SHOALHAVEN CITY COUNCIL

Strategic Planning Group

Sussex Inlet

SETTLEMENT STRATEGY

August 2007

Note

The Strategy is not a legal planning document but rather one that provides direction and guidance. It provides options for future urban development in the Sussex Inlet area, taking into consideration the significant natural values of the area.

It does not rezone land for development.

It identifies land that will be further investigated in detail for possible rezoning and development through a public and transparent process as required in the Environmental Planning and Assessment Act 1979.

Note on Mapping

The aerial photo base used in the figure in this Strategy is from 2006. The majority of data shown in figures has been provided by Shoalhaven City Council, drawing on a range of original sources and also data made available by the former NSW Department of Natural Resources and NSW Department of Environment and Climate Change.

Acknowledgement

This Settlement Strategy has been prepared using funding assistance provided by the NSW Department of Planning and the assistance by the following consultants during its preparation is acknowledged: APP Corporation Pty Ltd (lead consultants); Hill PDA (property and population issues); URS Corporation (engineering issues) and Eco Logical Australia (environmental issues and mapping).

Adopted by:	*Endorsed by:*
Shoalhaven City Council	NSW Department of Planning
25th August 2007.	14th August 2007.

Forward

Council has prepared the Sussex Inlet Settlement Strategy in collaboration with the NSW Department of Planning and other NSW State Government Agencies. The Strategy is a strategic framework that will help guide the conservation of this area and also manage residential and rural residential growth in the area for the next 20-25 years.

The Strategy does not itself rezone land for development, it does however identify broad potential development areas that will be further investigated and outlines issues that will be addressed in more detailed rezoning and the development for each area.

The development of the Settlement Strategy represents a positive collaborative effort between Shoalhaven City Council and the NSW Government and supports the State Government's South Coast Regional Strategy.

The Strategy establishes a clear vision for the areas future settlement and will enable Council and the NSW Government to make planning decisions within a forward looking growth management framework. In this regard, the Strategy contains a series of objectives and actions designed to achieve quality, well managed development and sustainable natural resource management outcomes.

Greg Watson
Mayor
Shoalhaven City Council

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1.0 INTRODUCTION

1.1 What is a Settlement Strategy?

This Settlement Strategy is a strategic planning document which provides a broad framework to guide the future residential and rural residential growth and development of the area. The Settlement Strategy identifies growth pressures and provides the social, economic and environmental context within which future growth must be managed. The Strategy therefore includes an analysis of key social, economic and environmental issues within the broader context of the locality and area. A range of planning tools including broad land use capability mapping has been used to identify key constraints and opportunities to future growth.

The Strategy adopts the overriding goal of ecologically sustainable development (ESD) as required under the *Local Government Act, 1993*. The Strategy seeks to address issues within an ecologically sustainable development framework in order to balance environmental, social and economic objectives and ensure appropriate outcomes.

It is important to note that the Strategy does not rezone land for development. It identifies land that will be further investigated for possible rezoning or development through the planning process governed by the *Environmental Planning and Assessment Act, 1979*.

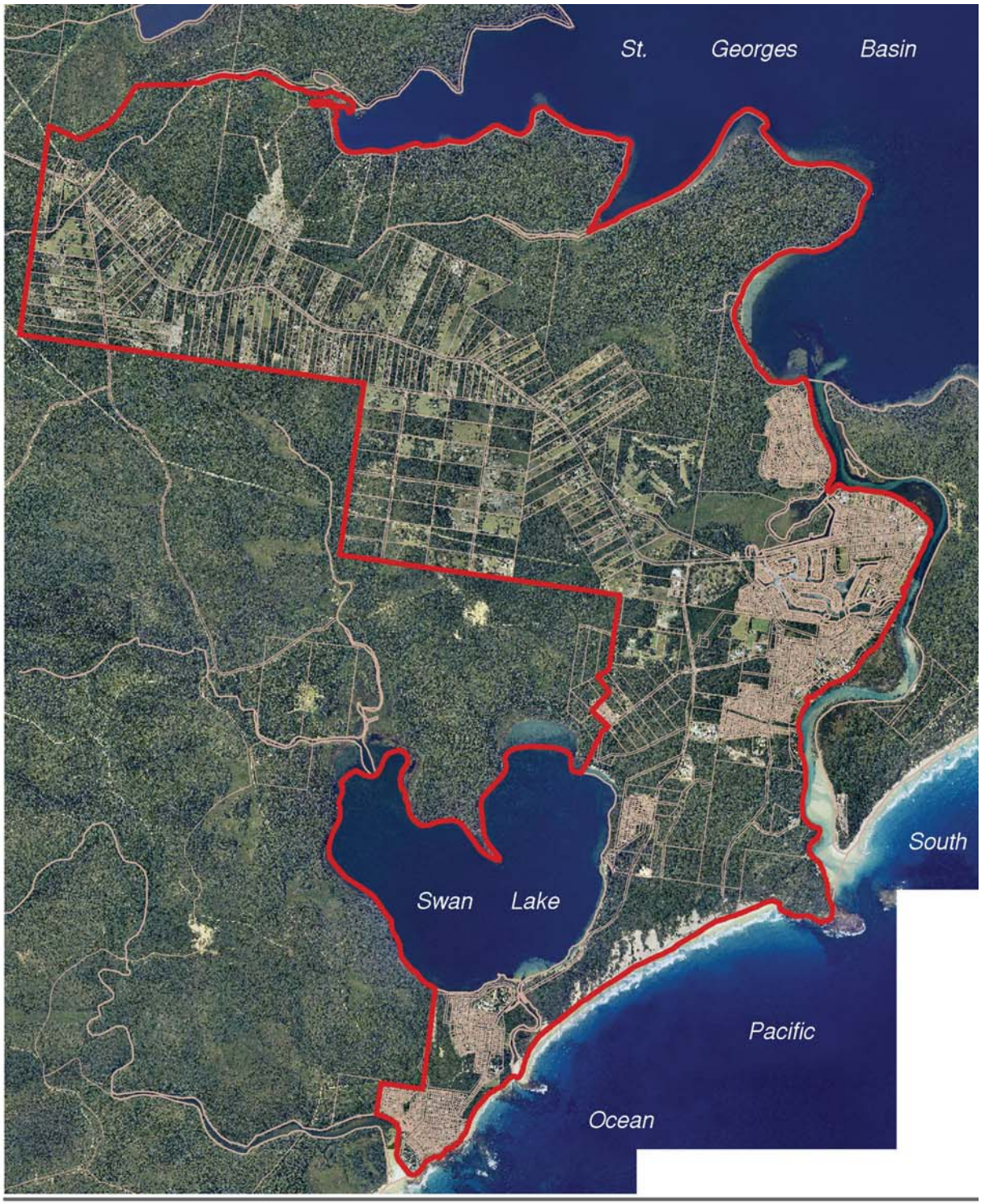
The Strategy aims to provide some certainty for the community and landowners by establishing clear objectives to manage growth in the medium to long term as well as identifying where future development potential may exist for the area.

1.2 Why has the Strategy been prepared?

The Settlement Strategy covers Sussex Inlet and the surrounding villages of Cudmirrah, Berrara and Swanhaven and provides the framework for future decisions relating to residential and rural residential development in the area over the next 20 to 25 years.

The area covered by the Strategy shown in Figure 1 and Figure 3 shows the existing land use zonings under Shoalhaven Local Environmental Plan 1985 and Shoalhaven Interim Development Order No 1 (1964).

Figure 1: Sussex Inlet Settlement Strategy Study Area



The Strategy has been prepared to provide sufficient detail in order to:

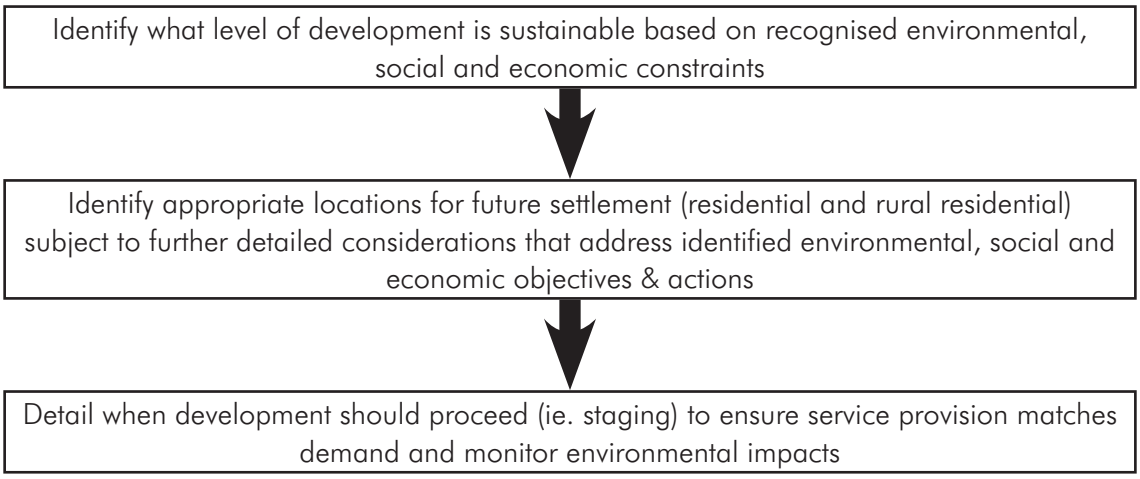


Figure 2 – Strategy Requirements

A State Government moratorium preventing the rezoning of land for additional residential and rural residential development in the Sussex Inlet area has been in place since the mid-1990's. The completion of the Strategy will enable the NSW Department of Planning (DoP) to consider lifting the moratorium.

Both Council and the DoP are keen to see the natural attributes of the Sussex Inlet area preserved. In particular, the southern foreshore of St Georges Basin forms an important scenic backdrop in the area and also plays a valuable role in protecting water quality. Opportunities also exist to formalise wildlife corridors within the area and ensure that a strategic approach is taken to achieve biodiversity conservation objectives. The scenic value of both Swan Lake and St Georges Basin are also important natural assets or features of the local area that must be carefully conserved and enhanced.

At the same time, there is demand for additional housing in the Sussex Inlet area, partly due to the fact that the rezoning moratorium prevented further areas being rezoned and developed and partly as a result of the increasing attractiveness of the coastal lifestyle. Additional development will also make the provisions of community facilities more viable and a greater range of housing styles is also required to meet the needs of an aging population.

The Strategy considers all these issues at a strategic level and provides clear directions for the future of the area to be implemented through subsequent rezoning and development processes.

In summary, the purpose of the Strategy is to:

- identify the level of residential and rural residential development that is sustainable based on recognised environmental constraints and consideration of social and economic issues;
- establish sustainable development principles and actions to guide future development decisions; and
- identify appropriate locations of future settlement options, explore opportunities for urban consolidation and consider infrastructure needs and service levels for existing and projected population levels.

1.3 How to use this document

The first section of this document outlines the planning framework that is relevant to the preparation of the Strategy. A brief outline of the intent or objectives of relevant Commonwealth and State Government legislation is provided along with the policy direction that relates to the issues addressed in the Strategy.

Section 2 contains a discussion of the key broad strategic issues that are relevant to the preparation of the settlement strategy. This Section includes objectives and broad actions and planning principles that need to be taken into consideration for any subsequent development or rezoning proposal. More detailed requirements for each investigation area are identified in Section 3 and will need to be fully considered as part of any future development or rezoning proposal. Each investigation area is mapped with the constraints and opportunities shown indicatively on the associated maps. Section 3 also contains the preferred settlement strategy outcomes for the study area.

Both Sections 2 and 3 list key actions and make reference to the key government agency or stakeholder responsible for the implementation of these actions. The actions are set either short, medium or long timeframes or are noted as being on-going. The timeframes outlined in the Strategy relate to the following:

Short term – 1-3 years
Medium term – 3-5 years
Long term – 5 years plus into the future.

1.4 Planning Framework Overview

There are numerous Acts, Regulations and policies or other documents that are relevant to the study area. The following is a brief overview of the statutory framework relevant to the implementation of this Strategy.

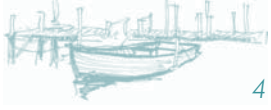
1.4.1 Commonwealth Government

The Commonwealth Government's *Environment Protection and Biodiversity Conservation Act, 1999 (EPBC Act)* contains relevant legislative responsibilities in relation to nationally listed threatened species, migratory birds listed under the JAMBA or CAMA agreements, RAMSAR listed wetlands and Commonwealth Reserves.

1.4.2 State Government

A wide range of NSW environmental and planning legislation applies to the study area, including amongst others: *Environmental Planning & Assessment (EPA) Act, 1979, Threatened Species Conservation Act, 1995, Native Vegetation Conservation act, 1997, Rural Fires Act, 1997, Rivers and Foreshores Improvement Act, 1948, Coastal Protection Act, 1979 and the Water Management Act, 2000*. There are a number of existing State planning instruments under the EPA Act that also apply to the study area.

These include, amongst others, State Environmental Planning Policy (SEPP) No. 14 Coastal Wetlands, SEPP No. 71 Coastal Protection and SEPP Major Projects. There are a number of other relevant statutory and non-statutory instruments and plans applicable in the area. These are discussed in more detail below.



State and Regional Environmental Planning Instruments (EPIs)

There are a number of exiting State EPIs under the *NSW Environmental Planning & Assessment Act 1979* that apply to the area. They include:

- State Environmental Planning Policy (SEPP) No.14 – Coastal Wetlands;
- State Environmental Planning Policy No.71 – Coastal Protection;
- State Environmental Planning Policy, Major Projects; and
- Illawarra Regional Environmental Plan (REP) No.1

The Illawarra REP was gazetted in 1986 and provides part of the wider planning framework for Shoalhaven. The REP applies to the area encompassing the Local Government Areas (LGAs) of Wollongong, Shellharbour, Kiama, Wingecarribee and Shoalhaven and therefore has a broad focus. The Illawarra REP identifies regional planning issues and considerations, including commercial centres, extractive industries, transport, environmental protection and waste management. The REP provides guidance and principles for Councils to consider and address in the preparation of local environmental plans (LEPs).

South Coast Regional Strategy

Whilst the Illawarra REP still remains current, the State Government has as part of its planning reforms prepared new Regional Strategies to provide an updated strategic planning framework for certain areas within NSW.

The South Coast Regional Strategy, covering the LGAs of Shoalhaven, Eurobodalla and Bega Valley was released in February 2007 and seeks to balance the demands of future growth with the need to protect and enhance environmental values. The regional Strategy is a 25 year plan for the area and identifies the need to plan for and accommodate 60,000 more people, 45,600 new dwellings and 25,800 new jobs.

The South Coast Regional Strategy identifies Nowra-Bomaderry, Ulladulla (including Milton) and an urban centre based on the existing settlements around Jervis Bay and St Georges Basin as three major urban centres. Nowra-Bomaderry is identified as one of three major regional centres, along with Batemans Bay and Bega. Sussex Inlet is identified as a town that has a concentration of services and residential development because of their location but at a lower level in the Settlement hierarchy than the regional centre and major towns.

The South Coast Regional Strategy contains a wide range of detailed outcomes and actions related to:

- Natural environment
- Natural hazards
- Housing and settlement
- Economic Development and employment growth
- Rural landscape and rural communities
- Water, Energy and waste resources
- Cultural Heritage
- Implementation

The South Coast Regional Strategy will be used to guide the preparation of new LEPs in the area and any rezoning investigations that arise from this Strategy will need to consider the relevant Regional Strategy outcomes and actions.

The Regional Strategy also specifically acknowledges that only urban areas which are identified in the final version of the Sussex Inlet Settlement Strategy endorsed by the Director-General of the Department of Planning, will be supported by the State Government.

Development proposals for urban areas outside the endorsed Sussex Inlet Settlement Strategy will not be supported unless they can demonstrate that they can satisfy the sustainability criteria that forms part of the Regional Strategy. Similarly, the Regional Strategy states that no new towns or villages will be supported unless compelling reasons are presented and the sustainability criteria can be satisfied. The criteria includes amongst other matters, infrastructure provision, environmental protection and accessibility.

As part of the preparation of the South Coast Regional Strategy seventeen sites throughout the region were reviewed during 2006 by the South Coast Sensitive Urban Land Review Panel. Two of the seventeen sites are within the Sussex Inlet Settlement Strategy area, namely:

- Badgee Lagoon (privately owned land surrounding the lagoon)
- Berrara (Crown Land between villages of Cudmirrah and Berrara)

The Review Panel provided specific recommendations regarding the suitability of each site in terms of scale and type of development, land release, priority and timing. These recommendations will be used to guide future development applications, LEPs and strategic land use plans. The Review Panel Recommendations are presented as Appendix 2 to the Regional Strategy and are considered and addressed later in this Strategy.

The South Coast Regional Strategy also makes reference to areas of high conservation value and the need for any new urban development to be prohibited by LEP's on land assessed as being of high conservation value. Areas of high conservation value are mapped in the South Coast Regional Strategy and indicate that important biodiversity and coastal assets occur within the Sussex Inlet area.

The South Coast Regional Strategy is to be supported by a South Coast Regional Conservation Plan which will map and describe areas of known or potential high conservation value on the South Coast. A major action of the Regional Strategy is that in identifying potential new urban areas the location and conservation significance of areas will need to be verified by Councils in consultation with the DoP and the Department of Environment & Climate Change (DECC).

The key conservation values mapped as occurring in the Sussex Inlet area are Endangered Ecological Communities, threatened fauna habitat, threatened flora habitat, wildlife corridors, old growth forest, wetlands and wader habitat. Some of these values are well documented, while others will require verification and additional environmental studies.

It is also indicated that appropriate planning controls are required to be incorporated into LEP's to protect and enhance the biodiversity values on land of lower conservation value.

NSW Coastal Policy 1997

The NSW Coastal Policy 1997 is a major State Government Policy that is relevant to the "coastal zone" as defined by the policy. A larger part of the Sussex Inlet area is subject to the Coastal policy, which

amongst other things contains principles for managing development in the coastal zone. The overarching theme of the policy is to ensure that development in the coastal zone is ecologically sustainable.

The policy has nine goals and a series of complimentary and strategic actions. Of particular relevance to this Strategy is the requirement (Strategic Action 6.1.2) that Local Councils prepare "urban land release/settlement strategies prior to major rezonings of rural land for urban expansion and ensure that any such rezonings are consistent with endorsed Regional Settlement Strategies" (NSW Government 1997).

In accordance with the provisions of SEPP No.71 – Coastal Protection, which gives legal weight to some of the elements of the NSW Coastal Policy, certain developments within the "Coastal Zone" require the consent of the NSW Minister for Planning. These include subdivision of land in a residential zone into more than 25 lots and subdivisions in a rural residential zone into more than 5 lots.

Coastal Design Guidelines

The former Coastal Council of NSW prepared "Coastal Design Guidelines for NSW" and these were released in February 2003. The Guidelines focus on improving urban design in coastal areas and ensuring that the character and environment of a place, including the social and economic context, are considered as part of coastal settlement planning. The Guidelines can be applied to a range of situations to guide the detailed design of urban areas and contribute to defining appropriate scale of settlement and development controls.

Other Policies and Plans

Healthy Rivers Commission Independent Inquiry into Coastal Lakes (2002)

The NSW Government's Healthy Rivers Commission (HRC) Independent Inquiry into Coastal Lakes released its Final Report in 2002. The report focuses on strategies required to maintain and improve the health and management of coastal lakes in NSW. The report discusses the problems facing coastal lakes and presents management approaches to protect them in terms of environmental and public health issues.

Two coastal lakes in the area were assessed during the inquiry and are discussed in the final report: St Georges Basin and Swan Lake. The following is a summary of the suggested provisions as outlined in the final report:

- St Georges Basin

  Classification: Healthy Modified Condition (this is a provisional classification and a detailed assessment is required to confirm its classification).

  Intended Primary Outcome: Key natural and/or highly valued modified ecosystem processes rehabilitated and retained.

  Other Possible Outcomes: Urban/village/rural residential areas are maintained and/or expanded within defined limits.

  Indicative Actions: Apply and enforce controls for new development to keep their impacts on lake/catchment health within sustainable limits. Progressively implement a program to rehabilitate natural riverine corridors etc.

- Swan Lake

  Classification: Significant Protection

  Intended Primary Outcome: Critical natural ecosystem processes restored and preserved.

  Other Possible Outcomes: Minimal risk for existing oyster growing; existing villages are maintained within current boundaries of developed areas and sustainable fishing.

  Indicative Actions: Limit any new urban and rural residential development to within existing boundaries of developed areas. Implement a program to progressively minimise intervention in natural entrance behaviour. Progressively mitigate (or remove) sewage discharges and overflows and progressively implement stringent stormwater controls for existing developed areas.

Sussex Inlet Crown Land Assessment

A detailed land assessment of State Government owned land adjacent to Sussex Inlet and Swanhaven urban areas has been prepared by the NSW Department of Lands in accordance with the *Crown Lands Act 1989*. The assessment which was completed during 2005 contains detailed management recommendations for the affected lands and also identified suitable or preferred land uses. Further comment on the Land Assessment is contained in Section 3.1.5 of this Strategy.

1.4.3 Local Government

Local Government Act

Under the *NSW Local Government Act 1993,* Council is required as part if its charter to properly manage, develop, protect, restore, enhance and conserve the environment of the area for which it is responsible, in a manner that is consistent with and promotes the principles of ecologically sustainable development.

The preparation of this Settlement Strategy will ensure that future development in the Sussex Inlet area considers the principles of ecologically sustainable development.

Shoalhaven Local Environmental Plan 1985

The Shoalhaven Local Environmental Plan (LEP) 1985 is the principal planning instrument for Shoalhaven providing detailed controls on the use of land within the City, including the Sussex Inlet area. In particular, it provides for specific uses of land through zoning and other planning controls.

The majority of rural land within the Sussex Inlet Region is zoned a mixture of Rural 1(d)(General Rural), Rural 1(g)(Flood Liable) and Rural 1(b)(Arterial and Main Road Protection) Zone. The existing rural residential areas have a "deferred" status under the current Shoalhaven LEP 1985 which means that their zoning reverts back to the previous zoning, in this case mainly Rural 1(c2) under an earlier version of the LEP.

The urban areas within the study area are zoned a mixture of Residential, Commercial, Industrial and Open Space. There are also substantial areas zoned for Environment Protection in and around the coastal areas, and large parts of the study area are identified and mapped by the LEP as being "land of ecological sensitivity".

The existing land use zones are shown on Figure 3.

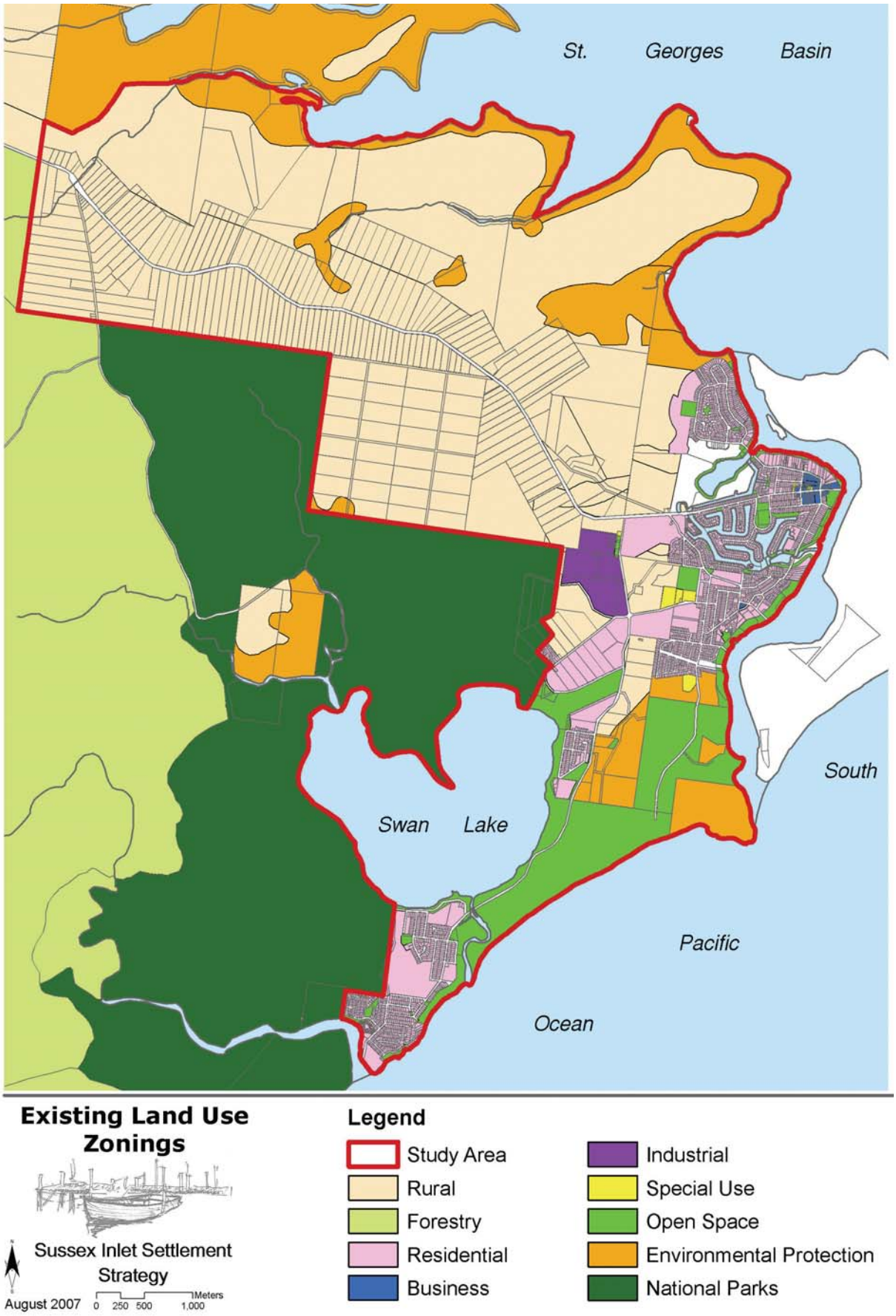
City*plan*

City*plan* was released by Council in June 2000 as a blueprint to guide the future direction of the City over the next 20-years and beyond. It identifies objectives and strategies that Council will use to realise its Vision for the future, including:

- acknowledging the value and beauty of our environment by addressing the issue of its protection with a sensitive and balanced approach to accommodate population growth;
- protecting the natural beauty, built environment and heritage of the area whilst adopting a balanced approach to growth;
- towns and villages will thrive with a range of low visual impact, affordable and well-designed housing and meeting places where people feel they belong;
- opportunities for rural living will be made available where this is in keeping with the area's natural attributes; and
- through implementation of the Housing Strategy, Council will help ensure that there is a diversity of housing types to meet the needs of all ages and types of demand.

Council will pursue these objectives through, amongst other things, the preparation of a City Wide Settlement Strategy, City Conservation Strategy, and implementation of the Shoalhaven Housing Strategy.

Figure 3: Existing Land Use Zonings



Shoalhaven Housing Strategy

The Shoalhaven Housing Strategy was adopted by Council in June 2006. This Strategy followed an earlier Local Housing Strategy that was prepared in 2000 and examined:

- The main attributes of current and future housing needs in Shoalhaven according to location;
- The stock of housing in the area and new additions to that stock;
- Apparent mismatches between available housing and needs of the population;
- Constraints to meeting the needs of key population sub groups; and
- Action taken by comparable Councils to improve the match between housing needs and housing supply.

