

Draft Review of 7(d) lands at Helensburgh, Otford and Stanwell Tops

Prepared for
Wollongong City Council

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1 Executive Summary

Wollongong City Council commissioned Willana Associates to undertake a desktop planning study of the 7(d) Hacking River Environmental Protection zone that is in the vicinity of Helensburgh, Otford and Stanwell Tops. Over the last thirty years Council has received many representations to rezone 7(d) land, conserve 7(d) land and reduce the minimum lot size for a dwelling entitlement. As Council is currently reviewing its planning controls through the process of preparing the draft Wollongong LEP 2009, it is appropriate that the planning controls for the 7(d) land also be reviewed.

The 7(d) Hacking River Environmental Protection zone was introduced in the 1980s and 1990s primarily to protect the water quality of the Hacking River and Royal National Park. Part of the imposition of the zoning followed the Helensburgh Commission of Inquiry (1994) which reviewed various urban release development proposals around Helensburgh, and concluded that a number of the proposals were not appropriate without further investigations.

As an interim measure while the desktop planning study of the 7(d) zoning is being undertaken, Council has proposed to translate the current 7(d) zone under Wollongong LEP 1990 to the E2 Environmental Conservation zone under the draft Wollongong LEP 2009. The E2 Environmental Conservation zone has similar restrictions to the 7(d) zone, although dwelling houses are not permitted.

The purpose of the desktop study is to resolve the conflict between the 7(d) zoning and its objectives to protect the natural environment, with the aspirations of the largely private owners of the land. The outcomes of this desktop study are to inform a revised planning and zoning framework for the area. The proposals as a result of this desktop study will be subject to public exhibition and input and further site specific studies for some areas, prior to final rezoning decision being made.

The main issues for the desktop study include:

- § The area of the desktop study comprises approximately 1,555ha with a total of 784 lots owned by 303 persons/ companies.
- § The current land uses within the study area is mixed. There are large swathes of land that is uncleared bushland. There is a dwelling house erected on 108 of the 784 lots in the study area and the majority of the remaining lots do not having a dwelling entitlement under the current planning controls. Generally adjacent to Helensburgh a number of commercial, industrial and special purposes land uses are operating.
- § A number of environmental and biophysical constraints affect the study area including vegetation, water courses, bushfire and steep terrain.

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- § An independent bushfire consultant's report on the likely Asset Protection Zone (APZ) requirements for Ensile land (Lady Carrington Estate – South), the Land Pooling area, properties in the vicinity of Lloyd Place and around Otford Village was commissioned by Council. The report concludes that APZ's could be provided within property boundaries for Ensile land, the Land Pooling area (with some lot boundary adjustments) and lots adjacent to Otford Village, and that it would be difficult to provide APZ within lot boundaries across all lots in the vicinity of Lloyd Place.
- § The legislative framework which regulates development in the area includes the *Environmental Planning and Assessment Act 1979*, *Threatened Species Act 1995*, *National Parks & Wildlife Act 1974*, *Environmental Protection & Biodiversity Conservation Act 1999*, *Water Management Act 2000*, *Heritage Act 1977* and the *Rural Fires Act 1997*.
- § There are a number of State Environmental Planning Policies (SEPPs) applying to the study area which are summarised in chapter 5 of this report.
- § The local planning controls applying to the study area include the *Wollongong Local Environmental Plan 1990*, the *Draft Wollongong Local Environmental Plan 2009*.
- § Numerous previous studies have been undertaken into the 7(d) zoned lands that have informed this desktop study. These studies include the Helensburgh Commission of Inquiry (1994), the draft Helensburgh Town Plan (1990), Wollongong Retail Centre Study (2004), Wollongong Local Government Area Employment Lands Strategy (2006), Helensburgh Urban Capacity Study (2006), and the Riparian Corridor Management Study (2004).
- § The NSW Government has introduced the Biodiversity Banking and Offsets Scheme (BioBanking) to help address the loss of biodiversity values, including threatened species across the State. This Scheme is described in Chapter 7 of this report. The aim of the BioBanking Scheme is to protect and improve the biodiversity of a site. If a site supports existing high quality bushland, and is zoned for environmental protection, it is unlikely that that site will be of any 'value' under the BioBanking Scheme. This is because the BioBanking process cannot add-value to the already high quality bushland on the site. There would be no net-gain to the community.
- § Based on the planning principles and planning criteria outlined in Chapter 8 of this report, a draft proposed zoning scheme based on the zones of the draft Wollongong LEP 2009 has been developed for the 7(d) land.
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- § These proposed zonings for the study area have been identified after undertaking constraints mapping and land use analysis. Where land is recommended to be rezoned to allow development, this is generally to ensure existing uses are consistent with zone objectives.
- § It is recommended that the majority of the study area will retain its environmental zoning, resulting in limited development opportunities of these lots. The environmental (E2 – Environmental Conservation) zoning will apply to land that supports undisturbed bushland, is restricted by riparian corridors and are steep. The resulting impact on the community of maintaining environmental zoning across much of the study area is confirmation of the protection of the bushland character of the area.
- § Sites recommended for residential zoning may result in additional dwelling houses being constructed in the area (approximately 302 additional dwellings, including 104 dwellings in the Land Pooling precinct). However, prior to the construction of these dwelling houses, further studies into the impact on the environment must be undertaken to the satisfaction of the Council.
- § Key conclusions of the desktop study include:
- § The proposed zoning scheme proposed in Chapter 8 facilitates and promotes economic, social, and environmental sustainability within the study area. The land use strategy proposed under the zoning scheme would facilitate both land use scenarios.
- § There is a need to resolve the current fragmented ownership pattern and dwelling entitlement issues, particularly in the Land Pooling area.
- § A new long term vision is needed for the area, which addresses the historic issues of dwelling entitlements and the high conservation values of the area.
- § Key recommendations of the desktop study include:
- § Council consult with the 7(d) landowners, the Helensburgh, Otford and Stanwell Park communities, and State Government Departments and Agencies on the draft proposals in this report.
- § Council resolve to commence the preparation of a draft Local Environmental Plan to amend the planning controls for the 7(d) lands.
- § Following public consultation and analysis of submissions, if then appropriate, adopt the zoning scheme proposed for cleared land supporting existing uses.
- § Following public consultation and analysis of submissions adopt the zoning scheme proposed for all land identified to maintain its environmental (E2 – Environmental Conservation) zoning.
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- § In conjunction with the landowners undertake a Local Environmental Study process to confirm the zoning scheme for land identified for residential zoning in the Land Pooling Precinct and Ensile's Lady Carrington Estate South.
- § Where the study area land is proposed to be rezoned to R2, E3 or E4, it is recommended that the draft Wollongong LEP 2009 be adjusted to allow 1 dwelling/ lot only where there is an existing allotment on the appointed day of adoption of the LEP.
- § It is also recommended that notwithstanding the current wording of clause 4 Prohibited Development in the E2 Environmental Conservation Land Use Table, a special savings provision is included for lots with existing dwellings, so the dwelling right is protected.

2 Introduction

2.1 Background

This report is a desktop planning study of the 7(d) Hacking River Environmental Protection zone that is in the vicinity of Helensburgh, Otford and Stanwell Tops. This zone was introduced in the 1980s and 1990s to protect the water quality of the Hacking River and Royal National Park. The grey shaded area in Figure 1 below shows the extent of the 7(d) Hacking River – Environmental protection zone in the Helensburgh and Otford area.

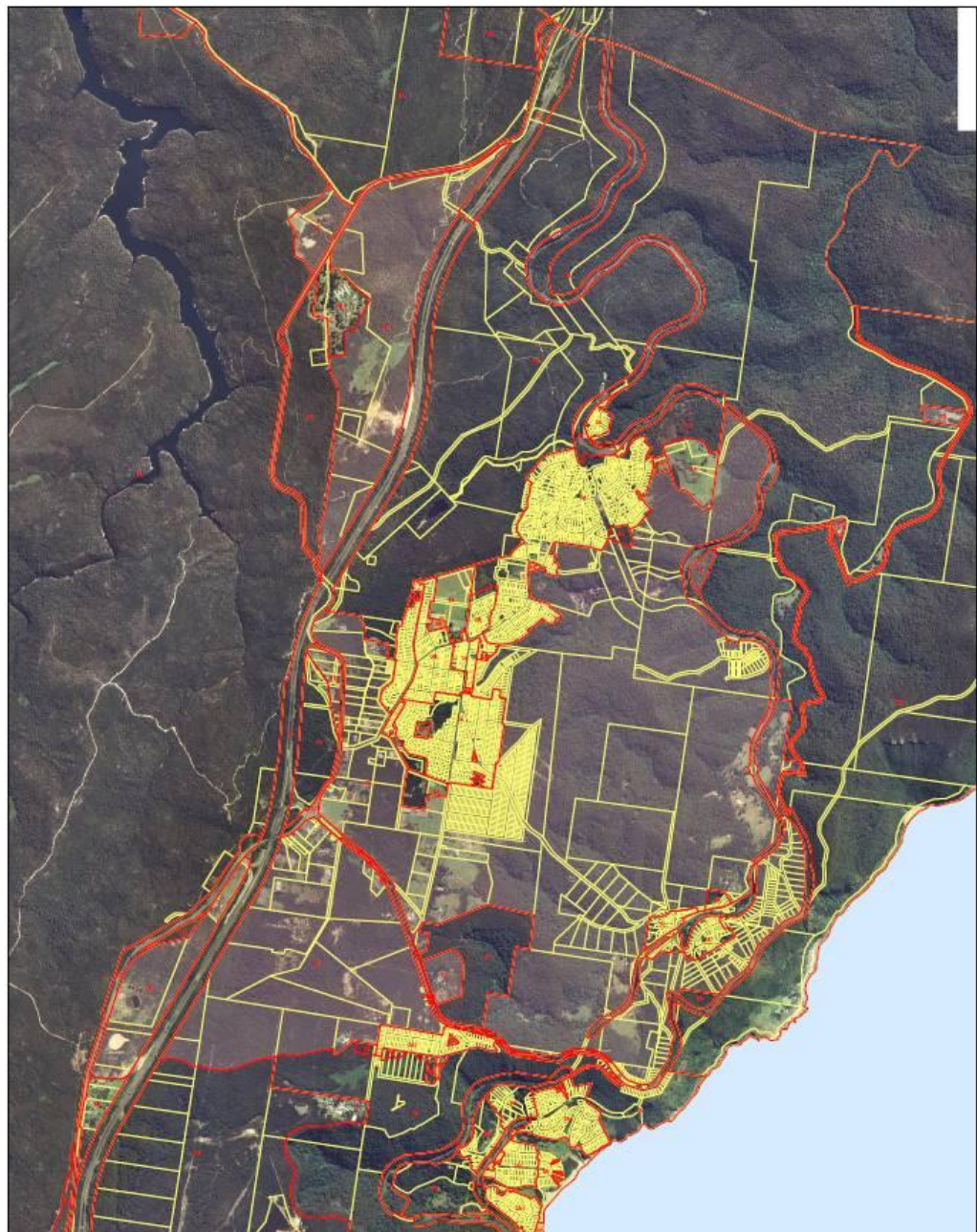


Figure 1: 7(d) Land Helensburgh & Otford

The objectives of the 7(d) zone under the Wollongong LEP 1990 are:

- a) to identify and protect the conservation value of the relatively pristine tributaries of the Hacking River Catchment and thereby safeguard the natural qualities of the area to complement the Royal National Park, and*
- b) to allow some diversity of activities on degraded land that will not prejudice achievement of the objective referred to in paragraph (a) or detrimentally affect the environmental quality or character of the locality or the amenity of any existing or proposed development in the locality.*

As an interim measure while the desktop planning study of the 7(d) zoning is being undertaken, Council has proposed to translate the current 7(d) zone under Wollongong LEP 1990 to the E2 Environmental Conservation zone under the draft Wollongong LEP 2009. The E2 zone has similar restrictions to the 7(d) zone, although dwelling houses are not permitted. The outcomes of this desktop study are to inform a revised planning and zoning framework for the area. The proposals as a result of this desk top study will be subject to public exhibition and input and further site specific studies for some areas, prior to final rezoning decision being made.

The objectives of E2 Environmental Conservation are:

- § to protect, manage and restore areas of high ecological, scientific, cultural or aesthetic value.
- § to prevent development that could destroy, damage or otherwise have an adverse effect on those values.
- § to maintain the quality of Sydney's and the Illawarra's water supply by protecting land forming part of the Sydney Water Catchment area and to enable management and appropriate use of the land by the Sydney Catchment Authority.
- § to provide for the conservation and rehabilitation of native vegetation on highly environmentally significant lands.

The effect of the 7(d) zone (and consequently E2 zone) is that development has been severely restricted to the extent that dwelling houses, on many lots, are not able to be constructed. It also means that where commercial uses have been established, these sites often enjoy existing use rights, and these existing uses are not consistent with the objectives of the land use policy.

Wollongong City Council at its meeting on 2 October 2007 resolved to review the 7(d) Hacking River Environmental Protection zone at Helensburgh, Otford and Stanwell Tops in terms of the appropriateness of the zone for existing commercial and industrial uses and the minimum lot size for a dwelling entitlement.

Conservation of significant bushland and protection of downstream water quality remain important priorities for land in the vicinity of Helensburgh, Otford and Stanwell Tops. As a result, there are a number of issues that require investigation as a part of this desktop planning study:

- § The capability of the 7(d) land and downstream areas to support development;
- § The capacity of Helensburgh and Otford to cater for additional development;
- § The future role of Helensburgh;
- § The direction of appropriate future planning control under the draft Wollongong LEP 2009; and,
- § The dwelling entitlement provisions of the 7(d) zone.

2.2 Purpose of the study

The purpose of the study is to resolve the conflict between the 7(d) zoning and its objectives to protect the natural environment with the aspirations of the largely private owners of the land. In the vicinity of Helensburgh and Otford there are 784 lots zoned 7(d) which are owned by 303 persons/ companies.

Through the analysis of existing studies and following site investigations this desktop study will assess the natural, built, economic and social environmental features of the Helensburgh locality. In reviewing such features, the locality's ability to accommodate ongoing demand for urban development will be determined. The determination aims to achieve an effective balance between protecting and enhancing the locality's environmental characteristics, with the need to satisfy growth of urban areas.

The study is particularly aimed at understanding and protecting the natural environment and its processes. As a result, the NSW Government's policy for environmental offsets must be considered in parallel to the highest and best use land evaluation.

