in the south-west grassy clearing. Two walls remain partially visible above the ground surface at right angles to each other, each about 20 cm thick.

- Item 3 – Historic Well:

  Immediately to the south of this item the remains of a narrow well were identified. The mouth of the well itself is approximately 50 cm in diameter. It is lined with concrete and has a concrete cap extending about 1.5 m to the north. The depth of the well remains uncertain. Deposits can be seen at the bottom of the well, about 1 metre from ground level, meaning the well has been filled with various materials since it was last used.

6.8 Implications for development

The previously identified area with low bio-physical constraints in the south and west of the Site (Figure 6.2) contains parts of Aboriginal sites Manyana 1, Manyana 5 and CS19 and the inferred low density artefact distribution associated with those sites. Loss of these sites would be acceptable on the basis that they are generally of low heritage significance and that large areas of Aboriginal stone artefact sites would be retained in the proposed environmental conservation zone.

Prior to any impact on Aboriginal sites or defined areas of archaeological deposit associated with those Aboriginal sites, an AHIP must be obtained from OEH. The AHIP should be extended to cover all parts of a future development area.

In relation to the items of historical significance, the following is recommended:

- conservation of the Goodsell grave site within a suitable open space curtilage;

- more detailed assessment of the archaeological potential of the historic ruins in the south-western area to accompany a S.140 excavation permit application prior to construction impact; and

- archival recording of historic ruins under a S.140 permit prior to removal during construction.

As recommended by ERM, "prior to commencing the lengthy AHIP application procedures, OEH should be consulted to determine whether they require further Aboriginal heritage assessment information in the form of an archaeological test excavation. Test excavations have been common in the area and not particularly informative beyond confirming the pattern suggested by surface material. However, the views of OEH on the need for test excavation are still required".

6.9 Services

Is there adequate public infrastructure for the planning proposal?

The Site is located on Inyadda Drive, the primary connector road between Manyana and Bendalong. Access to residential development would be from Inyadda Drive. Electricity and telecommunications are available in the area and will be provided on the Site.

As previously stated, there are very limited existing retail services. However, the imminent development of the Manyana Centre will mean that most convenience retail and community services will be available locally. The nearest major services (that is hospital, education and comparison retail facilities) are located at Milton-Ulladulla some 28 kilometres from Manyana.

6.9.1 Sewerage

i Background

North Manyana is currently served by the CRSS. Construction began on the scheme in 2005 and was completed in 2008. It consists of 36km of gravity sewers, 14 sewage pumping stations, 15km of rising mains and two Intermittently Decanted Extended Aeration wastewater treatment plants. The Northern Wastewater Treatment Plant (WWTP) is approximately 500m northwest of the project site and it is accessed from Bendalong Road.

Sewage from development on the Site will gravitate east to a pump station on the south east corner of the Site where it will be pumped by rising main to the Northern WWTP. Treated effluent will then be pumped in a main that follows Inyadda Drive along the western boundary of the Kylor site to an exfiltration area in the sand dunes to the south of Lake Conjola.

ii Design Capacity

Details of the CRSS were provided in an Environmental Impact Statement (EIS) published jointly by Shoalhaven City Council and the then Department of Land and Water Conservation in September 2001. This noted that the Northern WWTP was designed to accommodate an Average Dry Weather Flow of 920 kL/day and a Peak Dry Weather Flow of 1,150 kL/day to cater for short term peaks during the summer holiday period.

Before the plant was constructed, a Review of Environmental Factors (REF) was produced in October 2004 (Shoalhaven City Council and Department of Energy, Utilities and Sustainability). This increased the Average Dry Weather Flow capacity of the Northern WWTP from 920 to 966 kL/day and the Peak Dry Weather Flow capacity from 1,150 to 1,270 kL/day.

In the absence of site specific design data, Council had to make generic assumptions about future loadings on the plant. These included:

- an average occupancy of 4 people per dwelling;
- projections of the number of permanent and unoccupied dwellings; and
- no account was taken of the potential for wastewater re-use.

iii Recently Available Information

a. 2011 Census Data

Data from the 2011 Census can be compared with projections contained in the original project EIS for the year 2011. These are shown in Table 6.1 below.