The Strategy used Census data from 1981 to 1996 to identify population and dwelling trends in the area and their changes over time. One of the most marked trends identified was a large and rapidly growing component of older residents. Consultation also suggested some inadequacy of housing provision for "special need" groups amongst the population, including youth, Aboriginals, women, sole parents and people with a disability.

As such the Housing Strategy contains a number of objectives and detailed actions. The six broad Strategy objectives are:

1. Increase the supply of housing where appropriate for people whose needs are poorly met by existing stock.
2. Manage local housing supply to minimise unsustainable peaks and troughs in dwelling prices.
3. Support local providers to increase the supply of housing for special needs groups.
4. Increase the supply of affordable housing in Shoalhaven and retain existing affordable housing.
5. Ensure maximum accessibility of available community services and facilities to Shoalhaven residents, particularly those with special needs.
6. Pursue an active Housing Strategy for the Shoalhaven.

The Housing Strategy contains a number of actions which are applicable to the Sussex Inlet area, including:

Permit villas and integrated development in portions of the larger Bay & Basin centres viz: Sanctuary Point, St Georges Basin, Basin View. Limit this zoning to small parts of the built up area of these centres close to retail and community centres. These controls should also apply to Sussex Inlet.

Design planning controls to achieve viable redevelopment within approx 200m of retail and community centres, in areas of dwelling stock over 30 years.

Manage local housing supply to minimise unsustainable peaks and troughs in dwelling prices.

Increase the supply of affordable housing in Shoalhaven and retain existing affordable housing.

Ensure maximum accessibility of available community services and facilities to residents, particularly those with special needs.

1.5 Where does the Strategy fit into the Planning Process?

The Settlement Strategy represents a major policy initiative between Council and the State Government. The Strategy does not rezone or change the use of land within the study area but identifies broad areas for potential future development. Principles, objectives and actions are outlined in the Strategy to guide the planning outcomes for these areas if they are rezoned or developed.

While the Strategy is a stand alone document it operates within the broader set of State Government planning legislation and strategies. There are numerous Acts, regulations and other documents that apply to the area and the surrounding locality. This Strategy has been prepared using a range of existing studies which have been undertaken over time as well as up to date aerial photography and other mapping.

The Strategy identifies land that may be capable of being developed and outlines the issues that will need to be addressed during the more detailed rezoning and development processes for each area under the *NSW Environmental Planning & Assessment Act 1979* and other statutory processes.

The Settlement Strategy is a non-statutory plan for the Sussex Inlet area that focuses on setting outcomes and goals. It compliments and builds on the planning outcomes contained in the South Coast Regional Strategy and other planning instruments. It does not however, override relevant statutory responsibilities of Council or the NSW Government.

In terms of environmental conservation, the Settlement Strategy offers the opportunity to confirm conservation area and remove the uncertainty associated with existing subdivision potential in many areas. The Settlement Strategy contains a series of actions and environmental objectives to ensure that these matters are given appropriate consideration in any subsequent rezoning or development. The Strategy includes provision for wildlife/riparian corridors and the protection of important habitat for threatened species in order to conserve our biodiversity for future generations.

Figure 4 illustrates how the Strategy interacts with the NSW Planning System as it applies in the area.

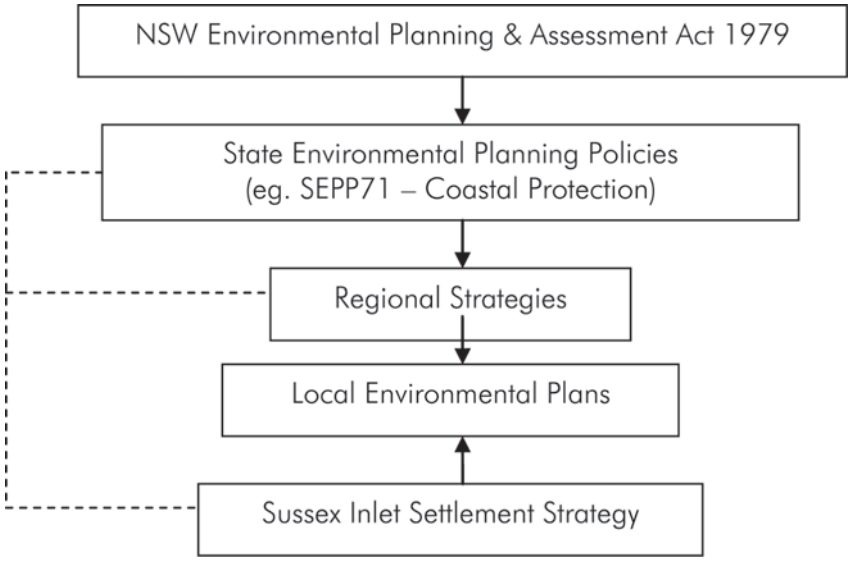


Figure 4 – NSW Planning Systems Hierarchy

There will be on going consultation with the community as part of the planning processes for new settlement within the area. Figure 5 illustrates how the community can be involved in the planning process.

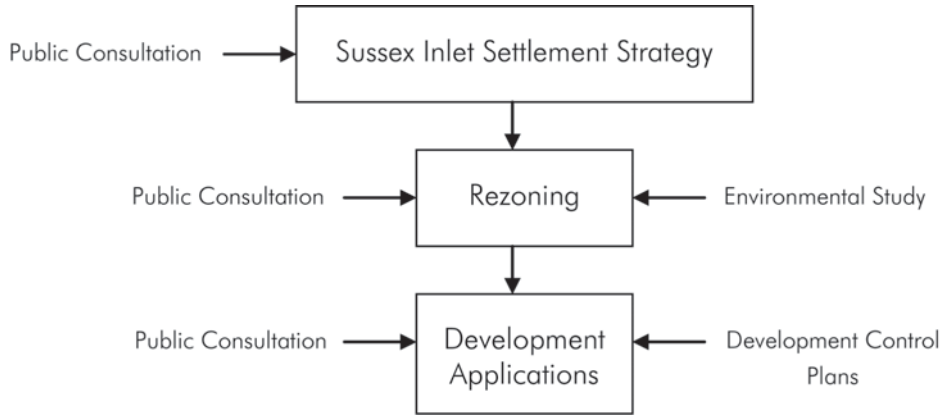


Figure 5 – Community Consultation Process

2.0 STRATEGIC CONSIDERATIONS

This section briefly outlines the range of broad strategic issues considered in developing the Strategy. The key social, economic and environmental issues are addressed in this section at a broad strategic level over the study area. Each key issue has been investigated by drawing on existing reports and broad land capability mapping has also been used to identify lands that may be appropriate to develop subject to more detailed investigation. Strategic objectives are identified to ensure that appropriate consideration is given to key issues as part of any subsequent rezoning or development processes.

In Section 3 the broad strategic issues are assessed in more detail over specific investigation areas and key actions are identified that need to be undertaken as part of any future development of these investigation areas. The broader strategic objectives contained in this section will also need to be addressed where the key issue is relevant to the development of an investigation area.

2.1 Socio-Economic Constraints and Opportunities

2.1.1 Future Settlement

Housing Demand and Supply

Housing demand and supply in the Sussex Inlet area is influenced by a number of factors. The previous rezoning moratorium prevented any significant areas of zoned land being brought to the market and there has not been substantial spare capacity for development in existing areas given current planning controls. At the same time, the demand for coastal living has increased in recent years. These two factors have seen significant price rises for housing in the area, particularly in the period between 2000 and 2004.

Strong underlying population growth in the Shoalhaven local government area (LGA) is forecast to continue, and while house price growth has moderated in the last twelve months; long term trends would suggest continued demand in the housing market. Council has adopted population forecasts which would see the overall Shoalhaven LGA population increase from 87,650 people in 2001 to 141,990 in 2036.

The 'sea change' phenomenon has been a driving force on housing demand in the study area and this is likely to continue. In many instances properties are initially purchased as an investment (either tenanted or left vacant as a holiday house / weekender) with a view to retiring to the locality in the future.

The housing pressures caused by holiday home purchases and 'sea change' migration have become more pronounced due to the increased levels of wealth afforded by the buoyant economy and in particular sharply rising house prices.

Another factor which is leading to increased population growth in Shoalhaven is the relatively limited supply of new residential land in the wider Illawarra area to the north.

The following tables detail low, medium and high range forecast population increases and the associated demand for dwellings for the study area. Given the wide range of factors which can influence population trends, it is appropriate to provide three potential scenarios.

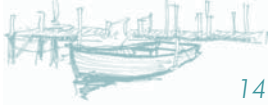


Table 1 – Low, Medium and High Population Forecasts for Sussex Inlet Area

Low Forecast

Forecast Dwelling Demand for Sussex Inlet Area - Low Forecast			
Year	**Forecast Population**	**Cumulative Net Population Increase**	**Resultant Cumulative Dwelling Demand**
2005	4,000		
2010	4,424	424	283
2015	4,806	806	537
2020	5,174	1,174	783
2025	5,543	1,543	1029
2030	5,911	1,911	1274
2035	6,267	2,267	1511

Medium Forecast

Forecast Dwelling Demand for Sussex Inlet Area - Medium Forecast			
Year	**Forecast Population**	**Cumulative Net Population Increase**	**Resultant Cumulative Dwelling Demand**
2005	4,000		
2010	4,526	526	350
2015	5,120	1,120	747
2020	5,793	1,793	1195
2025	6,554	2,554	1703
2030	7,416	3,416	2277
2035	8,390	4,390	2927

High Forecast

Forecast Dwelling Demand for Sussex Inlet Area - High Forecast			
Year	**Forecast Population**	**Cumulative Net Population Increase**	**Resultant Cumulative Dwelling Demand**
2005	4,000		
2010	4,751	751	500
2015	5,642	1,642	1095
2020	6,701	2,701	1801
2025	7,959	3,959	2639
2030	9,453	5,453	3635
2035	11,227	7,227	4818

Source: Hill PDA advice prepared as part of the Settlement Strategy investigations

The tables suggest a forecast resident population of between approximately 6,250 and 11,250 by 2035, with an associated demand for between approximately 1,500 and 4,800 additional dwellings. Over the next 10 years the resident population is forecast to increase by approximately 800 to 1,650, with an associated demand for dwellings of between approximately 550 and 1,100 dwellings, with the number of dwellings influenced by both aggregate population growth and the tendency towards smaller household size.

It is important to note that these forecasts for the Sussex Inlet area were prepared by consultants assisting with the preparation of the Strategy. Given the range of assumptions underpinning population forecasts and the long timeframes involved, it is possible for estimates to vary. In that context, it is noted that Council's adopted forecast for the area is for a population of 6,129 by the year 2036. This is broadly in line with the "low" scenario forecast above as part of the investigations supporting this Strategy.

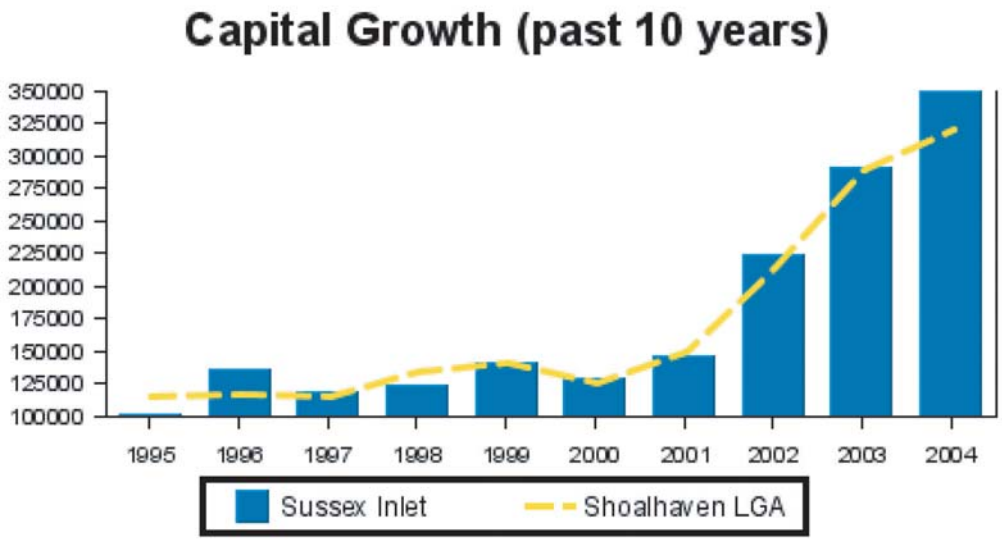
It is also important to note that these figures represent forecasts of population and subsequent dwelling demand if the ability to provide new housing was unconstrained. In other words, they represent an underlying level of demand. Clearly, the future population of Sussex Inlet will largely depend on how much land is available for residential development taking into account potential environmental constraints. The above figures should therefore not be regarded as population targets.

The value of the above estimates is that they highlight the strong underlying demand for new housing in the Sussex Inlet area and opportunities for new development need to be considered in this context.

On the supply side, the type of housing available in the Sussex Inlet area has remained relatively static. At present, there is a high proportion of separate or detached houses within the study area and a relatively low proportion of medium density or other housing forms. It is forecast that demand for medium density housing and smaller lots will tend to increase, reflecting a combination of the ageing population and the high number of single person households within the area. Similar conclusions were reached by Dr Judith Stubbs in her assessment of the social impacts of an ageing population prepared for Council in 2004. It is important therefore that a greater degree of housing choice is achieved in the future so that both existing and future residents of the Sussex Inlet area can choose housing which better suits their needs without having to leave the area as their circumstances alter.

This combination of factors has seen significant price growth for housing in recent years, as evidenced in the chart below, prepared by Hill PDA.

Chart 1 – House Price Growth in Sussex Inlet Area



Source: Hill PDA

Demographic Factors

The following trends and demographics issues are also relevant when considering future settlement in the area.

Age Profile

Sussex Inlet (and Shoalhaven generally) has a significantly higher than average proportion of senior residents as well as a notably lower than average proportion of people in the younger age brackets. Over time the percentage of older people in the population has increased, whilst youth numbers have continued to decrease. 42.6% of residents are over 60 years old in the Sussex Inlet compared to an average of 31.9% for other coastal towns in Shoalhaven LGA and 15.7% for the Sydney statistical district. The median age for the Sussex Inlet area is 55.3 years old.

In considering the future housing needs for Sussex Inlet, it is important to understand the future age profile of the population. It is widely recognised that as people age their housing needs can also evolve. While these needs can remain quite diverse, there is a general tendency for older people to require housing with lower maintenance obligations and in locations where convenient access to community facilities is available.

Drawing on forecasts of the age profile for the wider Shoalhaven area and relating it to the above population forecasts for Sussex Inlet, it is possible to make some assumptions about the future age profile of Sussex Inlet. These forecasts are provided in Table 2.

Table 2 – Future Age Profile of Sussex Inlet

	Population Forecast Scenario				People aged 65+		
Year	**Low**	**Medium**	**High**	**% aged 65+[1]**	**Low**	**Medium**	**High**
2005	4,000	4,000	4,000	23%	920	920	920
2010	4,424	4,526	4,751	25%	1,106	1,132	1,188
2015	4,806	5,120	5,642	27%	1,298	1,382	1,532
2020	5,174	5,793	6,701	30%	1,552	1,738	2,010
2025	5,543	6,554	7,959	33%	1,829	2,163	2,626
2030	5,911	7,416	9,453	35%	2,068	2,596	3,309

Notes

1. This table has been prepared by combining population forecasts prepared by Hill PDA for Sussex Inlet with Shoalhaven-wide age profile forecast percentages to provide estimates of the total number of people aged over 65 for the various population forecast scenarios.
2. The population forecasts were undertaken for five year intervals commencing in 2005, whereas the age profile forecasts were for five year intervals commencing in 2006. Therefore, the age profile percentages have been assumed to be transferable to the applicable prior year in terms of population forecasts.

It is clear from this analysis that regardless of which population growth scenario is adopted, there will be a substantial increase in the number of people aged over 65 in Sussex Inlet. While not all of these people will need or choose to live in smaller houses, it is imperative that a greater degree of housing choice be provided to meet the needs of this increasing segment of the local community.

Housing diversity will need to be provided in both appropriate areas within Sussex Inlet, as well as within any larger new residential areas which may be considered potentially suitable for residential development.

Housing Trends

Home ownership levels are relatively high at Sussex Inlet with some 77.2% of dwellings being owned or purchased and only 16.3% being rented.

84.6% of the 1,792 occupied dwellings within the Sussex Inlet area are separate houses, which is lower than for Shoalhaven as a whole at 88.1%. This difference is primarily due to the large proportion of dwellings under the 'caravan, cabin, houseboat' census category at 7.9%, compared to 3.0% for Shoalhaven.

The total number of medium density (semi detached, row or terrace house, townhouse etc) is lower within Sussex Inlet and surrounding villages and towns (2.1%) compared to Shoalhaven (3.1%) and NSW (9.3%). Similarly, the total number of 'flats, units or apartments' is lower (4.3%) compared to Shoalhaven (4.7%) and NSW (17.9%).

Census data for 2001 indicates that a relatively high proportion of dwellings in the area were unoccupied (36.7%), which compares to 26.1% for Shoalhaven, and 8.9% for NSW. The low occupancy rates in Sussex Inlet and surrounding coastal villages reflect the high incidence of holiday houses / weekenders. According to recent research, this trend of holiday home ownership is likely to continue in coming years.

Out of all the Shoalhaven planning areas, the Sussex Inlet area has the lowest proportion of family households (69.0% compared to 72.7% for Shoalhaven), and the highest proportion of lone person households (29.1% compared to 25.0% for Shoalhaven).

Key conclusions to be drawn from this analysis in terms of the Settlement Strategy include:

- The age profile of the population is weighted towards older people and will increasingly become so in the future;
- Raising issues of suitability for some people as they age and are less able to address maintenance and gardening tasks; and
- The on going trend of holiday homes results in comparatively low occupancy rates at certain times of the year.

It will therefore be important that decisions about the future housing needs of Sussex Inlet are significantly influenced by the need to provide greater housing diversity and adaptable housing than currently exists so that the needs of the increasingly aged population can be addressed.

Urban Consolidation Opportunities

Future urban development will also encourage and support infill housing development, where appropriate, following more detailed assessment of the existing building stock and environmental constraints like flooding. The South Coast Regional Strategy highlights the need for a wide range of housing choices to provide for different needs and different household incomes.

Opportunities for urban consolidation should be pursued in order to ensure that future housing mix matches the needs of smaller households and ageing residents within established urban areas. Urban consolidation will also help to strengthen the economic and social stability of the existing urban areas whilst ensuring more sufficient use of existing infrastructure and services.

The South Coast Regional Strategy is to be supported by Settlement Planning Guidelines, due for release in 2007. The guidelines will include dwelling projections for each local government area and guidance on urban design including water sensitive urban design and land use objectives. It is anticipated that further investigation into the matter of urban consolidation will be undertaken following the release of these guidelines and the preparation of a Citywide local environmental plan.

It is particularly important that new development opportunities are not limited to undeveloped sites. Consolidation within the non-flood prone land in the southern parts of the Sussex Inlet area should also be investigated and encouraged through appropriate planning controls.

Many of the existing lots within Sussex Inlet are quite large and the majority contain single detached houses. The size of these sites and their location relative to existing community facilities makes them ideal for redevelopment to provide for increased densities.

Any redevelopment need not be widespread because it is important that the overall character of Sussex Inlet be preserved. However, these sites offer an opportunity to increase the range of housing choices available to Sussex Inlet residents, particularly in convenient locations.

Future Settlement

Objective: To ensure that a range of living opportunities for future and existing residents is provided and urban growth is managed sustainably.

Broad Actions & Planning Principles

1. The supply of housing opportunities for future residential development will be provided within the environmental and servicing constraints of the area.
2. Settlement opportunities (residential and rural residential development) outside the investigation areas identified in this Strategy will not be supported unless compelling reasons are presented and they can satisfy the Sustainability Criteria contained in the South Coast Regional Strategy.
3. Areas of new urban development will be located and designed in accordance with the principles and policy actions identified in this Strategy.
4. A range of lot and household sizes will be encouraged in new residential areas to allow for housing choice and affordability, and the varying demands of a changing society. The housing mix in new residential areas should be consistent with the targets established in the Department of Planning's Settlement Planning Guidelines.
5. Review suitable sites within the Sussex Inlet township to identify opportunities for increasing existing residential densities and make necessary changes to facilitate increased housing choice in these areas.
6. Guidelines will be established, where appropriate, to ensure development compliments existing residential character and set performance standards to ensure that the bulk and scale of infill and new urban development protects or enhances residential amenity.

Implementation Responsibility

Council, Department of Planning, relevant State Government Agencies and landowners/ developers.

Note: Any future residential development will need to take into consideration relevant NSW State Government guidelines including:

- Coastal Design Guidelines for NSW
- Planning for Bushfire Protection Guidelines
- Settlement Planning Guidelines
- South Coast Sensitive Urban Lands Review

Timeframes for Actions

1. & 2. On going
3. to 6. Medium term

2.1.2 Community Facilities

Council has a detailed Community Plan for the period 2005 – 2010 that outlines a range of strategies which seek to achieve supportive, empowered, cohesive and creative communities.

The strategies and initiatives in the Community Plan are focused on policy direction and initiatives for the local government area as a whole. In that regard, the Strategy needs to reflect and support these policies in their general intent wherever possible.

The following social and community objectives have been used to guide the Strategy process. The Strategy should aim to:

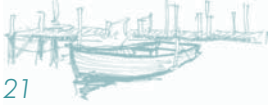
- create a safe living environment;
- cluster community activities in precincts or neighbourhoods or at a key focal point within smaller communities;
- support the capacity of the community to self initiate and manage its activities;
- integrate the provision of community facilities and services with surrounding areas and between precincts/neighbourhoods;
- provide for lifestyle opportunities across the lifecycle and dynamic demographic profile;
- develop a positive sense of community identity; and
- encourage social interaction and safe public environments.

One of the key issues for any urban area is whether there is sufficient population to support the provision of a range of community facilities. In considering the various options for the future of the Sussex Inlet area, it is important to take into account the additional facilities which could be supported through an increase in population.

The comparatively small size of the four townships in the area is strongly valued by the local community. However, increasing the size of the townships could see additional facilities provided for the community. Similarly, increased population could see existing facilities better utilised, making them more economically viable. It is also possible that a larger population could see more services, such as doctors, attracted to the area.

The Sussex Inlet area already contains a range of community facilities and has a strong network of social clubs. Through the preparation of the Strategy sixteen community groups and twenty social and sporting clubs were identified. This demonstrates the established and integrated nature of the communities in the Sussex Inlet area.

These broad social issues need to be weighed up when considering the future growth and type of development to be actively encouraged in the Sussex Inlet area.



Additional Community Land

Given the potential for future residential expansions in the area, it is also appropriate to make provision for additional community land. Land to the immediate west of the existing primary school and sports complex area remains undeveloped at this stage and would be a suitable and logical addition in this regard. Future uses have not yet been determined but could possibly include additional community facilities. This land is located towards the western end of Thomson Street.

Further investigations are required as to the extent of land required in this area for any future community uses. These investigations should also take into account the need to retain a vegetation corridor through the area. Sufficient land may exist to achieve both objectives subject to detailed investigation and design.

The land is largely Crown land and was considered in the 2006 Crown Land Assessment. While the review saw the land as being primarily suitable for conservation purposes, it is appropriate to consider its potential for partial use as community land. Detailed comment in this regard is also provided in Section 3.1.5.

Community Facilities

Objective: To ensure that adequate recreation and other community services/ facilities are provided to reflect changing demographics.

Broad Actions & Planning Principles

1. Services and facilities that require upgrading or provision will be identified and where appropriate will be provided in Council's Section 94 Plan and relevant State Government programs in accordance with the settlement hierarchy of the City and the population threshold of the Sussex Inlet area.

2. The provision of services and facilities will be monitored and the Community Plan regularly reviewed to ensure it meets the changing needs of the community.

3. Relevant community service actions of the Shoalhaven Housing Strategy will be considered and implemented.

4. Further investigate the capability of the Crown Land adjacent to Thompson Street to determine its potential for meeting the dual needs of additional well located community land and a vegetation corridor.

Implementation Responsibility

Council and relevant State Government Agencies.

Timeframe for Actions

On going

2.1.3 Employment Land

There is existing industrial land located on the south-western corner of The Springs Road and Sussex Inlet Road which is zoned Industrial 4(a) (General) under Shoalhaven LEP 1985. While it has not been fully developed at this stage, it is appropriate to provide for additional employment land in the longer term, particularly given the relatively large forecasted increase in population.

The most suitable and logical location for this expansion is to the immediate west of the existing employment land. This land adjoins the existing industrial zone and would be suitable for rezoning from its current rural zoning to industrial. It is well located relative to the road network, does not adjoin residential areas and is substantially cleared. The opportunity to create a small industrial cluster with adjoining land also exists. This land is shown in purple on Figure 6.

Employment Lands

Objective: To ensure the local economy complements and is responsive to the areas cultural and natural environment and there is adequate zoned employment land available to meet local employment demands.

Actions

1. The following land will be further investigated for addition to the existing Industrial zoned area to the west of The Springs Road:

   Lot 104 DP 26638 Sussex Inlet Road (see Figure 6) – Investigate the capability and suitability of this land for industrial development including the management of waste, stormwater run off, coordinated bushfire hazard reduction measures, provision of vegetated buffers and access through the existing industrial zoned land.

2. Funding opportunities for the preparation of an economic development strategy for the area will be explored. Such a strategy will seek to identify and examine the existing economic activity in the area, key opportunities for future economic activity and encourage sustainable development opportunities for tourism and other economic uses to supplement the local employment market.

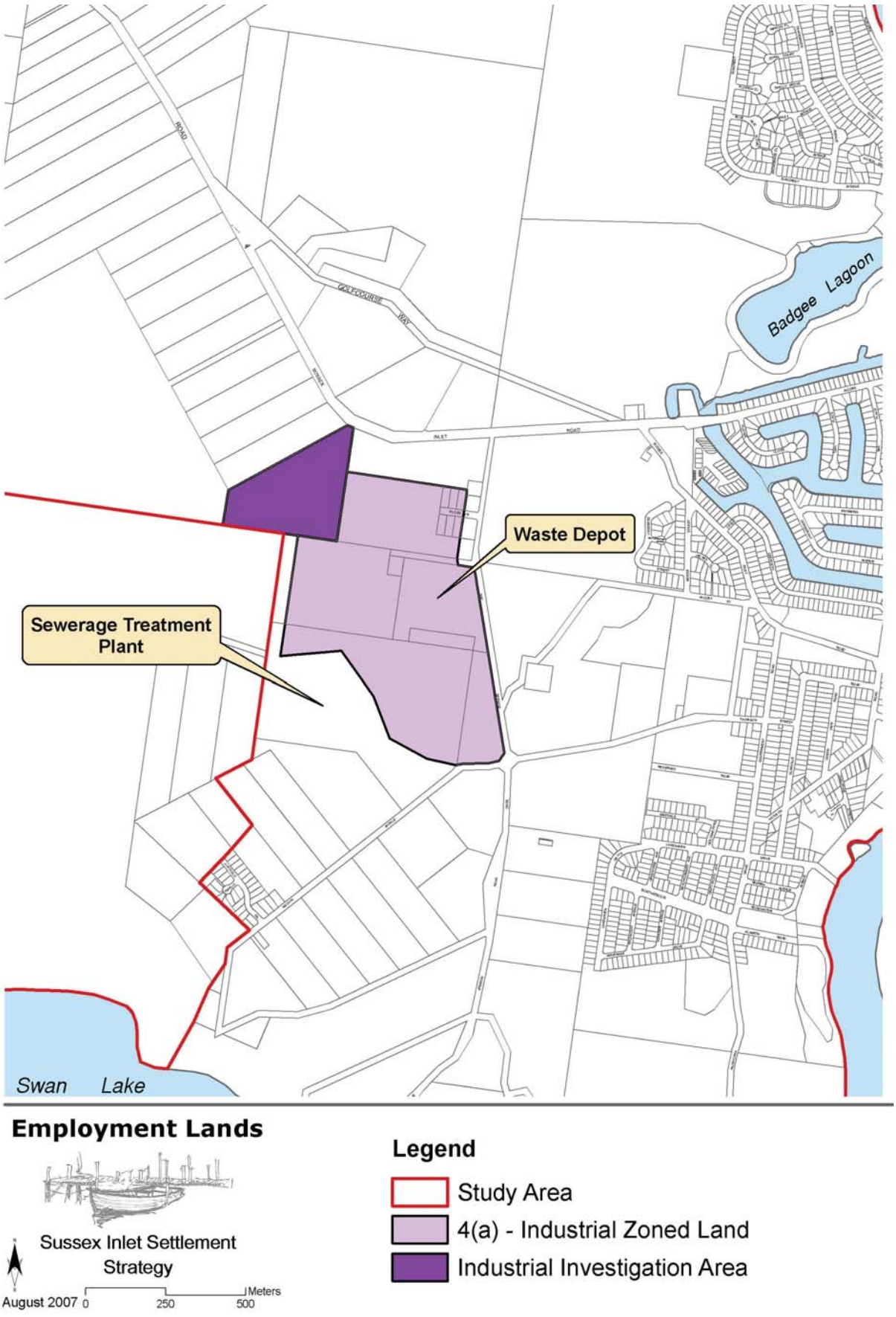
Implementation responsibility

Council, Department of Planning and relevant State Government Agencies.