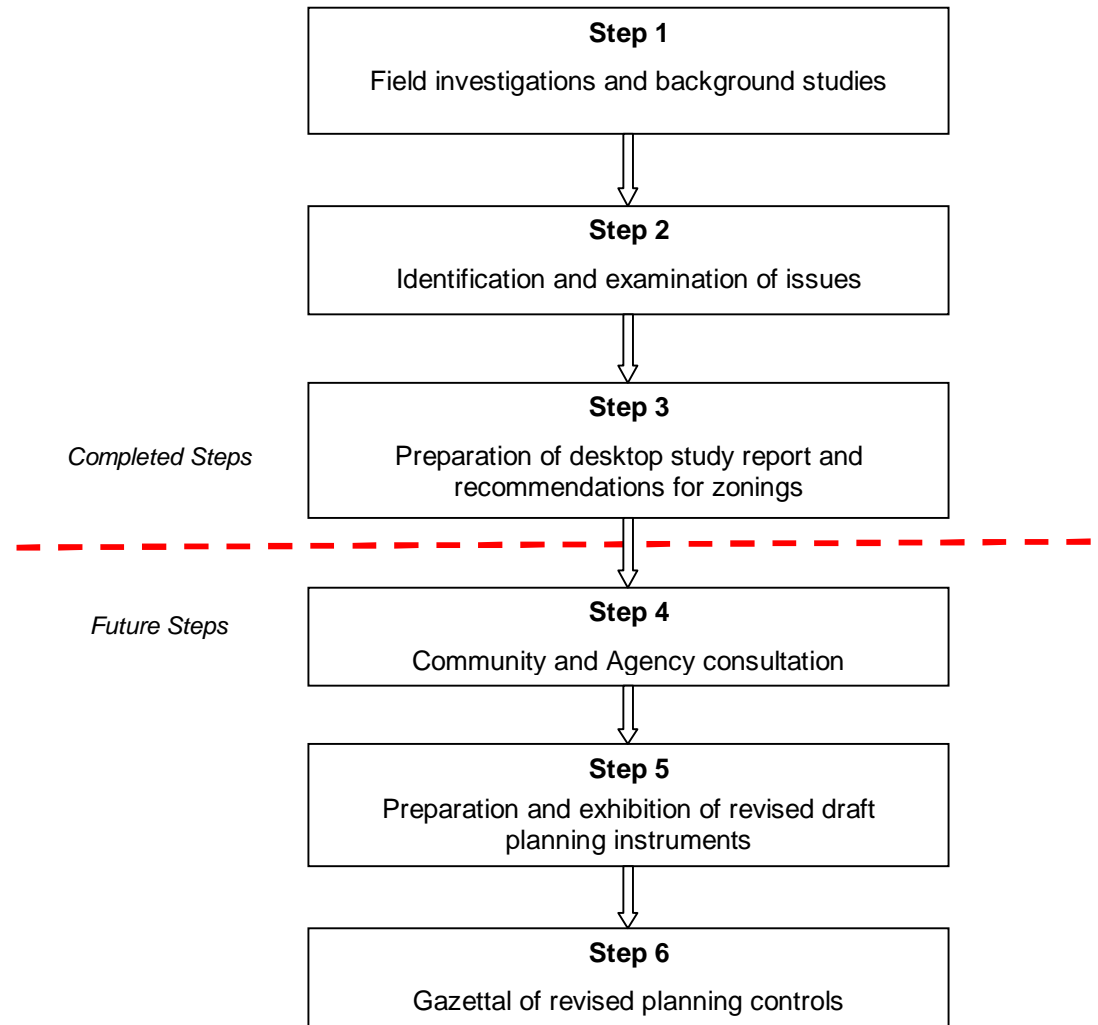
The results of the study will inform new statutory and non-statutory policies guiding land use in the Wollongong Local Government Area. The study will make recommendations for zonings in accordance with the land use zones identified in the draft Wollongong LEP 2009, which is based on the Standard Instrument (Local Environmental Plans) Order 2006.

Upon the completion of the desktop Planning Study, a revised vision and proposed new planning and zoning framework for the area will be exhibited for public comment.

2.3 The study process

A summary of the study process is included in Figure 2: Study Process. The first three steps have been completed.

Figure 2: Study Process



3 Study Area

3.1 General description

Helensburgh, Otford and Stanwell Tops are located at the northern end of the Wollongong local government area. The study area's northern boundaries are shared with the Royal National Park as well as the Sutherland Shire local government area. To the east are the foreshores of the Tasman Sea and to the west is the Sydney Water Catchment Area.

Helensburgh is characterised by a moderately sized urban area located within a plateau surrounded by bushland. The Helensburgh population is well serviced in terms of transport with the Princes Highway and Southern Freeway in close proximity to the west and Helensburgh and Otford Train Stations providing rail access to and from Sydney and Wollongong. Existing urban land uses are typical with a combination of commercial, residential, light industrial, general industrial and recreational land.

The locality is becoming increasingly in demand as a place of residence. Its proximity to beaches, the adjoining National Park, modest development density and good transport options provide high standards of amenity.

Otford is a small village in the Hacking River valley surrounded by bushland. The village has developed around the railway line.

The 2006 census indicates that Helensburgh and Otford had a combined population of 5,745 persons who were housed in 2,064 dwellings (ABS 2006 census).

3.2 Site history

The commencement of coal mining operations in the locality during the 1880's was responsible for the establishment of Helensburgh as a township. The mining operations continue to operate and remain a significant contributor to the locality's livelihood. A number of other commercial and industrial land uses have since developed.

The majority of Helensburgh and Lilyvale were subdivided in 1880-90s in association with the construction of southern railway. The paper subdivisions on the south east side of Helensburgh are part of the original village subdivision.

Residential development in Helensburgh has generally been moderate with the majority of expansion taking place in the 1970's as a result of intervention from Landcom. The locality's environmental sensitivities have constrained ongoing demand for further expansion. In recent times, Helensburgh has become increasingly attractive to existing residents of the Sutherland Shire, as it provides for greater affordability but remains in close proximity to established

social networks. The locality has also been subject to persistent intentions for large scale redevelopment as several large portions of undeveloped land are in limited ownership.

3.3 Land use history

Development for urban purposes commenced in the locality during the late 1870's with construction associated with impending coal mining operations. The Helensburgh township was subsequently established to support the coal mine.

The current shape and size of Helensburgh reflects the 1880-90s subdivisions of Helensburgh, Helensburgh West and Lilyvale. Over time land was developed for housing or re-subdivided. Figure 3: Subdivision history of the 7(d) lands provides some understanding of the subdivision history of the land. The subdivision of Otford dates from the early 1990s.

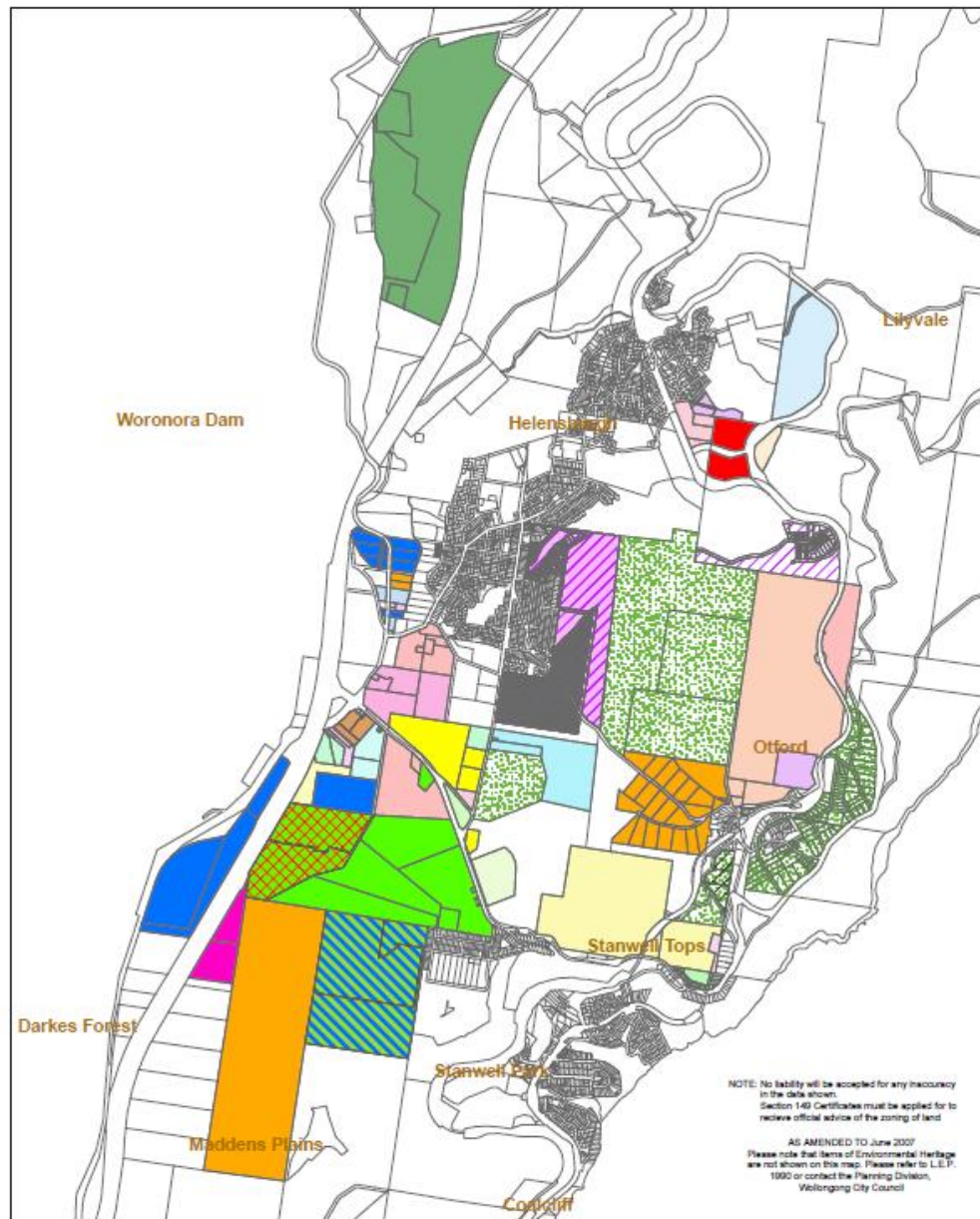
Until the 1950s, residential development occurred in an unplanned manner based on applications for dwellings and subdivision, and the availability of potable water. In 1951, the County of Cumberland Planning Scheme was gazetted which recognised the developed residential area as a “village” and the surrounding rural and bushland areas as “rural”. The Scheme introduced a minimum lot size of 2 hectares for a “country dwelling” on the rural zoned lots.

Over the years, the residential area of Helensburgh expanded with the rezoning of successive sections of the 1880s village plan from a rural zone to residential zone.

In 1988, the 7(h) Hacking River Environmental Protection zone was first introduced by Wollongong LEP No.126 as an amendment to Wollongong LEP No.38. The zone applied the North and South Lady Carrington Estates, the Department of Health land and parts of the Gills Creek catchment and Wilsons Creek catchment (Figure 4: LEP Amendments of 7(d) lands).

In 1990, the zone was renamed to 7(d) Hacking River Environmental Protection with the gazettal of Wollongong LEP 1990. In 1995, Wollongong LEP 1990 (Amendment No. 63) extended the 7(d) to apply to the land pooling paper lots. In 1997, the 7(d) zone was applied to the balance of the Gills Creek catchment around the intersection of Lawrence Hargrave Drive and the Princes Highway, by Wollongong LEP 1990 (Amendment No. 148).

In recent years, residential expansion has generally been limited with moderately sized subdivisions only commencing in the 1970's by Landcom, which continue today.



HELENSBURGH

Legend

1885	1908	1933	1950	1966	1973	1982	1999
1888	1913	1937	1956	1968	1974	1986	2000
1890	1927	1939	1957	1969	1977	1996	2003
1905	1929	1948	1963	1970	1979	1997	
1907	1931	1949	1964	1971	1980	1998	

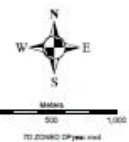


Figure 3: Subdivision history of the 7(d) lands

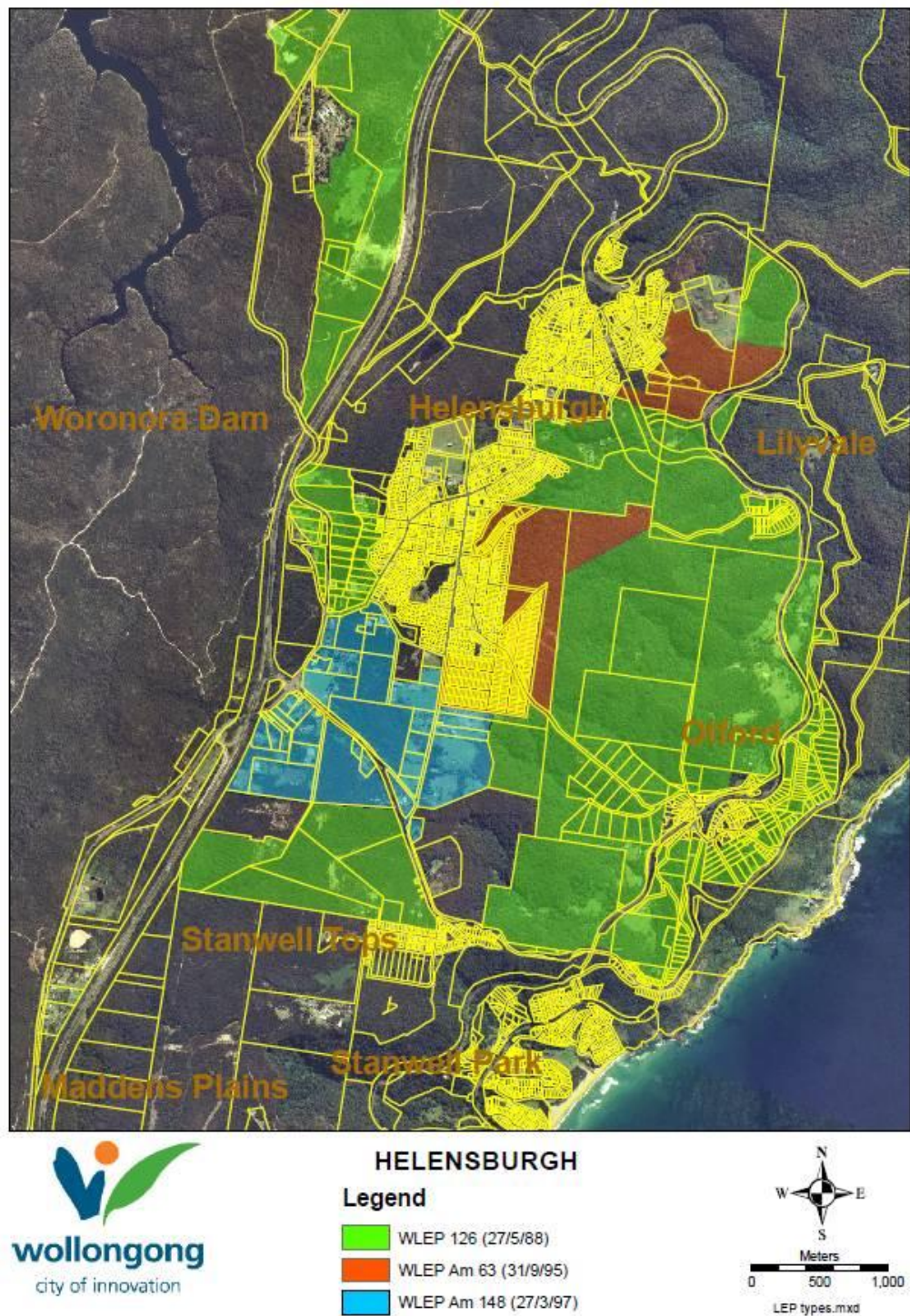


Figure 4: LEP Amendments of 7(d) lands

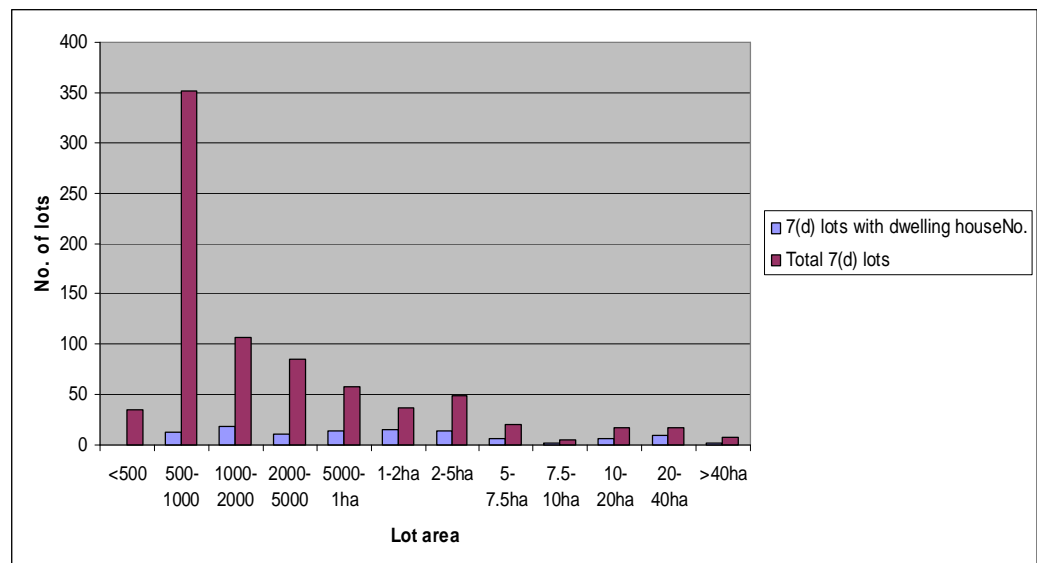
3.4 Lot size analysis

Currently, there are 784 properties zoned 7(d) Hacking River Environmental Protection. The lots can be divided into 4 types:

1. Small lots <2000m². The majority of these lots are the paper subdivision lots located to the south and east of Helensburgh (including the Land Pooling area).
2. Small rural lots 2000m² to 2 hectares in size. These lots are located along the Princes Highway, Lloyd Place and around Otford.
3. Rural lots 2 to 10 hectares in size.
4. Large Rural or Environmental Lots – 10 to 40 hectares in size.