Table 6.1 Actual dwellings

	2011 Census			
Area	**Occupied**	**Unoccupied**	**Total**	**Occupancy Ratio**
Fishermans Paradise	174	88	262	2.2
Manyana/ Cunjurong Pt	232	550	782	2.2
Bendalong	86	140	226	2.4
Lake Conjola	171	176	347	2.3
Conjola Park	139	98	237	2.3
Total	**802**	**1,052**	**1,854**	
EIS 2011 Projections	**895**	**1,139**	**2,034**	

From Table 6.1 it can be seen that the original projections of dwelling numbers were conservatively high compared with the ones counted during the 2011 Census. Also, the assumed number of people per dwelling in each area was considerably lower than the assumed figure of four per household.

iv Monitoring Data

Council monitors flows into the Northern WWTP and Southern WWTP. These give a site-specific understanding of the actual hydraulic loading on the treatment plants. They also measure key treatment parameters to confirm the efficacy of treatment processes. Recent results were obtained from Shoalhaven Water for the last two years in the form of daily flows and corresponding rainfall readings at each plant.

Average daily flows at the Northern plant were 254kL/d in 2011 and 245kL/d in 2012. The apparent decrease in 2012 was due to lower annual rainfall, which was 1,181mm in 2011 and 971mm in 2012. The corresponding values for the Southern plant were comparable at 259kL/d and 260kL/d respectively.

The design capacity of the Northern WWTP is 966kL/d ADWF. This can be compared with the measured ADWF of 218kL/d in 2011 and 214kL/d in 2012. Dry weather flows vary throughout the year as shown by Table 6.2.

Table 6.2 Monthly dry weather flows

Month	2011	2012
January	346	344
February	187	176
March	207	207
April	259	246
May	184	215
June	211	208
July	233	184
August	187	195
September	177	167
October	192	181
November	188	186
December	262	250
ADWF	**218**	**214**

It is interesting to compare loadings during July 2011 when the Australian Census was conducted. There were 318 occupied dwellings that collectively generated 233kL/d of flows, or 733L/dwelling/day. This can be compared with the conservative design assumption of 840L/dwelling/day.

Peak dry weather loadings occur during January of each year, corresponding to the highest holiday loadings. If all dwellings were occupied at the assumed peak occupancy and there was no contribution at all from caravan parks, the per capita generation rate was only 86L per person, which was well below the design allowance.

All these statistics confirm that the treatment plant was prudently designed and that there is more capacity than assumed to cater for new dwellings at North Manyana. Likewise, the combined loadings from the Northern and Southern plants are well below the ultimate capacity of the exfiltration ponds, meaning the full system has ample available capacity without the need for further augmentation.

v Effluent Re-use

The original sewerage EIS indicated that while allowance would be made to incorporate effluent reuse at an unspecified future date, it would not be economic to provide for such re-use in the design of the system. Over the last ten years, more experience has been gained with dual reticulation systems and the beneficial reuse of water. This included the successful commissioning of the REMS scheme in North Shoalhaven, one of the largest scale reuse programs for agricultural irrigation in New South Wales. It followed the first dual reticulation scheme at Shoalhaven Heads that provided much of the design data for subsequent reuse standards. Sydney Water's pilot program for reuse at inland sewage treatment plants also demonstrated the technical and social feasibility of wastewater reuse in urban communities.

Council held a wastewater reuse seminar in June 2007 to inform stakeholders about the potential for effluent reuse in the CRSS. This was of particular interest to Kylor Pty Ltd because the treated effluent pipeline passed along the boundary of the property, making the provision of treated wastewater more economic than usual. Each kilolitre of treated effluent reused by North Manyana and other new developments in the village would enhance the overall capacity of the scheme by reducing loadings on the exfiltration ponds, which are understood to be the limiting element of the overall facility.

Council adopted a revised Reclaimed Water Policy in 2009 (Policy Number*: POL08/254*). The policy seeks to promote the responsible use of reclaimed water, noting that it is a valuable resource in urban water cycle management. The policy commits Council to *"Promoting the use of reclaimed water within Shoalhaven City and the types of reclaimed water activities that can be safely and appropriately undertaken"* (Op cit Page 2). It will do this by *"Continuing to substitute reclaimed water supplies for potable water where appropriate."*

A significant new development like North Manyana provides an unusual opportunity to incorporate dual use infrastructure at the outset. It is difficult and expensive to retrofit dual reticulation to existing dwellings that usually are not configured with separate internal plumbing to segregate potable and non-potable supplies. Reused water can be safely used for applications such as toilet flushing, laundries and showers, as well as external garden and landscape demands. In 2007 it was noted that with reuse, it would be feasible to service around 350 properties with a dual reticulation system on the North Manyana site.

vi Adequacy of Sewerage System

The monitoring data indicate that the Northern WWTP has significant spare capacity that can be used to service the North Manyana development. The current plant which has already been constructed is only being used to between 23% and 27% of its ultimate capacity.