Timeframes for actions

1. Medium term as part of the LEP review process currently being undertaken by Council.
2. Longer term

Figure 6: Employment Lands



2.1.4 Infrastructure

In considering future settlement it is important to take into account the infrastructure required to support any given level of population and development. The major areas of infrastructure considered in the formation of the Strategy include the following:

- Traffic and transport;
- Water supply;
- Wastewater management system;
- Urban stormwater management; and
- Electricity and utilities.

Traffic and Transport

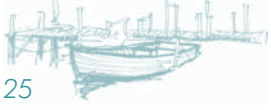
Sussex Inlet, Swanhaven, Cudmirrah and Berrara are accessed by road via the Princes Highway, Sussex Inlet Road and The Springs Road. The terrain through which both roads pass ranges from gently rolling to level and the environmental setting is either natural (forest) or rural (developed farmlets). Sussex Inlet Road is 13 km long with 11 km in the rural setting.

Both the Princes Highway and Sussex Inlet Road are sealed and the carriageways configured to two lanes with two-way traffic flow. On Sussex Inlet Road the travel speed is restricted to 100 km/h in the rural section and 50km/h within the urbanised village areas. In the rural section, sharpish bends have been sign posted with advisory speed signs, 85km/h and 75km/h as appropriate. Barrier linemarking defines areas where overtaking is considered to be unsafe such as the more severe bends and the occasional crest.

Main road access to the majority of the area is flood free, above the 1% AEP (1 in 100 year) flood level. However, the road bridge connecting to the northern part of Sussex Inlet is flood-prone, restricting access to or egress from this area in periods of flooding. Opportunities for addressing this limitation are considered as part of this Strategy.

The Princes Highway / Sussex Inlet Road intersection is configured to a 'seagull' arrangement with separate provision in the highway for a right turn lane. Further improvements to this intersection have been undertaken by the NSW Roads and Traffic Authority (RTA), including improvements to facilitate safe right turns from Sussex Inlet Road to the Princes Highway. Single lane roundabouts have been installed on Sussex Inlet Road at the two most heavily trafficked urban intersections.

The key issue for this Strategy is whether any proposed additional growth can be catered for within the existing road network or whether upgrades to the network will be required. The proliferation of access points onto Sussex Inlet Road will need to be addressed as part of any major urban development or rezoning proposal.



Traffic

The potential traffic impacts of the identified additional development have been considered in preparing this Strategy. Historic traffic data available from the RTA was used to establish the current traffic profile for both the Princes Highway and Sussex Inlet Road. Prediction forecasts for future and past years were made using trendline analysis. Dwelling, population and traffic generation statistics were based on the ABS 2001 Census data.

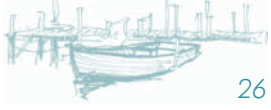
The following assessment of road performance considers both the average circumstance where the seasonal traffic highs and lows are averaged (AADT) and the peak high that may be experienced during periods such as the public holidays. The results of this performance assessment have been expressed in terms of Level of Service (LoS) where Level of Service is a traffic engineering measure used to assess the flow condition and level of congestion on a road. LoS volumes where interpolated from AustRoads "Guide to Traffic Engineering Practice – Part 2 – Road Capacity' (Table 3.9).

Table 4 – Level of Service (LoS) definitions

Level of Service	Description
A	Generally free flow conditions, vehicles unimpeded in manoeuvring in the traffic stream – travel speed 90% of free flow condition – level to rolling terrain – 0 to 1750 vehicles per day
B	Relatively unimpeded operation, manoeuvring in the traffic stream slightly restricted, stopping delays low – travel speed 70% of free flow condition – level to rolling terrain – 1751 to 3800 vehicles per day
C	Stable operating conditions, manoeuvring more and motorists experiencing appreciable tension in driving restricted, stopping delays low – travel speed 50% of free flow condition – level to rolling terrain – 3801 to 6550 vehicles per day
D	Bordering on range in which small changes in flow can significantly reduce travel speed and increase delay – travel speed 40% of free flow condition. The upper limit of LoS 'D' is when consideration may be given to improvement upgrades – level to rolling terrain – 6551 to 10750 vehicles per day
E	Significant delays, saturated conditions – travel speeds 33% of free flow condition – level to rolling terrain – 10751 to 18850 vehicles per day

Source: AustRoads "Guide to Traffic Engineering Practice – Part 2 – Road Capacity"

The growth in the total number of dwellings over time in the Sussex Inlet area was then analysed and it was found that there has been a 1.5% increase per annum in recent years.



Data from available traffic counts was also analysed to assess growth in background traffic. This data is summarised below.

Table 5 – Average Annual Daily Traffic Flow

Year	1982	1986	1990	1994	1997	2000	2003	2005 Forecast
Princes Highway	-	-	5816	6418	6213	7849	9089	9086
Sussex Inlet Road	1330	1485	1811	2180	2238	2459	2818	2872

Notes:

1. Princes Highway count site 07.484 – north of Sussex Inlet Road
2. Sussex Inlet Road count site 07.466 – east of Princes Highway

Analysis of the historic data shows that the area has experienced:

Traffic growth rate

- Princes Highway – 3.4 % per annum (years 1990 to 2003)
- Sussex Inlet Road – 0.6 % per annum (years 1982 to 2003)

Average Peak holiday to AADT ratio

- 1.6:1.0 – this peak was exceeded 3 weeks in a year.

Present Level of Service (predicted for the year 2005)

- Sussex Inlet Road – LoS 'B'
- Princes Highway – LoS 'D'

By definition LoS 'B' is relatively free flowing with reasonable overtaking opportunity, LoS 'D' is approaching conditions where capacity improvements may be considered.

Based on these trends and the expected levels of development, it is envisaged that:

- Sussex Inlet Road would continue to operate at levels of service (LoS) B for some time, and would decline to a still acceptable LoS C once 1,000 dwellings were delivered;
- LoS C would be maintained during peak summer holiday periods on Sussex Inlet Road;
- The Princes Highway generally would gradually decline in terms of performance, reaching LoS E over time and experiencing LoS F in peak summer holiday periods; and
- While some improvements to the Princes Highway would be warranted in the medium to long term, traffic generated as a result of growth in Sussex Inlet would account for only 10% of the increase.

While the initial traffic analysis was undertaken on the basis of an additional 1,000 dwellings, it is now likely that there will be perhaps 1,300 to 1,400 additional dwellings if all investigation areas are developed. This increase will lead to additional traffic impacts above and beyond those considered above, but it is not expected that the overall findings and infrastructure requirements would change substantially at all as a result of the addition 300 – 400 dwellings, particularly given that this number of dwellings represents a comparatively small addition to the overall total number of dwellings in the study area.

The RTA has indicated that their principle concern in relation to settlement in the area is the future efficiency of the Princes Highway. The intersection of the Princes Highway and Sussex Inlet Road has recently been upgraded. Detailed consideration will be required on the cumulative impacts of future development on the Princes Highway intersection as part of any rezoning to permit development within the identified investigation areas.

Flooding is a significant constraint and large parts of the central area of Sussex Inlet lie below the 1% AEP (1 in 100 year) flood line. At present the road bridge connecting the town centre to the Badgee residential area is flood prone restricting access to the area in flood events. The opportunity exists as part of rezoning and development investigations associated with land to the west of the Badgee residential area to investigate and provide an alternative flood free access to the existing residential area.

This opportunity is also identified in the St Georges Basin Floodplain Risk Management Plan (December 2006) as a potential management measure that should be investigated. The plan indicates that the residential area north of Badgee Lagoon is easily isolated in small/frequent flood events. The second alternative route will improve traffic access early in an evacuation and ensure nearly 400 properties are not completely isolated during flood events.

Should new development proceed, it will also be important to address localised traffic and transport impacts associated with that development. This will be able to be addressed through either Section 94 contributions, a planning agreement or development consent conditions. The key local roads have adequate capacity for the expected levels of growth, but localised improvements may be required depending on the scale of development in a particular location.

These improvements, together with initiatives to encourage increased public transport use, as well as walking and cycling should be considered in detail during the environmental study process for a particular rezoning or in association with development applications for urban expansion.

Traffic and Transport

Objective: To ensure that urban areas are permeable and accessible to pedestrians, cyclists and public transport and that adequate access is provided from within and outside the area.

Actions

1. Wherever possible new development will be designed to provide for permeability and accessibility by pedestrians, scooters and cyclists within the local network (ie. shops, recreation areas etc).

2. To ensure the integrity of the State Road network and in particular the Princes Highway is maintained, the cumulative impact for future development within the area will be addressed at the rezoning stage. Particular attention will be paid to the functioning of the intersection of Sussex Inlet Road and the Princes Highway.

3. Public transport in the area will be encouraged and promoted where ever possible and new developments will be required to consider future bus routes as part of their street hierarchy.

4. Localised transport and traffic impacts will be considered at the rezoning stage and addressed through appropriate Section 94 contributions, planning agreements or development consent conditions.

5. New roads and traffic generating development will be designed and implemented in accordance with State Government policies and environmental criteria for road traffic noise.

6. Flood free access to Badgee – The opportunity to provide flood free access to the existing Badgee residential area shall be considered and provided as part of any residential rezoning and development of lands to the west of the existing Badgee urban area.

Implementation responsibility

Council, RTA and Department of Planning *(NB: Only as part of consideration of any State Significant Development Applications or LEPs)*.

Timeframes for actions

On going

Water Supply

The Sussex Inlet area is supplied with water by the Northern Shoalhaven Water Supply Scheme. The existing local water supply system is shown in Figure 7.

The source of water supply to Sussex Inlet is water from the Bamarang Water Treatment Plant (WTP) located west of Nowra. The original water supply to Sussex Inlet was from Bamarang WTP via trunk mains ranging from 750 mm – 450 mm diameter, Brundee water pumping station and Vincentia reservoir.

The Northern Shoalhaven Water Supply Scheme has been augmented with new infrastructure from Bamarang WTP to the 450 mm diameter trunk main west of Basin View. The works include:

- Water pumping station and 600 mm diameter rising main from Bamarang WTP to Radar Hill,
- 10ML reservoir at Radar Hill,
- 600 mm diameter trunk main from Radar Hill reservoir to Bewong reservoir,
- 20 ML reservoir at Bewong,
- 600 mm diameter trunk main from Bewong reservoir to the existing 450 mm diameter MSCL trunk main west of Basin View.

Security of water supply to coastal towns and villages to and south of Saint Georges Basin has been significantly improved by the duplication of infrastructure between Bamarang WTP and the 450 mm diameter trunk main west of Basin View. The infrastructure supplying water to Sussex Inlet also provides water to the coastal villages of Swanhaven, Cudmirrah and Berrara, Lake Conjola area and supplements water supply to the Milton/Ulladulla districts.

Sussex Inlet has its own service reservoir (Sussex Inlet reservoir) which has a capacity of 13 ML. The reticulation system can be directly fed by the trunk main system when the reservoir is under maintenance from a bypass main. The existing Sussex Inlet reservoir was designed by the Department of Public Works and Services (now Department of Commerce) using their standards for reservoir design.

Shoalhaven Water advise that any spare capacity in the 20 ML Bewong reservoir will be subject to detailed hydraulic assessment. Apart from providing future peak day demand to Basin View, Part of Saint Georges Basin, Tomerong, Wandandian, Swanhaven, Cudmirrah, Berrara and other small rural offtakes it also supplements water supply to the Milton/Ulladulla districts.

Sussex Inlet reservoir would have been designed for a peak day demand rate of 4,000 Litres/day/equivalent tenement (L/d/ET). This figure is from the Department of Public Works, Water Supply Investigation Manual – Appendix A. The current Shoalhaven Water peak day demand rate for water supply is 2,000 L/d/ET. The Water Supply Development Servicing Plan (DSP) (Nov 2005) outlines how the peak day demand for water supply was derived. This figure was calculated from actual records and was introduced from 1st January 2006. The DSP also outlines the levels of service, system capacities, proposed growth (over a 30 year period) and the developer charge per ET. This document is revised every five (5) years.

The Water Supply DSP outlines specific growth areas and amounts within the Sussex Inlet Settlement Strategy study area. These areas will be served by the water supply system with provision of infrastructure as required. The current DSP does not seek to augment the headworks components (reservoir, trunk mains).

The capacity of the water supply system to support additional development in addition to that specified in the DSP within the study area will depend in part upon Council's strategy to provide further development in the Lake Conjola area and Milton/Ulladulla districts.

If the One Tree Bay development proceeds it will bring forward existing planned water supply augmentation infrastructure and will require the augmentation of the existing water supply infrastructure. Preliminary hydraulic analysis indicates the following:

- Duplication of the existing 450 diameter trunk main from Princes Hwy to an offtake point for One Tree Bay; and
- Additional Peak Day storage of approximately 4.50ML.

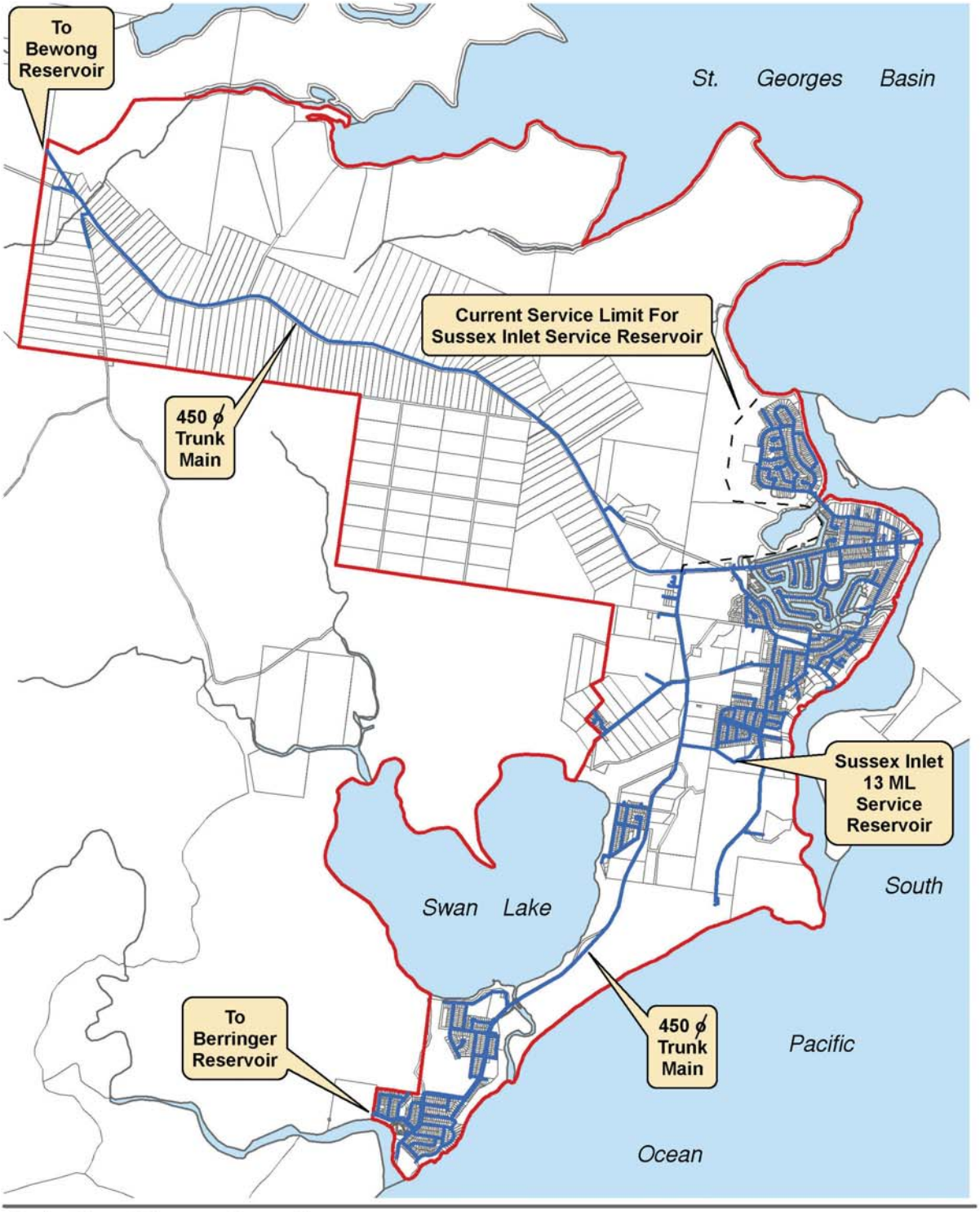
In addition to the above a new trunk feeder main would be required to be extended from the existing 450 diameter trunk main in Sussex Inlet Road to the start of the One Tree Bay development. All other infrastructure would be classified as reticulation mains and would need to be constructed by the developer of One Tree Bay.

Detailed hydraulic assessment of the water supply system would need to be undertaken to confirm the sizing of proposed system infrastructure and timing of works.

Shoalhaven Water has undertaken a "WATHNET" analysis of the bulk water supply for Shoalhaven City area using the last 100 years of data (including river flows, temperature, evaporation, rainfall, etc). This analysis examines the security of water supply to the reticulated Shoalhaven areas (see Shoalhaven Integrated Water Cycle Management Strategy – Bulk Water Supply WATHNET Report January 2007 – Project No. 883/06).

At this point in time Shoalhaven Water does not take into consideration the potential savings from the introduction of BASIX. As seen in the current drought the urban areas source water from the town water supply system. This water saving tool has not proved itself and it will require many years of data to show if there has been a reduction in the demand of water.

Figure 7: Existing Water Supply System



Wastewater

The urban areas and selected commercial and industrial areas are currently served by the Sussex Inlet Wastewater Treatment Plant (WwTP), which has two 4,000 person intermittently decanted extended aeration units. Effluent is treated using pressure sand filters and chlorinated prior to discharge into a sand dune exfiltration system at Cudmirrah Beach. The WwTP was commissioned in August 1990. Figure 8 shows the existing wastewater management system within the study area.

The WwTP operates under an Environment Protection Licence issued by the Department of Environment & Climate Change (formally the Environment Protection Authority). The licence requirements on discharged effluent are as follows:

- Oil and grease – 10mg/L grease and oil;
- Suspended solids – 30mg/L; and
- Biological oxygen demand (BOD) – 20mg/L.

The current Sewerage Services Development Servicing Plan (DSP) calculates the peak summer equivalent population (EP) at approximately 14,660. The normal operational capacity of the WwTP is 8,000 EP's and approximately 10,000 EP's with additional chemical dosing.

Several rural areas, including the Millallen Farmlets and Verons Estate are not currently, and due to the economics involved, are not likely to be sewered in the future. These areas have on site treatment including septic tanks and seepage systems which are managed by Council's Development & Environmental Services Group. Any runoff from these areas has the potential to eventually end up in one of three locations – Swan Lake, Badgee Lagoon or St Georges Basin.

In assessing the implications of further development from a wastewater perspective, it has been determined that the WwTP may not have any excess capacity. Detailed assessment of future needs will be required if substantial new development (such as the One Tree Bay proposal) was proposed prior to its proposed upgrading.

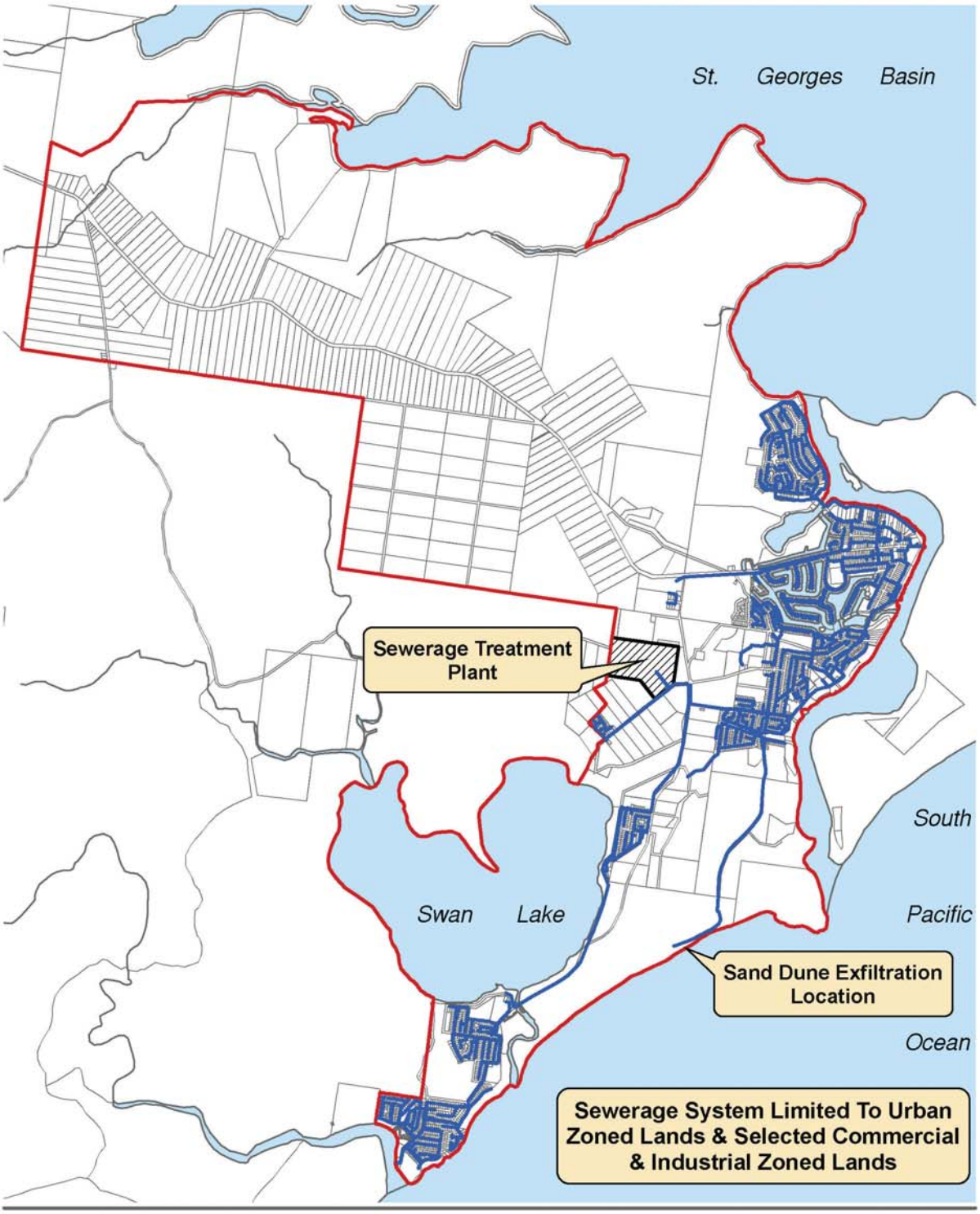
The Sewerage Services DSP outlines planned upgrade to the WwTP at 2009/11. Further detailed analysis needs to be undertaken to confirm if any spare capacity exists. As the planned augmentation of the WwTP is expected to take place after this current DSP then the future planned urban growth areas will be included in the next DSP and the WwTP would be augmented to allow the proposed new planned urban areas to be served by the WwTP subject to timing, environmental and financial constraints.

Any initiatives on the proposed large development sites to treat wastewater in a self-contained manner would also need to be taken into account and would have to be discussed with Shoalhaven Water. In developing large development sites, investigation of reclaimed water for reuse will need to be addressed.

In addition to augmentation of the WwTP a sewage transportation system would need to be provided to support the One Tree Bay proposal. Preliminary investigations estimate three sewage pumping stations and rising mains including large gravity trunk mains would be required to support it.

Augmentation of the existing sewage transportation system would need to be investigated before allowing any further extension of the sewerage system west of the existing urban zoned lands at Badgee. Where augmentation is limited new sewage transportation infrastructure may be required.

Figure 8: Existing Wastewater System



Water Supply and Wastewater

Objective: To ensure that areas are provided with adequate and efficient water supply and wastewater treatment system infrastructure and services.

Actions

1. All new urban development identified in this Strategy will be provided with reticulated water supply and wastewater treatment system in accordance with Council's Development Servicing Plans.

2. All new rural residential development will be provided with reticulated water only if reticulated sewerage is available.

3. The staging of development and its relationship with the proposed upgrade of the WWTP in 2009-10 will be monitored.

4. On site effluent management for rural residential will be implemented in accordance with Council's Development Control Plan (DCP) No. 78 – On Site Sewerage Management and relevant State Government guidelines.

Responsibility

Water Supply and Wastewater (Shoalhaven Water).
Onsite effluent management (Development and Environmental Services).

Timeframe

On going

Urban Stormwater Management

Stormwater in the study area generally drains into St Georges Basin or Swan Lake catchments and their associated water bodies. The values of these water bodies are discussed in detail in Section 2.

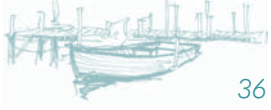
Both St Georges Basin and Swan Lake were assessed as part of the Healthy Rivers Commission Independent Inquiry into Coastal Lakes (2002). The need to progressively implement stringent and improved stormwater controls for developed areas within their catchments was identified as an outcome from the Inquiry.

Council has prepared an Urban Stormwater Management Plan that provides for the management of stormwater within a catchment or sub-catchment. The primary aim of the plan is to "……facilitate the coordinated management of stormwater within a catchment to achieve ecological sustainability and to achieve social and economic benefits from sound stormwater management practices". The Plan identifies a wide range of measures for action and implementation of the Plan is proceeding as funding is made available.

While the Urban Stormwater Management Plan attempts to deal with stormwater issues arising from existing settlements any new developments in the area should not exacerbate the demand for remedial works.

This approach is consistent with the Action in the South Coast Regional Strategy which states that local environmental plans will not include further residential and rural residential zoning in the catchments of the coastal lakes and estuaries shown unless it is demonstrated that a neutral or beneficial effect on water quality as measured at the boundary of the proposed new zoning can be achieved. The Department of Environment & Conservation (now DECC) has also released a booklet dealing with "Local Planning for Healthy Waterways – Using NSW Water Quality Objectives" (June 2006), the contents of which should also be considered in the preparation of any future rezonings for residential or rural residential uses.