There is a dwelling house erected on 108 of the 784 lots in the study area. The majority of the remaining lots do not having a dwelling entitlement under the current planning controls.

Graph 1: 7(d) Lot size and lots with dwellings



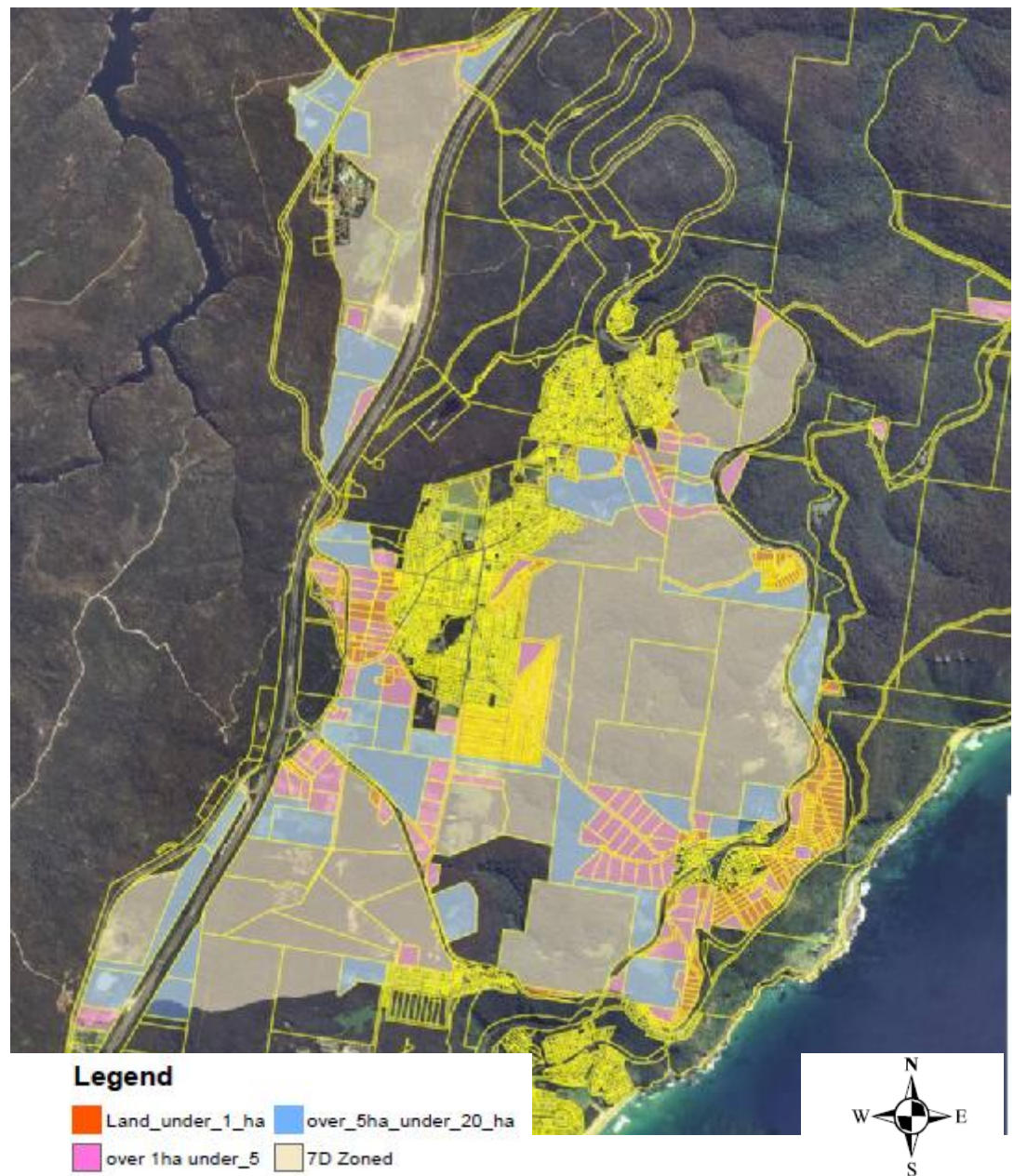


Figure 5: 7(d) zoned land under 1ha, 5ha and 20ha

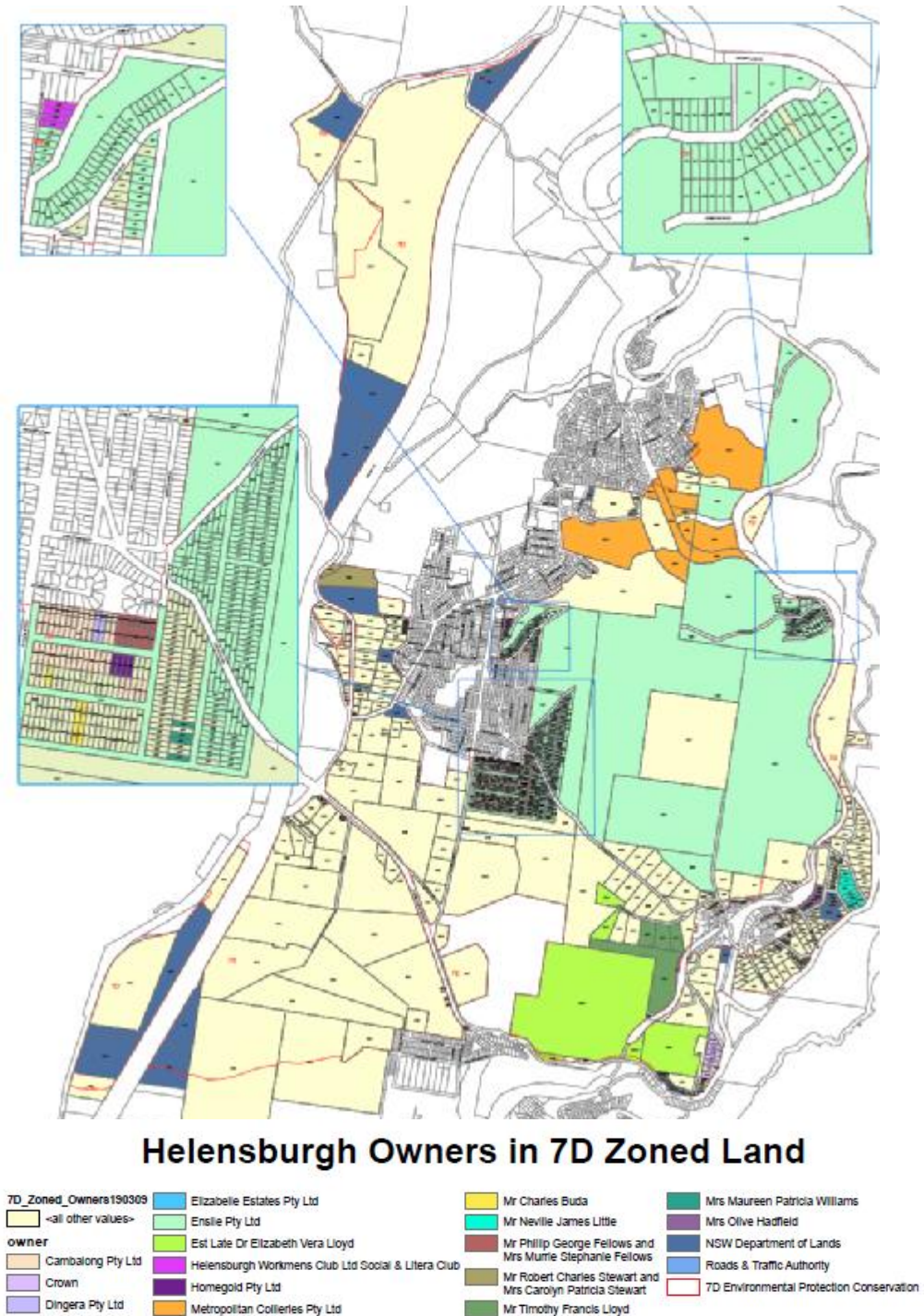
3.5 Land ownership

The area of this desk top study, being land zoned 7(d), comprises approximately 1,555ha with a total of 784 lots owned by 303 persons/ companies. Spatially, ownership is dominated by the following organisations being:

- § Ensile Pty Ltd.
- § Department of Health.

- § Helensburgh Land Pooling Group.
 § 7(d) Landowners Group.

Figure 6: Helensburgh Owners in 7D Zoned Land below indicates all land owners of 7D zoned lands as of 20 March 2009.



3.6 Regional context

Helensburgh, Otford and Stanwell Tops play a minor role in the regional context. They are townships located in the Wollongong local government area. Regionally, the Wollongong local government area includes Wollongong City Centre, which has been identified as a Regional City in the Illawarra Regional Strategy; Warrawong, a Major Regional Centre, and Dapto which has been identified as a Planned Major Regional Centre.

Port Kembla in Wollongong accommodates significant amounts of imports which are then redistributed throughout Australia. It also acts as an export facility for Australian primary materials which are high in global demand. Port and freight activities are expected to act as the main social and economic stimulus for Wollongong City and the broader local government area.

The region, including Helensburgh and Otford, however, provides important natural recreational features for the State. It includes the Royal National Park, ample beaches, large water bodies and mountainous features within close proximity to the Sydney metropolitan area. Such assets justify the substantial portion of residential expansion allocated to the Illawarra Region and particularly, the Wollongong local government area, during the following 25 years.

3.7 Major land uses

Outside the residential and villages areas of Helensburgh and Otford, the major land use is bushland. Within the 7(d) zoned land there is a variety of commercial, industrial and rural land uses. Major land uses in Helensburgh include the Metropolitan Colliery, the Helensburgh Waste Disposal Depot, the Sri Venkateswara Temple and the Symbio Wildlife Gardens.

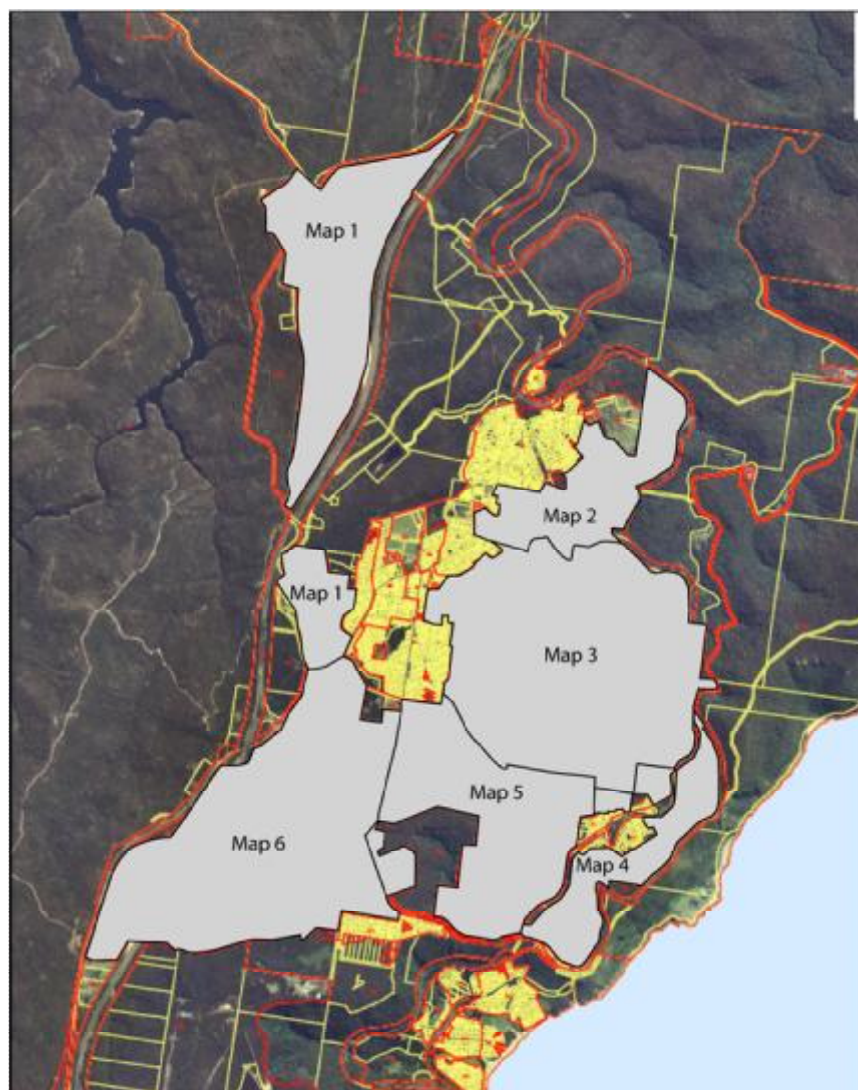
To provide an indication of the range of permitted land uses, the following table lists development applications approved by Council since the 1950s in the 7(d) area.

