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# SUSSEX INLET SETTLEMENT STRATEGY

PREPARED FOR:  
SHOALHAVEN CITY COUNCIL

APP Corporation Pty Ltd  
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## **EXECUTIVE SUMMARY**

Shoalhaven City Council, with assistance from the NSW Department of Planning (DoP), has prepared a settlement strategy for the Sussex Inlet area. The strategy covers the wider Sussex Inlet area, including Sussex Inlet itself, Cudmirrah, Berrara and Swanhaven.

A settlement strategy is a strategic planning document which provides a broad framework to guide the future development of an area. It addresses a wide range of relevant issues at a high level, and seeks to achieve a balance between various issues, such as conservation, housing choice, infrastructure capacity and development opportunities. It therefore seeks to address issues within an ecologically sustainable development framework, balancing environmental, social and economic outcomes. The strategy is designed to provide a strategic framework in which future more detailed planning decisions can be made.

It is important to note that the strategy has been prepared based on existing knowledge and has not involved substantial further technical analysis of many issues. This is appropriate given the large number of background reports which are available and also because any further development will be subject to detailed rezoning and/or development application processes, with their own site-specific analysis of a range of issues.

The strategy addresses a wide range of issues before putting forward a preferred strategy. It attempts to strike a balance between environmental, social and economic costs and benefits, and provides a clear direction for the future development of Sussex Inlet.

Issues addressed in preparing the preferred strategy include:

- housing demand and housing choice, particularly related to the current and future demographic profiles for the Sussex Inlet area;
- community facilities provision for a future population;
- Aboriginal and European heritage;
- water quality and aquatic ecology;
- vegetation communities;
- bushfire issues;
- traffic and transport;
- flooding; and
- infrastructure capacity across a range of utilities.

A preferred option has been developed based on this analysis. It involves the following:

- 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;
- provision of flood free access and, subject to detailed flora and fauna analysis, a potential conservation corridor through these sites;
- increasing the range of housing choice within the established areas of Sussex Inlet, but only in areas that are not flood affected;
- some limited infill development adjacent to established areas of Sussex Inlet, particularly in the southern areas of the town;
- limited rural residential development in clustered formations on the large rural lots fronting St Georges Basin, in return for dedication of the foreshore land to Council at no cost and protection of the remaining bushland;
- no further subdivision of the existing rural residential lots in the Millallen Farmlets area fronting Sussex Inlet Road;



- provision for a maximum of one dwelling per lot within the Verons Estate where the property falls within the catchment of Swan Lake and 2 hectare subdivision of those properties within Verons Estate that are outside this catchment area;
- potential development of a range of Crown Lands sites;
- limited additional development at Swanhaven, Cudmirrah and Berrara, incorporating bushfire perimeter roads; and
- additional opportunities for employment land and community facilities in Sussex Inlet.

This strategy responds to a number of environmental, economic and social drivers. Where new residential development is contemplated, it reflects the clear links between an analysis of the existing housing stock, the changing demographic profile of the area and the resultant need for both more housing and a greater diversity of housing types.

It is estimated that this would see approximately an additional 1,300 – 1,400 dwellings being delivered in the Sussex Inlet area over the next 20 or so years, depending on the extent and nature of future development.

Once the settlement strategy has been publicly exhibited for comment, it will then be up to Council to consider whether it should be formally adopted. After Council has agreed on a preferred settlement strategy, taking into account community and Government agency submissions, it will then forward the strategy to the NSW Department of Planning for further consideration.

The DoP will then advise the Minister for Planning as to whether he should endorse the settlement strategy and enable the rezoning moratorium to be lifted. Sites which have been identified for development through the strategy would then be able to move into the detailed planning phase, and in most cases, this would involve the preparation of an Environmental Study and a draft Local Environmental Plan to facilitate rezoning. There are further substantial opportunities for public consultation and comment during this process.

Development would then only proceed if the rezoning was agreed to by both Council and DoP and subsequent development applications were prepared for consideration by Council or the DoP.



## **1.0 INTRODUCTION**

### **1.1 What is a Settlement Strategy?**

A settlement strategy is a strategic planning document which provides a broad framework to guide the future development of an area. It addresses a wide range of relevant issues at a high level, and seeks to achieve a balance between various issues, such as conservation, housing choice, infrastructure capacity and development opportunities. It therefore seeks to address issues within an ecologically sustainable development framework, balancing environmental, social and economic outcomes.

The strategy is designed to provide a strategic framework in which future more detailed planning decisions can be made.

The settlement strategy does not rezone land for development. It identifies land that will be further investigated for possible rezoning through the normal planning process, as governed by the Environmental Planning and Assessment Act, 1979.

However, the settlement strategy is designed to provide some certainty for the community by identifying clear medium to long term planning intentions for the area.

### **1.2 Why Has it Been Prepared?**

The settlement strategy has been prepared for Sussex Inlet and the surrounding villages of Cudmirrah, Berrara and Swanhaven to provide strategic guidance for the future development of these areas. The strategy provides options for future urban and rural residential development in the Sussex Inlet area over a 20 to 25 year period.

The area covered by the strategy is shown in Figure 1, and Figure 2 shows existing land use zonings under Shoalhaven Local Environmental Plan 1985 and Interim Development Order No 1 (1964).

A moratorium preventing the rezoning of land in the Sussex Inlet area has been in place since the mid 1990's and both Council and the NSW Government are keen to resolve the uncertainty that this moratorium has created.

Both Council and the NSW Department of Planning (DoP) are keen to see the natural attributes of the Sussex Inlet area preserved. In particular, the southern foreshore of St Georges Basin forms a 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 to help resolve the future of several parcels of Crown Land. The water quality and scenic value of both Swan Lake and St Georges Basin are also important features of the local area.

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



The settlement strategy considers all these issues at a strategic level and enables the various issues to be balanced against each other, and clear directions for the future of the area to be established.

In summary, the purposes of the settlement strategy are to:

- identify the level of development that is sustainable based on recognised environmental constraints and consideration of social and economic issues;
- establish sustainable development principles 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 Does it Fit into the Planning Process?**

As indicated, the settlement strategy itself does not rezone land. Instead, it is a strategic examination of a range of planning issues. This strategy has been prepared on the basis of a range of existing studies which have been undertaken over time as well as up to date aerial photography and other mapping.

Once the settlement strategy has been prepared, and publicly exhibited for comment, it will then be up to Council to consider whether it should be formally adopted. After Council has agreed on a preferred settlement strategy, taking into account community and Government agency submissions, it will then forward the strategy to the NSW Department of Planning for further consideration.

The DoP will then advise the Minister for Planning as to whether he should endorse the settlement strategy and enable the rezoning moratorium to be lifted. Sites which have been identified for development through the strategy would then be able to move into the detailed planning phase, and in most cases, this would involve the preparation of an Environmental Study and a draft Local Environmental Plan to facilitate rezoning. There are further substantial opportunities for public consultation and comment during this process.

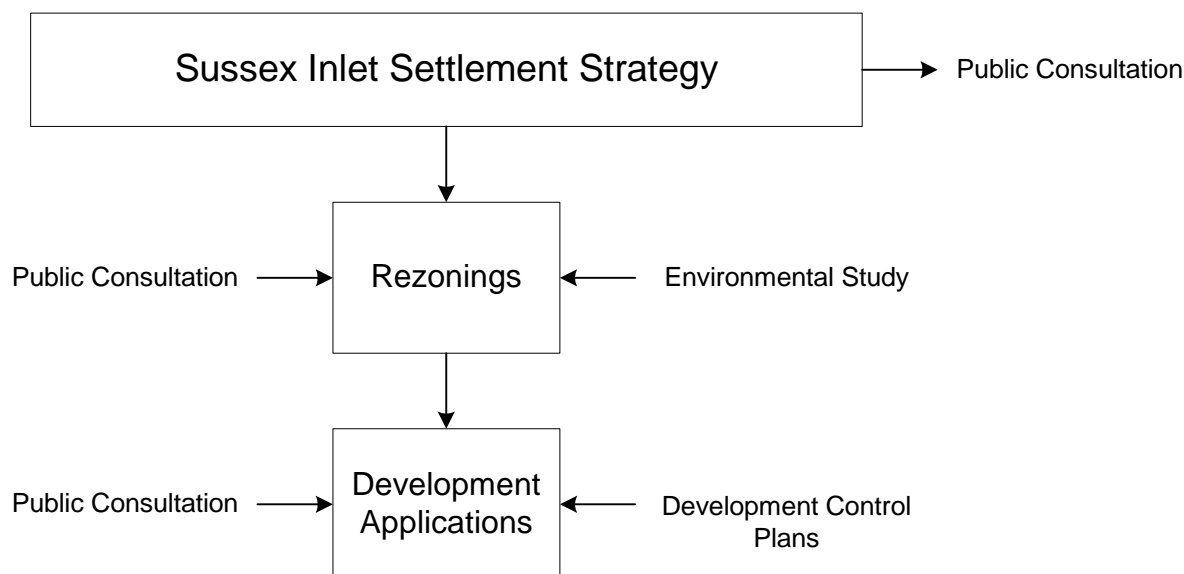
Development would then only proceed if the rezoning was agreed to by both Council and DoP and subsequent development applications were prepared for consideration by Council or the DoP. Given the coastal location, it is also likely that State Environmental Planning Policy No. 71 – Coastal Protection will need to be taken into account when considering particular proposals.

In terms of environmental conservation, the settlement strategy offers the opportunity to confirm conservation areas, removing the uncertainty associated with existing subdivision potential in many areas. Provided the settlement strategy is adopted by both Council and the NSW Government, and the necessary administrative changes were made, these conservation outcomes would then be locked in for future generations.

The relationship between the strategy and the planning process is summarised in Diagram 1.