It will therefore be essential for any new residential or rural residential areas that proceed in accordance with this Strategy to be consistent with the South Coast Regional Strategy and State Government guidelines in order to ensure best practice stormwater management.



Urban Stormwater Management

Objective: To protect and improve water quality through the adoption of best practice stormwater management in new and existing developments in the study area.

Actions

1. The relevant provisions of the South Coast Regional Strategy (DoP 2007) and Local Planning for Healthy Waterways – Using NSW Water Quality Objectives (DEC 2006) will be considered during the preparation of any rezonings for residential or rural residential uses arising from this Strategy.

2. Appropriate stormwater infrastructure will be provided and as far as practicable will be considered within the developable area and excluded from areas set aside for the protection of environmental attributes (eg. riparian areas).

3. Stormwater infrastructure associated with new developments in the study area should be designed and constructed in a manner that does not degrade existing natural land based or aquatic ecosystems or processes. Wherever possible, stormwater should be treated as close to the source as possible, prior to any discharge to natural systems.

4. Monitoring programs to assess the effectiveness of stormwater controls will be implemented, where appropriate, in association with new development in the area. A community education campaign aimed at improving attitudes and practices in relation to stormwater will also be considered as per the Shoalhaven Urban Stormwater Management Plan.

5. The relevant provisions of the Shoalhaven Urban Stormwater Management Plan will be considered for incorporation into relevant planning instruments, works and development processes.

Implementation Responsibility

Council, DECC, and relevant State Government Agencies

Timeframes for Actions

1. - 3. On going
4. Short to medium term and on going
5. Short term and on going

Electricity and Utilities

Reticulated electricity is provided to the area by Integral Energy. The existing power supply to the Sussex Inlet area is approaching the available capacity. It is therefore likely that, should substantial further development occur, additional power would be required. This additional need could potentially include an upgrade to the zone substation and trunk infrastructure. Further investigations will be required as part of planning for any future major developments. It will be necessary to liaise with Integral Energy on the timing of development that may create a demand for additional services in order to identify how this demand can be accommodated.

The study area is currently well serviced with telephone and related services. Further liaison with Telstra and other telecommunication service providers will be necessary on the timing of development that may create a demand for additional services including Broadband.

Electricity and Utilities

Objective: To ensure that the settlement areas are provided with adequate and efficient electricity and other utility (eg. telecommunications) infrastructure and services.

Actions

1. Further detailed analysis of the electrical power capacity will be undertaken as part of the detailed planning process associated with major developments or rezoning proposals.

2. All new urban development identified in this Strategy will be provided with reticulated electricity. The costs associated with the provision of this infrastructure will be passed on to the subdivision/ development proponent in line with reasonable user pays principles and determinations of the Independent Pricing & Regulatory Tribunal of NSW.

3. Council will liaise with Telstra and other telecommunications service providers on the timing of development that may create a demand for additional services including Broadband.

Responsibility

Council, proponents, landowners, Integral Energy and telecommunications service providers.

Timeframe

On going

2.2 Environmental Opportunities and Constraints

The Sussex Inlet area contains a range of natural habitats and ecosystems. These natural resources need to be conserved so that present and future generations can continue to enjoy them. Managing future settlement in the context of an area with various environmental attributes presents a number of challenges.

Key environmental issues are thus identified in this section of the Strategy and broad strategic objectives are outlined to provide the context for more detailed discussion of these issues in subsequent processes (eg. rezoning or development).

2.2.1 Water Quality and Aquatic Ecology

There are significant waterbodies and their catchments that make up the study area – St Georges Basin, Swan Lake/Berrara Creek and Badgee Lagoon. These waterbodies have some creeks and minor tributaries.

Given the significance of these waterbodies and their catchments a focus needs to be given to ensuring the quality of water within them is maintained and where possible enhanced in the future. Consistent with the St Georges Basin Estuary Management Plan (SCC, 2006) and the Swan Lake and Berrara Creek Natural Resources Management Strategy (SCC, 2002) the overall aim in this regard is to:

Restore, protect and conserve the natural resources of St Georges Basin, Swan Lake and Berrara Creek and their catchments so as to ensure that their use is ecologically sustainable in the long term.

Additionally, there are five significant wetlands identified under State Environmental Planning Policy Number 14 (SEPP14) within the study area and the protection of these wetlands must be considered in any land-use planning decisions.

There is limited existing water quality data for this area with Figure 9 illustrating where water sampling has previously been undertaken in the study area. The findings of relevant studies are summarised below.

St Georges Basin - Nutrient Survey Geoscience Australia 2004

- Deep central basin, muddy organic-rich sediments.
- The deep central basin has limited water exchange with the rest of Basin and is subject to nutrient rich urban runoff, muddy organic-rich sediments.
- With high rates of organic matter degradation and low denitrification efficiencies St Georges Basin appears highly susceptible to eutrophication if nutrient loads from the catchment were to increase. This is especially so for the shallower areas around the edge of the basin. Increases in nutrient loads from the catchment could likely lead to extensive phytoplankton blooms, decreased dissolved oxygen, and possibly decreases in seagrass area.
- The Basin was found to have high rates of organic matter degradation (mesotrophic to eutrophic) compared to other Australian estuaries.
- The Basin denitrification efficiencies were relatively low compared to other Australian estuaries.

Swan Lake - Swan Lake/Berrara Creek Natural Resource Management Strategy

- The Swan Lake Inlet has high levels of nitrogen, this is potentially linked to the naturally poor flushing capacity
- Berrara Creek drainage line shows higher levels of contamination from urban run off.
- Expected population growth will require increased capacity in sewage treatment facilities to prevent overflows of sewerage into waterways.
- Bank erosion in recreation areas
- Erosion of tracks and old gravel pits in the National Park, as well as erosion of unsealed road verges and stormwater drains contributes to sediment loads in Swan Lake and Berrara Creek.

Badgee Lagoon - Travers Morgan 1994

- Nutrient levels at all sites were acceptable.
- Waterways were all well oxygenated with typical background levels for suspended solids and pH.
- Faecal coliform level in Badgee Lagoon (1200 organisms/100ml) slightly exceeds the secondary contact recreational water guideline value. This was likely to be caused by septic tank effluent and urban runoff. Elevated levels in Riviera Keys and Sussex Inlet are probably due to urban run off. (based on ANZECC 1992)
- Levels of copper and iron were above guideline values at all sites.

The Healthy Rivers Commission's *Independent Inquiry into Coastal Lakes*, completed in 2002 assessed the condition and sensitivity of both Swan Lake and St Georges Basin. Swan Lake was found to have an extreme natural sensitivity, with a largely unmodified catchment and a slightly affected lake condition. St Georges Basin was determined to have high natural sensitivity, a modified catchment condition and a slightly affected lake condition. Both lakes were determined to be of high conservation value.

The South Coast Regional Strategy (DoP, 2007) indicates that further residential or rural residential zoning in the catchments of certain coastal lakes, in this case St Georges Basin and Swan Lake/Berrara Creek, should not be considered unless it can be demonstrated that they have a neutral or beneficial effect on water quality.

For each catchment in NSW, the State Government has endorsed the community's environmental values for water, known as 'Water Quality Objectives' (WQOs). These were adopted following extensive consultation with the community in 1998.

Examples of environmental values and uses protected by WQOs considered relevant to the study area include:

Aquatic ecosystems;

Primary contact recreation;

Secondary contact recreation; and

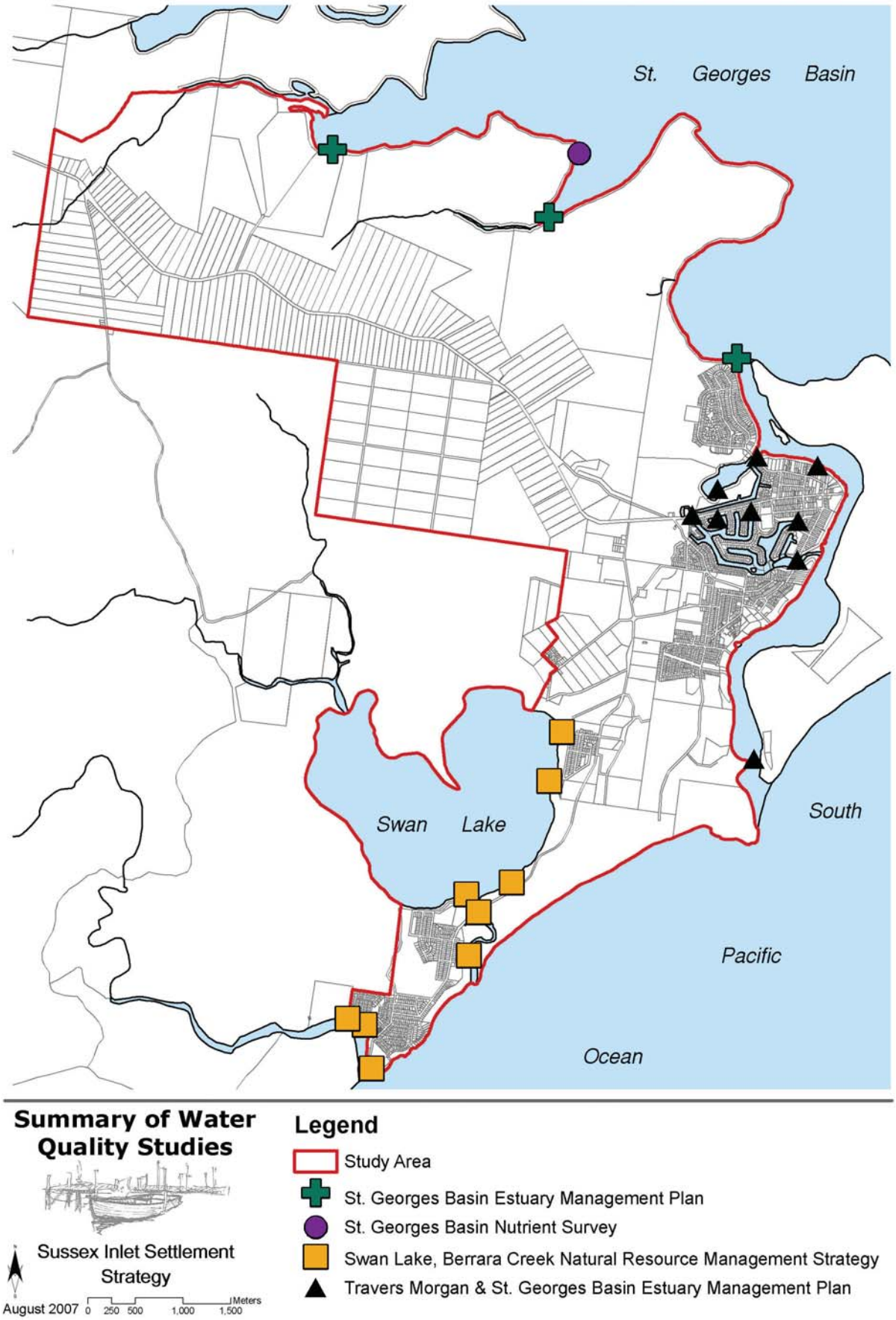
Visual amenity

These WQOs are the environmental values and long-term goals for consideration when assessing and managing the likely impact of activities on waterways in the study area. They are not intended to be applied directly as regulatory criteria, limits or conditions but are one factor to be considered by industry, the community, planning authorities or regulators when making decisions affecting the future of a waterway.

The environmental values expressed as WQOs provide goals that help in the selection of the most appropriate management options. The guiding principles are that:

- where the environmental values are being achieved in a waterway, they should be protected, and
- where the environmental values are not being achieved in a waterway, all activities should work towards their achievement over time.

Figure 9: Summary of Water Quality Studies



Water Quality and Flow

Objective: To ensure that the water quality and flow of waterways and their aquatic, marine and estuarine ecosystems is not detrimentally affected as a result of new settlement in the area.

Actions

1. New development should be consistent with the recommendations and findings of the Healthy Rivers Commission's *Independent Inquiry into Coastal Lakes*, (2002), the NSW Water Quality River Flow Objectives (EPA 1999) and *Local Planning for Healthy Waterways – Using NSW Water Quality Objectives* (DEC June 2006)

2. New development should consider and implement where possible the recommendations of the St Georges Basin Estuary Management Plan (SCC 1998) or the Swan Lake and Berrara Creek Natural Resources Management Strategy (SCC, 2002).

3. New development will be located and designed so as to avoid detrimental impacts on waterbodies and watercourses, including groundwater. Where there are manageable impacts, erosion and sediment control measures and means to mitigate nutrient and other pollutants should be provided within the development site and be excluded from areas set aside for the protection of natural or cultural attributes (eg. riparian areas, habitat corridors, Aboriginal places/sites etc).

4. New development will be designed so that domestic effluent management does not have a detrimental impact on water quality and flow and is consistent with relevant Council controls and State Government guidelines.

5. New development, including infrastructure (eg. stormwater controls), will be located, designed and constructed in a manner that does not degrade land based or aquatic ecosystems or processes.6.

   Consideration will be given to establishing a set of catchment health indicators to assist monitoring and assessment of cumulative impacts of development on water quality and flow.

7. Infrastructure works will not have a detrimental impact on the water quality of receiving waters in the area. In order to achieve this outcome, best practice soil and water management will be implemented when constructing various infrastructure, and the number of artificial barriers to flow and impediments to movements of aquatic biota will be minimised

Implementation

Council, proponents/ landowners, DECC, proponents/landowners, and other relevant State Government Agencies.

Timeframe for Actions

On going

2.2.2 Riparian Areas

As outlined in Section 2.2.1 there are a number of significant waterbodies and important watercourses throughout the study area. Riparian areas serve a wide range of functions and it is important that they are protected, managed and if necessary rehabilitated.

New settlement in the area will need to identify riparian areas and determine appropriate riparian buffer widths in a given locality. Consideration must also be given to the ability to rehabilitate and revegetate riparian areas in association with any future development.

To assist in this regard the Department of Natural Resources (DNR) has undertaken a biophysical assessment of streams in the Sussex Inlet area and allocated buffers to different stream types. This information is shown in Figure 10. There are three categories of riparian area identified by DNR:

- Category 1 – Environmental Corridor (40 m buffer from top of bank);
- Category 2 – Terrestrial and Aquatic Habitat (20 m buffer from top of bank);
- Category 3 – Bank Stability and Water Quality - (10 m buffer from top of bank).

Category 1 and 2 require an additional 10 meter buffer to counter edge effects from the urban interface (ie. vegetated buffer). Where possible, wildlife corridors have also been located in the Strategy to be consistent with Category 1 and 2 water courses. These riparian areas should be excluded from development areas and associated bushfire Asset Protection Zones (APZs).

It is indicated in the South Coast Regional Strategy as an action that:

"When planning new urban areas the 'Strategic Assessments of Riparian Corridors' methodology developed by the Department of Natural Resources in conjunction with the Department of Planning will be adopted by:

- *Incorporating the assessments into structure plans*
- *Appropriate zoning*
- *Appropriate management through a Development Control Plan."*

Thus the assessment undertaken by DNR must be considered as part of this strategic plan and also in future rezoning investigations.

Riparian Areas

Objective: To ensure that riparian areas are conserved and sustainably managed, in order to provide for natural ecological and hydrological processes and to avoid detrimental impacts on habitat values and water bodies immediately adjoining and downstream.

Actions

1. The design and location of new development in the area (including infrastructure) will seek to protect riparian habitat values and their ecological and hydrological function (including flood risk reduction) as defined by DIPNR's Setting Riparian Objectives for Water Courses in Sussex Inlet, Cudmirrah and Berrara 2004.

2. Riparian areas will be identified in future planning instruments affecting St Georges Basin, Swan Lake and Badgee Lagoon and their associated watercourses to provide a degree of certainty for future development and landuse changes in the area. This identification will use the DNR's 2004 Assessment report.

3. Riparian areas will be protected from ancillary detrimental uses (eg. clearing/underscrubbing) that undermine habitat values and their ecological and hydrological function in the landscape. Planning instruments should also seek to encourage the rehabilitation and repair of areas subject to detrimental impacts caused by past landuse practices.

4. Policies for providing incentives to conserve and enhance riparian corridors throughout the area will be investigated.

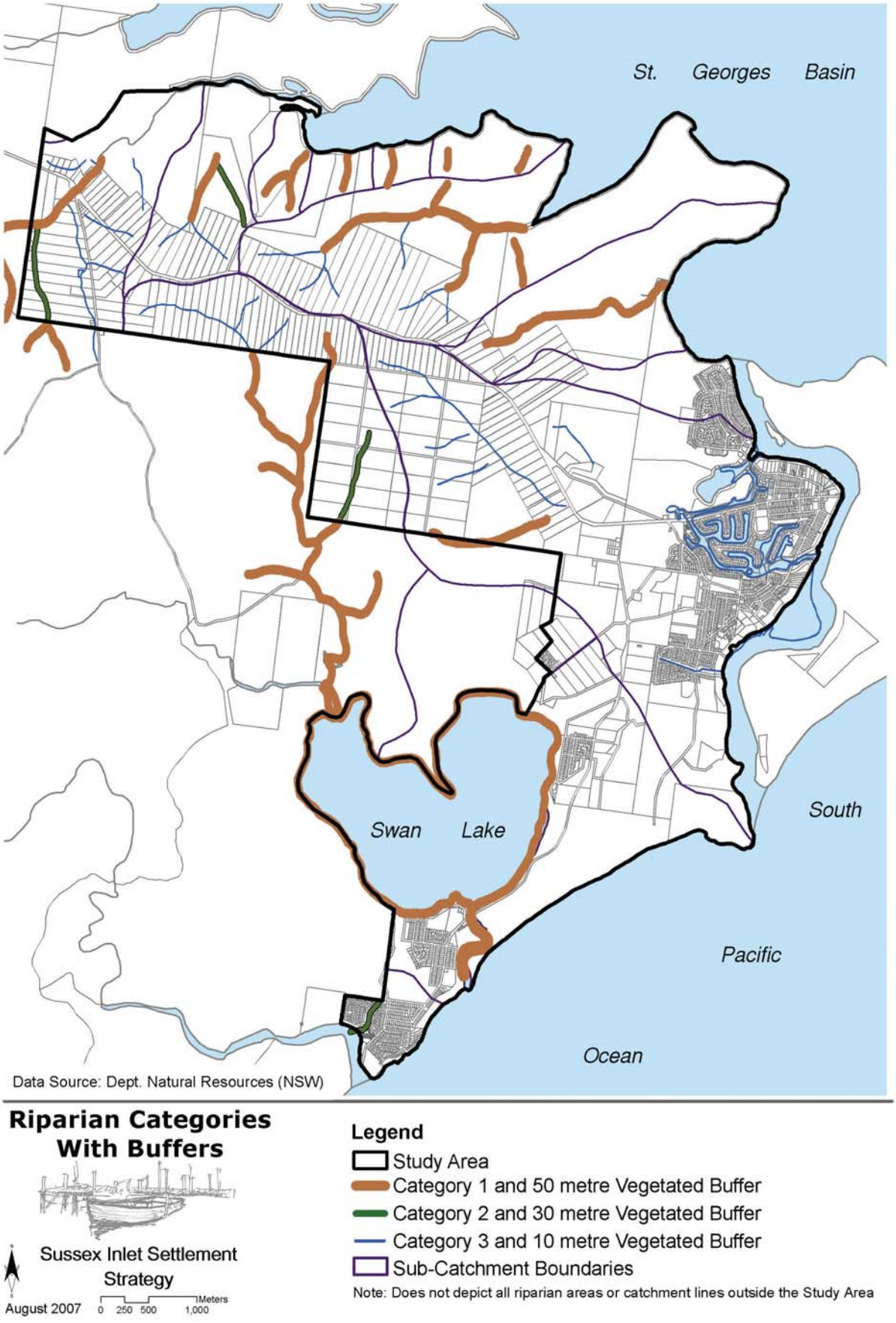
Implementation Responsibilities

Council, proponents/ landowners, DECC, and relevant State Government Agencies.

Timeframe for Actions

On going

Figure 10: Riparian Categories With Buffers



2.2.3 Flooding

A number of historical flood events have occurred within the St Georges Basin floodplain. Flooding can result from a combination of mechanisms which include catchment runoff, high ocean conditions and/or wind waves. During historical floods Sussex Inlet has been one of the worst affected areas (St Georges FPRMP 2006). The Sussex Inlet channel, the tributaries and their immediate adjoining area are classified as high hazard floodway. The Basin and the low lying developed areas of Sussex Inlet are defined as high hazard flood storage areas. The identified high hazard floodways and storage areas are shown in Figure 11. Flooding in Sussex Inlet is of a longer duration and is influenced by the overall catchment inflows to the Basin, the prevailing ocean conditions in Wreck Bay and the conditions in the channel.

Council completed a Flood Study in September 2001 to define flood behaviour across the floodplain. A Floodplain Risk Management Study was then undertaken. In 2006 Council adopted the St Georges Basin Floodplain Risk Management Plan. This plan provides the basis for the future management of flood prone lands in the settlement area. This Strategy uses information from the Floodplain Risk Management Plan to inform future planning decisions.

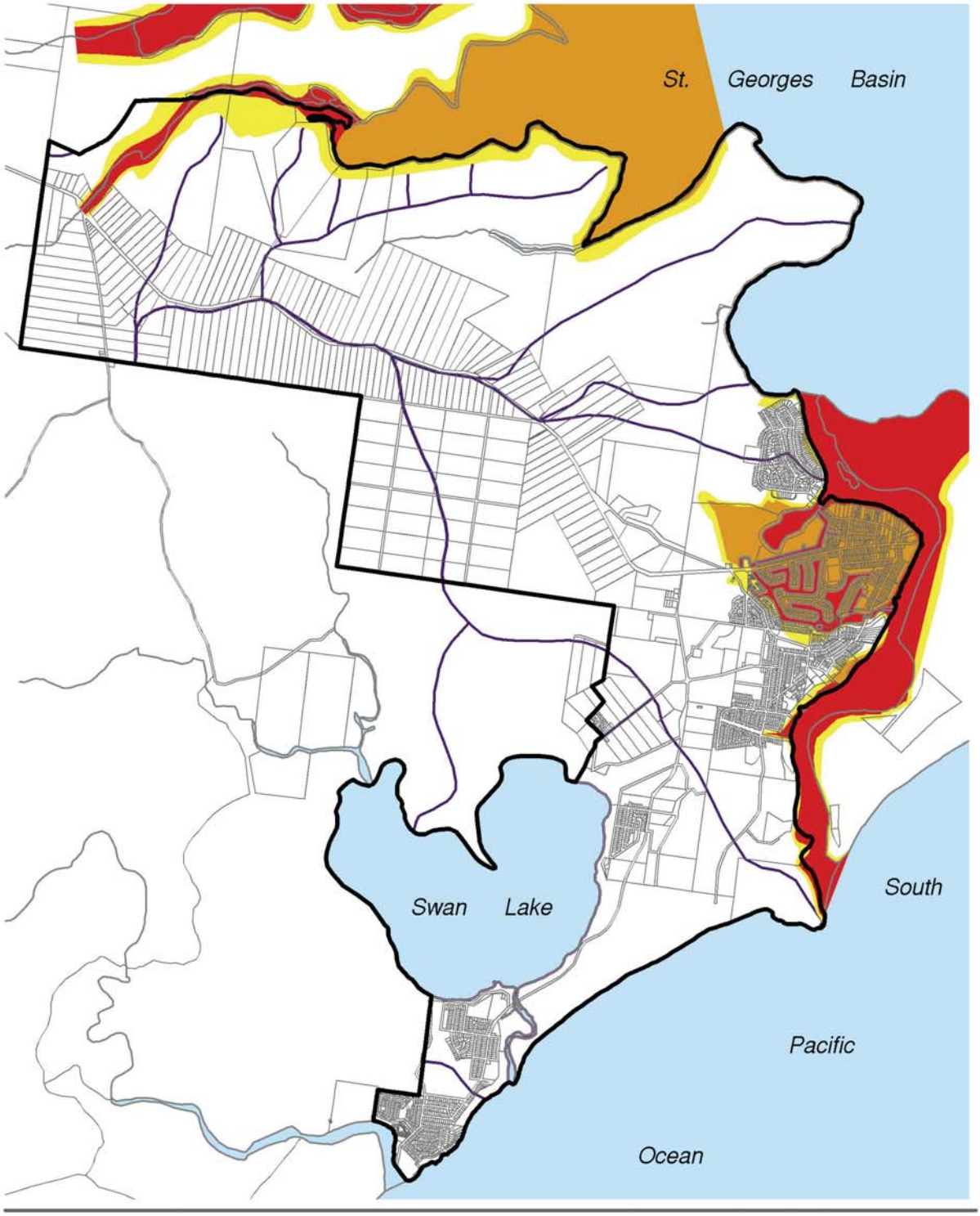
Council has adopted the 1% Annual Excedence Probability (AEP) or 1 in 100 year flood as the current design flood for the area, and the flood studies will establish appropriate Flood Planning Levels (FPL) for the area in the future. It is not proposed to rezone land below the flood planning level for new residential development.

The Probable Maximum Flood (PMF) also requires consideration particularly for matters associated with flood hazards and risks to human life. New settlement in the area will need to be planned so that consideration is given to the full range of potential floods up to and including the PMF, consistent with the Floodplain Development Manual (April 2005).

Flooding issues associated with new development in the area will be assessed in accordance with relevant policies and requirements of planning legislation including, but not limited to the EP&A Act (1979), Section 117(2) direction – No.4.3 Flood Prone Land and the Floodplain Development Manual (2005).

Climate change may affect coastal areas through sea-level rise, increased temperatures, and increased storm events. It is widely accepted that Australia is likely to experience a marked increase in the intensity and frequency of extreme storm events under enhanced greenhouse conditions. The direction of change in annual rainfall extremes in south-east NSW is uncertain, but the majority of models shows a decrease in rainfall in winter and increases in summer (CSIRO 2005).

Figure 11: Flood Risk Information



FLOODING

Objective: To identify and acknowledge flooding of land as a constraint to future development and outline relevant policies & controls that apply to the study area when managing land at risk of flooding.

Actions

1. The St Georges Basin Floodplain Risk Management Plan (2006) will be considered and implemented in accordance with the NSW Floodplain Development Manual (2005) for areas that are likely to be affected by flooding.

2. Land within the Flood Planning Area (1% AEP) will not be rezoned to provide for residential development. The zoning of existing urban areas will be reviewed in accordance with the Floodplain Management Plan. Development in new and existing areas will be compatible with the level of flood hazard over a whole range of flood events, up to and including the PMF (as such, development should not be located in areas that are considered to constitute a high hazard to life and property in time of flood).

3. Controls will be implemented in accordance with Council's Flood Policy and DCP No. 106 Floodplain Management.

Implementation

Council, DECC, and other relevant State Government Agencies.