A further consideration is the capacity of the exfiltration ponds. The design loading of the sewerage works was 840L/dwelling/day compared to measurements of actual flow quantities of 733L/dwelling/day, which is 12.7% less than the design allowance. The overall capacity of the sewerage system is recorded as 3,384 equivalent tenements (ET) (refer Table 3.18, Volume 1 of the scheme EIS). Of this total, Council determined by resolution on 17 June 2008 that North Manyana would contribute 226 ET. Conservatively adopting a potential maximum yield of 380ET for the Site would involve an increase in loadings of up to 154 ET, or 4.6% of system capacity. In summary, the system has 12.7% more capacity than anticipated, while the potential maximum lot yield would only utilise 4.6% or just over one third of this additional capacity.

It has been demonstrated that there is adequate capacity to serve the projected level of development at North Manyana, especially given Kylor's commitment to providing dual reticulation to future housing lots. North Manyana could implement a residential effluent re-use scheme as part of the development. Since the treated effluent rising main from the treatment plant to the exfiltration ponds passes the front of the Site along Inyadda Drive, all dual reticulation mains could be laid in the property but the final connection only made to the rising main once the effluent is of suitable quality to safely use for recycling. This would preserve the option of dual reticulation without prohibitively expensive retrofitting to individual residences.

6.9.2 Water Supply

Shoalhaven Water was consulted about its ability to supply North Manyana. The current system includes a 12.7ML reservoir to serve the locality. It was indicated that adequate water supplies were available to provide for the proposed development.

6.10 Traffic and transport

The following factors have been considered in relation to the traffic and accessibility aspects of the proposal:

- accessibility by public transport, and for pedestrians and cyclists;
- traffic impacts and those on the road network, including affected intersections;
- impacts on Bendalong Road, particularly cross sectional upgrading requirements and the need for additional overtaking lanes; and
- the need for pavement upgrades to Bendalong Road and Inyadda Drive.

6.10.1 Existing transport and traffic conditions

In relation to public transport, there are no regular services to Manyana or Bendalong. A private mini-bus service is available on a user-pays basis from Manyana and regular bus and coach services operate along the Princes Highway some 12 km from Manyana.

Traffic volumes on the "external" and "local" road networks were surveyed in May 2013. The external network is that on Bendalong road west of its intersection with Inyadda Drive, while the local network is that within Manyana and Bendalong. Traffic volumes on both parts of the network are light as shown in Tables 6.3 and 6.4

Table 6.3 Surveyed peak hourly traffic volumes at each intersection

Road Location	Two way traffic in the am and (pm) peak hours	Northbound or Eastbound	Southbound or Westbound
Princes Highway, north of Bendalong Road	423 (529)	241 (229)	182 (300)
Princes Highway, south of Bendalong Road	461 (513)	226 (210)	235 (303)
Bendalong Road, east of the Princes Highway	87 (61)	22 (32)	65 (29)
Bendalong Road, west of Inyadda Drive	89 (81)	19 (58)	70 (23)
Bendalong Road, east of Inyadda Drive	42 (52)	23 (28)	19 (24)
Inyadda Drive, south of Bendalong Road	93 (95)	74 (32)	19 (63)
Inyadda Drive, north of Curvers Drive	91 (98)	71 (35)	20 (63)
Curvers Drive, west of Inyadda Drive	47 (59)	37 (26)	10 (33)
Curvers Drive, east of Inyadda Drive	52 (73)	14 (47)	38 (26)

Table 6.4 Equivalent daily traffic volumes and % heavy vehicles at each intersection