**Diagram 1 – Relationship with Planning Process**



#### **1.4 Who prepared the Settlement Strategy?**

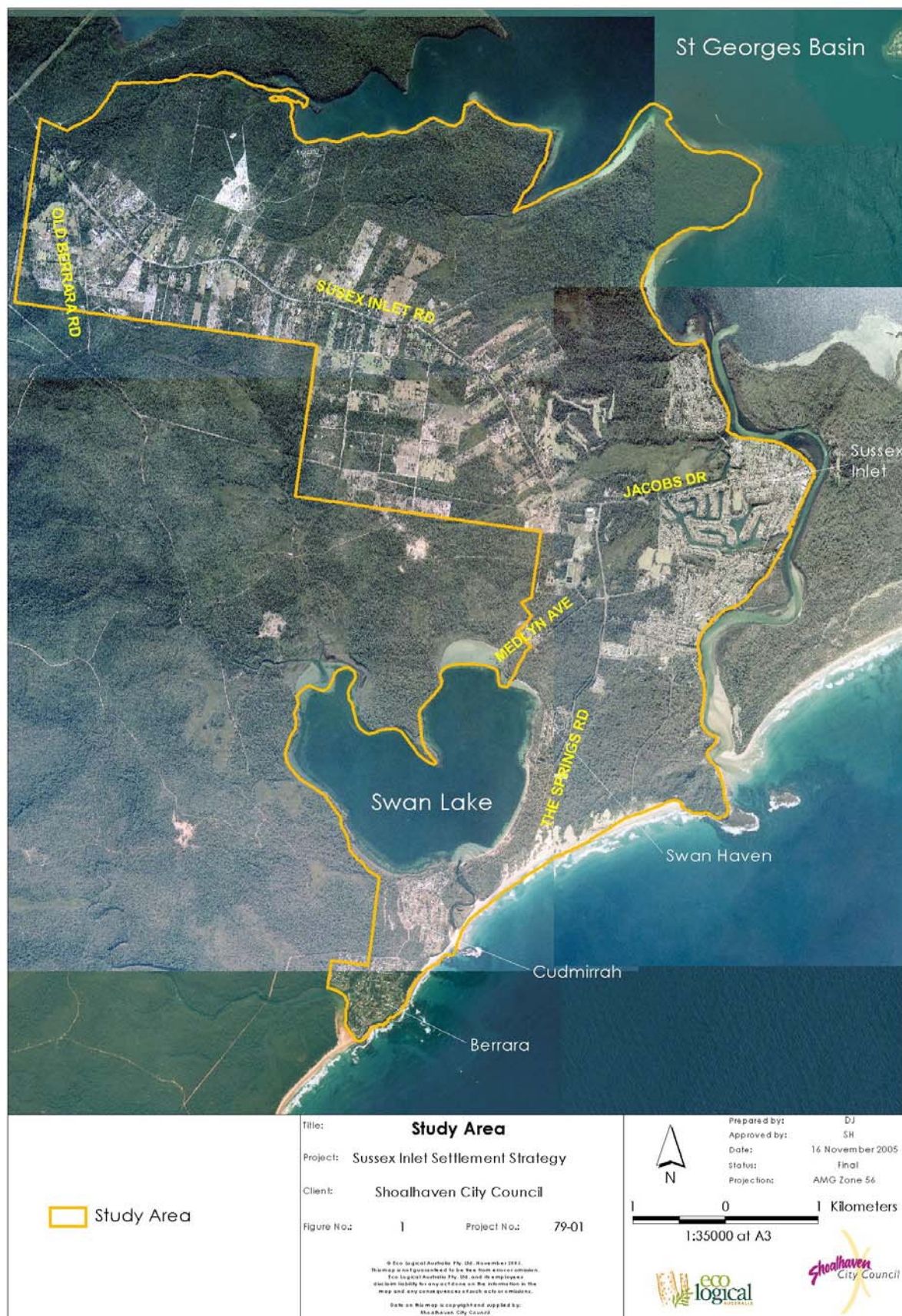
The preparation of the settlement strategy was funded by Council and the Department of Planning. The strategy was prepared by APP Corporation, who were assisted by Hill PDA (property and population issues), URS Corporation (engineering issues) and Eco Logical Australia (environmental issues and mapping). The assistance of various Council and DoP staff is also acknowledged.

##### *Note on Mapping:*

The aerial photo base used in the figures in this map is a combination of aerial data supplied by Council, including some aerial data obtained in 2005. All data shown in maps has been provided by Shoalhaven City Council, drawing on a range of original sources.

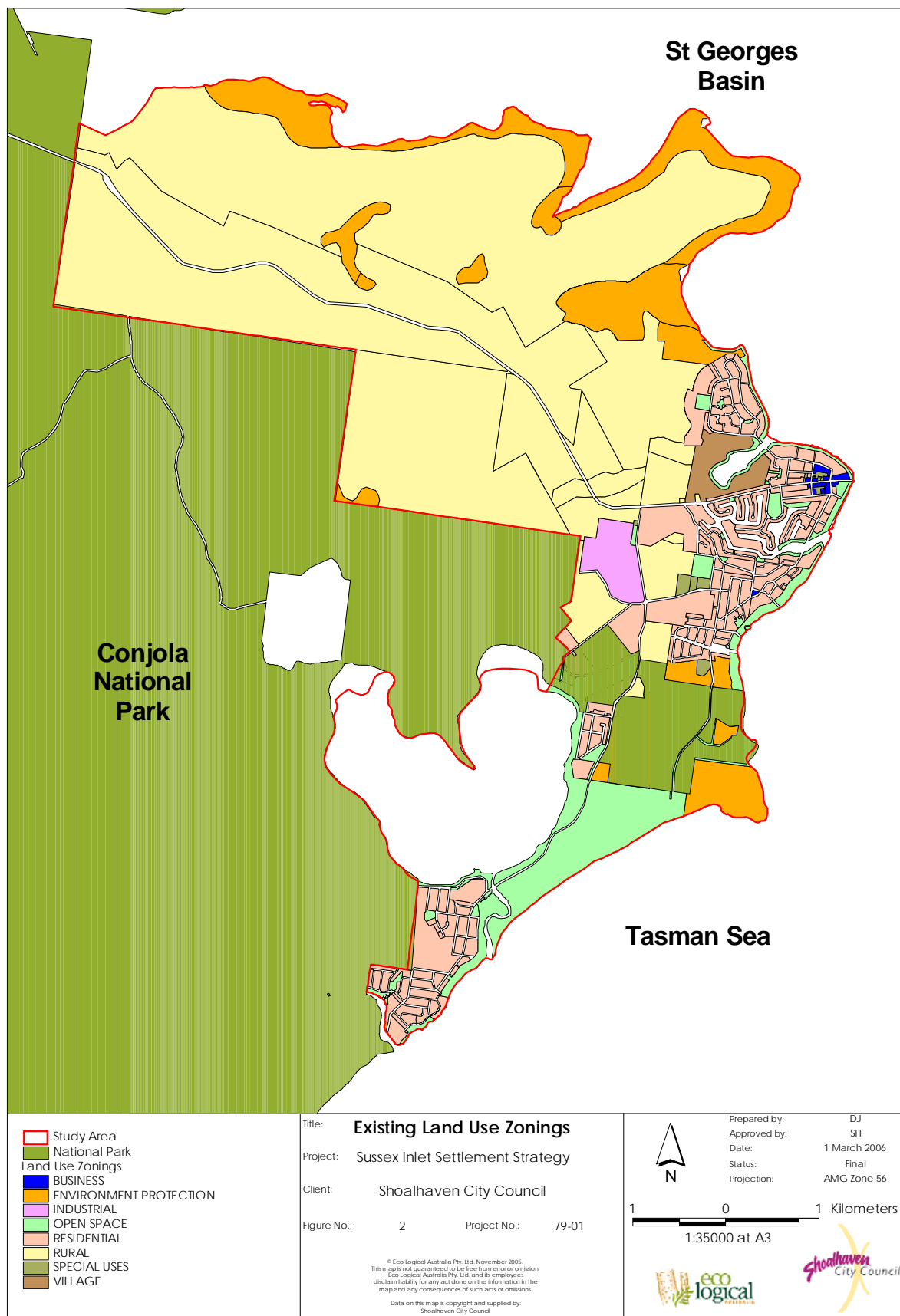


Figure 1. Study Area





**Figure 2. Existing Land Use Zonings**





## **2.0 STRATEGIC CONSIDERATIONS**

### **2.1 Introduction**

This chapter briefly summarises the range of issues considered in developing the settlement strategy. Each of these has been investigated, drawing on existing reports and some high-level analysis. Chapter 3 summarises these investigations in more detail, but this chapter discusses the issues at a more generic level, highlighting the way in which these factors need to be considered in preparing a preferred settlement strategy.

### **2.2 Strategic Planning Framework**

The wider planning framework for the Shoalhaven area is provided through the Illawarra Regional Environmental Plan No. 1 and Council's strategic planning framework as reflected in its growth management strategy.

Illawarra REP No. 1 applies to a wide area encompassing the local government areas of Shoalhaven, Shellharbour, Kiama, Wollongong and Wingecarribee. It is therefore necessarily broadly focused, seeking to maximise the opportunities for communities to meet their individual needs in a manner consistent with wider planning imperatives. The REP identifies regional planning issues, including commercial centres, extractive industries, transport, coastal protection and waste management. The REP provides outline guidance and principles for local councils in the preparation of local environmental plans.

Council's growth management strategy seeks to achieve a balance between social, environmental and economic outcomes in a climate of relatively strong growth pressures. It has a particular focus on ensuring the efficient use of infrastructure funding to ensure high priorities are addressed. The strategy identifies Nowra, Ulladulla (including Milton) and a new urban centre based on existing settlements around Jervis Bay and St Georges Basin as the three major urban areas. Culburra and Sussex Inlet are designated as having a significant level of services because of their locations and particular circumstances, but at a lower level than the principal towns nominated above.

Furthermore, the strategy seeks to permit extensions to existing towns and villages only where the increase in size does not adversely affect the settlement's character and the overall quality of living. There is a preference for such growth to occur on large parcels of land, rather than fragmented landholdings.

### **2.3 Socio-Economic Constraints and Opportunities**

#### **2.3.1 Housing Demand and Housing Choice**

Housing issues in the Sussex Inlet area are influenced by a number of factors. The rezoning moratorium has prevented any significant areas of zoned land being brought to the market. Nor has there 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 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 recently 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 for 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 scenarios at this stage.

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

***Low Forecast***

<b>Forecast Dwelling Demand for Sussex Inlet Area - Low Forecast</b>			
<u>Year</u>	<u>Forecast Population</u>	<u>Cumulative Net Population Increase</u>	<u>Resultant Cumulative Dwelling Demand</u>
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***

<b>Forecast Dwelling Demand for Sussex Inlet Area - Medium Forecast</b>			
<u>Year</u>	<u>Forecast Population</u>	<u>Cumulative Net Population Increase</u>	<u>Resultant Cumulative Dwelling Demand</u>
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

<u>Year</u>	<u>Forecast Population</u>	<u>Cumulative Net Population Increase</u>	<u>Resultant Cumulative Dwelling Demand</u>
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 above 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. The above figures should therefore not be regarded as population targets.