Site	DA No.	Land use
No. 239 Princess Highway, Helensburgh	1968/331	Mushroom farm
Lot 101 Lawrence Hargrave Drive, Helensburgh	1986/275	Concrete batching plant
No. 7 – 11 Lawrence Hargrave Drive, Helensburgh	1987/781	Koala Garden
No. 227 – 231 Princess Highway, Helensburgh	1964/1652	Garden nursery
No. 261 Princess highway, Helensburgh	1968/331	Mushroom farm
No. 155 Princess Highway, Helensburgh	1957/152	Service station
No. 187 Princess Highway , Helensburgh	1961/1769	Horse riding school
No. 191 Princess Highway, Helensburgh	1997/197	Pre-school
No. 193 Princess Highway, Helensburgh	1960/414	Garden nursery
No. 145 Walker Street, Helensburgh	1987/383	Bus depot
No. 120 Walker Street, Helensburgh	1995/654	Horse stables and training yards
Lot 42 Tarawa Road, Helensburgh	1988/803	Wholesale plant nursery
No. 2 Lawrence Hargrave Drive, Helensburgh	1988/276	Nursery
No. 2 Lawrence Hargrave Drive	1999/479	Golf driving range
No. 159 Walker Street, Helensburgh	1983/668	Earthmoving and landscaping supplies
169 Walker Street, Helensburgh	1965/2696	Poultry farm
No. 22 Lady Wakehurst Drive, Ottford	1990/1895	Dwelling and food shop
Lot 11 Lady Carrington Road, Ottford	1959/2380	Govinda Valley Retreat
Lot 3 Lilyvale Road, Lilyvale	1983/5093	Farm agistment and training

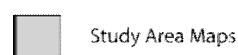
4 Environmental Characteristics

4.1 Landscape and visual character

To enable a considered analysis of the land capability of the 784 properties zoned 7(d), the study area has been divided into 6 areas as illustrated in Figure 7: Study Areas.



Context Map



Revision 061
23 - 02 - 2009



Figure 7: Study Areas

A map of the existing land uses within each precinct is provided in Figures 8 – 13 below (A3 sized maps are provided in [Appendix A](#))

4.1.1 Area 1 – Wilsons Creek and Garrawarra Hospital

The land surrounding the Garrawarra Hospital (Photograph 1: Garrawarra Hospital) is characterised by relatively undisturbed bushland, and in sections, steep terrain. The land forms headwaters of tributary creeks that feed into the Hacking River.

The Wilsons Creek Precinct is generally characterised by vegetation and bushland (Photograph 2: Rajani Rd, Wilsons Creek Precinct). However, there are a number of rural-residential land uses (Photograph 3: Existing dwelling, Wilsons Creek Precinct). Many of the properties have rear boundaries to Wilsons Creek. The terrain is relatively flat. The southern portion of the Wilsons Creek precinct is characterised by uses including light industrial and commercial uses, some dwelling houses and bushland.

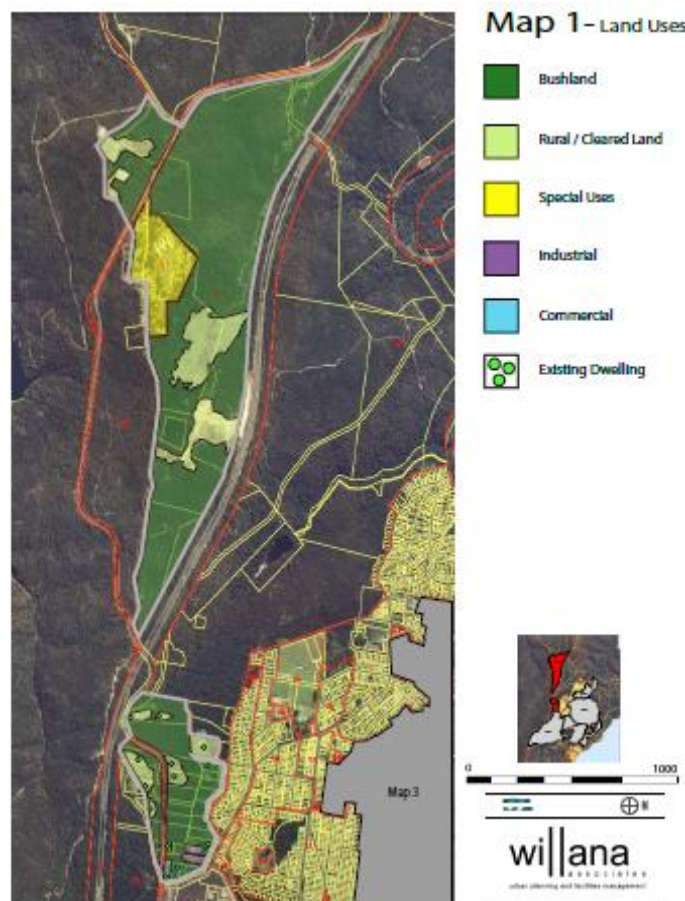


Figure 8: Garrawarra Hospital and Wilsons Creek Precinct - existing land uses



Photograph 1: Garrawarra Hospital



Photograph 2: Rajani Rd, Wilsons Creek Precinct



Photograph 3: Existing dwelling, Wilsons Creek Precinct

4.1.2 Area 2 - Lady Carrington Estate North and Colliery Precinct

Lady Carrington North Estate is generally characterised by undisturbed bushland that could support a variety of ecologically valuable species. The site was previously used for agricultural purposes and existing trails are still utilised for horse riding etc. The precinct is adjacent to the Helensburgh Waste Depot. The subject area is located within Mc Kinnons Creek catchment and one other unnamed tributary of the Hacking River.

The Colliery Precinct is characterised by the major land use in the area, i.e. the Metropolitan Colliery (Photograph 4: Metropolitan Colliery is a dominate feature of the landscape. Land surrounding the Colliery Precinct includes undisturbed bushland and a scattering of existing dwellings.

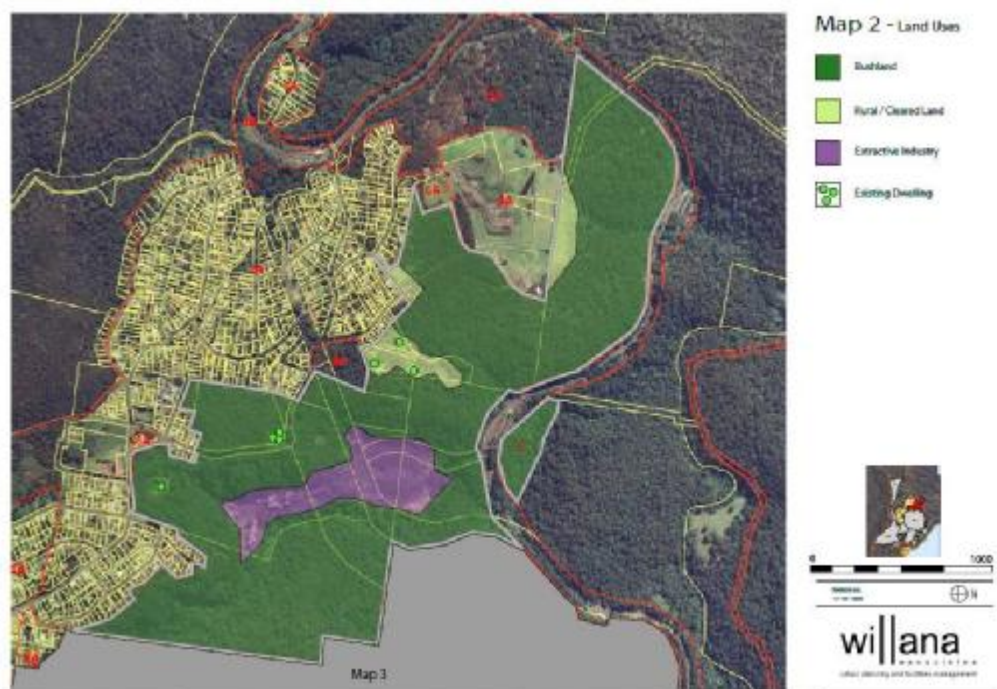


Figure 9: Lady Carrington Estate North and Colliery Precinct – existing land uses.



Photograph 4: Metropolitan Colliery is a dominate feature of the landscape.

4.1.3 Area 3 - Lady Carrington Estate South Precinct

This Precinct contains a significant amount of land with relatively undisturbed vegetation; supports numerous catchments; and is very steep in sections. To the east of the Precinct is a cleared area used for horse related activities.

The paper subdivision land to the west of Werong Road and north of Otford Road consists of 101 lots. The lots are about 1000m² in size. The land is generally cleared, flat and not inhibited by water courses. Land located between Whitty Rd, Undola Rd and Walker St is generally undisturbed bushland, steeply sloping and constrained by a creek. 5 lots on Undola Rd support existing dwellings.

The precinct includes the subdivision of Lilyvale, which contains 63 lots and 2 existing dwellings. The subdivision, with the exception of one lot containing a dwelling, is owned by Ensile Pty Ltd.



Figure 10: Lady Carrington Estate South Precinct - existing land uses.



Photograph 5: Land off Undola Rd



Photograph 6: Land off Walker Lane.

4.1.4 Area 4 - Otford Precinct

Land in and around Otford Station and Village support existing dwellings set amongst tall trees and established vegetation. Land on Lady Wakehurst Drive and west towards Otford Station is very steep terrain, and supports undisturbed bush (Photograph 8: Steep land, undisturbed bushland, Lady Wakehurst Drive.) Lands to the south of the precinct are generally undisturbed bushland. Some clearing has occurred for rural related activities and dwelling houses. A number of creek systems and tributaries of the Hacking River run through this precinct.

A number of large houses have been built off Lady Wakehurst Drive with views of the Tasman Sea.

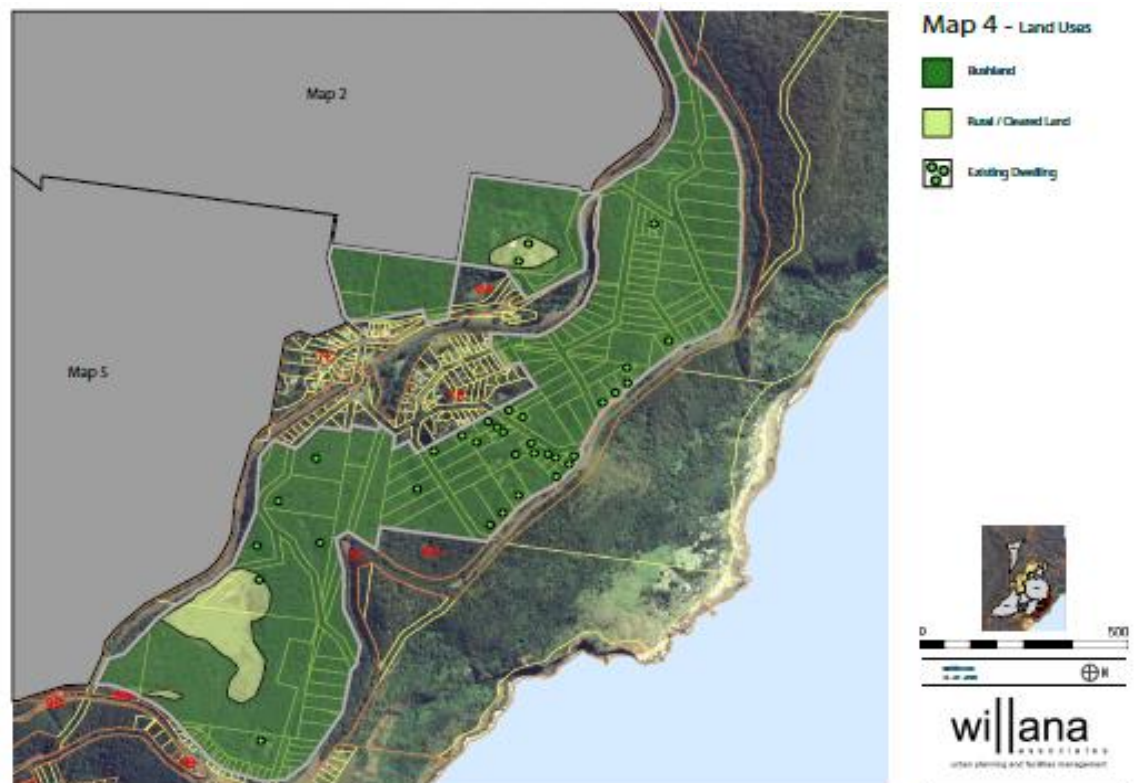


Figure 11: Otford Precinct - existing land uses.



Photograph 7: Lady Wakehurst Drive looking north



Photograph 8: Steep land, undisturbed bushland, Lady Wakehurst Drive.

4.1.5 Area 5 - Kellys Fall Precinct, Land Pooling and Lloyd Place

Lloyd Place (Photograph 9: Lloyd Place) is characterised as steeply sloping land, largely undisturbed bushland and is within the Herbert Creek catchment. This land was subdivided in 1970s and sold to individual owners. Offord Road was constructed as part of the approval to better link Helensburgh and Offord. Not long after the subdivision approval the “country dwelling” standard was increased from 2 hectares to 20 hectares which then precluded the owners from construction dwelling houses on their land. There is some land cleared for rural activities (horse related) south of Lloyd Place.

The Land Pooling precinct was subdivided in 1890s and the lots were sold to individual owners in the 1980s. The precinct contains 207 lots of about 1000m² in size. In 1986, Council encouraged the land owners to “pool their land” as part of a rezoning proposal and to achieve better subdivision design outcomes. Following the Helensburgh Commission of Inquiry, Council withdrew its support for the rezoning.

South of the Land Pooling Precinct is a range of rural industrial uses. The land is cleared, serviced and generally provides a fire protection zone to the Land Pooling area itself. The Land Pooling precinct is generally uncleared, and is constrained by Herbert Creek.



Figure 12: Kellys Fall Precinct, Land Pooling and Lloyd Place Precinct – existing land uses.



Photograph 9: Lloyd Place

4.1.6 Area 6 - Gills Creek Precinct, West of F6 Precinct and Princes Highway Precinct

The Gills Creek Precinct and the area west of the Freeway are characterised as being relatively disturbed lands. The *draft Helensburgh Town Plan* (1990), in relation to development potential in the Gills Creek precinct notes that, ‘the area is excluded from land identified with significant conservation attributes, and therefore its development does not contradict the objectives of the NPWS. However it is highly desirable that as much as possible of the existing woodland in this area should be retained and integrated into the design of urban development.’

The Gills Creek catchment contains parcels of land that can generally be described as being largely disturbed, having relatively low gradients and containing less quality vegetation than other areas in the Helensburgh area. “Approximately 150 hectares of land in Gills Creek has been identified as having urban potential and for which water quality management and other environmental controls can enable environmentally acceptable residential and

industrial development”.¹ Land uses in this area include a concrete batching plant, animal park, rural activities and dwelling houses.

The Princes Highway precinct contains land that has been relatively disturbed by previous and current land use activities.

The precincts contain a wide variety of land uses including:

- § Golf Driving Range;
- § School;
- § Nursery;
- § Horse Riding and agistment;
- § Place of Public Worship
- § Industrial; and
- § Infrastructure.