Timeframe for Actions

On going

2.2.4 Landbased Biodiversity

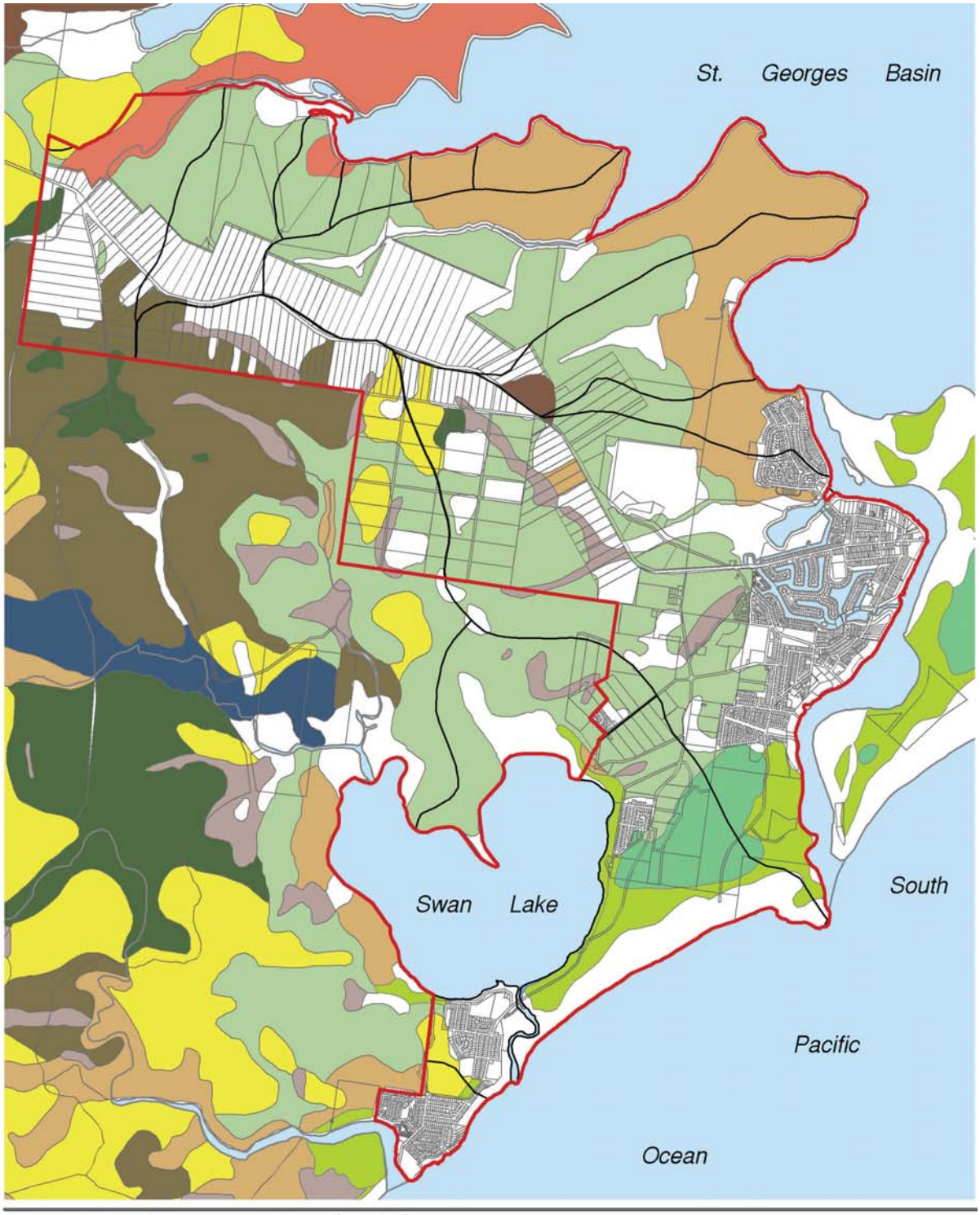
Vegetation Communities

The study area is surrounded by extensive areas of native vegetation including Cudmirrah and Conjola National Parks to the south and west and Corramy State Conservation Area to the north. Fifteen (15) separate vegetation communities covering some 2380 hectares have been mapped by Council within the area. Figure 12 provides an overview of these vegetation communities as mapped by Dr Kevin Mills (2000).

A number of these communities typically form part of the five Endangered Ecological Communities (EECs) protected under the *Threatened Species Conservation Act*, 1995 found within the study area. These EECs are listed below and shown in Figure 13:

- Swamp oak floodplain forest of the NSW North Coast, Sydney Basin and South East Corner bio-areas;
- Coastal saltmarsh in the NSW North Coast, Sydney Basin and South East Corner bio-areas;

Figure 12: Vegetation Communities



Vegetation Communities

Sussex Inlet Settlement Strategy

August 2007

0 250 500 1,000 1,500 Meters

Legend

- Bangalay
- Spotted Gum -Blackbutt Forest
- Spotted Gum - Tall Forest
- Peppermint - Stringybark Forest
- Peppermint - Bloodwood Forest
- Scribbly Gum - Casuarina Forest
- Scribbly Gum - Open Woodland
- Scribbly Gum - Bloodwood Woodland/Open Woodland
- Blackbutt - Banksia Forest
- Blackbutt - Bloodwood Forest
- Blackbutt - Tall Forest
- Sandstone Sedgeland
- Seagrass
- Sub-Catchment Boundaries
- Study Area

- Freshwater wetlands on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bio-areas; and
- Swamp sclerophyll forest on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bio-areas.
- Bangalay sand forest of the Sydney Basin and South East Corner bio-areas.

The South Coast Regional Strategy requires that urban development be excluded on land on which a EEC occurs. Appropriate steps to avoid significant indirect impacts (eg altering hydrology of wetland EEC community) must also be taken to mitigate any potential adverse impact.

The South Coast Regional Strategy contains areas of high conservation value which have been mapped by DEC. These areas of high conservation value include threatened plants, animals and vegetation communities.

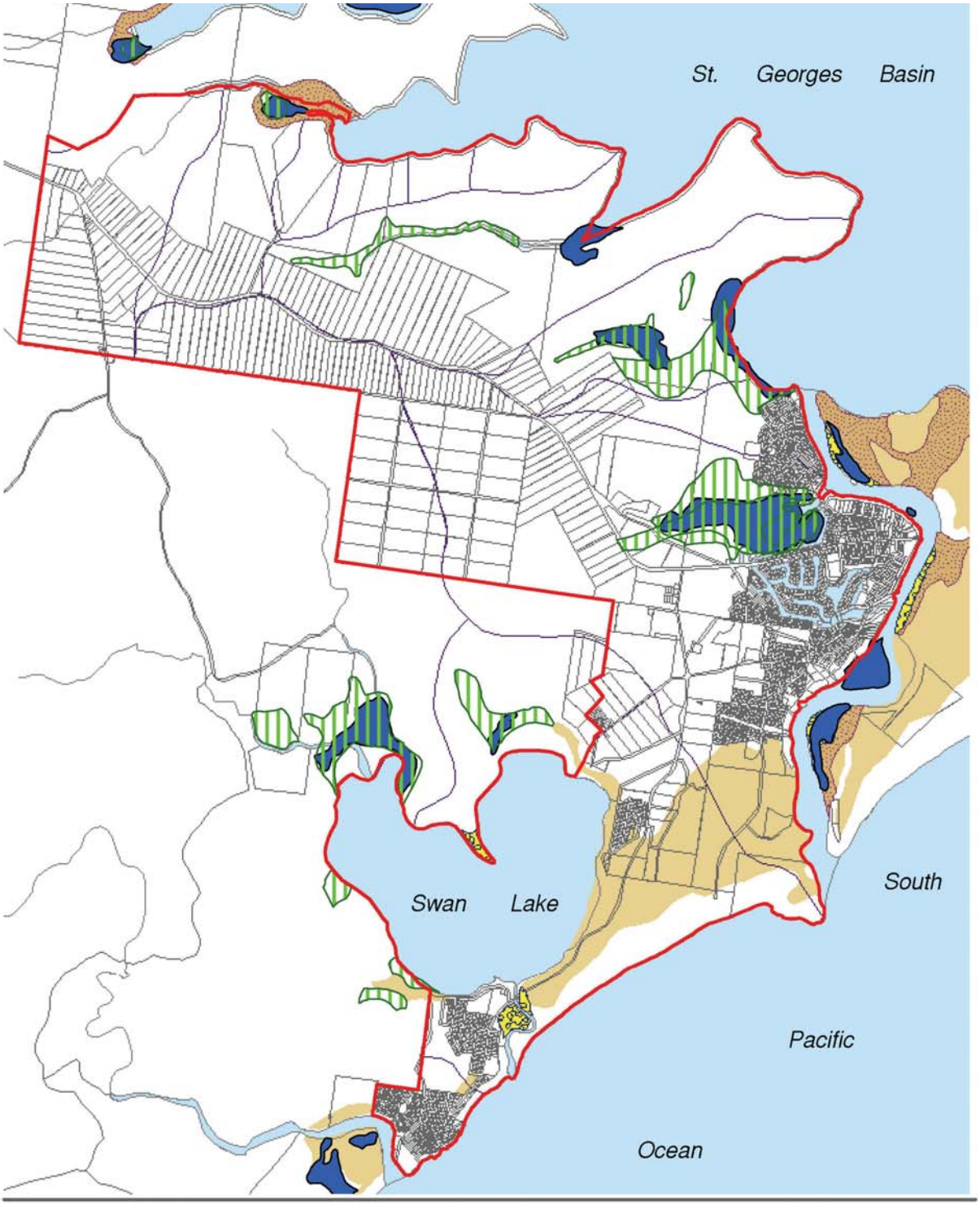
The South Coast Regional Strategy identifies old growth forests as being of high conservation significance as they support a relatively high level of biodiversity, are relatively uncommon and quite fragmented. Old growth forests are ecologically mature forests where the effects of disturbance are now negligible. For example certain native plants and animals, such as hollow nesters, may be restricted to or highly reliant on old growth forest for their habitat requirements.

Old Growth Forest has been mapped by Department of Environment & Climate Change and Conservation as occurring over areas of the land fronting St Georges Basin, the proposed Badgee investigation area and part of Verons Estate. These lands should be examined to determine the status of old growth in these areas.

Consistent with NSW State Government legislation, the EECs and SEPP 14 Wetlands have been excluded from future development in this Strategy.

Prior to any change in land use, further detailed assessment of vegetation types and wildlife corridor opportunities will need to be undertaken as part of detailed environmental studies.

Figure 13: Potential Endangered Ecological Communities



Threatened Flora and Fauna

Very few field based studies have been conducted in this study area. However, Atlas records indicate that at least two (2) threatened flora and fourteen (14) threatened fauna species listed under the *NSW Threatened Species Conservation Act 1999* have been found in the area.

Desk based assessment using a predictive model indicate that the habitat in the study area (predominantly classified as Currambene-Batemans Lowland Forest) is suitable for the threatened species listed in the table below. These are the key species that would need to be considered in habitat verification work undertaken as part of any future detailed environmental studies.

Scientific Name	Common Name	Scientific Name	Common Name
Calyptorhynchus lathami	Glossy Black-cockatoo	Pandion haliaetus	Osprey
Cercartetus nanus	Eastern Pygmy-possum	Petaurus australis	Yellow-bellied Glider
Chalinolobus dwyeri	Large-eared Pied Bat	Petaurus norfolcensis	Squirrel Glider
Dasyurus maculatus	Spotted-tailed Quoll	Phascolarctos cinereus	Koala
Falsistrellus tasmaniensis	Eastern False Pipistrelle	Potorous tridactylus	Long-nosed Potoroo
Glossopsitta porphyrocephala	Purple-crowned Lorikeet	Pseudomys fumeus	Smoky Mouse
Heleioporus australiacus	Giant Burrowing Frog	Pteropus poliocephalus	Grey-headed Flying-fox
Isoodon obesulus obesulus	Southern Brown Bandicoot (eastern)	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat
Kerivoula papuensis	Golden-tipped Bat	Scoteanax rueppellii	Greater Broad-nosed Bat
Lathamus discolor	Swift Parrot	Sminthopsis leucopus	White-footed Dunnart
Litoria aurea	Green and Golden Bell Frog	Tyto novaehollandiae	Masked Owl
Lophoictinia isura	Square-tailed Kite	Tyto tenebricosa	Sooty Owl
Miniopterus schreibersii oceanensis	Eastern Bentwing-bat	Xanthomyza phrygia	Regent Honeyeater
Mixophyes balbus	Stuttering Barrred Frog	Cryptostylis hunteriana	Leafless Tongue Orchid
Mormopterus norfolkensis	Eastern Freetail-bat	Galium australe	Tangled Bedstraw
Ninox connivens	Barking Owl	Genoplesium baueri R.Br.	Bauer's Midge Orchid
Ninox strenua	Powerful Owl	Pterostylis gibbosa	Illawarra Greenhood
Pachycephala olivacea	Olive Whistler	Rhizanthella slateri	Eastern Australian Underground Orchid

The subsequent detailed investigation work arising from the implementation of this Strategy will need to fully consider potential impact on threatened flora/fauna and other biodiversity considerations.

There is the potential through the implementation of the Strategy to afford protection to a viable system of interlinked habitats including the extensive southern foreshore of St Georges Basin and linkages between Badgee Lagoon, Swan Lake as well as Cudmirrah and Conjola National Parks. Specific studies will be required to determine movement paths and effective corridor widths for effective habitat movement and biodiversity conservation.

Any future LEPs will need to protect regionally significant corridors shown as "Indicative Habitat Corridors" on Map 2 of the South Coast Regional Strategy, 2007. These corridors will be verified in the Regional Conservation Plan and development proposed in these areas will be required to maximise the retention of native vegetation.

Land Based Biodiversity

Objective: To ensure that significant areas of land-based biodiversity, ecosystems and the function of natural processes are conserved and sustainably managed as a major contribution to the achievement of ecologically sustainable development

Actions

1. Landuse planning in the study area should recognise the value of lands as wildlife corridors and seek to maintain the structure and composition of native vegetation within these areas. In some critical areas, corridor values may be enhanced or improved by replanting and rehabilitation of cleared and/or disturbed areas.

2. New settlement will be located and designed so as to avoid detrimental impacts on land-based biodiversity. Disturbance to flora and fauna habitats by new or existing development will, as far as possible, be minimised and any proposed clearing of vegetation will obtain the relevant approvals and be undertaken in accordance with relevant legislation, policies and best management practices.

3. Decisions regarding the location and design of new development in the area will recognise that the conservation of biodiversity is dependent on maintaining landscape connectivity through a native vegetation system of National Parks, habitat corridors, environment protection zones under the Shoalhaven LEP and bushland on private land.

4. Significant populations of, and habitats for, threatened species, populations and ecological communities listed in Schedules 1 & 2 of the *Threatened Species Conservation Act 1995* will be conserved and managed under proposed planning instruments associated with new development. A range of policy options to conserve biodiversity on private land will also be explored, including, but not limited to, restrictive covenants and voluntary conservation agreements.

5. New settlement in the area will seek to minimise and manage activities that can be defined as, or contribute to, key threatening processes listed in Schedule 3 of the *Threatened Species Conservation Act 1995*.

Land Based Biodiversity continued

6. Policy options to offset unavoidable impact(s) of new development on land-based biodiversity in the area will be explored. These options may include strategies for mitigation and compensatory habitat and will be investigated at all levels of the planning system.

7. New settlement in the area will consider and, wherever possible, seek to implement the recommendations arising from any relevant approved Regional Vegetation Management Plan prepared under the *Native Vegetation Conservation Act 1997*; and any relevant approved Recovery Plan or Threat Abatement Plan prepared under the *Threatened Species Conservation Act 1995*.

8. The habitat values, ecological and hydrological processes of wetlands will be conserved and managed so that the impact of development in the catchments of wetlands (SEPP 14 and others) is minimised.

9. Remnant vegetation, particularly that which occurs outside protected areas, will be conserved and protected wherever possible to maintain and increase natural species diversity. Decisions regarding new settlement in the area should therefore aim to improve the condition of existing native vegetation and encourage the revegetation and rehabilitation of land with appropriate vegetation management.

10. New settlement in the area will be encouraged to provide for biodiversity enhancements (or positive cumulative impacts), by incorporating requirements for, amongst other things, weed control, habitat rehabilitation and the use of local native species in landscaping.

11. Locally significant habitat corridors will be addressed at all levels of the planning system in order to protect locally significant biodiversity values.

Implementation Responsibility

Council, proponents/ landowners, DECC, Catchment Management Authority and other relevant State Government Agencies.

Timeframe for Actions

On going

2.2.5 Freshwater, Marine and Estuarine Biodiversity

The wetlands located in the study area include the following types of habitats:

- Subtidal aquatic beds; includes kelp beds, seagrasses, tropical marine meadows,
- Estuarine waters; permanent waters of estuaries and estuarine systems of deltas,
- Intertidal marshes; including saltmarshes, salt meadows, saltings, raised salt marshes, tidal brackish and freshwater marshes,
- Intertidal forested wetlands; including mangrove swamps, nipa swamps, tidal freshwater swamp forests,
- Brackish to saline lagoon and marshes with one or more relatively narrow connection with the sea,
- Shrub swamps; shrub dominated freshwater marsh, shrub carr, alder thicket on inorganic soils, and
- Freshwater swamp forest; seasonally flooded forest, wooded swamps; on inorganic soils.

The three dominant wetland areas are St Georges Basin, Swan Lake and Badgee Lagoon. A number of the wetlands in these areas are included in State Environmental Planning Policy (SEPP) No.14, which aims to ensure the coastal wetlands are preserved and protected. The South Coast Regional Strategy requires zonings that achieve environmental protection to apply to all SEPP 14 wetlands. Future development in the catchment of SEPP14 wetlands will need to demonstrate no net impact on the hydrology, water quality or ecology of these wetlands.

St Georges Basin is a significant wetland and it is a representative example of an estuarine wetland area. It provides habitat for animal taxa at a vulnerable stage in their life cycles, and provides a refuge when adverse conditions such as drought prevail. St Georges Basin is considered to be a wader habitat of international significance. Both State and Commonwealth impact assessment processes would require protection of this habitat and thorough assessment of developments that may impact on this habitat.

Swan Lake can be described as a brackish to saline lagoon with surrounding marshes. It has a relatively narrow connection to the sea.

The Swan Lake catchment is 3,160 hectares in size and supports forestry activities to the southwest and north. Other parts of the catchment contain residential development and open space recreation areas, which abut the Lake on the eastern boundary.

Other wetlands contained in this catchment are described as:

- Shrub swamps; shrub-dominated freshwater marshes and alder thicket on inorganic soils; and
- Freshwater swamp forest, seasonally flooded forest, wooded swamps, on inorganic soils.

(Source: *A Directory of Important Wetlands in Australia Third Edition* Environment Australia, 2001).

Badgee Lagoon shows a transition from seagrass to mangrove, to saltmarsh to spagnum marsh. The areas supports large areas of mangrove, saltmarsh and seagrass. Several fauna species recorded within the area are considered endangered at a State level. The catchment on the south and western sides is relatively undisturbed and has extensive natural vegetation cover.

Development can pose potential risks to conserving marine biodiversity and maintaining ecological processes. The risks include:

- Deterioration in water quality due to land clearing in the catchment and pollution from urban and industrial runoff and waste.
- Deterioration in and destruction of marine habitat due to new structures; and
- Changes in natural processes such as water flow (tides, currents), natural erosion rates and so on due to structures.

Estuary Management Plans are an important component of the suite of mechanisms that manage biodiversity at the local level. The St Georges Basin Estuary Management Plan and the Swan Lake and Berrara Creek Natural Resources Management Strategy have been prepared and adopted by Council as policies for estuary management and include outcomes to ensure that the use of these waterways and their catchments is ecologically sustainable in the long term. These Plans need to be considered as part of any subsequent rezoning investigations undertaken in the study area.

Freshwater, Marine and Estuarine Biodiversity

Objective: To ensure that the potential impacts/hazards associated with new settlement are recognised, avoided and managed to prevent detrimental impacts on freshwater, marine and estuarine biodiversity values of the area.

Actions

1. Freshwater, marine and estuarine attributes such as mangrove forests, wetlands, salt marshes, sea grasses and other aquatic, marine or estuarine habitat will be protected from the impacts of new development in the study area. In order to achieve this outcome, new settlement in the area will be assessed in accordance with relevant State Government legislation and other policies for freshwater, marine and estuarine habitat management.
2. Significant populations of, and habitats for, threatened species, populations and ecological communities listed under the *Fisheries Management Act 1994* (Schedules 4 & 5) will be conserved and managed under proposed planning instruments associated with new development.
3. New settlement in the area will seek to minimise and manage activities that can be defined as, or contribute to, key threatening processes listed in Schedule 6 of the *Fisheries Management Act 1994*.
4. Public access to riparian, marine and estuarine areas may be provided if such access can be achieved without or with minimal disruption to freshwater, marine or estuarine biodiversity.
5. The provisions of the St Georges Basin Estuary Management Plan (SCC 1998) and the Swan Lake and Berrara Creek Natural Resources Management Strategy (SCC, 2002), will be incorporated into rezoning, site management and development processes where relevant.

Implementation Responsibility

Council, proponents/ landowners, DECC, DPI, and other relevant State Government Agencies.

Timeframe for Actions

On going

2.2.6 Bushfire

The majority of the study area is classified as Bushfire Prone Land (excluding small areas within the town) and is surrounded by bodies of bushfire prone vegetation including Cudmirrah/Conjola National Park. The large number and complexity of natural and man-made assets means it is difficult to implement active fire management strategies to protect all assets that could be damaged by extreme wildfire events or inappropriate fire regimes (*Fire Management Strategy 2005*).

Bushfire is a major planning constraint on future development; a fact that was highlighted during the fires at the end of 2000 that is likely to become a significant issue given projected changes associated with Climate Change and global warming. At the same time, a fine balance is required between providing adequate bushfire protection and maintaining environmental values.

With this in mind, new development in bushfire prone areas needs to be appropriately sited to address:

- the nature and location of vegetation to be conserved, the bushfire hazard this will pose and the context of development options in this regard;
- the slope of land and proximity of assets;
- the provision of Asset Protection Zones (APZs) within the boundaries of the development;
- the adequacy of emergency access and egress;
- building construction standards;
- the provision of water supplies for fire fighting;
- the provision of sufficient emergency response resources and trained personnel; and
- the availability of evacuation assembly areas and the quality of any evacuation plans, particularly in relation to elderly or less mobile people.

All new development will need to comply with the State Government's Planning for Bushfire Protection (PBP) Guidelines 2006, and implement a level of protection consistent with current best practice. These guidelines specifically state that bushfire protection measures must be located within the development area and provide adequate water supply and construction standards consistent with AS3959-1999 'Construction of buildings in bushfire-prone areas' (SAI Global, 1999).

Consequently, future development will need to address the requirement to provide appropriate APZs and perimeter roads. As the population grows in number and age, it is likely that additional fire fighting resources will be required if adequate emergency response is to be provided. Given the finite supply and increased demand for water during emergency situations as a result of the larger population, consideration should be given to identifying and providing strategically located static water supplies dedicated to fire fighting purposes.

Consideration was previously given to provision of an additional access point to the Princes Highway, with the upgrading of Berrara Road being canvassed. However, this was not pursued as any fire that posed a threat great enough to close Sussex Inlet Road would also ultimately likely require the closure of Berrara Road.

The Fire Management Strategy for Conjola National Park (NPWS, 2005) identifies a number of APZs and Strategic Fire Advantage Zones adjacent to existing developed areas.

The following key issues identified in the *Fire Management Strategy for Conjola National Park and Narrawallee Creek Nature Reserve* are relevant to future development in the study area and should be considered as part of any proposal for future development:

- The 'single-road-in-and-out' vehicle/emergency access to this community.
- Fragmented nature of neighbouring urban settlement throughout fire-prone bushland to the north and east of the reserves. Associated with this is the complex mix of land ownership and management along the urban/bushland interface.
- The vulnerability of key infrastructure and routes across bushland to these urban areas. Eg. power supply, water supply, communications.
- The dispersed arrangement of access and dwellings in rural subdivision areas.
- The considerable biodiversity found in these areas that may be at risk from inappropriate fire regimes.
- High incidence of 'unplanned fire' arising from arson or careless use of fire.

Figure 14 is a bushfire behaviour model for the area based on climatic, vegetation and terrain data (*Fire Management Strategy Conjola National Park 2005*). Figure15 shows the extent of the 2000-2001 bushfire which affected the area.