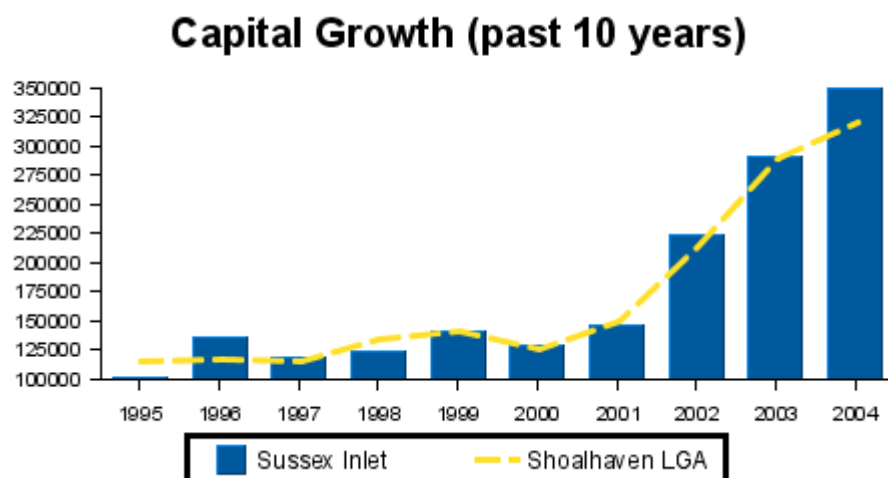
The value in deriving the above estimates is that it highlights that there is likely to be a strong underlying demand for new housing in the Sussex Inlet area, and opportunities for new development need to be considered in this context.

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.

In this context, it is important 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

### 2.3.2 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 subdivision. 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**

Year	Population Forecast Scenario			% aged 65+ <sup>1</sup>	People aged 65+		
	Low	Medium	High		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;
- the housing stock being is currently predominantly detached housing on large lots, raising issues of suitability for some people as they age and are less able to address maintenance and gardening tasks; and
- the ongoing 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 than currently exists so that the needs of the increasingly aged population can be addressed.

### 2.3.3 Provision of Community Facilities

Council already has a wide-ranging Community Plan for the period 2005 – 2010. This document 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 Sussex Inlet Settlement Strategy needs to reflect and support these policies in their general intent.

The following social and community objectives have been used to guide the Sussex Inlet Settlement 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 increases 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 settlement 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 issues need to be weighed up when considering the future growth and development of the Sussex Inlet area.



### 2.3.4 Aboriginal and European Heritage

There are numerous known Aboriginal Heritage sites within the study area, many of which are recorded within the Department of Environment 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 use 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 and riparian, wetland and estuarine margins. More detailed site analysis and consultation with the Local Aboriginal Land Council will form a key part of any subsequent Environment Studies should rezoning be proposed. Close consideration will also be given to the findings of the Regional Aboriginal Heritage Study.

European settlement 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 has recorded two sites of European Heritage significance, the locations of which have been considered in developing the settlement strategy:

- “The Springs” Holiday Cabins and;
- Errol Bond Memorial.

Council has also recently prepared a European Heritage study and a draft Local Environmental Plan to address heritage matters.

## 2.4 Environmental Opportunities and Constraints

### 2.4.1 Water Quality and Aquatic Ecology

The need to balance future development with the conservation of key environmental values and management of ecological processes is important.

In this regard, particular attention has been given to ensuring the quality of water within St Georges Basin, Swan Lake and Berrara Creek is maintained, and where possible enhanced in the future. Consistent with the St Georges Basin Estuary Management Plan (SCC, 1998) 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.*

This encompasses the need to consider nutrient flows from new and existing developments, vegetation clearing & sediment movement, weed invasion, riparian buffers, aquatic habitat and hydrological regimes. Additionally, there are a number of significant wetlands identified under State Environmental Planning Policy Number 14 (SEPP14) within the strategy area, the protection of which must be considered in any land-use planning.

The Department of Planning (DoP) has previously undertaken a biophysical assessment of streams in the area, allocating buffers to different stream types. This information has been incorporated into Figure 2. These riparian buffers should be excluded from development



areas except in exceptional circumstances. Closer evaluation of this issue would be undertaken during the detailed environmental assessment of a particular area proposed for development.

Finally, recommendations in this strategy need to be consistent with the recommendations and findings of the Healthy Rivers Commission's *Independent Inquiry into Coastal Lakes*, prepared in 2002. This inquiry 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.

#### 2.4.2 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. Seventeen (17) separate vegetation communities covering some 2380 hectares have been mapped by Council within the study area. A number of these communities typically form part of up to four Endangered Ecological Communities protected under the *Threatened Species Conservation Act, 1995*, including:

- Swamp oak floodplain forest of the NSW North Coast, Sydney Basin and South East Corner bioregions;
- Coastal saltmarsh in the NSW North Coast, Sydney Basin and South East Corner bioregions;
- Freshwater wetlands on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions; and
- Swamp sclerophyll forest on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions.

Limited field surveys have previously been conducted within the study area, however records exist for at least two threatened flora species and 12 threatened fauna species. In order to provide for ongoing protection of these species and other threatened species likely to occur, a number of principles are relevant to this strategy, including:

- protection of a diversity of habitat types;
- maintenance of habitat corridors between proximal areas of vegetation; and
- protection of habitat of sufficient size to provide for long term habitat viability.

#### 2.4.3 Bushfire

Given the extensive areas of bushland to the west of Sussex Inlet and surrounding townships, bushfire is a major planning constraint on future development, a fact that was highlighted during the fires at the end of 2001. At the same time, a fine balance is required between providing adequate bushfire protection and maintaining environmental values.

Key considerations in relation to bushfire planning include:

- 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);
- the adequacy of emergency access and egress;



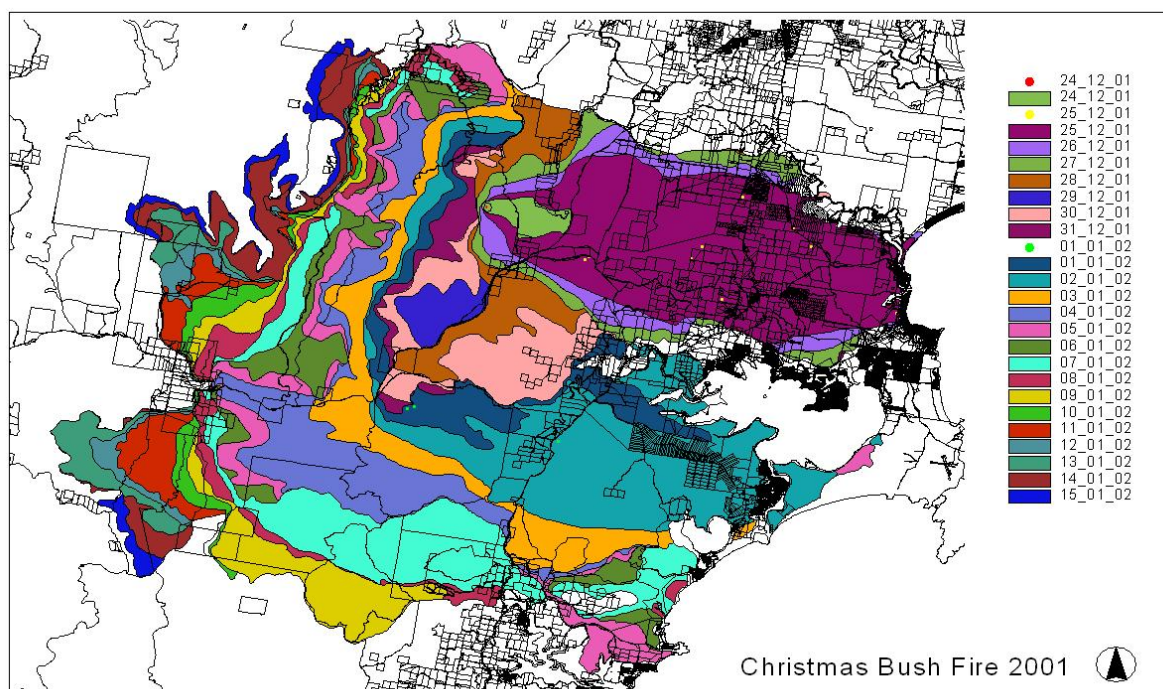
- building construction standards;
- the provision of water supplies for fire fighting;
- the provision of sufficient emergency response resources and trained personnel; and
- the availability of evacuation assembly areas and the quality of any evacuation plans, particularly in relation to elderly or less mobile people.

Consideration was given to provision of an additional access point to the Princes Highway, with the upgrading of Berrara Road 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 draft Fire Management Strategy for Conjola National Park (NPWS, 2005) identifies a number of APZs and Strategic Fire Advantage Zones adjacent to existing developed areas. However, all future development will need to comply with the document 'Planning for Bushfire Protection' (NSW RFS, 2001) which specifically states that bushfire protection measures must be located within the boundaries of the development. Consequently, future development will need to address the requirement to place APZs and perimeter roads within the development boundary and to provide for adequate water supply and construction standards consistent with AS3959-1999 'Construction of buildings in bushfire-prone areas' (SAI Global, 1999).