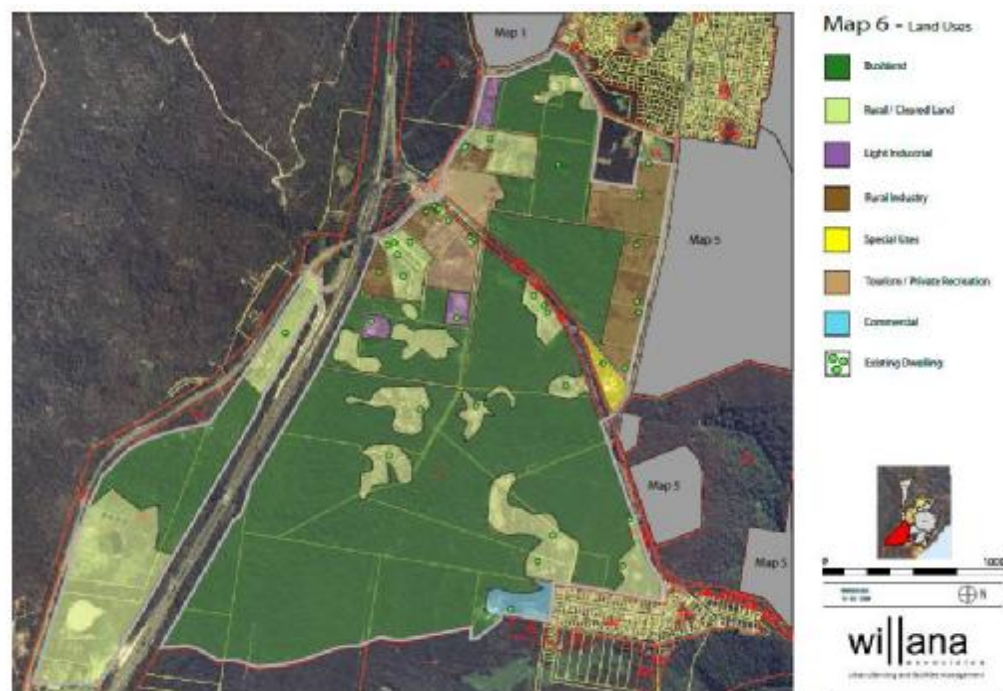


Figure 13: Gills Creek Precinct, West of F6 Precinct and Princes Highway Precinct – existing land uses.

¹ Draft Helensburgh Plan, July 1990, Strategic Planning Section, Wollongong City Council, 1990, pg 155



Photograph 10: Hindu Temple



Photograph 11: Golf Driving Range



Photograph 12: Nursery

4.2 Biophysical Constraints

There are a number of biophysical constraints which affect the study area including significant vegetation, bushfire, and steep terrain and water catchments.

The extent of vegetation covering the study area is illustrated in the land use survey maps discussed in Section 4.1 above.

4.2.1 Bushfire

The *Rural Fires Act 1997* stipulates that development affected by bushfire prone land, must address a range of bushfire issues. Wollongong City Council has mapped bushfire prone land across the LGA according to the Rural Fire Services (RFS) *Guidelines for Bushfire Prone Land Mapping*.

The countryside around Helensburgh is characterised by well timbered slopes. The bushfire prone lands map (Figure 14: Bushfire Prone Lands) indicates significant areas subject to bushfire impacts. The areas that would require significant bushfire planning would be:

- § Areas adjoining existing residential land uses;
- § Land between Baines Place and the Highway in the Gills Creek precinct;

- § Properties adjoining the Princes Highway in the Wilsons Creek precinct;
- § Land located on the western side of Walker Street adjacent to the Land Pooling area;
- § Land surrounding the Metropolitan Colliery; and
- § Land surrounding the existing buildings on the Lady Carrington Estate land (adjacent to the Rail line).

The Bushfire Prone Lands map indicates that the vegetation category for all of the subject land is Vegetation Category 1. This is the most hazardous vegetation category, and as a result, special building setbacks, landscaping and construction requirements will apply to all development in the study area.

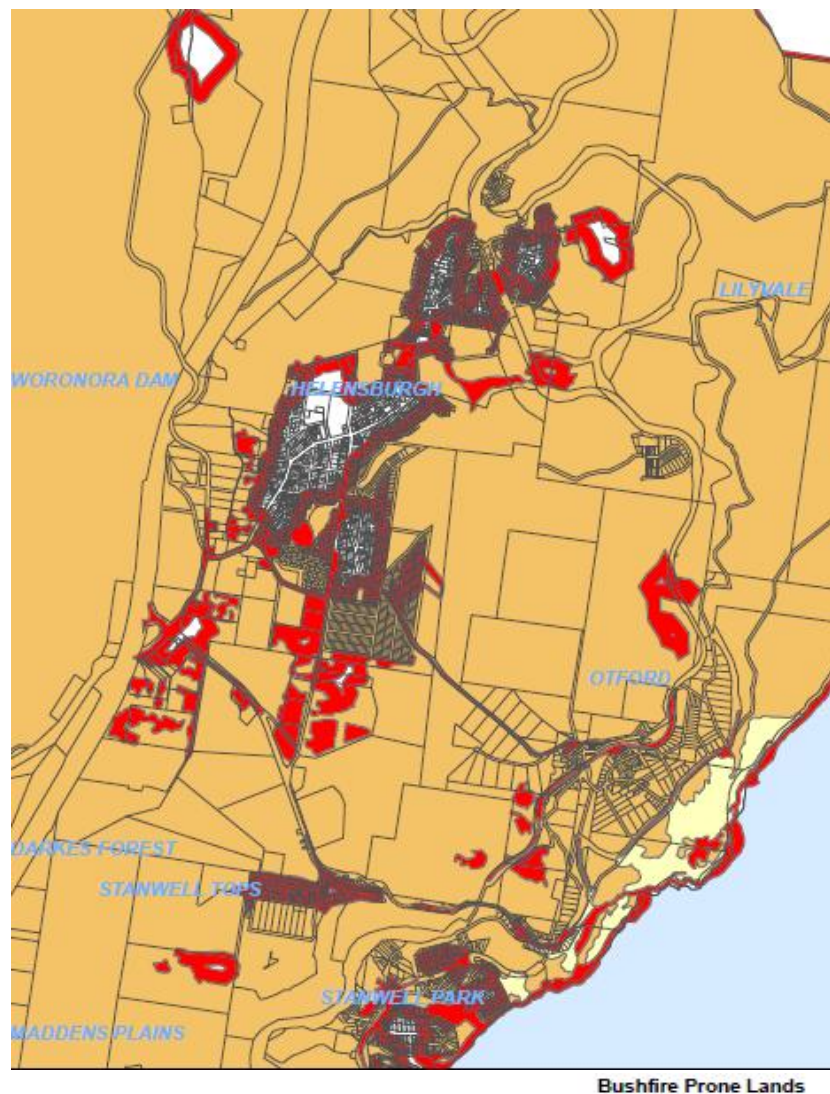


Figure 14: Bushfire Prone Lands

In considering rezoning Ensile land (Area 1 – Lady Carrington Estate South), the Land Pooling area (Area 2), Lloyd Place (Area 3) and land adjacent to Otford Village (Area 4) for residential zoning (see Figure 15: 7(d) land investigated by Bushfire Consultant), Council commissioned an independent

desktop bushfire study in order to understand the asset protection zones (APZ) that may be required in order to allow the designated land to be developed for residential purposes. A copy of the independent desktop bushfire report is provided at [Appendix B²](#).



Figure 15: 7(d) land investigated by Bushfire Consultant

The consultant's report concludes that development on the Land Pooling land and Ensile land (Lady Carrington Estate South) could proceed, from a bushfire perspective, with some boundary adjustment necessary within the Land Pooling precinct. The development of Ensile (Area 1) and Land Pooling land (Area 2) has the potential benefits of providing bushfire protection to existing urban areas of Helensburgh. The Otford Village lots (Area 4) could also be developed from a bushfire perspective as it is likely that each existing lot in the

² Note that the scope of works for the bushfire consultant did not include the consideration of environmental issues other than bushfire. The purpose of the study was to understand the size of developable land taking into account the required Asset Protection Zone within property boundaries.

present subdivision layout would be capable of meeting its own APZ requirements within its own boundaries.

In determining the potential APZ for Lloyd Place (Area 3), the bushfire assessment indicated that several sites would not be able to be developed even if wholesale clearing of land was permissible. This is a direct result of the topography of the land, i.e. the steepness of the slope of the land. The bushfire consultant's report identified a second category of lots where there may be potential for development, but as a minimum this would require extensive clearing and significant changes to the landform, which would unlikely to be in accordance with either State Government or Council's planning controls. In addition, design performance criteria of Council's other planning controls would also need to be achieved (e.g. minimising cut & fill/ driveway grades and building heights).

On the basis of the above, those sites that remain and may have a site by site solution fail on the basis that they are isolated sites surrounded by undeveloped land. It is considered that there is no holistic solution for the Area 3, and on this basis it is recommended the 7(d) (and consequently E2 – Environmental Conservation zone), remains unchanged.

4.2.2 Slope stability and geo-technical issues

Geologically, Helensburgh, Otford and Stanwell Tops are within the Sydney basin, a Permo-Triassic sedimentary basin which incorporates two major geological units: the Triassic Hawkesbury Sandstone; and the underlying Triassic Narrabeen Group of laterised Hawkesbury sandstone. The geology is important as it influences soils, slopes, vegetation patterns and resultant land uses.

The existing urban development has generally followed the plateau surfaces and flatter ridge tops. The exception to this is Otford Village, which is situated on the valley floor of the Hacking River, and development at the northern end of Helensburgh which in part occupy the slopes of Wilsons Creek. Figure 16: Constraints Map - Ridges, slopes and water indicates the extent of ridge lines and slope across the study area (refer to [Appendix C](#) for an A3 copy of the constraints map).

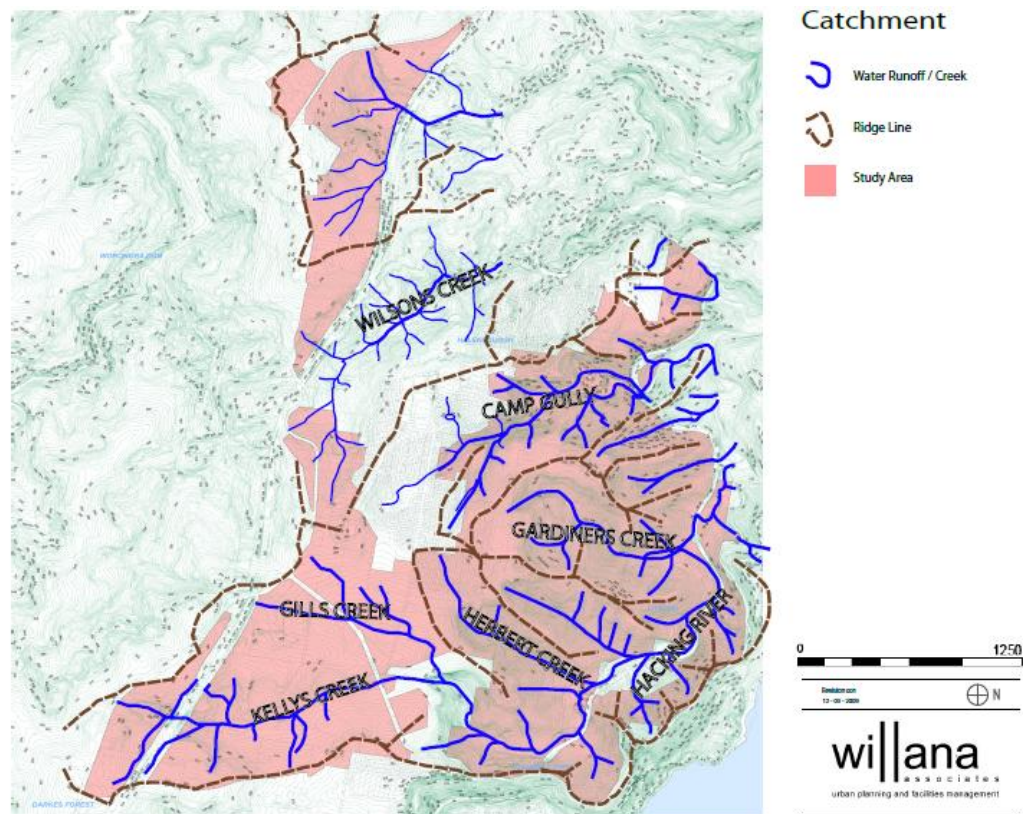


Figure 16: Constraints Map - Ridges, slopes and water catchments

4.2.3 Water quality/ quantity

The study area is divided into 4 main catchments which are tributaries of the Hacking River.

1. Wilsons Creek
2. Gills Creek
3. Gardiners Creek
4. Herbert Creek

Figure 16: Constraints Map - Ridges, slopes and water catchments indicates the extent of the water catchments that may impact on the development potential of land within the study area.

The Hacking River is protected by the Protection of the Environment Operations Act 1997. The River suffers from degradation from existing development within its catchment which includes the existing townships of Helensburgh and Otford. Local natural characteristics also aggravate the

situation with the area being dominated by erodible sandstone base, high intensity rainfall pattern and low base flow in water courses.³ The protection of the Hacking River and its catchment is the primary objective of the 7(d) zoning of the land. Consequently any rezoning of the 7(d) land must not result in any further degradation of the quality of water entering Hacking River. New development permissible as a result of any rezoning in the study area must satisfy stormwater management targets that support the environmental values of the catchment. The primary outcome of rezoning land in the study area will be to protect and enhance the long term viability of the riparian corridors in the area.

Riparian management is a central issue to water quality, bed and bank stability, biodiversity and environmental corridor functioning to ensure the long term health of the Illawarra's water catchments. A Riparian Corridor Management Study (March 2004) was prepared in response to the 1999 Commission of Inquiry into the *"Long Term Planning and Management of the Illawarra Escarpment"*. The study area includes all of the Wollongong LGA. Figure 17: Riparian Corridor Management Study indicates that the study area supports a number of riparian corridors that the need to be protected under any rezoning scheme for the area.

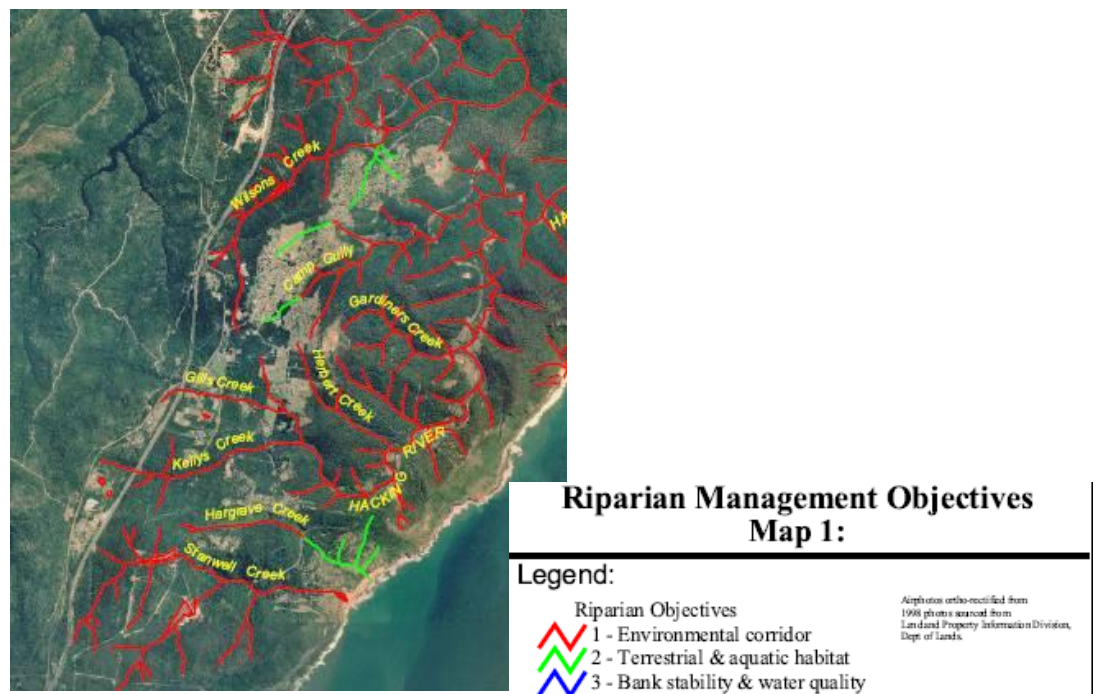


Figure 17: Riparian Corridor Management Study

³ Draft Helensburgh Plan 1990, Strategic Planning Division, Wollongong City Council, pg 85.