NOTE: *For the purpose of this Strategy, bush fire risk is defined as the chance of a bushfire or inappropriate fire regime occurring and causing damage to assets. 'Assets' include life and property, cultural heritage and natural heritage.*

Figure 14: Bushfire Behaviour Model (sourced from DEC/RFS)

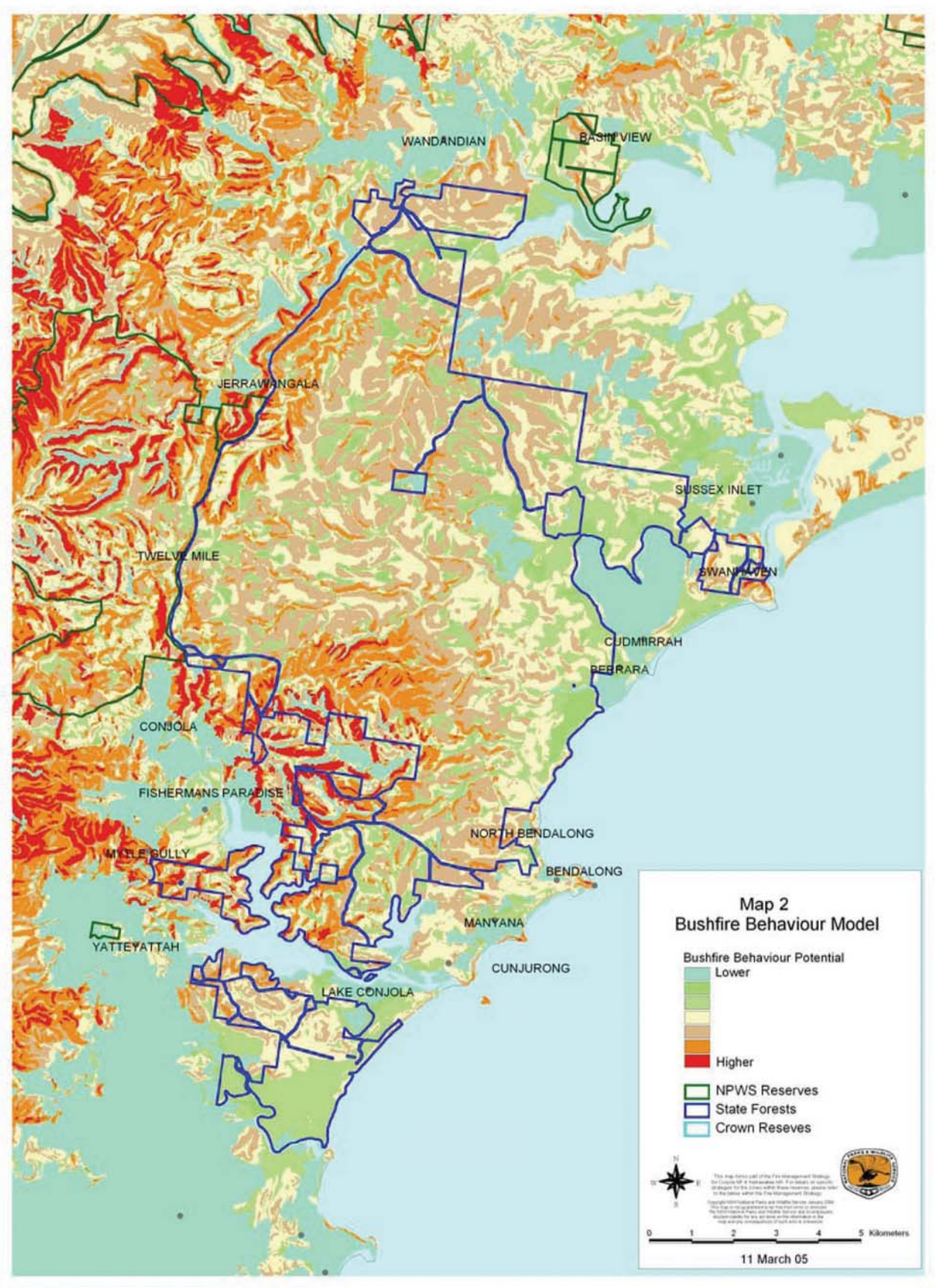
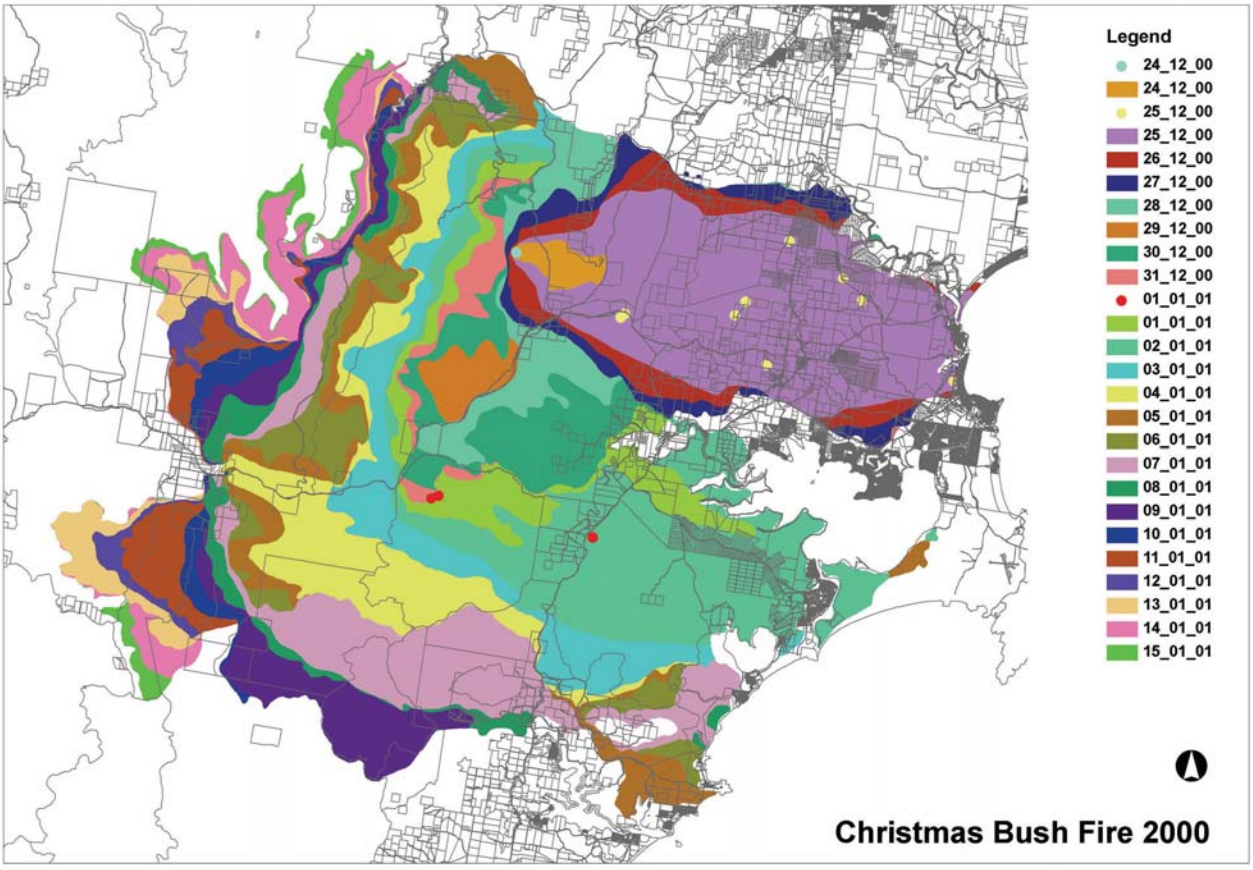


Figure 15: 2000-2001 Bushfire Extent



Bushfire

Objective: To ensure that settlements are protected from bushfire risk and the risk of bushfire is managed and mitigated.

Actions

1. Appropriate Asset Protection Zones (APZs), will be incorporated into planning instruments associated with new settlement in the study area, in accordance with the requirements of Section 117 (2) Direction No.4.4 - Planning for Bushfire Protection.
2. Asset Protection zones associated with new development will be contained within the developable area and will be excluded from areas set aside for the protection of natural or cultural attributes (eg. riparian areas, habitat corridors, Aboriginal places/sites etc).
3. New settlement will be planned to include bushfire risk management measures that are relative to the associated fire risk in the locality.
4. The implementation of bushfire risk management measures associated with new settlement will comply with relevant assessment requirements and policies such as the EP&A Act, Rural Fires Act and the guideline Planning for Bushfire Protection (2006).

Implementation Responsibility

Council, proponents/ landowners, NSW Rural Fire Service, and DoP and relevant State Government Agencies.

Timeframe for Actions

On going

2.2.7 Cultural Heritage

There are numerous known Aboriginal heritage sites within the study area, many of which are recorded within the Department of Environment & Climate Change and Conservation AHIMS database. Known sites include shelters, quarries, middens, artefact scatters and axe-grinding grooves. In addition to the known sites there are likely to be numerous unknown sites, potentially a number of mythological and traditional sites as well as contemporary land used by members of the Jerrinja Local Aboriginal Land Council and other nearby Land Councils.

Archaeological modelling is often used to predict areas of potential significance with an emphasis placed on landscape position. In this regard emphasis may be placed on rock outcrops, riparian, wetland and estuarine margins. More detailed site analysis and consultation with the Local Aboriginal Land Council and the traditional owners will form a key part of any subsequent Environment Studies should rezoning be proposed. The studies should ensure that any negative impacts are avoided or ameliorated. Close consideration will also need to be given to the findings of the Regional Aboriginal Heritage Study.

European settlement of the area commenced in 1866 with the arrival of Danielle Glanville and his family who settled near Berrara. Settlement of Sussex Inlet began in 1880 with the arrival of Jacob Ellmoos (Kuskie, 1997). Council prepared a European Heritage study and Local Environmental Plan to address heritage matters and the following sites of European heritage significance are currently identified in the LEP within the study area:

Cudmirrah

- Errol Bond Memorial

Swanhaven

- "The Springs" Holiday Cabins

Sussex Inlet

- "Greentrees" Holiday Cabins
- Post-war Community Hall/Picture Theatre
- Former Termeil Wesleyan Church (relocated)
- "Kemps Boatshed"

Shoalhaven offers an exceptional range of recreational attractions particularly associated with its long ocean frontage with many beaches, bays and lakes. Through increases in the amount of leisure time due to 40 hour working week, a healthier lifestyle and increased wealth, places such as Sussex Inlet and environs have developed significantly over the last 50 years. Initially leisure development utilised existing coastal facilities either old villages or created small settlements such as Swanhaven where 1950's cabins survive within a littoral rainforest setting. Churches, schools and entertainment facilities such as the Sussex Inlet Cinema developed in the larger town of Sussex Inlet together with accommodation establishments such as Heimdale (now demolished) and Christians Minde on the northern side of the Inlet.

The 1998 Shoalhaven Heritage Study prepared by Peter Freeman Pty Ltd included a preliminary overview of the cultural assets of this area and identified 5 items within the Sussex Inlet town area and 1 item in Swanhaven. Planning should protect known items and the villages of Cumirrah and Swanhaven to safeguard their unique character. The natural assets such as Swan Lake, the Inlet and the "Springs" littoral rainforest should also be recognized and protected for their contribution to the natural landscape.

Cultural Heritage

Objective: To ensure that significant natural and cultural heritage values of the area are recognised, conserved and managed.

Actions

1. The Aboriginal and European heritage significance of the landscape will be recognised and assessed prior to new development proposals in the area. In particular, Aboriginal cultural heritage will be recognised as a living culture, with Aboriginal people having strong interests in the management of the land and waters of the Jervis Bay area. Archaeological assessment and survey, and the input of Aboriginal people will be essential as part of investigations into new settlement in the area.

2. Significant cultural heritage places, items and landscapes will be conserved and managed, and not detrimentally affected by new development in the area. Consultation with the Aboriginal people of the area will be undertaken early in the rezoning process associated with any new settlement. This consultation is particularly important in relation to the traditional significance of landscape features, as these are often not reflected in site registers and databases.

3. New settlement in the area will be carried out in sympathy with the landscape and heritage character of the area.

Implementation Responsibility

Council, proponent/landowners, Department of Environment & Climate Change and relevant State Government Agencies.

Timeframe for Action

On going

2.2.8 Soils

The maintenance of soil is a major consideration, and it is important to address the impacts of land degradation (especially soil erosion) when managing and or developing land. Soil erosion and sedimentation are issues that generally become more difficult to manage as land uses are intensified.

In addition, the impacts of soil erosion are more problematic in landscapes with dispersive clay soils, as the clays stay suspended in water for longer periods and cannot be trapped by conventional sediment controls. The management of suspended soils is particularly difficult where waterbodies have a limited flushing regime (for example St Georges Basin). It is important that the nature and characteristics of soils, the risks associated with soil erosion and sedimentation along with the likely success, or otherwise, of management controls that are proposed in connection with new development are understood and addressed at all stages of the planning process.

Potential Acid Sulphate Soils

Potential acid sulphate soils are also known to occur in parts of the study area. The State Government has mapped the occurrence of potential acid sulphate soils along the NSW coastline, and identified areas of high and low probability of occurrence as well as areas of no known occurrence.

Figure 16 identifies the mapped high probability locations

These are areas where there is likely to be a high probability that acid sulphate soils will occur and are at, or within one to three metres below ground surface. Whilst small-scale disturbance of these soil types can generally be managed large scale disturbance can lead to substantial alterations to water chemistry. This disturbance can have devastating impacts on aquatic ecosystems including fish kills.

The majority of areas affected by these soils are located within low-lying flood plain areas that are below the 1% AEP (Average Excedence Probability) flood level. The remaining areas are generally associated with SEPP14 Wetlands or riparian areas that will generally be kept free from development due to their environmental values as well as the prevalence of acid sulphate soils.

Land affected by the classes of potential acid sulphate soil listed above should not be developed for new urban or rural residential development. However, existing situations will need to be treated on their individual merits.

Soils

Objective: To ensure that soil characteristics, including potential acid sulphate soils, are identified and addressed in assessing the sustainability of new settlement in the area.

Actions

1. The calculation of development density will only be made following an assessment of soil attributes of the land, and some lands may be totally excluded from development on the basis of their soil attributes.

2. Areas of potential acid sulphate soils will be identified and excluded from new development areas in the area. Assessment and management of acid sulphate soils issues will be undertaken in accordance with the NSW Acid Sulphate Soils Manual.

3. Areas of potential acid sulphate soils will be identified and excluded, where possible, when considering the location and construction of infrastructure to serve settlements.

4. Ameliorative measures will be undertaken for minor disturbances of potential acid sulphate soils in association with existing development/subdivision patterns.

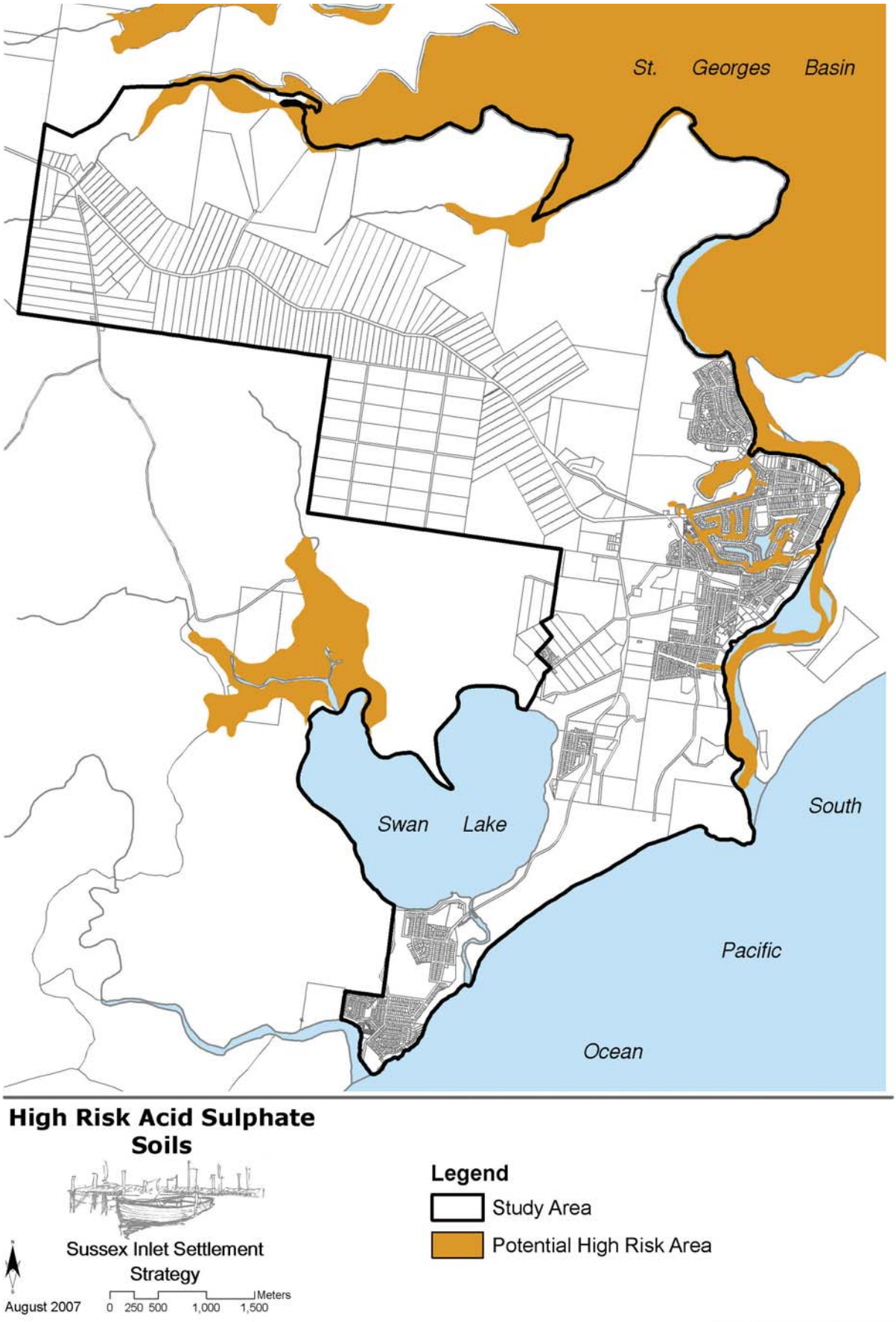
Implementation Responsibility

Council, proponents/landowners, DECC and relevant State Government Agencies.

Timeframe for Actions

On going

Figure 16: High Risk Acid Sulphate Soils



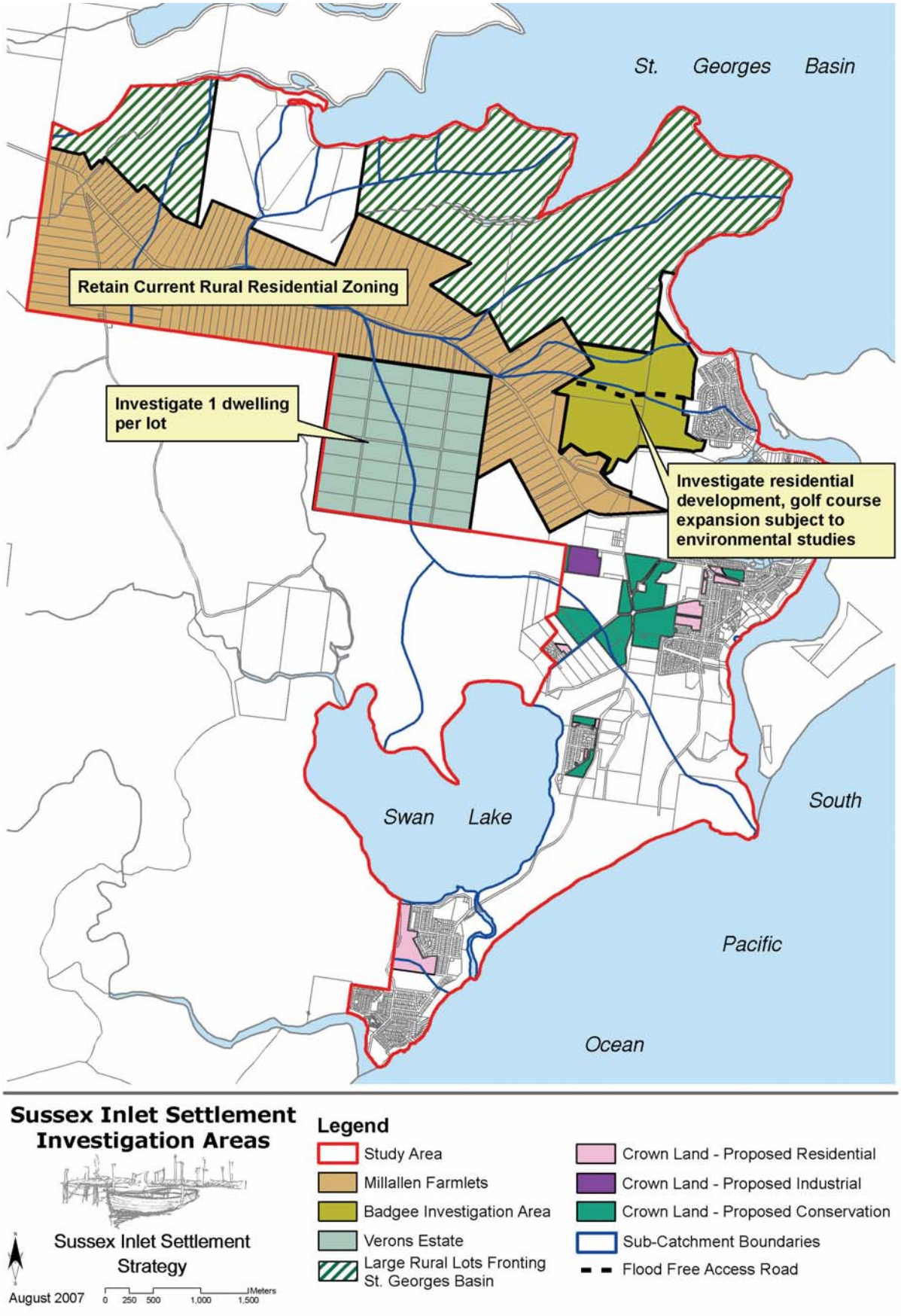
3.0 SETTLEMENT STRATEGY

This Section sets out the preferred options for the future settlement and development of the study area. It identifies investigation areas that may be appropriate for future settlement in the Sussex Inlet area and outlines key actions or detailed investigations that need to be considered or undertaken as part of any subsequent rezoning or development application lodged over the identified investigation areas. The section also contains recommendations on several planning issues relevant to the management of growth in the Sussex Inlet area.

It is important to note that further detailed investigations must be undertaken prior to any future development proceeding. Where rezoning is required, this will involve the preparation of an environmental study to support the required draft Local Environmental Plan (LEP) process. Where rezoning is not required, the environmental and planning assessments required as part of the development application process must be undertaken. Future investigations will therefore need to address the relevant broad strategic objectives and actions contained in Section 2 as well the detailed area specific actions contained in this Section.

Figure 17 illustrates the investigation areas over which additional development may occur subject to further investigations as part of any subsequent rezoning or development. The investigation areas and the required actions associated with any subsequent development of these areas have been based on Investigation Area Constraints summarised in Figure 18.

Figure 17: Sussex Inlet Settlement Investigation Areas



Settlement Strategy Overview

Residential Investigation Areas

1. Investigate residential development of two large landholdings adjacent to the Badgee area and the existing nine hole golf course, subject to an integrated and detailed environmental study process.

2. Some limited infill development adjacent to established areas of Sussex Inlet, particularly in the southern areas of the town.

3. Limited additional development at Swanhaven, Cudmirrah and Berrara, incorporating bushfire perimeter roads, consistent with the Crown Land Assessment and the outcomes of the South Coast Sensitive Urban Lands Review.

4. Retain the current minimum lot size of 2 ha for the existing rural residential lots in the Millallen Farmlets area fronting Sussex Inlet Road.

5. Investigate the provision of a maximum of one dwelling per lot within the Verons Estate small lot rural subdivision.

6. Large rural lots fronting St Georges Basin – possibility of limited additional rural residential development, clustered in an appropriate location, will be investigated.

Opportunities for future community facilities & employment lands

7. Future development of a range of Crown Lands sites in accordance with the Crown Land Assessment, 2005.

8. Additional opportunities for employment land and community facilities in Sussex Inlet. (See Section 2 for details).

Opportunities for conservation and enhancement of environmental values

9. Investigate the potential for habitat corridors of an appropriate width and location to enhance the biodiversity values of the area as part of any rezoning investigations.

10. Consider the need for water quality monitoring and baseline studies prior to any development of land in the Badgee investigation area & Swan Lake catchments.

11. Identification and protection of riparian areas within the settlement investigation areas.

12. Appropriate public land dedication and environment protection zoning of parts of the large lots fronting St Georges Basin in association with development opportunities outlined in this Strategy.

Figure 18: Settlement Strategy Investigation Area Constraints

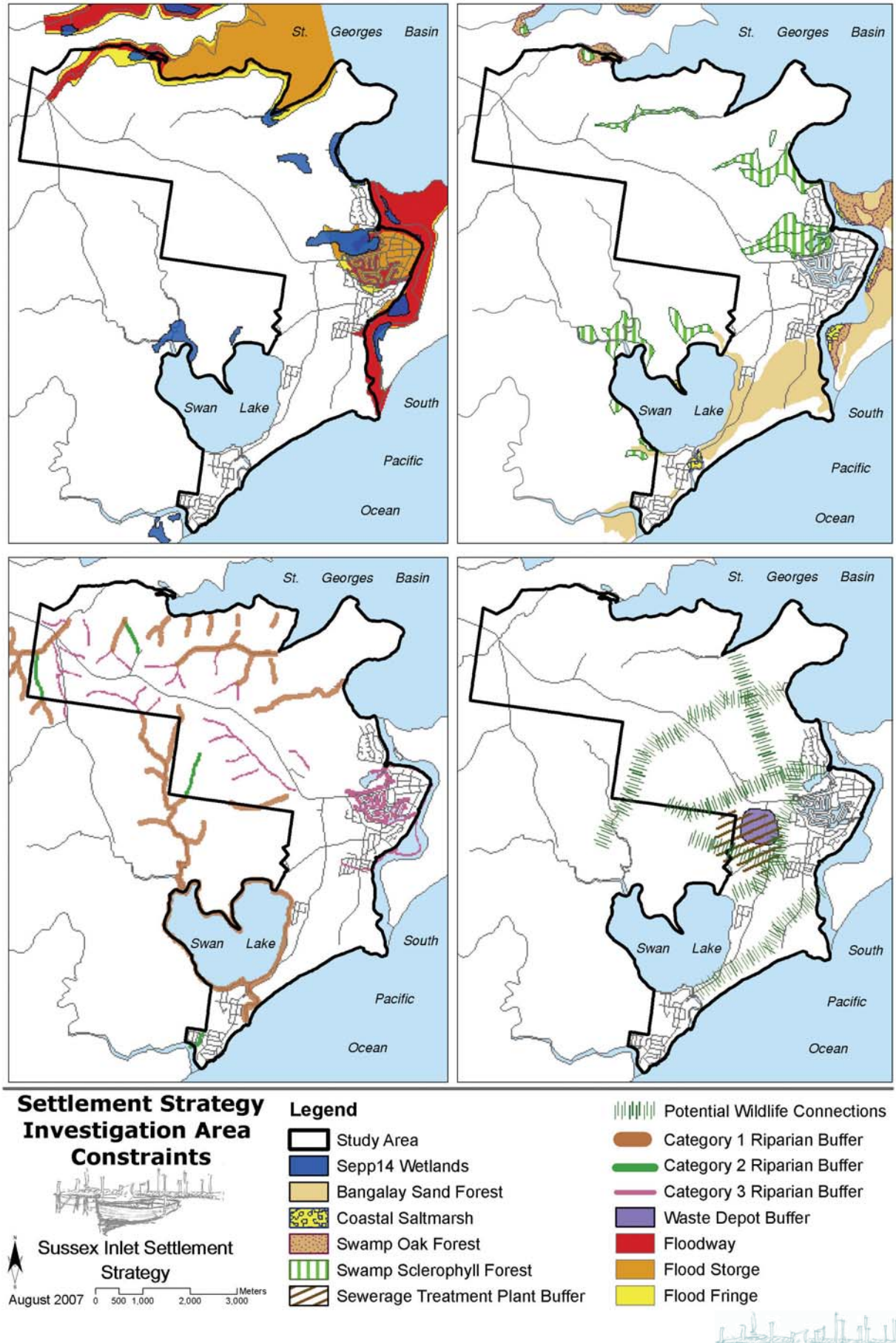


Figure 18 illustrates the investigation areas and the potential constraints relating to them. The constraints that have been identified for this purpose are:

- Riparian categorisations and associated buffers as identified by the Department of Natural Resources
- SEPP 14 Wetlands (high conservation value as defined by the South Coast Regional Strategy)
- Endangered Ecological Communities (high conservation value as defined by the South Coast Regional Strategy)
- Flood liable areas identified by Council's GIS mapping.
- 400 metre buffer to sewage treatment plant - consistent with the Sydney Water Sewage Treatment Plant Buffer Zone Policy (March 1997)
- 250 metre buffer to the Waste Depot – consistent with Environmental Guidelines, Solid Waste Landfills (EPA NSW)
- Potential wildlife connections based on riparian areas and important habitat linkages

Figure 18 does not comprehensively depict all High Conservation Value areas as defined by the South Coast Regional Strategy. Detailed investigations to verify environmental values will need to be undertaken as part of any rezoning investigations in order to satisfy the requirements of the Regional Strategy and establish development potential or clarify constraints to any future development.