The extent of fire damage in 2001 is shown in Map 1

**Map 1. Bushfire Extent**





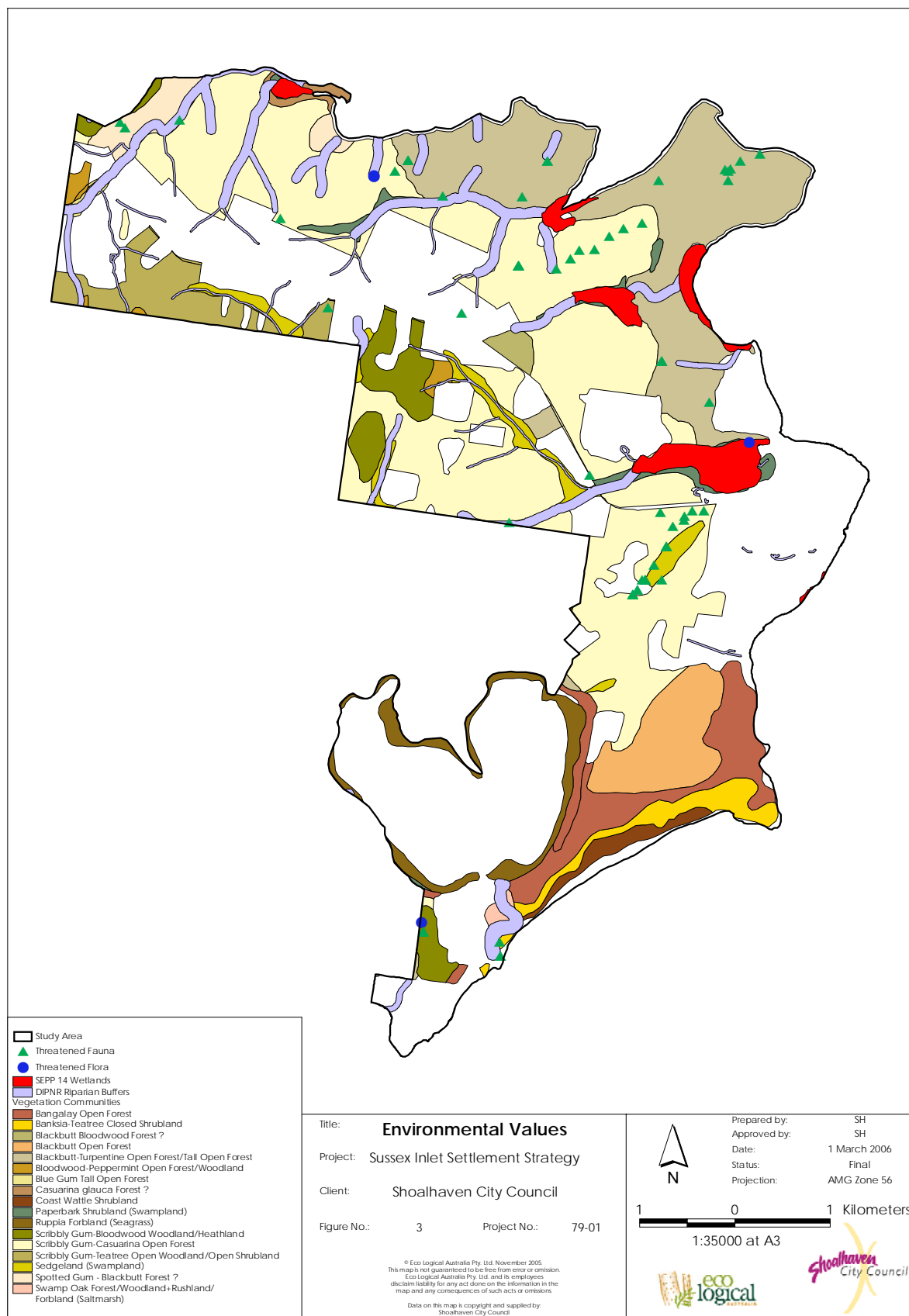
#### 2.4.4 Acid Sulphate Soils and Flooding

Potential acid sulphate soils are known to exist in a number of locations throughout the study area. Whilst small-scale disturbance of these soil types can generally be managed, large scale disturbance can lead to substantial alternations to water chemistry, potentially having devastating impacts on aquatic ecosystems.

The majority of areas affected by these soils are low-lying flood plain areas that are below the 1% AEP (Average Exceedence Probability (1 in 100 year) flood level (see Figure 4). The remaining areas are generally associated with SEPP14 Wetlands or riparian areas that will generally be kept free from development due to their inherent environmental values as well as the prevalence of Acid Sulphate Soils.

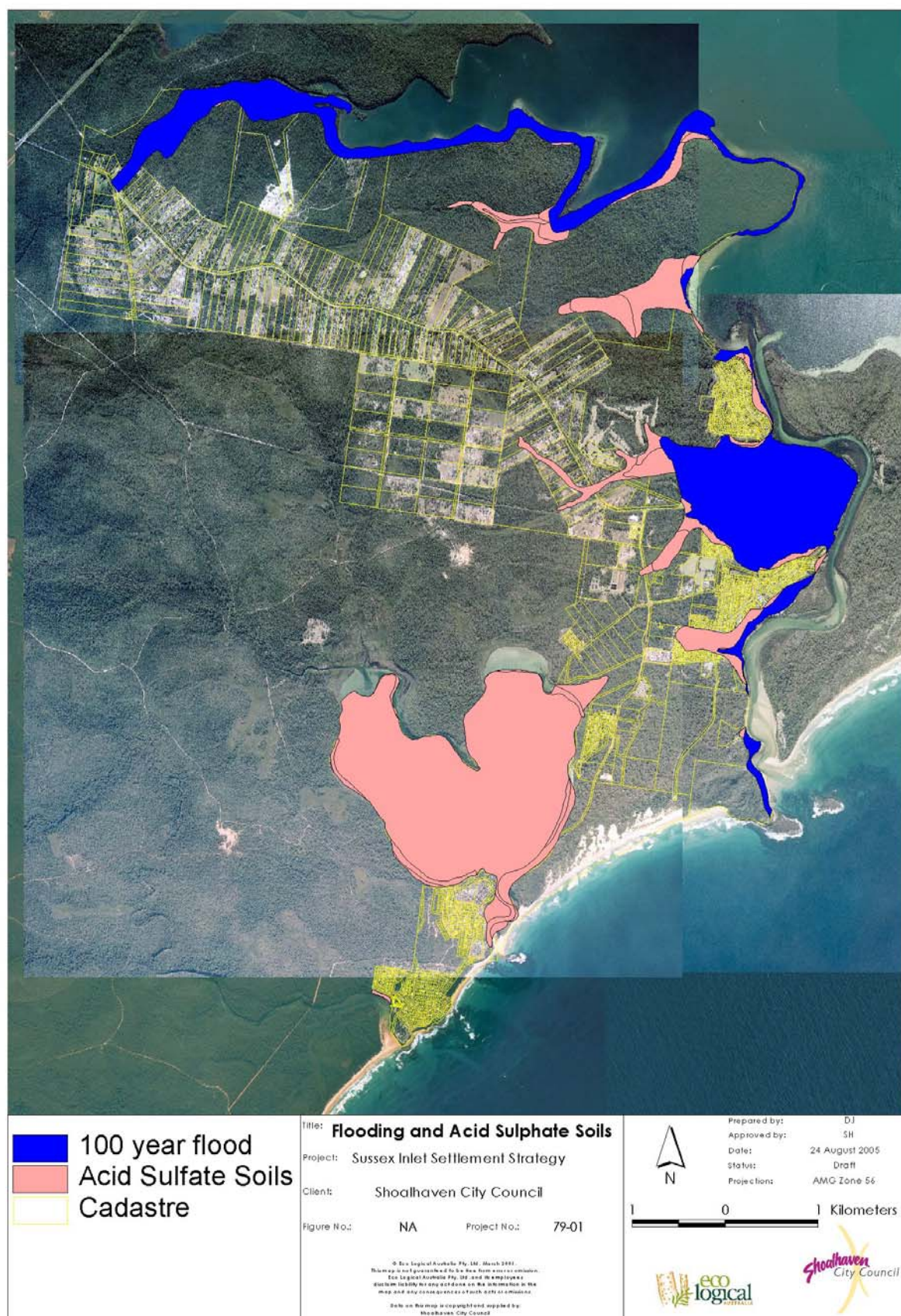


**Figure 3. Environmental Values**





**Figure 4. Flooding and Acid Sulphate Soils**





## 2.5 Infrastructure Constraints and Opportunities

In preparing a settlement strategy it is important to take into account the infrastructure required to support any given level of population and development. The major areas of infrastructure to be considered in the formation of the settlement strategy include:

- the local and regional road network;
- the water supply system; and
- the wastewater management system.

### 2.5.1 Traffic and Transport

Sussex Inlet, Swanhaven, Cudmirrah and Berrara are accessed by road via the Princes Highway, Sussex Inlet Road and 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, it should be noted that when Badgee Lagoon floods, 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 the 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 are being undertaken by the Roads and Traffic Authority, 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 would be required. This will be discussed in more detail in Section 3.6.1.

### 2.5.2 Flood Free Access

One of the central issues to be taken into account in the preparation of the Sussex Inlet Settlement Strategy is the question of flooding.

Large parts of the central areas of Sussex Inlet lie below the 1% AEP (1 in 100 year) floodline. This standard is generally now used to identify areas which should not be used for intense urban development. As a guiding principle for the strategy, it is therefore appropriate that all significant new development, including any urban consolidation, be located above the 1 in 100 year floodline.



The second flooding issue is related to providing flood free access for residents located on the northern side of Badgee Lagoon. In certain flood events, their ability to evacuate the area is limited as a result of the connecting bridge on River Road being inundated. The opportunity exists to provide flood free access for these residents as part of any new development considered on the large landholdings located between this area of Sussex Inlet and the existing golf course. In considering the development potential of this land, it will be important to weigh up the benefits of being able to achieve flood-free access against any associated environmental impacts.

### 2.5.3 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 5.

Water is supplied from the Bamarang Water Treatment Plant. The original supply was via the Vincentia Reservoir using a 450 mm main, however this has now been augmented with a 600 mm main that supplies water via the Bewong Reservoir. The mains supplying Sussex Inlet area also supply areas further south to Lake Conjola and Ulladulla district. The Sussex Inlet area has its own reservoir (Sussex Inlet Reservoir) allowing the major supply mains to provide maximum day demand hence improving the reliability of the water supply system.

Sussex Inlet Reservoir has a capacity of 13 ML. The water supply system with two supply mains is considered to be very reliable and has adequate capacity to cater for planned increases in future demand. Council has advised that there is approximately 5 ML/day spare capacity in the system for growth south of Bewong. This equates to approximately 2,500 equivalent tenements (ETs), which could be taken up by development in a number of areas.

The current design allowance for water of 4,000 L/day/equivalent tenement (ET), established by the former Department of Public Works and Services, was revised as part of the regular revision of the developer service charges. The revised design allowance is 2,000 L/day/ET and was introduced on 1 January 2006.

Any additional development should be considered in determining the Section 64 charges for water supply. The capacity of the system to supply additional development in the study area will depend in part upon Council's strategy to supply further development in the Lake Conjola area and Ulladulla district.

The impact of additional future development is addressed in Section 3 where the preferred settlement strategy option is described in more detail.

### 2.5.4 Wastewater Management

Residential development within the study area is 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 plant was commissioned in August 1990.

Several rural areas, including the Millallen Farmlets and Verons Estate are not currently sewered and due to the economics involved are not likely to be sewered in the foreseeable future. These areas have on-site treatment including septic tanks and seepage systems. 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.