4.2.4 Biodiversity

The study area supports significant bushland areas, which sustains a diverse range of flora and fauna species. Figure 18: Vegetation EEC Species indicates that the study area supports endangered ecological communities (EEC) – vegetation.

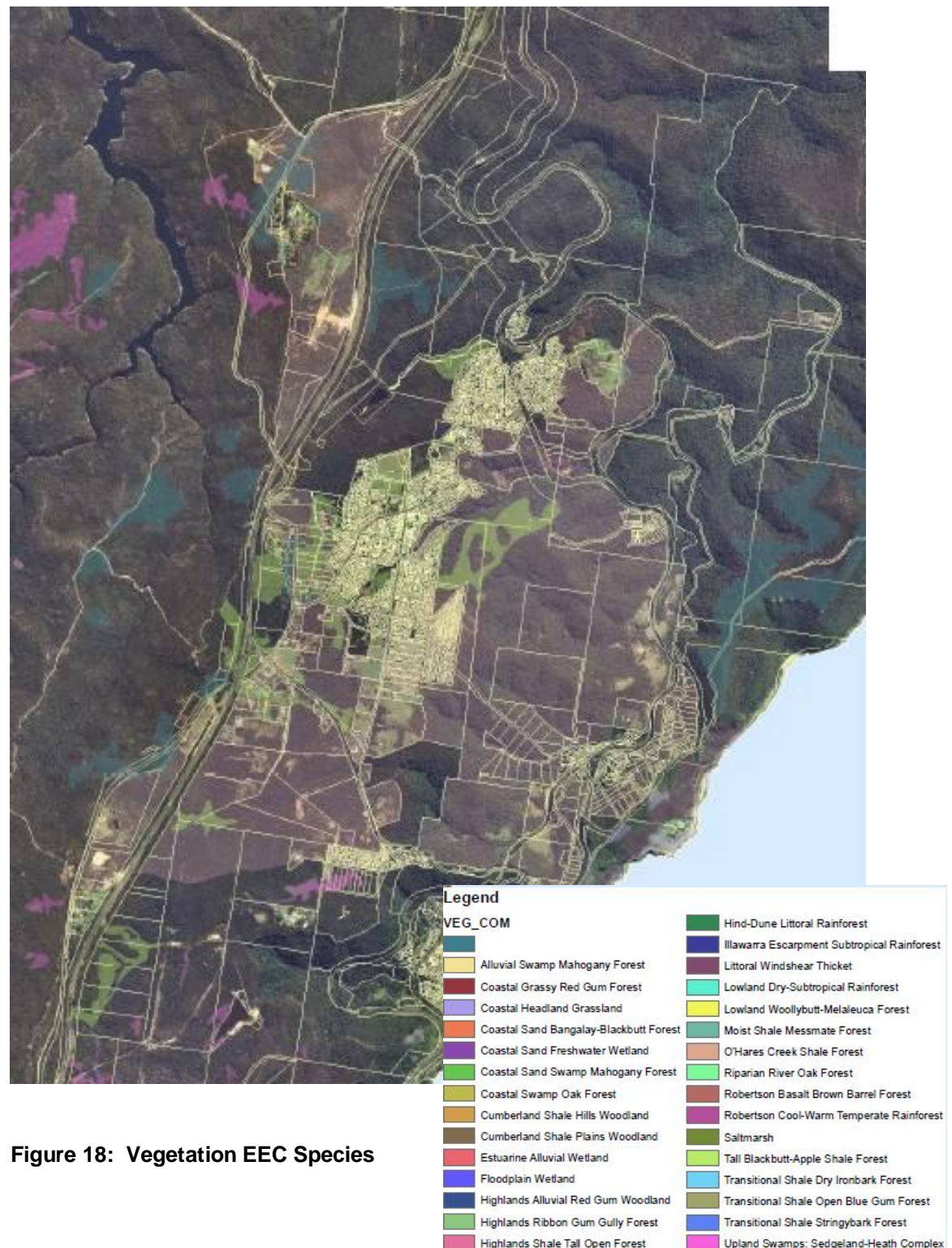


Figure 18: Vegetation EEC Species

The Garrawarra State Conservation Area and the Royal National Park are adjacent to the study area to the north and east. The Garrawarra State Conservation Area is managed as if it were a National Park because it protects rainforest in the upper catchment of the Hacking River, which provides an important link between the rainforests of the Royal National Park and those of the Illawarra Escarpment and Sydney water catchment areas to the south and south-west.

The *Illawarra Regional Strategy* identifies that the Illawarra Region, which includes the study area, is one of the most biologically diverse in the State. Map 2 of the *Illawarra Regional Strategy* identifies the biodiversity of the Region. Figure 19: Illawarra Regional Strategy Extract Map 2 - Biodiversity is an extract of the Biodiversity Map from the Illawarra Regional Strategy, clearly indicating that the study area functions as part of the habitat corridor between the Royal National Park and areas south of Helensburgh.

The Illawarra Regional Strategy states that Local Environmental Plans are to maximise protection of 'Significant Native Vegetation', 'Indicative DEC Regional Habitat Corridors' and 'Other Indicative Habitat Corridors'.

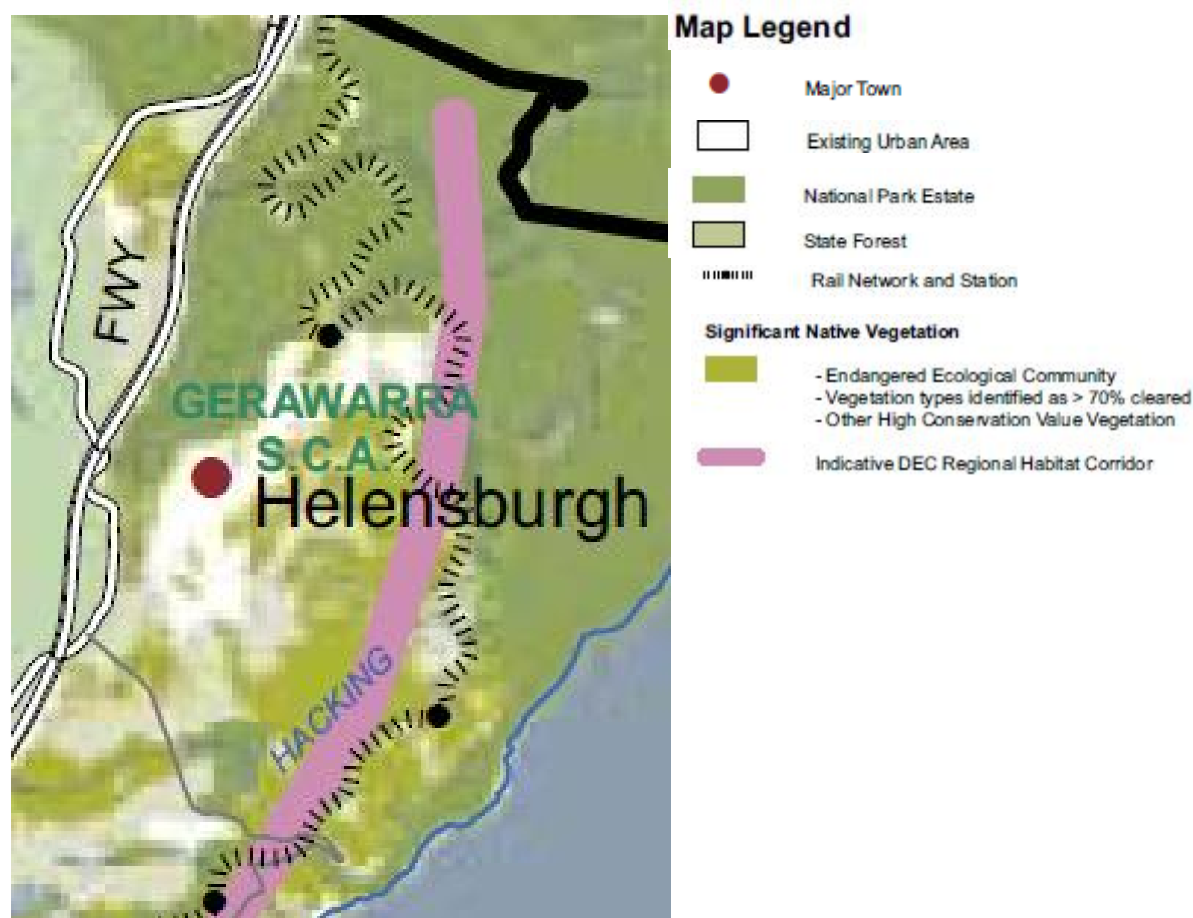


Figure 19: Illawarra Regional Strategy Extract Map 2 - Biodiversity

The *Illawarra Escarpment and Coastal Plain - bioregional assessment* covers the escarpment and foothills of the Wollongong Local Government Area and was completed by the NPWS in August 2002. The assessment included:

- § *habitat maps and species profiles for 51 threatened animals in the region*
- § *mapping of all threatened ecological communities in the Wollongong Local Government Area*
- § *details of wildlife corridors stretching from Macquarie Pass to Royal National Park, and from Lake Illawarra to the Illawarra Escarpment*
- § *classifications, descriptions and photographs of 54 different plant communities, from coastal grasslands to subtropical rainforests.*⁴

As illustrated in Figure 20, it is noted that the Land Pooling Land and Ensilé Land (Lady Carrington – South) are not affected by the conservation

⁴ www.environment.nsw.gov.au/surveys/Illawarra_EscarpmentBioregional_Assessment.htm

assessment corridor. The corridor does impact on all land surrounding Otford, however, given Otford is an existing built-up area, additional dwellings are potentially supportable subject to complying with Council's planning controls and building design criteria without adversely impacting on the corridor.

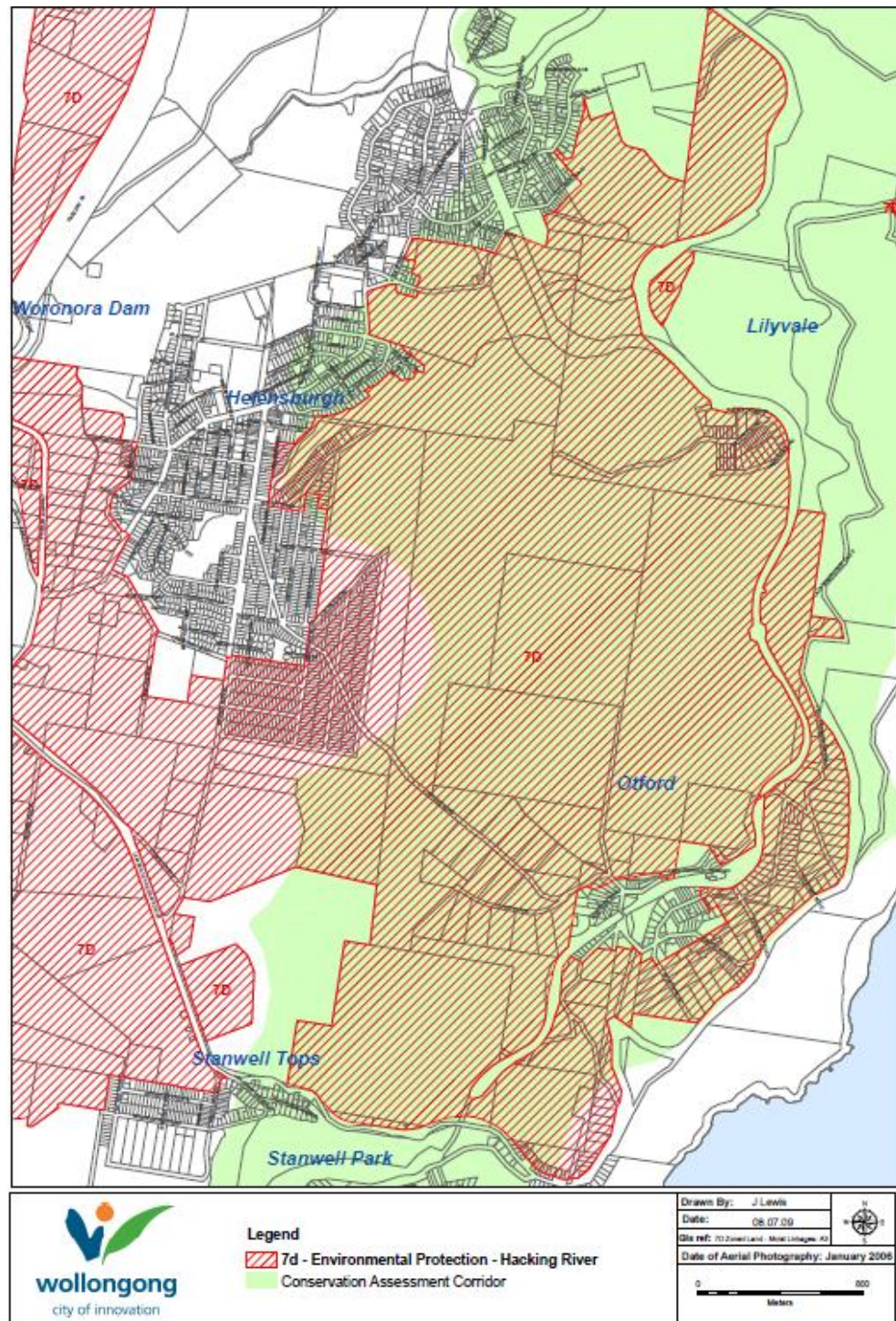


Figure 20: Illawarra Bioregional Assessment (2002) - Conservation Assessment Corridor

5 Major Infrastructure

5.1 Water

In relation to the existing water system, Sydney Water advised Council – *‘the Helensburgh Distribution System comprises of Helensburgh WS048 and WS348, Helensburgh Lower WS049, Hargrave Heights WS202 and Stanwell Park WS229 Supply Zones, and it is part of Woronora Water Delivery System.*

Helensburgh Surface Reservoirs are supplied from Woronora Dam through two dual purpose mains (300mm and 200mm mains) via Woronora Pumping Station (WP319).’

5.2 Sewerage

Three sewerage pumping stations serve the Helensburgh Township:

- § Trunk sewer main located on the eastern side of Helensburgh that varies in size from 315mm to 750mm diameter.
- § This trunk main also transfers sewerage from Stanwell Tops and the Northern Towns Priority Low Pressure Sewerage Area (Stanwell Park, Otford and Coalcliff) to the Cronulla Sewerage Treatment Plant (STP) via Helensburgh.
- § A 450mm diameter sewer rising main from Helensburgh travels through the Royal National Park to Waterfall and then to the Cronulla STP.

Sydney Water advised Council that the existing infrastructure may require amplification to meet any demand arising from increased growth and to serve development are as follows (subject to the finalisation and/or findings of the relevant Sydney Water System Plan):

- § The 450mm sewer rising main from Helensburgh to Waterfall, if there is a lack of adequate capacity.
- § A number of sewerage pumping stations (SPSs) may be required for the expansion of the existing service boundary of the Helensburgh Township.
- § Existing pumping stations may require upsizing to cater for the any proposed infill development.