Road Location	Daily traffic volume estimated from the peak hours	Percentage of heavy vehicles in the am and (pm) peak hours
Princes Highway, north of Bendalong Road	5,200	6% (3%)
Princes Highway, south of Bendalong Road	5,400	6% (3%)
Bendalong Road, east of the Princes Highway	810	6% (3%)
Bendalong Road, west of Inyadda Drive	930	4% (2%)
Bendalong Road, east of Inyadda Drive	520	4% (2%)
Inyadda Drive, south of Bendalong Road	1030	4% (2%)
Inyadda Drive, north of Curvers Drive	1040	4% (2%)
Curvers Drive, west of Inyadda Drive	580	4% (2%)
Curvers Drive, east of Inyadda Drive	690	4% (2%)

6.10.2 Additional traffic from Proposal

Existing traffic generation rates in Manyana have been estimated and they are as follows:

- daily external traffic- 0.92 vehicle trips per residence;
- morning peak external traffic- 0.088 trips per residence; and
- evening peak external traffic- 0.080 trips per residence.

Using these rates the additional traffic generated by the Proposal has been estimated and it is given in Table 6.5.

Table 6.5 Additional daily and peak hourly traffic volumes generated by the proposal

Traffic generation route	Additional daily traffic (vehicle trips)	Additional am peak hour traffic (vehicle trips)	Additional pm peak hour traffic (vehicle trips)
External traffic to and from the Princes Highway, via Bendalong Road (west)	350	33	29
Local traffic to and from Bendalong via Inyadda Drive and Bendalong Road (east)	108	10	9
Local traffic to and from Manyana (east) via Inyadda Drive and Curvers Drive	89	8	8
Local traffic to and from Manyana (west) via Inyadda Drive and Curvers Drive	89	8	8
Total generated traffic via all routes	636	59	54

The above increase in traffic has been added to the existing traffic volumes giving total estimated future traffic volumes as shown in Table 6.5. It can be seen that the most noticeable effects will be on Inyadda Drive and Bendalong Road with increases of 44% and 38% respectively. Notwithstanding, the future traffic volumes will still be well below the threshold (2,000 vehicles per day (vpd)) when higher road design standards would be needed under Austroads guidelines (2010).

6.10.3 Impacts at intersections

Existing intersections at Curvers Drive, Inyadda Drive and Bendalong Road have all been assessed and found to provide both good visibility and safe turning conditions. The need for additional lanes as a result of traffic growth from the proposal has been examined using the Austroads guide (2010) as referred to in Appendix B of the Traffic Assessment (Appendix H).This analysis shows that nearly all intersections meet the applicable design standards; the exception is the Bendalong Road/ Inyadda Drive intersection which has an existing deficiency. This will become more pressing as traffic volumes increase and requires widening of the sealed shoulder.

6.10.4 Pavement conditions

The surveys undertaken in May 2013 show that heavy vehicles make-up about 2-4% of the total traffic volume. Except during the proposal's main construction phase, this proportion should not change materially in future, meaning there will not be a need to upgrade pavements. During major construction damage could occur and the condition of pavements should be monitored regularly. Any road damage should be repaired promptly to ensure ongoing maintenance of safe and efficient driving conditions.

6.10.5 Pedestrian and cycle access

Requirements for pedestrian facilities have been determined principally by reference to Council's subdivision code, which requires paved 1.2m wide footpaths along the two perimeter roads on the northern edges of the two future residential areas. A footpath will also be provided along Inyadda Drive to link the residential areas to the new commercial centre. Elsewhere a network of less formal and unpaved pedestrian trails will be provided both within and linking residential areas to the beach.

Bicycle access will be provided for along the paved footpaths and off-road bikes will be able to use the trails network. One important part of this network will be a coastal trail adjoining the eastern boundary of the Site which will be the first link in Council's planned Manyana-Bendalong bike path.

The planned footpath and trails network is shown on the Concept Plan (see Figure 2.1).

6.11 Summary of environmental constraints and opportunities

A summary of the implications for development of all of the previously examined factors is presented in Table 6.6 below.