Figure 6 shows the existing wastewater management system in the Sussex Inlet area. The WWTP operates under a Department of Environment and Conservation (formerly the Environment Protection Authority) Environment Protection Licence. The licence requirements on discharged effluent are as follows:

- oil and grease – 10 mg/L grease and oil;
- suspended solids – 40 mg/L; and
- biological oxygen demand (BOD) – <50 mg/L.

The current summer peak period population of Sussex Inlet is approximately 6,500 people. The operational capacity of the Sussex Inlet WWTP is 8,000 equivalent persons (EP) with its two 4,000 EP intermittently decanted extended aeration units. The WWTP currently meets the demand of the existing population of the Sussex Inlet area and there is some capacity for planned future growth.

In considering whether further growth can be accommodated, the settlement strategy takes into account whether upgrades or expansions of this facility would be required. Where large sites are being considered for development, there is also the possibility that on-site contained facilities could be used, although detailed investigations of this issue would need to be undertaken in close consultation with Council, Shoalhaven Water and the NSW Department of Environment and Conservation.

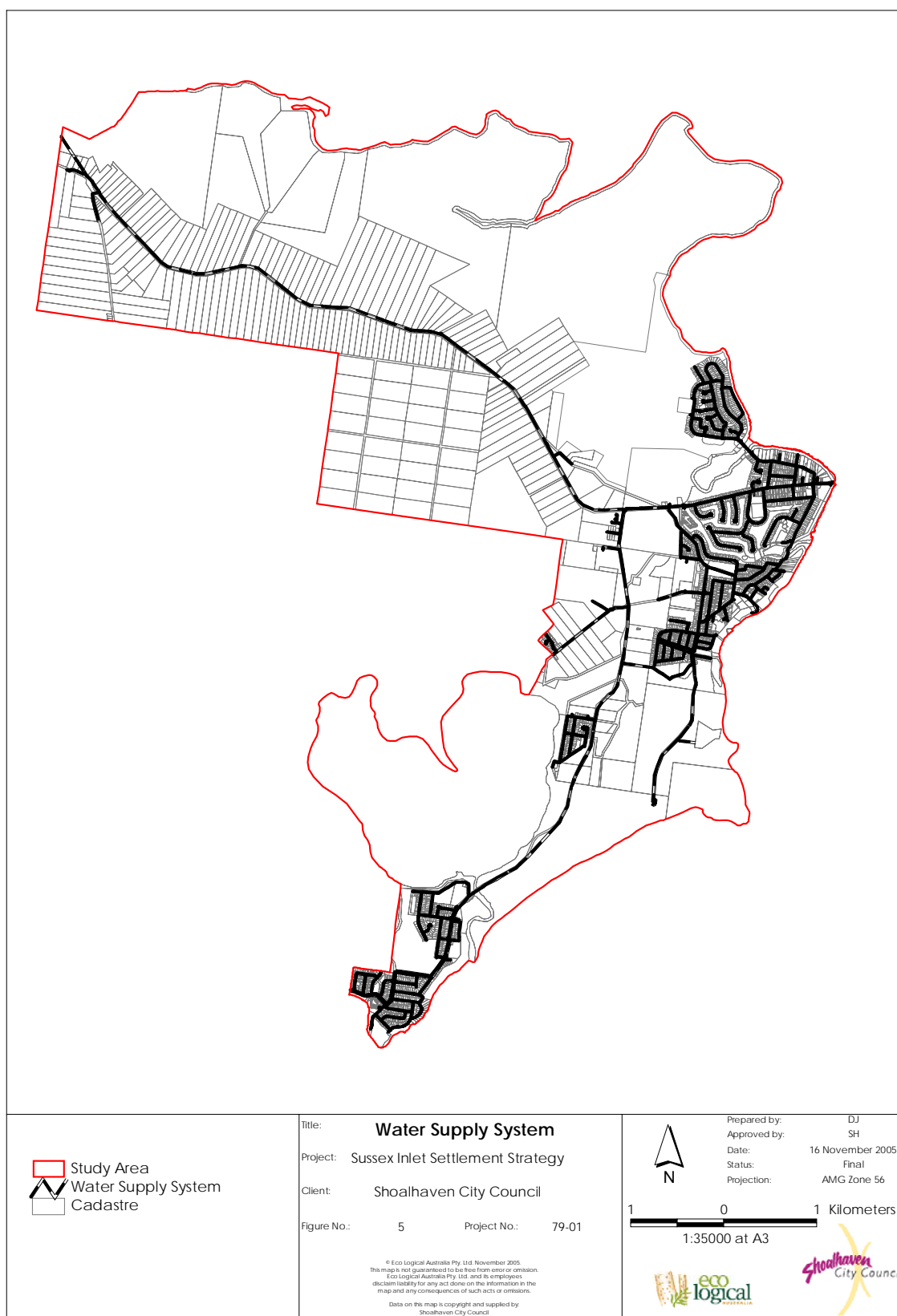
## 2.6 Conclusion

This section has provided a brief overview of the range of issues which will need to be taken into account when considering options for the Settlement Strategy. The intention of the section has been to highlight that there is a range of social, environmental and economic issues which need to be taken into account. A balancing of the different issues and perspectives will be necessary and will also be an important contributor to ensuring the strategy has wide acceptance within the Sussex Inlet community.

**The following section describes the preferred settlement strategy and goes into more detail on each of these issues providing an assessment of the likely impacts and benefits of the preferred strategy. The preferred strategy has been prepared after a range of investigations and detailed consultation with Council and State Government agencies.**

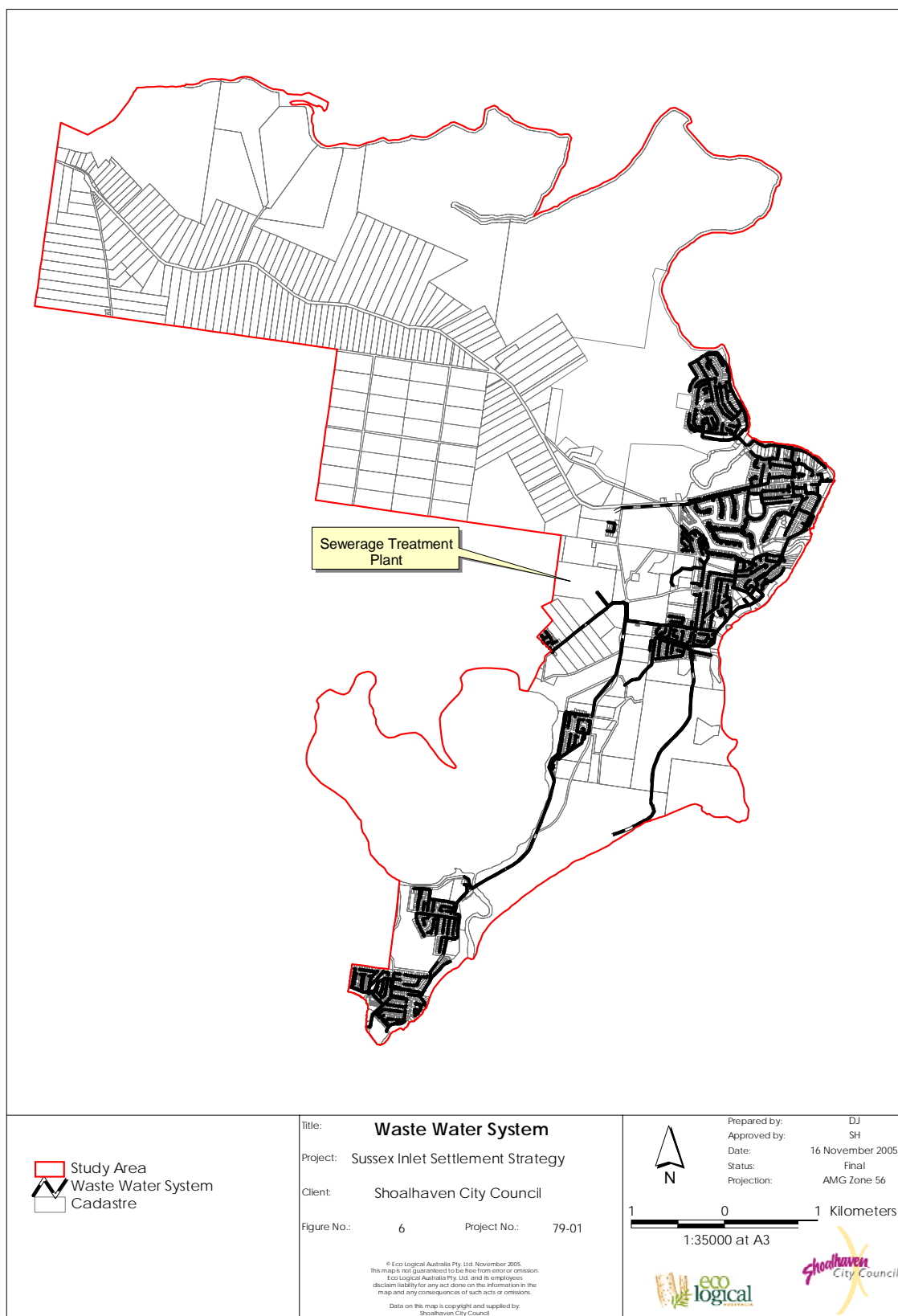


**Figure 5. Existing Water Supply System**





**Figure 6. Existing Wastewater System**





## **3.0 SETTLEMENT STRATEGY**

### **3.1 Introduction**

This section sets out the preferred option for the future development and settlement of the Sussex Inlet area. It describes the preferred areas of potential future development, identifies areas for conservation and considers the implications of this option from a range of perspectives.

In identifying the preferred option, it is important to note that substantial further detailed investigations will be undertaken should the areas identified for future development actually proceed to development. Where rezonings are required, this would likely involve the preparation of an environmental study to support the draft local environmental plan (LEP). Where rezonings were not required, the normal environmental and planning assessments required as part of the development application process would be undertaken.

The option outlined is the Council's preferred option, based on the work undertaken to support this strategy.