5.3 Transport

The following roads are part of the local road network that services the study area. The existing characteristics of these roads are as follows:

- § **The F6 Freeway** is a major arterial road link that provides the main north/south regional connection between the Illawarra and Sydney. The F6 Freeway is a dual carriageway motorway with generally two to three trafficable lanes servicing both directions of traffic. The speed limit of the road varies between 80 km/h and 110 km/h.

-
- § **Old Princes Highway** is a loop road that starts and finishes on the F6 Freeway at the Helensburgh on-ramp and F6 Freeway Bulli Tops interchange. The road has generally two trafficable lanes with several overtaking opportunities. The road has line markings and reflectors, as well as a reasonably large shoulder area on both sides of the road. The speed limit of the road varies between 80 km/h and 100 km/h.
- § **Train.** All trains on the South Coast Line stop at Helensburgh station which is located to the north of the study area. The limited stops trains are timetabled to take 51 minutes to reach Central Station from Helensburgh. There is also a train station located in Otford Village. South Coast Line trains stopping at this station are less frequent compared to those stopping at Helensburgh.

6 Statutory Framework

6.1 Environmental Planning & Assessment Act 1979

The Environmental Planning & Assessment Act (EP & A Act) provides the framework for regulating and undertaking land use. It allows for the development and implementation of statutory and non-statutory legislation which consent authorities utilise to achieve development which reflects community expectations. In summary, the EP & A Act aims to provide legislation which achieves the efficient use of land, without compromising the natural, social and built environments. Of particular importance to rezoning procedures is section 117 which allows the Minister to require the consent authority to consider a range of matters prior to finalising any local environmental plan.

6.2 Other Relevant Acts

Threatened Species Act 1995 (TSA)

The TSA identifies threatened, endangered and extinct species, populations and ecological communities of both flora and fauna in NSW. The legislation enables the identification of critical habitat intended for conservation and the preparation of subsequent recovery plans. The TSA is of particular relevance to this study as it includes a number of species that can be found in Helensburgh.

National Parks and Wildlife Act 1974 (NPWA)

The NPWA represents the principle tool for the management of national parks in NSW. The Act also provides for the management of Aboriginal sites in the State. The Act does not allow for such sites to be impacted without authority from the National Parks and Wildlife Service. Previous studies have identified several aboriginal artefacts throughout Helensburgh. Further studies are required to determine their significance and the relevance of the NPWA.

Environment Protection & Biodiversity Conservation Act 1999 (EPBC Act)

The principle aims of the EPBC Act are to protect those aspects of the natural and cultural environments which are of national significance and to maintain natural biodiversity. Of relevance to land use planning are the lists provided within the EPBC Act that identify numerous endangered species of flora and fauna which cannot be impacted without the relevant environmental approvals.

Water Management Act 2000 (WMA)

The WMA aims to provide sustainable and integrated management of water sources within NSW. Some of the objectives of the Act include the application of ESD principles, encouraging the shared responsibility of government and

water users for the efficient use of water, and encouraging total water cycle management by individuals, companies and water utilities. The Act also aims to maintain the health of rivers, groundwater and associated wetlands, floodplains and estuaries. The WMA may be of relevance to the Helensburgh locality as it includes a mechanism requiring development proponents to consult with relevant state government departments should a proposal potentially impact on their utility service.

Heritage Act 1977 (Heritage Act)

The Heritage Act aims to conserve the environmental heritage of NSW. The Act mainly addresses items of state significance listed on the State Heritage Inventory. The procedures for undertaking works, if any, on such items are provided by the Heritage Act. Studies to date have not addressed in detail the issue of European heritage in the subject study area. Accordingly, further analysis may be required to determine the relevance of the Heritage Act.

Rural Fires Act 1997 (RFA)

The RFA aims to prevent, mitigate and suppress fires, coordinate bushfire fighting and protect people, property and the natural environment from fire. The RFA requires council to consider the threat of bushfire damage when considering development. Given large portions of land in Helensburgh are bushfire prone, the RFA is of particular relevance to the study process.

6.3 State Environmental Planning Policies

State Environmental Planning Policy No. 44 – Koala Habitat Protection (SEPP 44)

This Policy aims to encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas to ensure a permanent free-living population over their present range and reverse the current trend of koala population decline. According to clause 16 of the SEPP and clauses 57 and 61 of the EP & A Act, the Council may be directed to consider the provisions of the SEPP when considering whether to rezone land.

State Environmental Planning Policy No 55 – Remediation of Land (SEPP 55)

SEPP 55 provides a state wide, basic means of managing contaminated or potentially contaminated land for the purpose of reducing risk of harm to human health or any other aspect of the environment. In relation to rezoning procedures, clause 6 of the SEPP requires the consent authority to at the least, consider whether any of the land in question is contaminated or potentially contaminated. Should any of the land be so affected, the consent authority must determine whether the land is suitable in its contaminated state,

or will be suitable after remediation, for all the purposes allowed for by the rezoning. If the land is to be remediated, the consent authority must also implement measures to ensure the remediation process takes place accordingly prior to the land being used for its intended purposes.

State Environmental Planning Policy No. 71 – Coastal Protection (SEPP 71)

SEPP 71 aims to protect and manage the natural, cultural, recreational and economic attributes of the New South Wales Coastline. Improving public access to coastal foreshores in an environmentally sensitive manner is also a key aim of the policy. Clause 8 of the SEPP provides a range of matters which a consent authority must consider when preparing local environmental plans.

State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP)

The key aim of the Infrastructure SEPP is to facilitate efficient delivery of infrastructure throughout the state by improving efficiency in regulatory processes and providing a greater degree of certainty to proponents of critical infrastructure. The Infrastructure SEPP operates in conjunction with the Standard Instrument and supplements local environmental plans. It encapsulates a range of key developments and stipulates a range of zones within which such developments are permitted. In the event the zoning provisions of the Infrastructure SEPP are inconsistent with any local environmental plan, the SEPP prevails.

State Environmental Planning Policy (Major Projects) 2005 (Major Projects SEPP)

The Major Projects SEPP is directed towards proposed development which is likely to have an impact on the state or at least, beyond the boundaries of the local government area within which it is proposed. It provides public authorities which deliver state wide services an opportunity to review the development and the impact it is likely to have on such services. The SEPP includes various lists identifying the types of development affected by its provisions, and for which the Minister for the Department of Planning will be the consent authority.

Standard Instrument (Local Environmental Plans) Order 2006

On 31 March 2006, the NSW Government gazetted the Standard Instrument Order. It requires any new local environmental plan to be in the format, including structure and content, specified by the Standard Instrument Order. The intention of the order is to standardise local environmental plans to improve their understanding by stakeholders involved communities across a

range of local government areas. Council has prepared the draft Wollongong LEP 2009 in accordance with the Standard Instrument.

State Environmental Planning Policy No. 1 – Development Standards (SEPP 1)

SEPP provides flexibility in the planning system by allowing otherwise immovable statutory standards to be varied where a strict planning test can be satisfied. SEPP 1 is unlikely to be relevant during the study process rather, may be utilised during the physical construction stages of the locality.

State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 (BASIX SEPP)

The BASIX SEPP was introduced as a means of minimising the demands of new houses and their occupants on basic natural resources such as energy and water. Dwellings are required to demonstrate they achieve minimum energy and water saving targets through solar passive design and implementing a range of mechanical measures such as stormwater retention and re-use tanks. This SEPP is likely to be of greatest influence to the Helensburgh locality during construction activities.

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008

The policy provides exempt and complying development codes that have State-wide application, identifying, in the General Exempt Development Code, types of development that are of minimal environmental impact that may be carried out without the need for development consent; and in the General Housing Code, types of complying development that may be carried out in accordance with a complying development certificate as defined in the *Environmental Planning and Assessment Act 1979*. The General Housing Code specifies how residential developments, including:

- § Detached single and two storey dwelling houses
- § Alterations and additions
- § Other ancillary development, such as swimming pools

Can proceed in certain zones on lots 450 square metres and greater as complying development.

6.4 Regional Plans and Strategies

Illawarra Regional Strategy (IRS)

The IRS was released by the Department of Planning in January 2007 and provides guidance for all forms of urban development in the Illawarra Region. In doing so, the IRS also aims to manage urban development to protect the region's significant characteristics and improve the lifestyles of its residents.

The region encompasses the local government areas of Wollongong, Shellharbour and Kiama. Key features of the IRS include an increase by 47,600 to the region's existing population of 281,000 over 25 years and the planned West Dapto residential release area providing for 19,350 new dwellings. The strategy suggests industry will be boosted with the relocation of the vehicle freight terminal from Sydney to Port Kembla and the upgrade of the Main Southern Freight Rail Line, with potential for increases in administrative employment in the Wollongong core commercial area. The IRS also highlights the significant, yet highly sensitive natural environmental features of the locality, and measures to protect them.

The IRS encompasses a large area and will be translated accordingly by the relevant local governments to suit their impending environmental planning instruments. The IRS is unlikely to influence the Helensburgh locality given its limited capacity for urban development and highly sensitive surrounding natural environment.

Illawarra Regional Environmental Plan No. 1 (Illawarra REP) (deemed SEPP as of 1 July 2009)

The Illawarra REP represents findings of previous studies into the attributes of the Illawarra Region and particularly, its future urban capacity. On the basis of previous studies, it provides a range of objectives and controls which a wide range of land uses, including agriculture, residential and conservation, must satisfy. Such objectives are required to be considered either during preparation of a local environmental plan or a development application. The REP will be of relevance to the subject study as it intends to investigate the potential for urban development in an area which includes environmental sensitivities.

Drinking Water Catchment Regional Environmental Plan No. 1 (Drinking Water REP) (deemed SEPP as of 1 July 2009)

The Drinking Water REP aims to create healthy drinking water catchments by protecting existing pristine examples and improving those that are damaged. If land the subject of a new local environmental plan is located within a hydrological catchment, the consent authority must take into consideration the

results of a strategic land and water capability assessment undertaken by the Sydney Catchment Authority for the catchment. In relation to development applications, the Drinking Water REP provides criteria which development must satisfy prior to consent being granted, as well as stipulating a range of developments which require concurrence from the Chief Executive of the Sydney Water Catchment Authority.

Although the 7(d) lands drain to the Hacking River, and not the Sydney Catchment Area, consultation should still occur with the Sydney Catchment Authority.

6.5 Local Environmental Plans

Wollongong Local Environmental Plan 1990 (WLEP 1990)

The WLEP 1990 is the principle instrument influencing development within the Wollongong local government area. It determines which types of development and land uses can take place and in which locations, as well as influencing the design of some developments. Helensburgh contains a combination of residential, commercial, environmental and industrial zoned land according to the WLEP 1990. Of significance to this study is the large portions of land zoned 7(d) Hacking River Environmental Protection zone particularly given sections of such lands currently contain urban land uses or appear capable of supporting further urban development.

The intention of the 7(d) zone is to maintain and enhance the existing natural environment as evidence in the WLEP's objectives for the zone, as referenced below:

- a) *To identify and protect the conservation value of the relatively pristine tributaries of the Hacking River Catchment and thereby safeguard the natural qualities of the area to complement the Royal National Park, and*
- b) *To allow some diversity of activities on degraded land that will not prejudice achievement of the objective referred to in paragraph (a) or detrimentally affect the environmental quality or character of the locality or the amenity of any existing or proposed development in the locality.*

Other measures in the WLEP 1990 aimed at minimising development in the 7(d) zone and minimising its impact on the natural environment include:

- § Clause 13 which generally aims to achieve large lots when subdivision is proposed.
- § Clause 13B requires a minimum lot size subdivision standard of 550m² for land zoned 2(a) Low Density Residential.

-
- § Clause 14 which generally allows single dwellings on lots of either 10, 20 or 40 hectares, depending on the date of subdivision.
 - § Clause 14B prohibits dual occupancy, town houses and residential flat buildings in land zoned 2(a) Low density Residential. The restriction was introduced as sewerage systems were not available.
 - § Clauses 17 and 18 which provide a number of objectives oriented towards environmental conservations which development must be consistent with.

6.6 Draft Local Environmental Plans

Draft Wollongong Local Environmental Plan 2009 (Draft WLEP 2009)

The draft instrument has been prepared in accordance with the *Standard Instrument Order* issued by the NSW Department of Planning in 2006. In its current format, the Draft WLEP 2009 represents a straight forward transition from the existing LEP to the new format provided by the Standard Instrument Order. In relation to the Helensburgh study area, the Draft WLEP 2009 would zone the existing 7(d) Hacking River Environment Protection zone to zone E1 National Parks and Nature Reserves and E2 Environmental Conservation which effectively provide the same outcome as the existing 7(d) zone in terms of land uses. Given the existence of numerous typically urban land uses in such zones, as indicated in chapter 1, this provides obvious inconsistencies in terms of permissible land uses which would undermine the efficiency of the 'new' instrument.

The draft Wollongong LEP 2009 proposes to remove the prohibition on dual occupancies and town houses in the R2 Low Density Residential zone, as sewerage services are now available.

6.7 Development Control Plans

A range of development control plans apply to the Helensburgh locality, the majority of which are indirectly relevant to this study as they are most influential during the physical construction stage.

Development Control Plan No.49 – Residential Development contains controls for the subdivision of land and the design and erection of dwelling houses and other forms of residential development. Section 16.1 of the DCP includes specific controls for residential development at Otford.

6.8 Draft Development Control Plans

No draft development control plans are currently of relevance to this study.

6.9 Helensburgh Commission of Inquiry

The Commission was undertaken in 1994 by the Commissioners of Inquiry for Environment and Planning at the request of the then Minister for Planning and Housing, Robert Webster. The Commission was requested to determine the appropriate future land uses for the locality after a number of independent studies and conflicting opinions on the localities natural environmental features and its urban capabilities. The overriding position of the subsequent report was the retention of the existing conservation oriented zonings at the time.

The Commissioner also recommended that should urban development be pursued, further detailed studies of the environmental sensitivities of the area were essential. This was concluded on the basis that studies available at the time had mainly identified potential issues resulting from urban development but had not comprehensively determined their potential impact.

The Commission concluded that the majority of the area be zoned for conservation due to the following key environmental features:

- § Existence of endangered flora and fauna.
- § Steep slopes which are associated with advanced erosion and sedimentation of the Port Hacking River.
- § Sensitive water quality of the Port Hacking River, particularly given existing stormwater management provisions were inadequate and those proposed were new, relatively untested methods.
- § A high likelihood of bushfire activity.

However, some areas limited in size were concluded as capable of urban development, being those already cleared and generally flat. They included 73ha in Gills Creek and 13ha in the Lady Carrington Estate. Urban development was also identified as an opportunity to minimise current environmental impacts from existing scattered urban land uses in the locality. This could be achieved by upgrading existing infrastructure such as storm water or sewer systems, or ceasing harmful land uses.

6.10 Other studies

Draft Helensburgh Town Plan (1990)

The Draft Helensburgh Town Plan (1990) was prepared by Wollongong City Council to present a detailed and comprehensive long-term plan for the future development, management and conservation of land in the vicinity of Helensburgh, Stanwell Tops, Stanwell Park and land further south to Maddens Plains. The Helensburgh Town Plan provides a summary conclusion of all current findings (as at 1990) into a Local Environmental Study and Strategic

Plan and was prepared to form the basis of a Draft Local Environmental Plan and a Draft Development Control Plan.