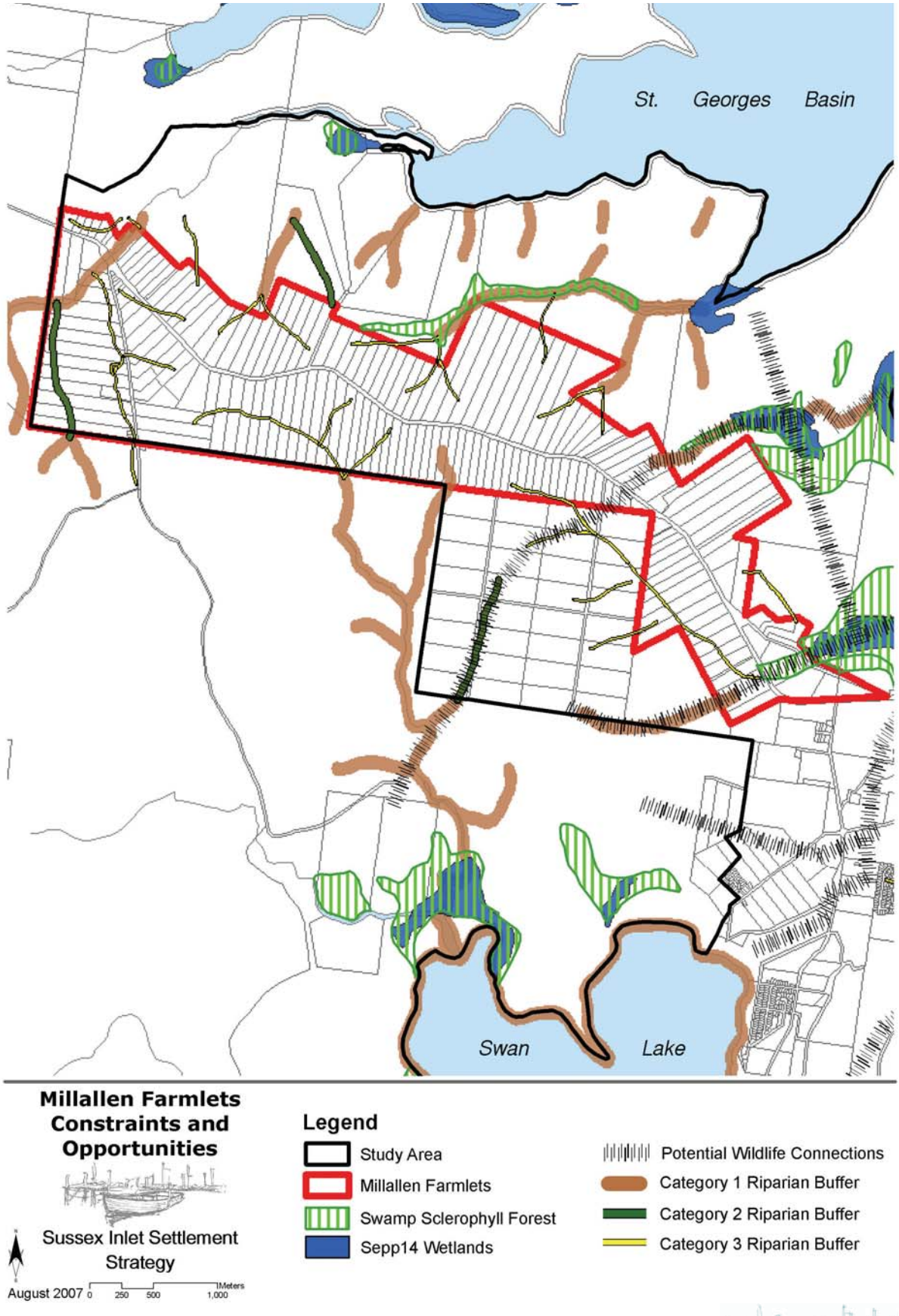
3.1 Settlement Strategy Investigation Areas

This section of the Settlement Strategy provides more detail on the key investigation areas along with actions that need to be considered prior to these areas being rezoned or redeveloped. This section also discusses other sites which are within the study area for which there is a need to clarify future planning direction. The text below outlines specific actions that need to be addressed prior to any development taking place.

The actions and specific objectives have been developed in response to the broad key strategic issues outlined in Section 2 and the land capability mapping that forms part of the strategic environmental analysis.

3.1.1. Millallen Farmlets

Figure 19: Millallen Farmlets - Constraints & Opportunities



The Millallen Farmlets are located along Sussex Inlet Road from the western edge of the study area near the Princes Highway to the western edge of Sussex Inlet township. They are existing rural residential allotments of varying sizes, are unsewered and have access to Sussex Inlet Road. They are currently zoned Rural 1(c2) under Shoalhaven LEP 1985 with a minimum lot size of 2 hectares and were deferred from the Rural Plan amendments to the Shoalhaven LEP which were gazetted in 1999. The existing zoning generally enables one dwelling per lot. They are shown bordered in green on the above map. Given that the zoning of the subject land has been "'deferred" there is a need to provide some resolution to the future zoning and use of the area.

It is not considered appropriate to permit further additional subdivision of these lots above what is currently permitted for the following reasons:

- Given the area relies on onsite effluent disposal, it would be inappropriate to intensify development and permit more onsite systems, with their associated water quality and runoff risks. Similarly, it would be prohibitively expensive to provide sewer to these areas;
- The existing linear nature of the lots and their configuration does not lend itself to further subdivision;
- Many of these sites are exposed at the rear to large areas of bushland with associated bushfire risks. Permitting development at the rear of these lots would increase these risks;
- The multiple access points to Sussex Inlet Road already pose a degree of road safety risk and increasing the level of development in this area would increase this risk; and
- It is more appropriate to locate additional development opportunities close to existing urban areas, where access to community facilities is better and where the impacts of development can be better managed.

Thus the opportunity to zone the land Rural 1(c)(rural lifestyle) under Shoalhaven LEP 1985, with a 2 hectare minimum subdivision standard which is consistent with the existing provisions relating to the land should be pursued.

Millallen Farmlets

Action

Resolve the "deferred" status of the subject land by zoning it Rural 1(c)(rural lifestyle) under Shoalhaven LEP 1985, or a similar zone under the Standard LEP Instrument, with the retention of a 2 hectare minimum subdivision standard consistent with the existing provisions relating to the land.

Responsibility

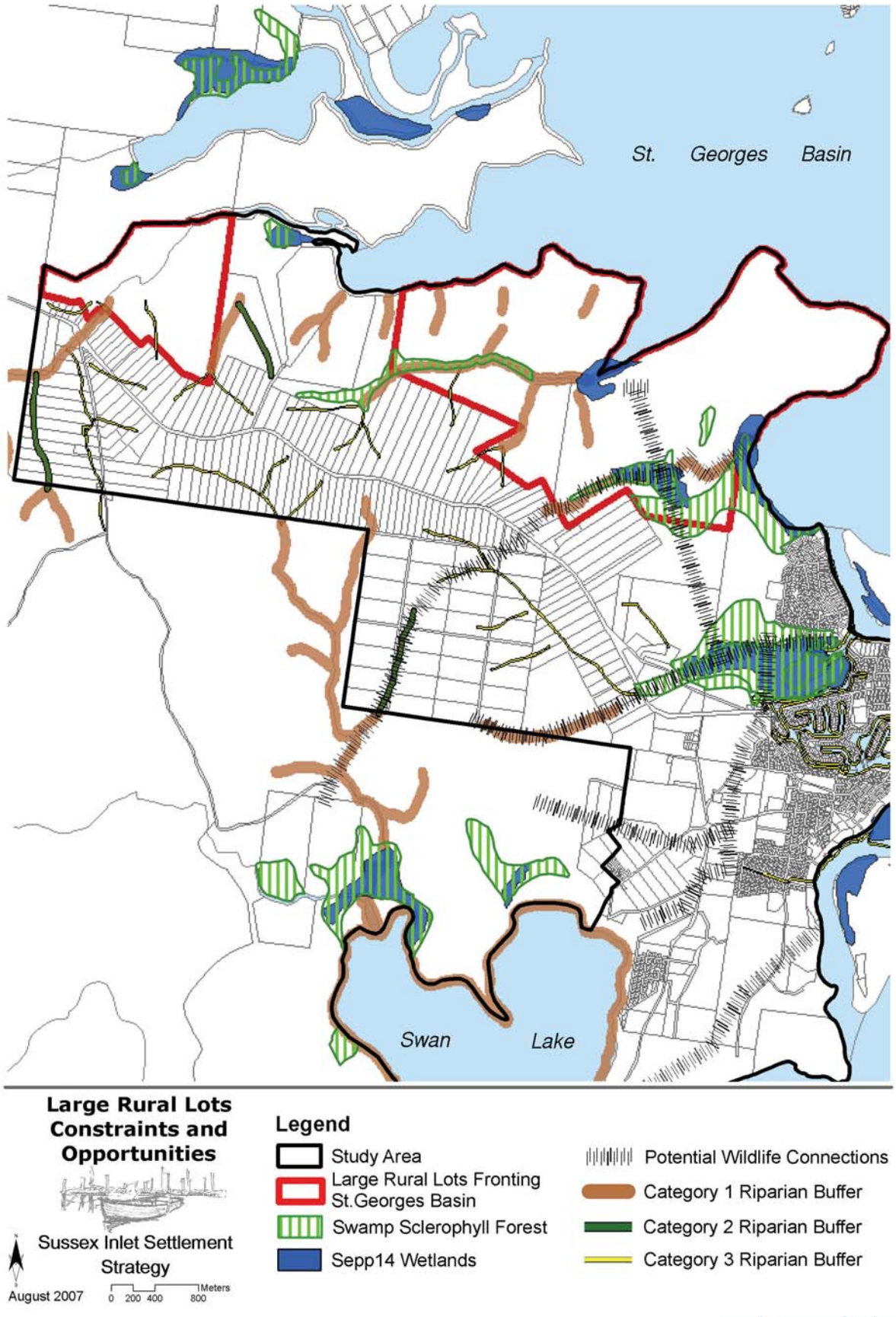
Council/Department of Planning.

Timeframe for Action

Short term

3.1.2. Large Rural Lots Fronting St Georges Basin

Figure 20: Large Rural Lots – Constraints and Opportunities



There are a number of large lots located on the southern shore of St Georges Basin that are held in private ownership and currently have a minimum subdivision size under Shoalhaven LEP, 1985 of 40 hectares. These lots are between 130 and 370 hectares in size and therefore have some subdivision potential under the current planning controls. However, the sites are largely covered in high quality bushland, and generally have frontages to St Georges Basin. The land forms an important scenic backdrop to St Georges Basin and contains land of significant biodiversity value. Development of this land will be limited by its potential High Conservation Value (defined by the South Coast Regional Strategy). These lots have been mapped by the State Government as containing a combination of threatened flora and fauna habitat, old growth forest, endangered ecological communities and SEPP 14 wetlands. Any development investigations would require verification of the environmental values of the site.

It is however important to consider options and scenarios for these important parcels of land given their environmental and visual significance and their current development potential. It would be undesirable to see the land further fragmented into 40 hectare lots, resulting in the need for bush fire protection measures, fencing and other uses associated with individual dwellings. This form of development could also negatively impact on water quality and biodiversity values with associated clearing potentially impacting on the scenic quality of the area. The fragmentation of the area would also remove any potential for some of the land to be brought into public ownership in an attempt to protect the integrity of the foreshore and achieve biodiversity conservation objectives.

In this context, it is appropriate to investigate whether some additional rural residential development, clustered in defined areas can be supported in return for the protection of the majority of the bushland through an appropriate environmental protection zoning. Ideally, any future development will result in the dedication of the foreshore land fronting St Georges Basin to the public at no cost to Council.

This approach has a number of advantages, including:

- Efficient and less costly provision of infrastructure and services;
- protection of the large areas of bushland;
- an enhanced ability to manage bushfire risk without widespread clearing to achieve asset protection zones;
- social benefits associated with minimising social isolation
- achievement of the scenic protection objectives for the southern foreshore of the Basin;
- public ownership of the remainder of the land and controlled public access to the foreshore; and
- reduced impact on water quality in St Georges Basin as a result of locating any development adjacent to existing areas of development and as far as possible from the shoreline.

Further detailed work will be required to provide more detail on an appropriate level of development and to better define appropriate locations for any clustered development to ensure the full range of social, economic and environmental considerations are taken into account.

Planning agreements, prepared under the *Environmental Planning and Assessment Act 1979* between the existing landowners and Council could be an appropriate way in which to achieve a number of these planning objectives. Voluntary conservation agreements could also be a useful tool in achieving an appropriate balance between development and conservation outcomes in these areas but need to be entered into by the landowner.

One Tree Bay Proposal

A proposal for One Tree Bay has been submitted by Miltonbrook Pty Ltd and involves the creation of a new relatively dense, walkable, mixed use township of approximately 160 hectares on One Tree Point, which is located on the southern side of St Georges Basin. The proposal also includes the creation of a lakeside park around the township of approximately 40 hectares with 4 kilometres of frontage to St Georges Basin; and the transfer of approximately 880 hectares, with 15 kilometres of frontage to St Georges Basin to the NSW National Park Estate. The proposed township could possibly accommodate approximately 4,000 people in 1,800 dwellings.

Council resolved on the 24 April, 2007 to offer in principle, support for the proposal, which will need to be discussed with the State Government and address the relevant provisions of the South Coast Regional Strategy.

Large Rural Lots Fronting St Georges Basin

Actions

1. The possibility of additional limited rural residential development, clustered in defined areas, will be investigated. Any rezoning to facilitate this should also require the protection and dedication of the remaining land to the National Parks and Wildlife Service (NPWS) as well as foreshore dedication.

2. Planning options will need to be discussed with the Department of Planning to achieve dedication of appropriate land to the public.

3. A detailed environmental study should be undertaken as part of any rezoning proposal and address amongst other issues, water quality, Aboriginal heritage, threatened species habitat requirements, endangered ecological communities, management and enhancement of biodiversity values, potential habitat corridors and visual analysis to minimise impacts.

4. Any proposed development of this land beyond that agreed to through Actions 1 and 2 will not be supported unless compelling reasons are presented and they can satisfy the Sustainability Criteria outlined in the South Coast Regional Strategy.

   One Tree Bay is not identified as one of the Settlements supported by the South Coast Regional Strategy (SCRS) and is not included in this Strategy. Therefore, any consideration of the One Tree Bay proposal should be made in the context of the Housing and Settlement Section of the SCRS. In particular the following actions will apply:

   - No new towns and villages will be supported, unless compelling reasons are presented and it can be demonstrated that they satisfy the sustainability criteria.

   - Any additional development proposed will need to demonstrate that it can satisfy the Sustainability Criteria in Appendix 1.

Responsibility

Council, Department of Planning, and proponent/landowner and other relevant State Government Agencies.

Timeframe

Short/Medium term

3.1.3 Verons Estate

Verons Estate is an existing small lot rural subdivision of 32 lots located to the south of the eastern end of the Millallen Farmlets. The area falls into two water catchments, with the lots generally located to the western half of the estate draining to Swan Lake, and those on the eastern side draining towards Badgee Lagoon. The area is not sewered and does not have trunk water supply. The Estate is shown bordered green on Figure 21.

Some of the lots have been cleared or partly cleared and some lots have structures located on them. The majority of the Estate is currently zoned Rural 1(d) under Shoalhaven Local Environmental Plan LEP, 1985. Approximately 7.5 hectares, in the southwest corner adjacent to the National Park, is also zoned Environment Protection 7(a) (Ecology). Fourteen (14) of the 32 lots within the Swan Lake Catchment are also identified as "land of ecological sensitivity" under the Shoalhaven LEP, 1985 and development consent is required for all activities on the land including agriculture.

Council does not generally have the legal ability to approve dwellings on the individual lots within the Estate because they do comply with the required minimum allotment size of 40 hectares and are not "existing holdings" as defined under Shoalhaven LEP, 1985. The zoning and planning provisions applying to the land have generally prevented the erection of dwellings on the individual lots since 1964. The exception to this is where existing holdings do exist.

While the current subdivision layout provides for access and informal roads exist, formal roads have not been constructed. In September, 2005 Council acknowledged that the roads within the Verons Estate (constituted in DP 9897) are public roads. Any future road up-grade will be at the cost of the benefiting landowners.

Council resolved to support rezoning investigations of the Estate in 1993 and in 1994 the NSW State Government placed a moratorium on rezoning of land in the Sussex Inlet area pending completion of a broader Strategy. Since the rezoning moratorium came into force the planning situation for this Estate has remained unresolved.

It is therefore considered appropriate within the context of the Strategy to provide some planning direction for this area. Given the need to balance environmental concerns (vegetation removal, water quality etc) while also addressing landowner expectations and providing certainty over time, it is considered appropriate to investigate the ability for a maximum of one dwelling entitlement per allotment for the properties within the Estate. Consideration will also be given to allowing tourist development and facilities on those properties outside the Swan Lake catchment as part of the future rezoning investigations. It is also considered appropriate for the landowners to fund the construction of roads and the required infrastructure. The area is likely to remain unsewered and should not be connected to the water supply system. Development controls addressing water quality, bush fire hazard and vegetation clearance should be considered as part of any future rezoning in this area to ensure environmental impacts are minimised.

Verons Estate

Actions

1. The potential to enable rural residential development (maximum one dwelling per lot) will be investigated. Consideration will also be given to allowing tourist development and facilities on properties outside the Swan Lake catchment as part of the rezoning investigations.

2. Appropriate environmental studies will be undertaken and controls investigated to support any rezoning proposal, addressing, as a minimum:

   Land capability and environmental values
   Bushfire risk and management
   Relationship to adjoining National Park
   Water quality, including soil and water management
   Locally significant riparian and habitat corridors
   Effluent disposal

3. Should the rezoning proceed, then an implementation plan (possibly including a Section 94 Plan) will be prepared as part of any draft LEP to consider and address the provision of required infrastructure and any outcomes required to support development.

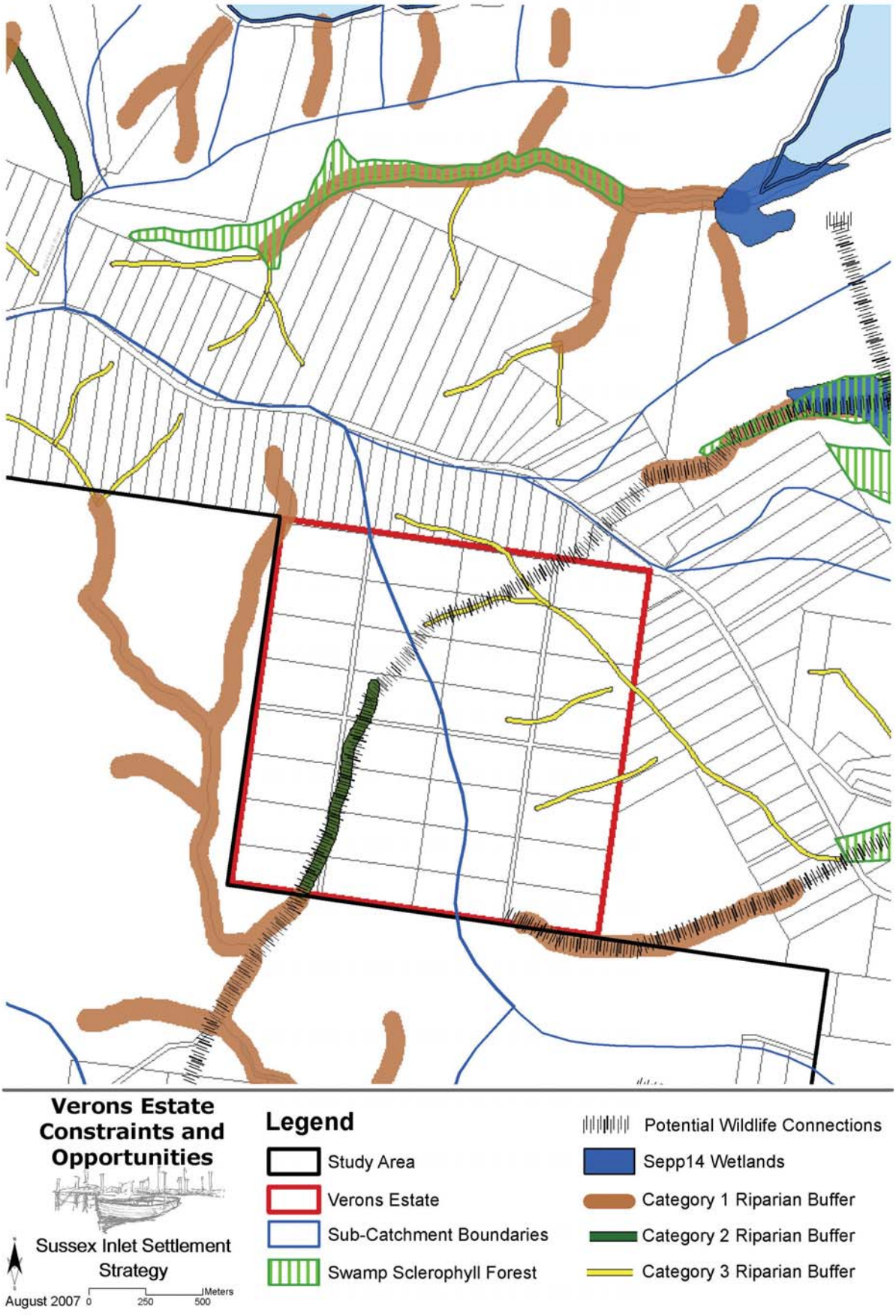
Responsibility

Council, Department of Planning, proponents/ landowners and relevant State Government Agencies.

Timeframe

Short term

Figure 21: Verons Estate – Constraints and Opportunities



3.1.4 Badgee Investigation Area

There are two large land holdings located to the west of the existing Badgee residential area and north of Sussex Inlet Road. These holdings have common characteristics in many regards and are shown edged in green on Figure 22. One of these holdings incorporates the existing nine-hole Sussex Inlet golf course as well as land already zoned residential under Shoalhaven LEP 1985 on the western fringe of the existing Badgee residential development north of the River Road bridge.

It has been proposed that part of these sites be developed for mixed residential purposes, a range of community facilities and the expansion of the golf course to 18 holes.

The potential social/economic benefits arising from the development of this land would include:

- provision of additional housing stock in a flood free location adjacent to the existing urban area of Sussex Inlet with associated efficiencies relating to infrastructure provision and staging of development;
- the ability to co-ordinate planning and environmental management (including water quality) across two large sites under one Local Environmental Study and rezoning process;
- a long term increase in population for Sussex Inlet with associated benefits in terms of increased viability for local services and facilities as well as the provision of new facilities;
- sufficient land to provide for an extension of the existing golf course from nine to eighteen holes;
- provision of a flood free road access from the existing residential area to the north of Badgee Lagoon through to Sussex Inlet Road (also discussed in Section 2.2.3); and
- provision of a range of different housing types within the two sites as part of efforts to increase the diversity of housing stock in the study area.

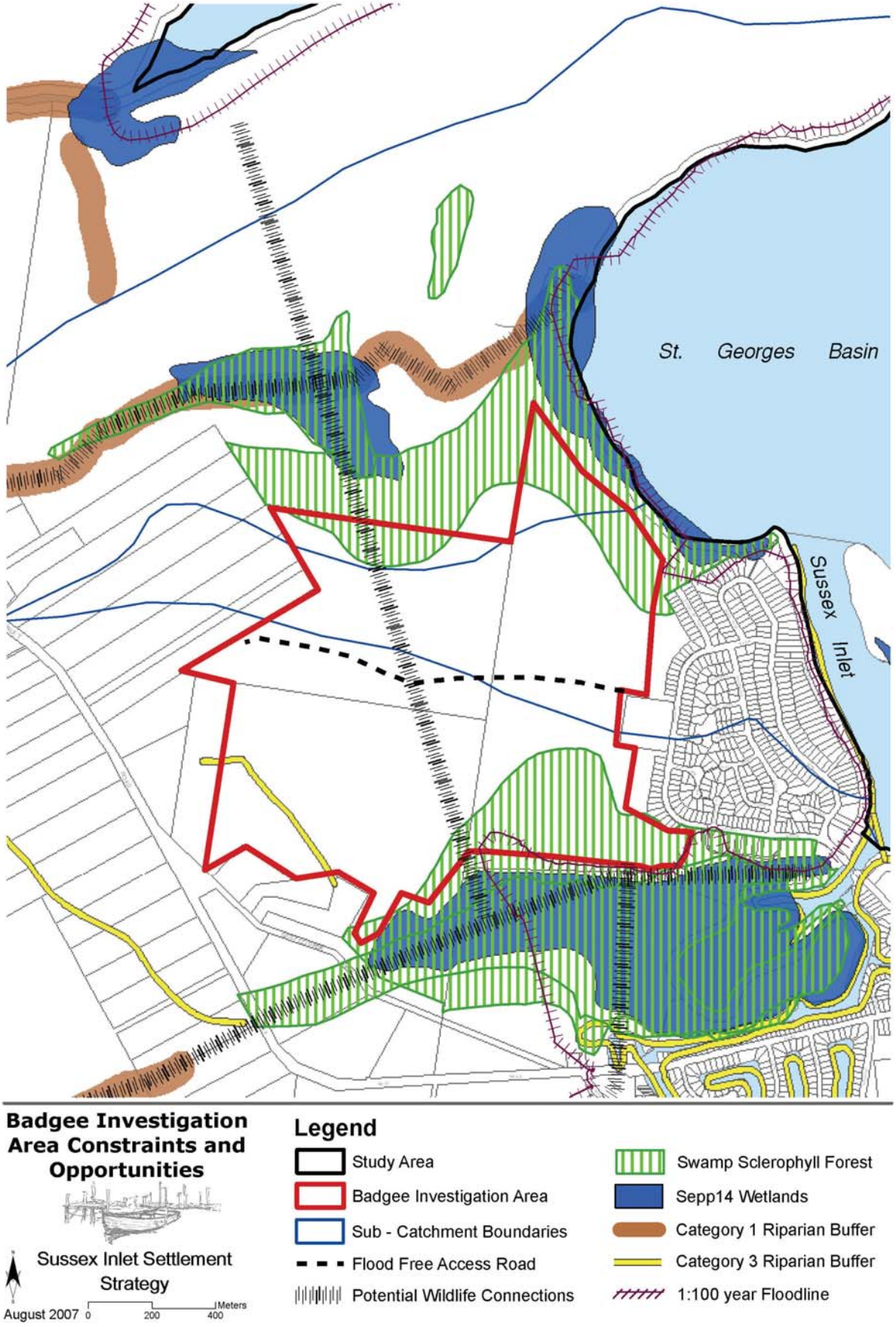
Potential environmental offsets/mitigation measures include:

- Subject to further detailed assessment the opportunity to incorporate the habitat corridors through the site in a north-south direction. This includes the opportunity to link Badgee riparian areas to the south of Sussex Inlet Road to the bushland fronting St Georges Basin;
- dedication of Badgee Lagoon (with appropriate buffer) to the community at no cost, thereby protecting the SEPP 14 wetland and rezoning this land to an appropriate environment protection zone;
- public dedication of St Georges Basin foreshore;

As indicated, development of these sites should involve:

- preparation of a joint Local Environmental Study and rezoning process to ensure maximum integration of planning and environmental outcomes across property ownership;
- provision of flood free road access to Sussex Inlet Road;
- detailed investigations and controls addressing water quality management issues;
- further detailed flora and fauna analysis to establish the appropriate location, width and linkages of the potential habitat corridors, including through the proposed expansion of the golf course.

Figure 22: Badgee Investigation Area – Constraints and Opportunities



The environmental study is necessary given the nature of the subject land and the need to consider in detail issues such as flora and fauna, water quality and bushfire hazard protection. The environmental study over this land will need to consider its potential high conservation value (defined by the South Coast Regional Strategy). These lots have been mapped by the State as having a combination of threatened flora and fauna habitat, old growth forest, endangered ecological communities and SEPP 14 wetlands. Thus the investigations will need to verify the environmental values of the site.

Given that there are currently only two landowners in this area, substantial potential exists for Council to investigate entering into a planning agreement relating to the delivery of a range of outcomes described above. This agreement could be prepared using the relevant provisions of the *Environmental Planning and Assessment Act 1979*.

Badgee Investigation Area

Actions

1. Provide for the expansion of the Sussex Inlet urban area through the investigation and potential rezoning of this area. The need to provide a mix of residential, community and recreational uses will be considered as part of the investigations.
2. A coordinated and integrated environmental study will be undertaken and controls investigated to support any rezoning proposal, addressing, as a minimum:

   Land capability and environmental values (SEPP 14 wetlands, Endangered Ecological Communities etc)
   Locally significant riparian and habitat corridors
   Aboriginal Cultural heritage
   Visual impact
   Bushfire risk and management
   Water quality including stormwater and soil and water management
   Traffic impact
   Required social and community infrastructure
   Infrastructure servicing
   Staging of development
3. Should rezoning proceed then an implementation plan (possibly including a Section 94 Plan) will be prepared as part of any draft LEP. The implementation plan will need to address the provision of required infrastructure, any outcomes required to support development and include an appropriate staging plan.
4. The recommendations of the South Coast Sensitive Urban Lands Review must be addressed as part of any subsequent development of this area.
5. Consideration shall be given to incorporating a small neighbourhood shopping centre as part of the overall development of the Badgee Investigation Area given the flooding issues that impact on the existing business area of Sussex Inlet.