### **3.2 Overview of Preferred Option**

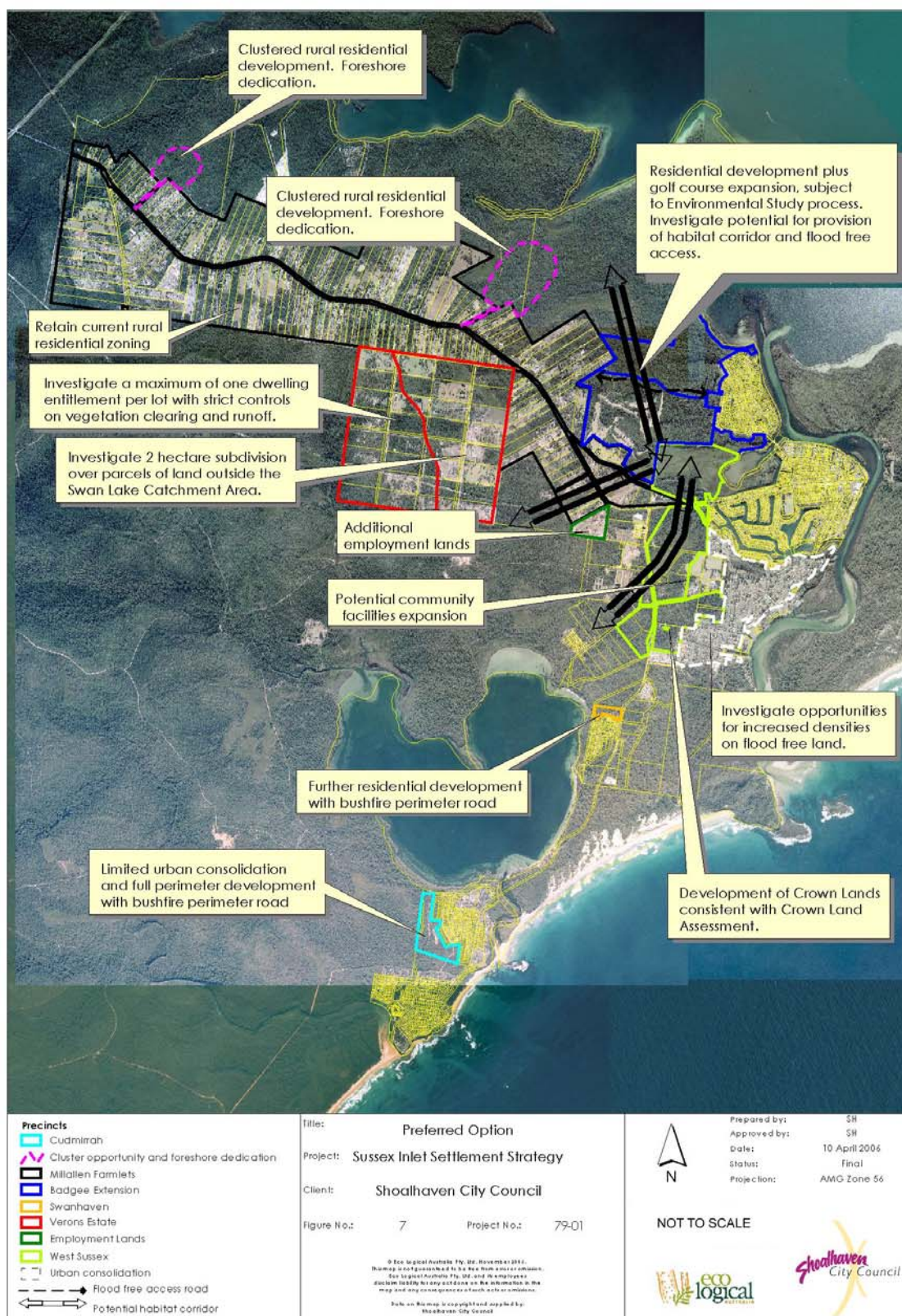
The preferred option is represented graphically in Figure 6. A detailed description of how the strategy affects each part of the study area is provided in the following sections, but in summary, it involves the following:

- 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;
- provision of flood free access and, subject to detailed flora and fauna analysis, a potential conservation corridor through these sites;
- limited rural residential development in clustered formations on the large rural lots fronting St Georges Basin, in return for dedication of the foreshore land to Council at no cost and protection of the remaining bushland;
- retain the current rural residential zoning and existing minimum lot size for the existing rural residential lots in the Millallen Farmlets area fronting Sussex Inlet Road;
- provision for a maximum of one dwelling per lot within the Verons Estate where the property falls within the catchment of Swan Lake and 2 hectare subdivision of those properties within Verons Estate that are outside this catchment area. This is subject to the necessary infrastructure being at the cost of landowners;
- increasing the range of housing choice within the established areas of Sussex Inlet, but only in areas that are not flood affected;
- potential development of a range of Crown Lands sites;
- some limited infill development adjacent to established areas of Sussex Inlet, particularly in the southern areas of the town;
- limited additional development at Swanhaven, Cudmirrah and Berrara, incorporating bushfire perimeter roads; and
- additional opportunities for employment land and community facilities in Sussex Inlet.

It is estimated that this would see approximately an additional 1,300 to 1,400 dwellings being delivered in the Sussex Inlet area, depending on the extent and nature of future development. These proposals are explained in further detail in the next section.



**Figure 7. Sussex Inlet Settlement Strategy**





### 3.3 Planning Rationale for Key Proposals

This section of the settlement strategy explores in more detail the key sites which are affected by proposed changes. A series of specific actions addressing a wide range of locations and issues are developed along with a clear implementation strategy. The text below outlines these specific actions and summarises the implementation strategy, indicating the recommended implementation timeframes for each action, separated into short (1-2 years), medium (2-5 years) and long term actions (5+ years). The responsibility for each action is also nominated.

#### 3.3.1 Millallen Farmlets

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 zoned Rural 1(c2) under Shoalhaven LEP 1985 with a minimum lot size of 2 hectares, but were deferred from the Rural Plan amendments which were gazetted in 1999. The existing zoning generally enables one dwelling per lot. They are shown bordered in black on Figure 7.

It is considered inappropriate to permit further subdivision of these lots for the following reasons:

- as 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 levels of development in this area would increase this risk; and
- it is more appropriate to locate additional urban development in close proximity to existing urban areas, where access to community facilities is better and where the impacts of development can be better managed on large master planned sites.

Should further subdivision be proposed under the current zoning, a traffic impact assessment is required. This assessment needs to address appropriate access points to ensure traffic safety and to evaluate disruption to traffic flow on Sussex Inlet Road.

***Action 1: Retain area in its current rural residential zoning and existing minimum lot size.***

***Timeframe: Short term***

***Responsibility: Council/Department of Planning***



### 3.3.2 Large Rural Lots Fronting St Georges Basin

A number of large lots located on the southern shore of St Georges Basin 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 offer some subdivision potential under current planning controls. However, the sites are largely covered in bushland, and generally have frontages to St Georges Basin.

It is therefore important that an appropriate planning response is developed for these parcels. In this context, it is considered appropriate to allow some additional clustered rural residential development in defined areas (generally in the area shown in pink on Figure 7) at the southern boundaries of these sites, in return for the protection of the majority of the bushland on the sites as well as the dedication at no cost to Council of foreshore land fronting St Georges Basin.

This approach has a number of advantages, including:

- protection of the large areas of bushland;
- an enhanced ability to manage bushfire risk without widespread clearing to achieve asset protection zones;
- achievement of the scenic protection objectives for the southern foreshore of the Basin;
- public ownership and 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.

Figure 7 nominates possible areas for these small clusters of development. However, further detailed work will be required to provide more detail on controls, to establish a minimum lot size and to better define appropriate locations for the housing clusters.

Planning agreements, prepared under the reforms to section 94 of 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.

***Action 2: 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 areas.***

***Timeframe: Short/Medium term***

***Responsibility: Council / Department of Planning***

### 3.3.3 Verons Estate

Verons Estate is a small lot rural subdivision of 32 lots located to the south of the eastern end of the Millallen Farmlets. While the subdivision provides access for roads, and dirt access roads do actually exist, formal roads have not been constructed, and the area is not sewered and does not have trunk water supply. It is shown bordered red on Figure 7.



Sporadic clearing of vegetation on some of the blocks has been undertaken, and some lots have structures located on them. Since the rezoning moratorium came into force, the planning situation for this estate has remained unresolved.

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.

It is considered appropriate within the context of the settlement strategy to provide some directions for this area. Given the need to balance environmental concerns (vegetation removal, water quality) while also addressing landowner expectations and providing certainty over time, it is considered appropriate to investigate the ability for a maximum of one dwelling per allotment for those properties that drain into the Swan Lake catchment and to permit further subdivision of the lots outside this catchment area into two hectare allotments. It is also considered appropriate for the landowners to fund the construction of roads and required infrastructure. The area is likely to remain unsewered and not be connected to the water supply system. Development controls addressing water quality and vegetation clearance should be imposed on development in this area to ensure environmental impacts are minimised.

While it is acknowledged that development in this area is likely to have some environmental impact, limiting the development to a maximum of 32-70 dwellings is considered likely to see these impacts being minimised and managed.

This approach is considered a reasonable response to a range of competing issues.

***Action 3: The potential for rural residential development (maximum one dwelling per lot) will be investigated for those properties within the catchment area of Swan Lake and 2 hectare subdivision potential will be investigated for those properties outside this catchment area.***

***Timeframe: Short term***

***Responsibility: Council / Department of Planning***

#### 3.3.4 Badgee Extension

There are two large landholdings located to the west of the existing Badgee area and north of Sussex Inlet Road. These sites have common characteristics in many regards, and are shown edged in blue on Figure 7. These sites incorporate the existing nine hole Sussex Inlet golf course and Badgee Lagoon, as well as land already zoned residential on the western fringe of existing residential development north of the River Road bridge.

It is proposed that these sites be developed for residential purposes, as well as a range of community facilities and an expansion of the golf course to 18 holes.

While it is acknowledged that development of this land will result in the loss of some vegetation, it is considered that there are substantial potential benefits arising from the development of this land. These benefits 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;
- the ability to coordinate planning and environmental management (including water quality) across two large sites under one Local Environmental Study process;
- a substantial increase in population for Sussex Inlet, with associated benefits in terms of increased viability for local services and facilities and the provision of new facilities;
- subject to further detailed flora and fauna analysis, the opportunity to potentially incorporate a conservation corridor through the site in a north-south direction, thereby linking the Badgee area and riparian areas to the south of Sussex Inlet Road to the bushland fronting St Georges Basin;
- dedication of Badgee Lagoon and a buffer area to the community at no cost, thereby protecting the SEPP 14 wetland and rezoning this land appropriately;
- potential for public dedication of St Georges Basin foreshore;
- sufficient land to provide for an extension of the existing golf course from nine to eighteen holes; and
- provide a flood free road access from the existing residential area to the north of Badgee Lagoon through to Sussex Inlet Road west of the golf course.