Table 6.6 Environmental and services constraints and opportunities

Environmental factor	Implications for development
Topography	Little constraint – some low lying poorly drained areas only
Soils and geology	Little constraint – some potential for ASS which will require management
Flooding	Localised constraint along two creeks
Ecology	Significant constraint across approximately 60% of the Site
Bushfire	Constraint across majority of the Site to varying degrees that requires safeguarding
Aboriginal heritage	Little constraint requiring recording and management
Historic heritage	Very localised constraint

Table 6.6 Environmental and services constraints and opportunities

Environmental factor	Implications for development
Servicing factor	
Sewerage	Unconstrained- capacity is available and services are proximal to the Site
Water	Unconstrained- as above
Roads	Little constraint- one intersection requires minor upgrading
Retail and community facilities	Significant constraint but will be removed with development of Manyana Centre

How has the planning proposal adequately addressed social and economic effects?

The proposal will have a number of positive socio-economic impacts. It will increase the number of residential lots and provide a greater range of housing types. The high standard of master planning and building design, combined with well targeted marketing will have a positive impact on Manyana's profile and recognition in the residential market. This will be generally beneficial for land values in Manyana. The proposal will provide employment opportunities during construction. It will also increase the local population enabling a broader range of retail and community services to be provided.

7 Community consultation

As discussed in Section 1.2, initial consultation occurred between November 2012 and May 2013. Further community consultation will be undertaken in accordance with Part 3, Division 4 of the EP&A Act.

The community consultation process will be developed in consultation with Council during the 'gateway' process and at a minimum will involve:

- stakeholder meetings - briefing sessions will be held to engage with key stakeholders including local councillors, state members, representatives from government agencies and local community groups; and
- community information sessions – community information session(s) will be held. These will be advertised locally and will allow interested parties to attend at their convenience to obtain information, ask questions and raise concerns.

8 Conclusion - A new direction for Manyana

This planning proposal presents a land use concept for North Manyana which has substantial planning and environmental benefits in its own right and particularly over the current zonings. In accordance with the requirements of 'A guide to preparing planning proposals' (DoP 2009), a review of relevant strategic plans has been undertaken. It shows that the proposal is consistent with applicable regional and local strategic objectives.

The planning proposal will provide a land use outcome that either avoids areas of environmental value or appropriately compensates for any losses. Other environmental concerns - bushfire hazard, flooding, and impacts on cultural heritage - have either been avoided or mitigated in the concept plan.

The proposal reflects strategic planning priorities. It will help satisfy demand for competitively priced residential land which effectively uses available infrastructure and services. New development will be guided by a master plan specifying building design, siting, materials and landscaping standards. It will be accompanied by a well targeted marketing campaign that will lift Manyana's profile and generally improve the village's image and land values.

The planning proposal will serve the public interest in a number of important ways. First, ecologically valuable coastal land will be protected in an environmental conservation area. Second, a large and contiguous area of bushland and riparian corridors will be retained. Third, it will provide increased support for the new Manyana commercial centre allowing a broader range of services and facilities to be provided. Fourth, it will use available public infrastructure, particularly sewerage and water supply, allowing a better financial return on prior public investment in these facilities. Fifth, it will reduce current risks to life and property by incorporating contemporary bushfire asset protection measures in contrast to their absence in exposed areas, especially along Curvers Drive. Sixth, it will be accompanied by upgrading of local infrastructure including pedestrian and bike paths, and landscaped buffers along its western and southern boundaries.

The overall outcome will be a positive resolution of planning outcomes for North Manyana, a residentially zoned area with a long history of uncertainty about its future.

Abbreviations

ACT	Australian Capital Territory
AHIP	Aboriginal Heritage Impact Permit
APZ	Asset protection zone
ARI	Average recurrence interval
ASS	Acid sulfate soils
CRSS	Conjola Regional Sewerage Scheme
DA	Development assessment
LPI	Department of Land and Property Information
DGMS	Draft Growth Management Strategy (DGMS)
Draft LEP 2013	Draft Shoalhaven Local Environmental Plan 2013
DP&I	Department of Planning and Infrastructure
EMM	EMGA Mitchell McLennan
EP&A Act	Environmental Planning and Assessment Act 1979
FDI	Fire danger index
LEP	Local Environmental Plan
NSW	New South Wales
OEH	Office of Environment and Heritage
PMF	Probable maximum flood
RHVA	Read Head Villages Association
SCRS	South Coast Regional Strategy
SEPP	State Environmental Planning Policy
SLEP 1985	Shoalhaven Local Environmental Plan 1985
TEC	Threatened ecological community
TSC Act	NSW Threatened Species Conservation Act (

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