Responsibility

Council, Department of Planning in associated with proponents/ landowners and other relevant State government Agencies.

Timeframe

Short term

3.1.5 Crown Land

Crown Land - Sussex Inlet and Swanhaven

The NSW Government owns several parcels of land immediately adjacent to and within the existing urban areas in the Sussex Inlet study area. These are shown in Figure 23.

The NSW Department of Lands is responsible for the assessment and management of Crown land under the *Crown Lands Act, 1989*. The Department of Lands is required to undertake the proper assessment of Crown land prior to the land being reserved or dedicated for a public purpose, sold or leased. The Department finalised and adopted a Crown Land Assessment at Sussex Inlet and Swanhaven (referred to as the Crown Land Assessment) in September, 2005. The Assessment process included a land capability assessment and public review prior to the adoption of preferred use or uses for Crown land.

The land assessment process for Crown land is not specifically linked to other statutory land use planning processes, but forms part of the State Government's policy direction which needs to be considered as part of this Strategy and its subsequent implementation.

The recommendations made in the Crown Land Assessment for each mapping area, shown in Figure 24 are outlined below and relevant comments are provided that explain the position taken in this Strategy.

Mapping Area 1

The assessment indicates that the most suitable uses for the western part of the mapping area are:

- Environment protection and nature conservation for catchment protection;
- Recreation, tourist or community uses;
- Public utility services not requiring substantial structures.

The suitable uses identified for the eastern part of the mapping area are:

- Industrial or public utility services;
- Recreation, tourist or community uses;
- Environment protection and nature conservation for catchment purposes.

Comments - The subject land is currently zoned Industrial 4(a), with a small strip of land in the west of the area zoned Rural 1(d) under Shoalhaven LEP 1985. Given the adjoining uses (sewerage treatment plant and waste depot) the eastern part of the area is suited to some from of development for industrial or public utility use, with due consideration being given to the need to protect the environmental values of the adjoining National Park and provide appropriate bushfire hazard protection measures, including buffers.

Mapping Area 2

This area is assessed as having poor urban and rural land capability. The Crown Land Assessment indicates that the most suitable uses for the mapping area are:

- Environmental protection and nature conservation;
- Limited outdoor recreation.

It is indicated that the land is not suitable for urban development because it forms an important natural buffer and valuable habitat corridor that allows movement between Swan Lake and the SEPP 14 wetland around Badgee Lagoon as well as the bushland to the north.

Comments **-** As identified in Section 2.1 the opportunity to provide for additional future community uses and infrastructure, in the vicinity of the existing Thomson Street community and sporting facilities, requires some consideration and resolution. This future use requirement needs to be reconciled against the suitable uses currently identified in the Crown Land Assessment. The opportunity to enable some future community uses adjacent to the existing facilities as well as the protection of identified environmental features needs to be discussed further with the Department of Lands.

Mapping Area 3

This mapping area is essentially made up of pockets of Crown Land within the Sussex Inlet urban area. The Crown Land Assessment indicates that the most suitable uses for the mapping area are:

- Residential and/or community development;
- Recreation or tourism uses.

The area is considered suitable for urban development given its location with the existing urban area and there are no major environmental constraints over the land.

Comments **-** The subject land is already appropriately zoned part Residential 2(c), part Residential 2(a1) and part Open Space 6(c) under Shoalhaven LEP 1985. Allowance is also currently made for the use of the 6(c) zoned parcel by a youth club.

Mapping Area 4

This mapping area contains three distinct parcels of land located north and south of Medlyn Avenue. The Crown Land Assessment indicates that the most suitable uses for the part of mapping area north of Medlyn Avenue are:

- Environment protection and nature conservation;
- Recreation (natural, semi natural);
- Residential and public use (limited)

The Assessment indicates that the most suitable uses for the part of mapping area south of Medlyn Avenue are:

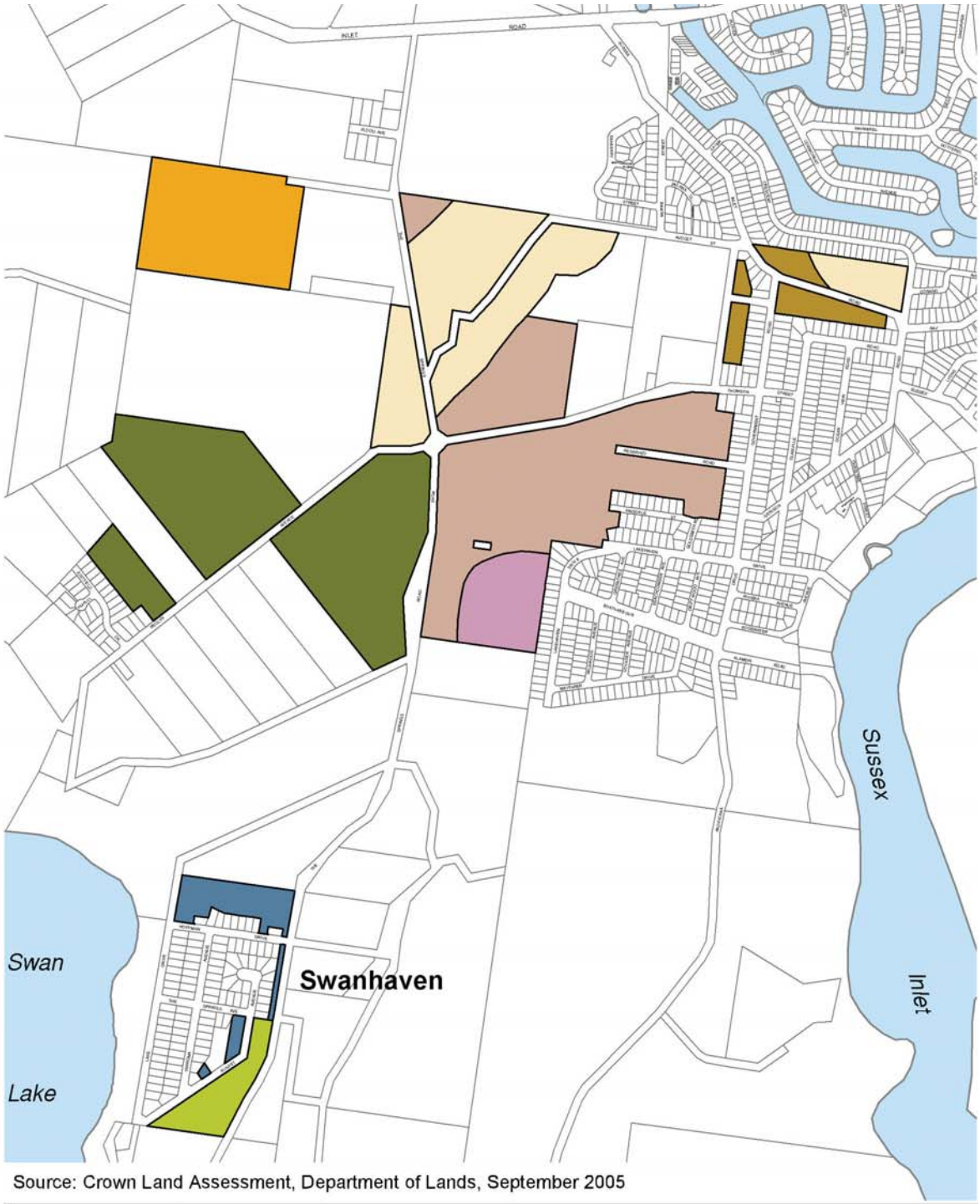
- Conservation for catchment values and wildlife corridor.

Given that the area links to the adjacent National Park and forms part of a larger habitat corridor it is indicated that the conservation of the land north of Medlyn Avenue outweighs any gains from its social or economic value.

The lands north of Medlyn Avenue are however identified for a mix of residential and other uses including conservation.

Figure 23 - Crown Land – Sussex Inlet and Swanhaven

Source: Crown Land Assessment at Sussex Inlet and Swanhaven, Department of Lands, September 2005



Source: Crown Land Assessment, Department of Lands, September 2005

Crown Land - Sussex Inlet and Swanhaven

Sussex Inlet Settlement Strategy

August 2007 0 250 500 Meters

Legend

Mapping Areas

- Mapping Area 1
- Mapping Area 2
- Mapping Area 3
- Mapping Area 4
- Mapping Area 5
- Mapping Area 6
- Mapping Area 7
- Mapping Area 8

Comments – The land south of Medlyn Avenue is currently zoned Residential 2(c) under Shoalhaven LEP 1985 and is also affected by the environmental buffers surrounding the sewage treatment plant and waste transfer station. The areas north of Medlyn Avenue are zoned Rural 1(d) under Shoalhaven LEP 1985. Development of the Crown Land parcel immediately adjoining the existing Justfield Drive residential subdivision for residential development would require further investigation given bushfire and environmental issues and if appropriate rezoning.

The possible rezoning and development of part of this area adjoining the existing Justfield Drive residential subdivision will need to be discussed further with the Department of Lands and the Rural Fire Service.

Mapping Area 5

This area is made up of land adjoining The Springs Road, north and south of Thomson Street. The Assessment indicates that the most suitable uses for the eastern part (Part Lot 53 DP 755937) of the mapping area are:

- Conservation;
- Limited recreation or tourism;
- Limited residential development or community purposes

The Crown Land Assessment indicates that the most suitable uses for the remainder of the mapping area are:

- Environmental Protection and nature conservation for catchment values and wildlife corridor.

The identified eastern area (Part Lot 53), is currently zoned Residential 2(c) under Shoalhaven LEP 1985 and is bounded on three sides by urban development. It is noted that its capability is however limited by high bushfire hazard. The remainder of the mapping area has environmental value and forms part of the habitat corridor system in this location. It is therefore identified as being unsuitable for development.

Comments – The residential use of Part Lot 53 is consistent with its zoning and urban context. However as identified in Section 2.1 the opportunity to provide for additional future community uses and infrastructure in the vicinity of the existing Thomson Street community and sporting facilities requires some consideration and resolution. This future use and requirement needs to be reconciled against the uses currently identified in the Crown Land Assessment. The opportunity to enable some future community uses adjacent to the existing facilities and also protect the identified environmental values needs to be discussed further with the Department of Lands.

Mapping Area 6

This area contains an endangered ecological community listed under the *Threatened Species Conservation Act, 1995* adjacent to the southern part of the Sussex Inlet urban area. The area is not considered suitable for development due to its environmental values and the Crown Land Assessment indicates that the most suitable uses for this mapping area are:

- Environmental protection and nature conservation for an endangered ecological community.

Comments – Given the environmental value of the subject land it is appropriate that it be given an environmental protection zoning in any future LEP review.

Mapping Area 7

This mapping area is made up of vegetated parcels adjacent to the northern and eastern boundaries of Swanhaven. The four parcels are currently zoned Residential 2(a1), Residential 2(c) or Recreation 6(c) under Shoalhaven LEP, 1985.

The Crown Land Assessment indicates that the most suitable uses for the majority of the large northern parcel are:

- Environmental protection and nature conservation for catchment protection;
- Limited outdoor uses for recreation, tourism.

It is indicated that the southern boundary of this parcel is uneven which increases the difficulty of managing the urban/bushland interface. The southern part of this parcel is considered to be capable of some limited development subject to suitable consideration and management of the bushfire hazard.

The Crown land Assessment indicates that the most suitable use for the remaining parcels making up the mapping area is:

- Urban residential infill development.

The narrow strip of land along the western side of The Springs Road is however considered to be only suitable for conservation and provides an important visual buffer. The two remaining parcels of land located on Sunset Avenue road reserve are surrounded by existing residential development and are suitable for limited residential infill development.

Comments - The Crown Land Assessment indicates that some infill residential development is appropriate along the southern boundary of the large northern parcel. It may also be necessary for any development in this location to provide an appropriate buffer to the existing sewerage pumping station located at the western end of Hoffman Drive. The two parcels on Sunset Avenue are also considered to be suitable for infill residential development.

Mapping Area 8

This mapping area is made up of undeveloped Crown Land south east of Swanhaven and the Crown Land Assessment concludes that it contains a wetland gully that is densely vegetated, with moderate erosion hazard. As such the Crown Land Assessment indicates that the most suitable uses for the land are:

- Environmental protection and nature conservation.

Comments – The subject land is currently zoned part Residential 2(a1) and part Recreation 6(c) under Shoalhaven LEP 1985. Given the environmental value of the subject land it is appropriate that it be given an appropriate environmental protection zoning in any future LEP review.

Figure 24 provides an interpretive overview of the preferred uses identified in the Land Assessment for the eight mapping areas.

Crown Land – Sussex Inlet and Swanhaven

Action

Hold discussions with the Department of Lands regarding the Crown Land Assessment recommendations and the implementation of this Strategy. The potential for additional community land and a conservation corridor on Crown land at Thomson Street will be investigated and discussed. If these matters can be resolved the necessary zoning changes will be made as part of the Citywide LEP review.

Responsibility

Council , Department of Lands and Department of Planning.

Timeframe

Short term

Crown Land – Cudmirrah/Berrara

There are also other areas of Crown Land in the study area that are not covered by the Crown Land Assessment 2005, discussed in detail above. The most significant of these is a large parcel of land between the existing villages of Cudmirrah and Berrara.

This land is already zoned Residential 2(c) under the provisions of Shoalhaven LEP 1985 and is the subject of an unresolved Aboriginal Land Claim that was lodged in 2004.

The future use of this land was considered in detail by the South Coast Sensitive Urban Lands Review undertaken in 2006 as part of the preparation of the South Coast Regional Strategy.

This review concluded that only a small part of the site was suitable for limited urban development adjacent to Swan Avenue and Waratah Avenue mainly planned to allow for better bushfire management for the villages. This will be achieved through the provision of a perimeter road and sufficient separation between bushland and adjoining dwellings for a suitable asset protection zone. Development in this area should provide a mix of housing at an increased density than normal. Care should also be taken to minimise the impact on identified threatened species and to ensure that water quality impacts on Swan Lake are avoided.

The majority of the site was considered to be unsuitable for development because of the presence of endangered ecological communities listed under the *Threatened Species Conservation Act, 1995* and the potential for adverse impacts on Swan Lake. Thus the Review Panel concluded that the majority of the site should be given an appropriate environmental protection zoning in any future LEP review.

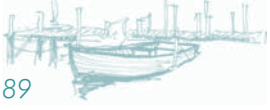
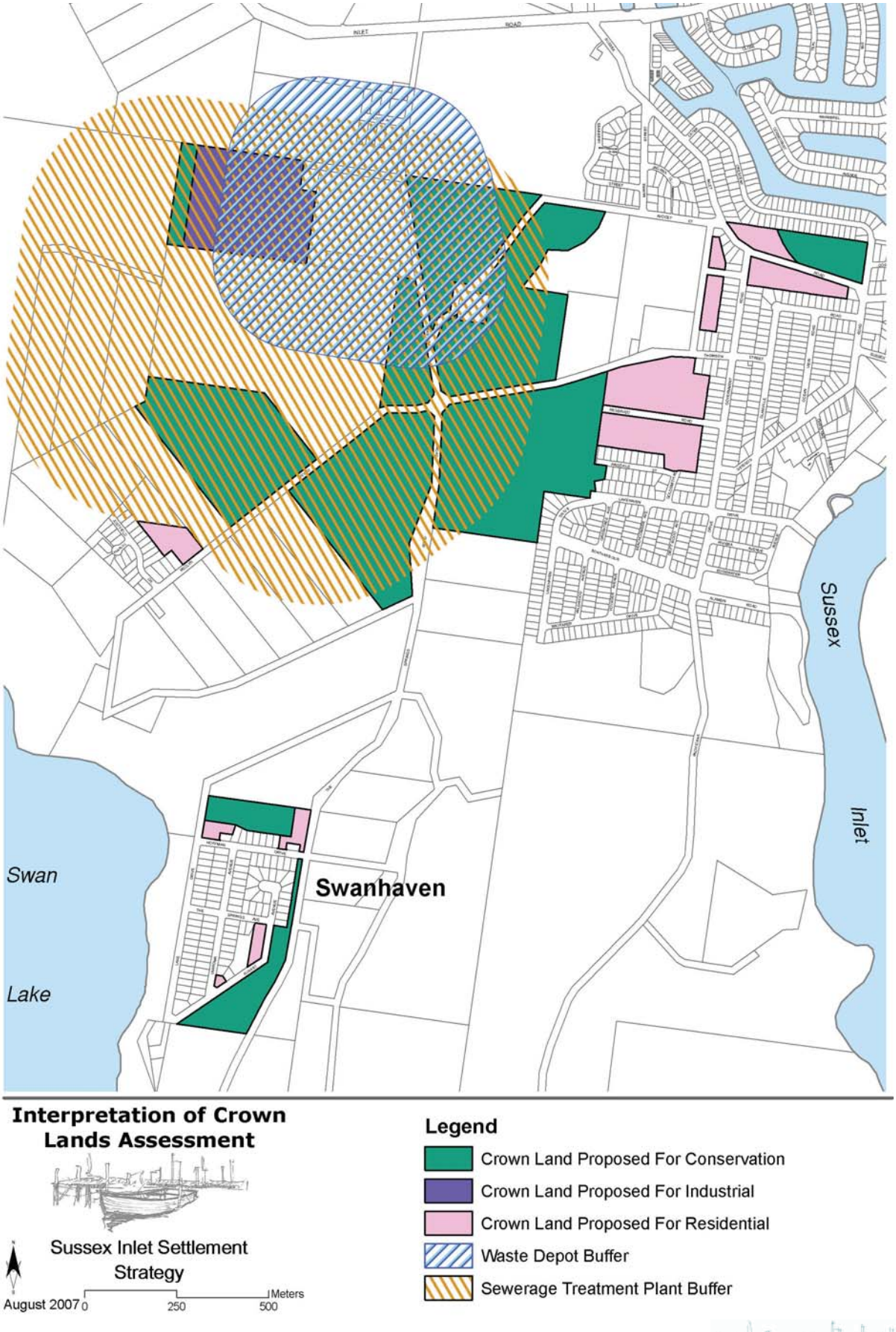


Figure 24: Interpretation of Crown Lands Assessment



Crown Land – Cudmirrah/Berrara

Action

The recommendations of the South Coast Review Panel will be considered in any future development or rezoning of the Crown Land between Cudmirrah and Berarra.

Responsibility

Council, Department of Lands and Department of Planning.

Timeframe

Medium/ Long term

3.1.6 Preferred Settlement Strategy – Outcomes

The preferred Settlement Strategy for the Sussex Inlet study area represents a balance between a range of competing objectives and issues. It will enable a reasonable level of sustainable growth in the Sussex Inlet area in the future, subject to the outcome of detailed rezoning and development processes that will follow the Strategy.

Importantly the level of additional development contemplated will enable a greater range of facilities and employment opportunities to be made in the area. Given the predicted future population profile, it will also enable and encourage a greater degree of housing choice and diversity to meet the needs of an aging population.

It is important to undertake an estimate of the potential additional number of dwellings which may result from the development of all of these areas. These forecasts are of a particularly preliminary nature, as they pre-date detailed investigations of the areas identified for future growth. They are not therefore presented as target levels of future development on particular sites but instead provide an indication of potential aggregate levels of development.

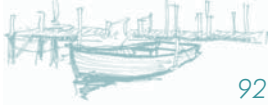
Two methods have been used in this assessment. For sites which are not currently developed, consideration has been given to known environmental constraints and assumptions have been made about the proportion of a site which may be able to be developed. This is known as an efficiency ratio, and is presented as a percentage. Given the preliminary nature of these estimates, a baseline efficiency ratio of 65% has been assumed. This compares with ratios approaching 80% in areas where all constraints are limited and well understood. A national average density of development (12 dwellings per hectare) has then been applied to produce a forecast dwelling yield.

The primary source of new housing in this context would be the Badgee investigation area. The total site area in this location is approximately 170 hectares. In this case, it is reasonable to assume an even lower efficiency ratio of 50% given that part of the proposal for this land is the expansion of the golf course. Using the above assumptions, this would yield approximately 1,000 dwellings.

The other main area which can be considered in this context is selected Crown land sites. However, the Crown land sites which have been identified as being suitable for residential development are generally quite small in scale. While they will provide some additional housing the number of additional dwellings is expected to be relatively small and very dependent on detailed design considerations. These sites would add marginally to the total of approximately 1,000 additional dwellings expected in the Badgee investigation area.

Similarly, it is anticipated that only a relatively small number of additional houses would be provided through urban consolidation opportunities. A future land capability study and planning controls that encourage urban consolidation are needed to ensure appropriate infill development. This infill development would partly address the predicted market trend of improved housing choice in the Sussex Inlet area.

In summary, therefore, depending on identified environmental constraints the Badgee investigation area could be expected to yield somewhere in the order of 1,000 dwellings of varying types and sizes, whilst the urban consolidation opportunities and development of Crown Land in accordance with the Crown Land Assessment may yield approximately 300 dwellings. Together with other minor opportunities for additional housing identified in this Strategy, this may see a total of 1,300 – 1,400 dwellings being provided in Sussex Inlet in the future.



The development of areas identified in the Strategy will be supported in principle subject to the findings of the required detailed investigations undertaken during the rezoning process. It is acknowledged that this detailed investigation and rezoning process may take some time and will ultimately determine the release of residential and rural residential land.

The Strategy also details other potential developments and land uses that are not strictly residential or rural residential in nature. These have been included in the Strategy because they are related to the growth of the area. These opportunities will require detailed consideration and timing will largely be demand driven.

Council and the NSW Government will ensure that the Strategy is appropriately monitored and reviewed through time to ensure that it responds to new information and adopts an adaptive approach to continued settlement in the area.

Preferred Settlement Strategy – Outcomes

Objective: New residential and rural residential development will be staged and monitored in accordance with its scale and potential environmental, social and economic impacts.

Actions

1. For large scale staged projects, policy mechanisms will be considered and implemented to ensure that the commencement and completion of latter stages will be dependent on environmental and other performance benchmarks being met by previous development stages.

2. Council and the Department of Planning will keep the Strategy under periodic review. The purpose of this review is to ensure that the Settlement Strategy objectives and actions remain current and relevant.

Implementation Responsibility

Council, Department of Planning, proponents/ landowners and relevant State Government Agencies.

Timeframes

On going

4.0 WAY FORWARD

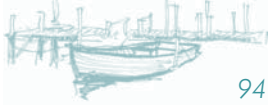
This report sets out a Strategy for the future settlement of the Sussex Inlet study area. The endorsement of this Strategy by the Director-General of the NSW Department of Planning will enable State Government to consider lifting the previous rezoning moratorium and enable residential and rural residential rezoning proposals that are consistent with the Strategy to be considered further. The Strategy also establishes a broad planning framework that is consistent with the South Coast Regional Strategy.

The *Environmental Planning and Assessment Act 1979* sets out the legal procedures that must be followed when preparing and assessing development and rezoning proposals that may follow the completion of this Strategy. Further opportunities for community input will be available as part of these statutory processes.

Strategy Mapping

The mapping contained in this document outlines some of the broad features of this Strategy and should be read in conjunction with the objectives, actions, responsibilities and timeframes for implementation that are the basis of this document.

The mapping illustrates the proposals presented and discussed in Section 3. These proposals represent areas of potential new settlement in the study area that will be subject to further detailed investigation in accordance with the objectives and actions outlined in the Strategy.



Strategy Implementation

Council and the NSW Government will continue to work together to implement the Strategy. The immediate implementation priorities of the Strategy have been outlined in timeframes contained in Sections 2 and 3.

It should be noted that the various objectives, actions and implementation responsibilities may ultimately dictate the nature and timing of settlement outcomes and results from this Strategy. For example, a detailed environmental study and draft LEP will need to be prepared in accordance with the provisions of the *Environmental Planning & Assessment Act 1979* before any land not currently zoned for residential or rural residential purposes is considered for such a use. Each investigation area identified in the Strategy will have unique and particular issues to investigate and resolve as part of the planning process.

It may be necessary and appropriate or desirable in some circumstances to depart from the Settlement Strategy's specific benchmarks and outcomes in order to reach the best "whole of planning" outcome for a particular location or the study area as a whole. Any departure from the Strategy's benchmarks will, however, involve a detailed and open assessment process, which will detail why the departure is considered necessary in order to contribute to the best planning outcome for the area.

Council and the NSW Government will also ensure that the Strategy is appropriately monitored and reviewed through time to ensure that it responds to new information and adopts an adaptive approach to continued settlement in the area.

Conclusion

This Settlement Strategy will help guide future development and conservation of the area for the next 20 to 25 years. The Strategy does not itself rezone land for development however, it identifies broad areas for consideration and sets clear principles and outcomes to guide future development in the study area.

The Sussex Inlet area has unique environmental and cultural values. The area is known to contain habitat for a significant number of threatened species and the threat of bush fire and flooding must be also taken into consideration when responding to development pressure in this area. It is also a popular place to both live and visit and as a result future settlement needs to be accommodated and carefully managed.

Appendix 1

Summary of findings from the Independent Review Panel - South Coast Sensitive Urban Lands Review 2006, for areas relevant to the Sussex Inlet Settlement Strategy study area.

Badgee Lagoon

1a. Suitability of site

The majority of the Badgee Lagoon site is unsuitable for urban development on the grounds of its potential negative impacts on water quality in Badgee Lagoon.

Two areas of the site in the north-western and south-western corners are suitable for residential development in accordance with the proposals put forward by the owner, subject to best practice WSUD and water quality management.

It should be noted that the site considered by the Panel includes a subdivided and developed strip of land along Suncrest Avenue on the northern side of the lagoon. The Panel has excluded this area from its recommendations so that development can proceed in line with existing approvals.

1b. Scale and type of land release

Development should provide for a mix of housing, at yields that exceed traditional residential yields in the locality.

2. Priority and timing

According to market demand.

3. Alternate land uses

The land that is unsuitable for development should be zoned for conservation purposes. The most appropriate zone under the new LEP template is either Zone E2 Environmental Conservation or Zone E1 National Parks and Nature Reserves. Negotiations should be commenced with the owner to secure dedication of the land for conservation purposes in return for development of the 2 areas identified above.

Berrara

1a. Suitability of site

This site is suitable for limited development.

The northern parts that drain into Swan Lake are unsuitable for development on the grounds of the potential adverse impacts on the ecology of the lake from urban run-off, and the existence of EECs.

Land in the south-east corner is unsuitable due to the presence of EECs. A small part of the site adjacent to Swan Avenue and Waratah Avenue is suitable for limited development mainly planned to allow for better bushfire management for the Berrara/ Cudmirrah villages. Site planning should provide for a perimeter road and sufficient separation between bushland and adjoining dwellings for a suitable Asset Protection Zone (APZ).

The remainder of the site is not suitable for development in view of the lack of potential for the village to reach a sustainable size, and a lack of pressing need for additional residential land.

1b. Scale and type of land release

Development should provide for a mix of housing, at yields that exceed traditional residential yields in the locality.

2. Priority and timing

Low priority.

3. Alternate land uses

The land in the northern portion of the site should be zoned for environmental conservation using the new Zone E2 Environmental Conservation under the LEP template.

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