As noted above, development of these sites should involve:

- preparation of a joint Local Environmental Study and masterplanning process to ensure maximum integration of planning and environmental outcomes;
- provision of flood free road access to Sussex Inlet Road;
- detailed investigations and controls addressing water quality management issues;
- subject to further detailed flora and fauna analysis, potential incorporation of a conservation corridor, including through the proposed expansion of the golf course;
- dedication of Badgee Lagoon to Council at no cost;
- expansion of the golf course to 18 holes;
- provision of a range of community facilities on site; and
- provision of a range of different housing styles within the two sites as part of efforts to increase the diversity of housing stock in the area.

Development of these sites will only be able to proceed if the land is rezoned. As part of that rezoning, detailed environmental investigations will need to be undertaken as part of the preparation of an Environmental Study. These investigations are 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.

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 the outcomes described above. This agreement could be prepared under the requirements of the amendments to section 94 of the Environmental Planning and Assessment Act 1979.

The environmental, infrastructure and demographic implications of developing this area are discussed in more detail in the following sections.



***Action 4: Provide for the expansion of the urban zoned area of Sussex Inlet through the investigation and potential rezoning of the area.***

***Timeframe: Short term***

***Responsibility: Council /Landowner / Department of Planning***

### 3.3.5 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 stocks in the long term, particularly given the relatively large potential increase in population forecast.

The most suitable 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 a rezoning from its current rural zoning. 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 7.

***Action 5: Provide for the provision of additional employment land through the rezoning of the identified land to an appropriate industrial zone.***

***Timeframe: Long term***

***Responsibility: Council / Department of Planning / Landowners***

### 3.3.6 West Sussex Inlet, Swanhaven, Cudmirrah and Berrara

#### *Riparian and Conservation Corridors South of Sussex Inlet Road*

A recent subdivision approval over land to the south of Sussex Inlet Road and to the east of The Springs Road has incorporated a riparian corridor. This area is considered appropriate in the context of the wider area being considered by the settlement strategy. It will be able to link through to the proposed corridor to the north of Sussex Inlet Road, and has the potential to connect through to land to the south, adjacent to Medlyn Avenue, linking with the existing known Green and Golden Bell Frog population. This would not require additional action by Council, given that it has already been incorporated into a subdivision approval.

An opportunity also exists to achieve a conservation corridor via vegetated land to the west of the small industrial precinct at the corner of Sussex Inlet Road and The Springs Road. While this land is zoned industrial and the settlement strategy proposes additional industrial land to the west, the existing vegetation effectively provides habitat and could function as a conservation corridor. Further investigation of the detailed planning controls applying to the existing and proposed industrial land would need to be undertaken.



***Action 6: Prepare planning controls to provide appropriate protection for these corridors.***

***Timeframe: Short term***

***Responsibility: Council***

#### *Additional Community Land*

Given the proposed expansion of the residential population of the area, and the proposed additional employment land, 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 a high school or 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. These investigations should also take into account the need to facilitate the vegetation corridor described above. Sufficient land may exist to achieve both objectives, provided appropriate design is undertaken.

The land is largely Crown land, and was considered in the Crown Land review and Council's response to the review. 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.

***Action 7: Undertake further investigations of the Crown Land on the northern edge of Thomson Street to determine the potential for meeting the dual needs of additional well-located community land and a vegetation corridor.***

***Timeframe: Medium term***

***Responsibility: Council / Department of Lands***

#### *Crown Land Holdings*

The NSW Government owns several parcels of land immediately adjacent to existing urban areas within the Sussex Inlet area. These are shown in Figure 8.

There are also areas of Crown Land located on the foreshores between Sussex Inlet and Cudmirrah and along the river bank on the southern edge of Sussex Inlet itself. There is also significant land located on the periphery of Cudmirrah, some of which is subject to an unresolved Aboriginal land claim, and on the western edges of Sussex Inlet itself.

A draft Crown Lands Assessment was undertaken by the NSW Department of Lands in 2004, and was exhibited for a one month period in June and July 2004. This assessment considered each of the sites in detail and made recommendations for their future use. Council also made a detailed submission in response to the exhibition of the draft assessment.



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Having reviewed these recommendations as well as Council's submission, the following recommendations are put forward as part of the Settlement Strategy. In the majority of cases, the recommendations are consistent with both the Crown Lands assessment and the Council submission. Where differences exist, they are noted. The recommendations are summarised in Table 2 below, with mapping area numbers shown in Figure 8.







Mapping Area	Recommendation
1	Adjacent to Sewerage Treatment Plan and nearby industrial precinct. Best suited for long term potential industrial, reflecting its current zoning.
2	Several parcels best suited for an environmental protection zoning, with the exception of a small parcel fronting Avocet Street in the north-eastern corner of the Crown land, which is potentially suitable for an extension to the existing Thomson Street sporting complex.
3	Several parcels suitable for residential development.
4	Notwithstanding some existing residential development at the western end of Medlyn Avenue, it is considered that, due to a combination of bushfire hazard and environmental concerns, none of these sites should be developed for housing or any other purposes, and should be rezoned to reflect their environmental objectives.
5	<p>The parcel north of Thomson Street should be further investigated to determine the potential for a combination of additional community land and an environmental corridor.</p> <p>The eastern portions of the parcel to the south of Thomson Street may have some potential for residential development, subject to more detailed investigations as part of a development application process. This land is already zoned residential. The western portions of this site should be preserved as a buffer to The Springs Road, as well as incorporating bushfire hazard reduction areas.</p>
6	An environmental protection zoning is appropriate for this parcel given the presence of an endangered species.
7	Generally suitable for residential development, reflecting their current zoning, provided appropriate bushfire setbacks and a buffer to the Sewage Pumping Station can be achieved.
8	An environmental protection zoning is appropriate for this parcel given its location adjacent to the national park and the presence of dunes.

There are also other parcels of Crown Land which are located outside the area covered by the 2004 Draft Crown Lands review but within the Settlement Strategy study area. Of these areas, those on the eastern edge of Sussex Inlet should retain their current zonings and status, reflecting their natural attributes.

Land located between Swanhaven and Cudmirrah should retain its existing open space zoning, again reflecting the natural attributes of these areas and the benefits associated with maintaining a distinct identity for the two townships.

The final area is located between Cudmirrah and Berrara. This land is already zoned residential, and subject to detailed planning, provision of some open space links between Swan Lake and the ocean, and adequate bushfire safety measures being incorporated, this



area is generally suitable for residential development. Care should be taken to minimise the impact on identified threatened species and to ensure that water quality impacts on Swan Lake are avoided.

***Action 8: Undertake necessary zoning changes to facilitate above recommendations, and investigate the potential for integration of additional community land and a conservation corridor on Crown land in Thomson Street.***

***Timeframe: Medium term***

***Responsibility: Council / Department of Lands***

### 3.3.7 Urban Consolidation Opportunities

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.

***Action 9: Undertake an audit of suitable sites for increased residential density within the Sussex Inlet township. Make the necessary changes to planning controls to facilitate increased housing choice in this area.***

***Timeframe: Medium term***

***Responsibility: Council / Department of Planning***

## 3.4 Potential Dwelling Yields from Identified Areas

Having identified a number of sites for both new and infill development, it is important to undertake an estimate of the potential additional number of dwellings which may result from development of all of these areas. These forecasts are of a particularly preliminary nature, as they pre-date detailed investigations in a number of areas. They are not therefore presented as target levels of future development on particular sites, but instead to provide some broad 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 extension discussed above in section 3.3.4. 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, as discussed in section 3.3.6. 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 extension area.

For sites where urban consolidation opportunities have been identified, it is difficult to predict what level of redevelopment of existing properties will occur because it depends on a larger number of discrete decisions by existing landowners. Even if planning controls are changed in the area identified in section 3.3.7 to facilitate a greater level of medium density housing, the actual amount of new housing which is delivered will depend on both the willingness of existing landowners to sell their land and the willingness of developers to provide new housing. Notwithstanding these uncertainties, estimates are required for this strategy.

Within the area which is not flood prone, and as discussed in section 3.3.7, there are approximately 730 lots of varying sizes. Of these, 32% or 235 lots are greater than 700m<sup>2</sup> in size. Nearly 500 lots are greater than 600m<sup>2</sup>. For the purposes of this exercise, it is therefore assumed that these 500 lots could initially be considered candidates for some form of increased density, be it a small number of villas on single lots, or a larger number of villas, small lot houses and townhouses on consolidated lots. Those approximate 500 lots have a total land area of approximately 38 hectares, or 380,000m<sup>2</sup>. Using a conservative assumption that 20% of these lots and this area became available for redevelopment over the medium term, and that a minimum site area of 250m<sup>2</sup> was required per new dwelling, this would yield approximately 300 additional dwellings in the established, non-flood prone areas of the southern part of Sussex Inlet. This would represent a valuable contribution to the objective of providing increased housing choice for the changing nature of the population of Sussex Inlet.

Clearly, the above assumptions are rather arbitrary. Further investigation of this issue is required, as recommended in Action 9 above. These investigations would include a more thorough assessment of the suitability of sites, and consideration of the appropriate planning controls to apply. The above controls and assumptions are for indicative purposes.

In summary, therefore, the Badgee extension could be expected to yield somewhere in the order of 1,000 dwellings of varying types and sizes, and the urban consolidation opportunities identified in Sussex Inlet 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.



***Action 10: An appropriate percentage (eg. 10-20%) of dual occupancy and medium density residential development should be provided for within each new larger residential area and this will be established at the rezoning stage and reinforced in the subsequent development application processes.***

***Time Frame: Short / Medium***

***Responsibility: Council***

### **3.5 Environmental Assessment of Preferred Settlement Strategy**

#### **3.5.1 Vegetation Communities**

Further development of the Sussex Inlet area will ultimately result in vegetation loss and a potential reduction in habitat for a variety of species. However, the areas identified for potential development are considered to exhibit environmental characteristics that are common across the study area and are not likely to be of a great enough size to substantially reduce the viability of flora and fauna species occurring in the area.

Further detailed assessment of corridor requirements will need to be undertaken as part of detailed environmental studies, as will the presence of threatened species in the areas to be impacted. Importantly, the strategy has the potential to afford protection to a viable, representative system of inter-linked habitats including the extensive foreshore of St Georges Basin and linkages between Badgee Lagoon, Swan Lake and Cudmirrah National Park.

***Action 11: Undertake further detailed assessment of the placement and widths of potential environmental corridors as part of rezoning processes for relevant sites.***

***Timeframe: Short term***

***Responsibility: Council / landowners***

#### **3.5.2 Water Quality and Aquatic Ecology**

With regards to potential impacts on water quality and hydrology the relatively confined area to be impacted provides opportunities to minimise and ameliorate impacts through a combination of water sensitive urban design (WSUD) and engineering solutions including detention ponds and artificial wetlands. Additionally, by providing riparian buffers and avoiding impacts to wetlands identified for protection under State Environmental Planning Policy No. 14 – Coastal Wetlands, key aquatic habitat areas can be protected and potentially enhanced.

The principles identified in Section 2.4 must be included as key criteria when undertaking subsequent Environmental Study if the objectives of the Swan Lake and Berrara Creek Natural Resources Management Strategy (SCC, 2002) and the St Georges Basin Estuary Management Plan (SCC, 1998) are to be met.

Restrictions on further subdivision of the unsewered Millallen Farmlets and controls as part of the Verons Estate rezoning investigations will reduce the potential of these areas to cause decline in water quality within Swan Lake and St Georges Basin.



***Action 12: Ensure environmental principles listed in section 2.4 are addressed in further environmental studies undertaken as part of rezoning investigations.***

***Timeframe: On going***

***Responsibility: Council***

### 3.5.3 Bushfire

From a bushfire perspective the proposed strategy will provide opportunities to significantly increase the protection afforded to existing development at Sussex Inlet and Cudmirrah. This will be achieved through the provision of asset protection zones (APZs) as part of new development areas.

All new development will also need to comply with *Planning for Bushfire Protection (NSW RFS, 2001)*, implying a level of protection consistent with current best practice. 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.

***Action 13: Ensure new development addresses the requirements of the Planning for Bushfire Protection guidelines.***

***Timeframe: On going***

***Responsibility: Council***

### 3.6 Aboriginal and European Heritage

The proposal avoids known areas of European Heritage significance. However, further work is required in relation to Aboriginal Heritage at the Environmental Study stage, or where relevant, at the development application stage. In particular, consultation with the Local Aboriginal Land Council is required and extensive survey of proposed development areas may be required to ensure any impacts can be avoided or ameliorated.

***Action 14: Ensure that where relevant, appropriate Aboriginal heritage investigations and consultation is undertaken.***

***Timeframe: On going***

***Responsibility: Council in consultation with local Aboriginal communities***

### 3.7 Infrastructure Assessment of Preferred Settlement Strategy

A preliminary assessment of the implications of this preferred settlement strategy has been undertaken.



As discussed in Section 3.4, it is expected that approximately 1,300 to 1,400 additional dwellings could be developed in the Sussex Inlet area if all of the areas identified in this strategy proceed to development.

### 3.7.1 Traffic

The potential traffic impacts of the identified additional development have been considered. Historic traffic data available from the RTA was used to establish the current traffic profile for both the Princes Highway and Sussex Inlet Road and 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 were 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 growth.

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 areas develop. 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 area.

It should also be noted that the Roads and Traffic Authority has proposed an upgrade to the intersection of the Princes Highway and Sussex Inlet Road. This upgrade will involve safety improvements and extra provision for right turn movements from Sussex Inlet Road to the Princes Highway. The upgrade is expected to be completed by June 2006. Signalisation of the intersection is not proposed at this stage.



Should new development proceed, it will 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, walking and cycling should be considered in detail during the Environmental Study process for a particular rezoning or in association with larger development applications.

***Action 15: Ensure localised transport and traffic impacts are addressed through appropriate section 94 contributions, planning agreements or development consent conditions.***

***Timeframe: On going, as development proceeds***

***Responsibility: Council / Roads & Traffic Authority***

### 3.7.2 Water Supply

The major constraint posed by water supply to development in the study area will be the provisions, if any, made for additional development in the Lake Conjola area and Ulladulla district.

As the existing water supply system is basically linear and the system services both the Sussex Inlet area and the Lake Conjola area further south, development in the Lake Conjola area and Ulladulla district may use some of the current 5 ML/day spare capacity in the system, thereby reducing the potential for development in the Sussex Inlet area.

The water supply system has been assessed to have the capacity to supply the proposed additional dwellings and can proceed without further augmentation of the water supply system to Sussex Inlet, provided there is no major expansion of development in the Lake Conjola area and Ulladulla district. Should such an expansion occur, the opportunity would exist to service new development in the Sussex Inlet area via the trunk main from Bewong.

These findings are consistent with Council's recent analysis undertaken as part of the recent preparation of its Development Servicing Plan for water and sewer. Detailed hydraulic investigation and analysis into the reticulation system will be required to ensure that all growth areas can be served by the existing service reservoir.

***Action 16: Should further development be proposed in the Lake Conjola area and Ulladulla district, undertake further assessment of the water supply needs of the Sussex Inlet area. Detailed hydraulic investigation and analysis into the reticulation system will also be required to ensure that all growth areas can be served by the existing service reservoir.***

***Timeframe: On going monitoring***

***Responsibility: Shoalhaven Water / Council***



### 3.7.3 Wastewater

In undertaking an assessment of the implications of further development from a wastewater perspective, it has been determined that the wastewater treatment plant has very limited excess capacity in the short term. Detailed assessment of future needs would be required if substantial new development was proposed prior to its proposed upgrading.

Augmentation of the wastewater treatment plant (WWTP) is planned for some time between 2006 – 2009 according to Council's newly adopted Development Servicing Plan (DSP). Subject to more detailed assessment, it is expected that this augmentation would provide enough capacity at the WWTP for the approximate 1,300 – 1,400 dwellings being contemplated as part of the settlement strategy.

However, further consideration needs to be given to the timing of future development and how it relates to the proposed upgrade and the proposed augmentation of the WWTP should be considered in the review of developer services charges. 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. The opportunity may exist to consider possible reuse of reclaimed water for reuse in the local area.

***Action 17: Monitor development staging and its relationship with the proposed upgrade of the WWTP in 2009-10.***

***Timeframe: On going monitoring***

***Responsibility: Shoalhaven Water / Council***

### 3.7.4 Electricity

Existing power supply is understood to be approaching the available capacity. It is therefore likely that, should substantial further development occur, then additional power would be required, potentially including an upgrade to the zone substation and trunk infrastructure. Further investigations would be required as part of planning for any future major developments.

***Action 18: Undertake further detailed analysis of power capacity as part of the detailed planning process for major developments.***

***Timeframe: On going monitoring***

***Responsibility: Council / Integral Energy***

## 3.8 Community Facilities Assessment

Demand for social infrastructure, including community facilities and services, has both a quantitative (how many people are required to make the facility sustainable?) and a qualitative aspects (what are the particular community aspirations which make this an important service to provide?). This information is relevant in informing the community planning process.

There is a need to consider both the number of potential services users, the demographic characteristics of the likely population, their lifestyle expectations and needs as part of the



social planning process. For example, it may be that a particular service needs to be provided at an early stage before the demand for the service reaches a critical mass. This particularly relates to essential services such as emergency services.

The population expected to reside in the area will guide the application of standards and threshold for key services such as open space, childcare facilities, schools, aged care, and libraries. Typical thresholds will need to be taken into account when considering whether new or expanded facilities should be provided, and opportunities for delivery of facilities as part of new significant developments should also be considered.

For these reasons and because in some cases thresholds will not be reached, it is difficult at this stage to recommend specific new facilities that may be required as a result of future growth. To enable general discussion, the following thresholds are considered to be relevant and should be taken into account when planning for new development:

- one 3 hectare primary school site per 1,500 – 2,000 new homes;
- one 6 hectare high school site per 4,500 – 6,000 new homes;
- 2.83 hectares of open space per 1,000 additional people;
- one multi-purpose family and children's centre per 8,000 – 10,000 people; and
- one multi-purpose community centre per 8,000 – 10,000 people.

A range of other facilities such as district cultural centres and district youth centres have substantially higher thresholds which are not likely to be reached by the Sussex Inlet area.

As new development proceeds and thresholds are potentially reached, additional facilities will need to be provided. Close consultation with community facilities and services providers, at all levels of government, will be required to ensure timely provision of appropriate facilities. Improvements may also be able to be made to existing facilities and services, including public transport. Facilities should be provided with reference to Council's Community Plan.

Any new facilities will complement the existing facilities in the Sussex Inlet area, including the primary school, leisure centre, police station and local sporting facilities. In many cases, the additional population will make these existing facilities more viable.

***Action 19: Ensure that social impact assessments are undertaken as part of the Environmental Study process for significant new development and rezoning proposals.***

***Timeframe: In association with major developments***

***Responsibility: Council / Landowners***

### **3.9 Conclusions**

This section provides a detailed description of the preferred settlement strategy for the Sussex Inlet Area. The proposals described above are considered to represent a reasonable balance between a range of competing objectives and issues, and will enable a reasonable level of sustainable growth in the Sussex Inlet area in the future.

Importantly, the level of additional development contemplated will enable a greater range of facilities and employment opportunities to be made available in the area. It will also, critically, encourage a greater degree of housing choice in the future, which is a fundamental requirement for the comparatively aged Sussex Inlet community.



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## **4.0 NEXT STEPS**

This report sets out a settlement strategy for consideration by Council, the residents of the Sussex Inlet area, and the Department of Planning.

The next step is for a process of community consultation to take place. This will build on the well-attended community meeting which took place in the early stages of the preparation of this strategy. It will involve a period of public exhibition of the strategy and a further public meeting. Community input on all the issues and all the land covered by the settlement strategy will be sought.

After the community consultation process, the settlement strategy will be reviewed to take into account suggestions from the community and government agencies, and will then be put to Council for formal endorsement.

Once Council has endorsed the settlement strategy, it will be forwarded to the Minister for Planning for consideration. One of the fundamental objectives of the strategy has always been to gain the Minister's approval and thereby allow the longstanding rezoning moratorium to be lifted.

Should the Minister for Planning approve the strategy and remove the rezoning moratorium, sites which have been identified for possible future development as a result of this strategy will then be required to go through the planning processes set down in the Environmental Planning and Assessment Act 1979. In some cases, this will involve development applications accompanied by required supporting information.

Where a rezoning is required, there will be a need to determine whether a formal Environmental Study is required. For the larger sites identified in this strategy, it is considered that an Environmental Study will be an essential precursor to any rezoning and development proceeding. This is particularly the case because this settlement strategy has focused at a strategic level, and has not involved undertaking detailed new studies, instead relying on a wide range of existing studies and reports.

Further opportunities for community input will be available during each of the above processes.



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