The Draft Helensburgh Town Plan concludes that some urban expansion in the Helensburgh area is feasible and justified, subject to stringent environmental controls, particularly relating to water quality management. The study recommends:

- § The release of around 110 hectares of land for residential use and 40 hectares for light industrial/ hi-tech commercial development within Gills Creek Catchment.
- § The rezoning of the small rural lots east of Walker Street to be deferred until such time as it is demonstrated that coordinated financing and development of the area is possible.
- § Major areas of proposed development in Camp Creek Catchment only to be agreed to after major geotechnical investigations for suitable stormwater pollution control measures. Such measures to be endorsed by the National Parks and Wildlife Service and the State Pollution Control Commission. Quality tree cover and visual impact must be addressed in planning development in Camp Creek.

An extract of the proposed zonings following the recommendations of the draft Helensburgh Plan, from the public consultation flyer for the Plan is provided at Figure 21.

It was concluded that land limitations in southern Sydney and in Wollongong strongly support residential land release around Helensburgh subject to acceptable environmental controls.

The Helensburgh Strategic Plan is presented in the final section of the Helensburgh Town Plan. The Strategic Plan incorporates objectives relating to: reducing impacts of development to safeguard the environmental quality of the surrounding area; maximising landowner choice and opportunities; safety and equitable access to facilities; maximisation of amenity; affordability; efficient use of resources and flexibility and practicality with respect of housing market variations and changes in land ownership.

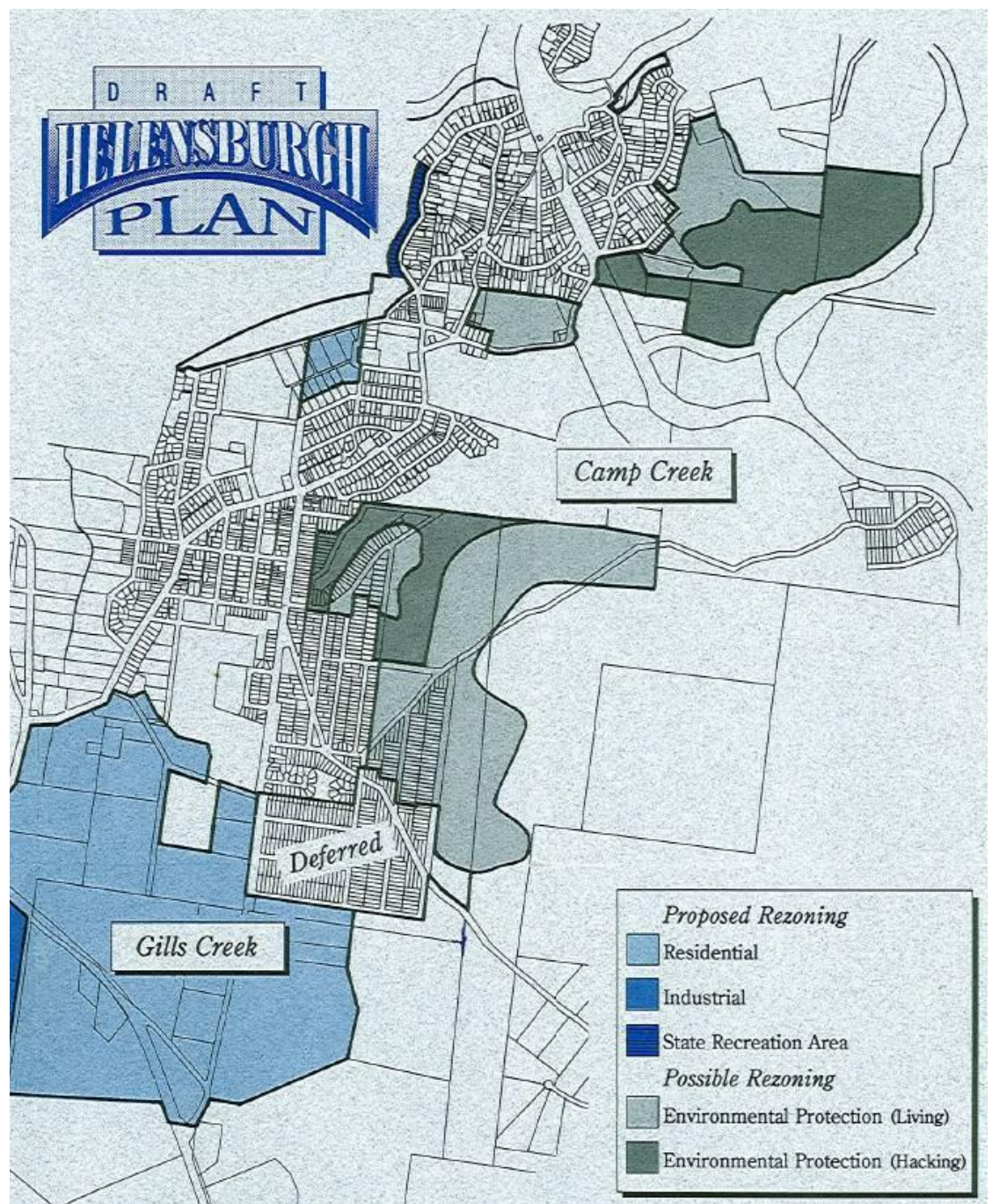


Figure 21: Draft Helensburgh Plan Exhibition Material

Wollongong Retail Centre Study (2004)

Wollongong City Council commissioned this retail study to provide a strategy for the future planning and management of retail development in the LGA. The Study describes Helensburgh as a “large Neighbourhood Centre, serving the daily and weekly shopping needs of a small township distinguished by its containment within clear natural boundaries”.

It is concluded that the future role of the Helensburgh Neighbourhood Centre should be to maintain its orientation towards convenience shopping and that “the more substantial retail needs of the local community will be met either in Wollongong City Centre or in Sydney”.

To maintain and support the growth of the centre, it is recommended that retail development should be contained and consolidated in its current central core and retail development should be discouraged beyond this existing retail core.

Wollongong Local Government Area Employment Lands Strategy (2006)

Council commissioned the Employment Lands Strategy to inform future planning strategy documents to ensure there are appropriate land and facilities to accommodate the projected labour force within the LGA and Illawarra Region.

An analysis of Helensburgh’s Industrial Area identified that the industrial precinct (located to the east of the Princes Highway, along Cemetery Road and Parkes Street) is predominantly undeveloped. The study identified that there is a demand for additional employment land at Helensburgh and that “the Helensburgh industrial precinct should remain to accommodate and consolidate a range of light industrial activities that provide important services to the surrounding residential area”.

Helensburgh Urban Capacity Study – SGS Economic & Planning (2006)

This study assessed the current demographic conditions of Helensburgh and the existing stock of urban development to estimate its future demand and supply expectations. The following features were identified:

- § Helensburgh is attractive to current residents of the Sutherland Shire intending to purchase or occupy their first home independently because house prices are less, yet its location remains in close proximity to the shire.
- § Helensburgh currently has a young age profile with the majority of residents between 0 – 64 years of age.
- § The population comprises mainly of couples with children (60% of households have 3 or more occupants).

-
- § There are a high proportion of 'moderate' weekly income earners (between \$1000 and \$1500).
 - § The majority of existing housing stock comprises of detached, single dwellings.

It was identified that the population in Helensburgh is expected to increase by 3600 people, requiring 1570 new dwellings. A review of existing residentially zoned land indicates up to 170 additional dwellings can be accommodated on existing residentially zoned vacant lots or under developed lots zoned for medium density purposes.

The study suggests that, given the demographics of the locality and existing urban form, the majority of the shortfall in lots should be provided in detached dwellings on conventionally sized lots (450m² to 550m²). However, the report's concluding statements indicate that any such development should be based on the additional studies recommended in the Commission of Inquiry report (1994).

Review of Commercial Uses on 7(D) Land at Helensburgh – Report of Acting Manager City Strategy, Wollongong City Council 14/09/07 (Environment & Planning Committee)

This report examined existing commercial activities within and around Helensburgh on land currently zoned 7(d) - Environmental Protection according to the current local environmental plan. The accompanying field work identified seventeen (17) properties in the subject area which are currently occupied by commercial uses. The report also noted there had been enquiries from an additional six (6) property owners to commence other commercial uses.

The release of the 'Standard Instrument' LEP suggests that land currently zoned for conservation, should simply be re-zoned to the equivalent zone in any new LEP. However, given the high number of commercial uses in the Helensburgh region, this would create a number of conflicts with the new LEP's zoning objectives and fundamental purpose. Those currently operating commercial land uses include:

- § Mushroom farming
- § Concrete batching
- § Koala Gardens
- § RTA Depot
- § Service station with workshop
- § Quarry
- § Horse riding school with stables and yards
- § Pre school

-
- § Nursery
 - § Bus Depot
 - § Landscaping supplies
 - § Gold driving range
 - § Poultry farm
 - § Health retreat

In referencing the *Wollongong Local Government Area Employment Lands Strategy (2006)*, this report also notes that there exists approximately 1.5 ha of undeveloped land within Helensburgh zoned either 3(a) General Business or 4(a) Light Industrial. Also referenced from the Employment Lands Strategy, exists an opinion that there is a shortage of 'good size' lots for light industrial purposes within the subject area.

Also referenced in this report is the *Wollongong Retail Centre Study (2004)*. It notes that retail areas within Helensburgh have experienced a loss of trade due to the attraction to retailing activities within the City of Sydney. It suggests an increase in residential densities around existing retail areas to improve retail prospects.

Riparian Corridor Management Study (2004)

The Riparian Catchment Management Study (RCMS) was prepared in response to the 1999 Commission of Inquiry into the *long term planning and management of the Illawarra Escarpment*. The study developed three categories of riparian environmental objectives for the streams in the escarpment relative to their significance. The study also provides a minimum width for corridors related to each of the categories listed to achieve their intentions. The categories are as follows:

- § Category 1 Environmental Corridor – provides biodiversity linkages ideally between one key destination to another along the coastline and the escarpment or between large nodes of vegetation generally.
- § Category 2 Terrestrial and Aquatic Habitat – provides basic habitat and preserves the natural features of watercourses (not necessarily linking key destinations).
- § Category 3 Bank Stability and Water Quality – has limited (if any) habitat value but contributes to the overall health of the catchment.

The map produced by the study also encompasses the Hacking River which adjoins the Helensburgh study area. The map identifies that nearly all the creeks and associated tributaries of the Hacking River are classed as Environmental Corridors, the highest category. Accordingly, the RCMS requires consideration as part of this study.

7 Biobanking & Offset Scheme

7.1 Recommendations for BioBanking & Offset Policy

The NSW Government has introduced the Biodiversity Banking and Offsets Scheme (BioBanking) to help address the loss of biodiversity values, including threatened species across the State. The BioBanking Scheme aims to facilitate by a market-based approach the process of 'offsetting' impacts on biodiversity from developable areas. BioBanking seeks to protect areas of high biodiversity values that are targeted for restoration investment. In areas of medium biodiversity values, environmental offsets may be used in order to 'maintain or improve' biodiversity values. Permitted vegetation removal will require the losses to be offset through vegetation protection or revegetation either at the same site as where the vegetation was removed or off-site.

BioBanking is being developed in recognition of the flexibility that is required to ensure that the competing objectives of development and conservation can be satisfied. The system relies on biodiversity credits generated by supportive landowners and a credit market.

A framework for the NSW BioBanking Scheme has been established under the Threatened Species Conservation Amendment (Biodiversity Banking) Act 2006.

The aim of the BioBanking Scheme is to protect and improve the biodiversity of a site. If a site supports existing high quality bushland, and is zoned for environmental protection, it is unlikely that that site will be of any 'value' under the BioBanking Scheme. This is because the BioBanking process cannot add-value to the already high quality bushland on the site. There would be no net-gain to the community.

It is recommended that Council develops a Bushland and Fauna Habitat Preservation and Augmentation Policy to protect and enhance biodiversity generally in the study area. This policy should be implemented simultaneously to the approval of rezoning 7(d) land in the vicinity of Helensburgh and Otford.

Liverpool Council has developed such a policy which could guide Council in their development of a similar set of controls. Liverpool Council's policy in relation to the preservation of bushland and fauna habitat is contained within the Liverpool Development Control Plan 2008, Part 1.1, Chapter 4 ([Appendix D](#)). However Liverpool's Policy only relates to land with environmental, waterways or drainage zonings. It is recommended that such a policy should apply to all land in the vicinity of Helensburgh and Otford, in order to protect the quality of the bushland that is integral to the character of the area.

8 Analysis of landholdings

8.1 Planning Principles

The planning principles guiding the outcomes of the desktop study for the 7(d) land in the vicinity of Helensburgh and Otford are:

- § To preserve and enhance the conservation value of all significant vegetated areas.
- § To protect and facilitate the enhancement of the water quality of the tributaries of the Hacking River Catchment.
- § To protect threatened flora and fauna species.
- § To support existing urban and rural uses where these uses do not have an adverse impact on the high ecological, scientific, cultural or aesthetic values of the area.
- § To facilitate residential land uses where there are sufficient ecological trade-offs to allow development to move forward.
- § To minimise environmental impact of existing and future development.
- § To assign each lot of land within the study area to its highest and best value use taking into account the significant environmental features of the study area and any constraints attached to each parcel of land.

8.2 Planning Criteria

The planning criteria used in the desktop study to determine the highest and best use of the land include:

- § Current land use.
- § State of existing degradation of vegetated land.
- § Slope of land.
- § Location of water catchment.
- § Bushfire risk.
- § Access to existing infrastructure.
- § Opportunity for growth of Helensburgh and Otford urban areas.
- § Land ownership and fragmentation of land.

8.3 Zoning recommendations

The analysis of the Helensburgh area has resulted in the following zones being recommended for translation from the 7(d) Environmental Protection – Hacking River zone in accordance with the draft Wollongong LEP 2009. An extract of the draft Wollongong Local Environmental Plan 2009 Land Use Table outlining the objectives of the proposed zones for Helensburgh and listing permitted development is provided at [Appendix E](#).

-
- § Zone RU1 Primary Production.
 - § Zone RU2 Rural Landscape.
 - § Zone R2 Low Density Residential.
 - § Zone B6 Enterprise Corridor.
 - § Zone SP2 Infrastructure.
 - § Zone SP3 Tourist.
 - § Zone RE2 Private Recreation.
 - § Zone E2 Environmental Conservation.
 - § Zone E3 Environmental Management.
 - § Zone E4 Environmental Living.

Where the study area land is proposed to be rezoned to R2, E3 or E4, it is recommended that the draft Wollongong LEP 2009 be adjusted to allow 1 dwelling/ lot only where there is an existing allotment on the appointed day of adoption of the LEP. It is also recommended that notwithstanding clause 4 Prohibited Development in the E2 Environmental Conservation zone Land Use Table, a special savings provision is included protecting dwelling rights where there are existing dwellings.

Based on the planning principles and planning criteria outlined above a zoning scheme centred on the zones of the draft Wollongong LEP 2009 has been developed and is illustrated in Figures 22 – 27 below (A3 maps of each precinct is provided at [Appendix F](#)). The justification for the zonings is provided below. The justification is divided into 6 precincts which are numbered and identified on the recommended zoning plans.

8.3.1 Map 1 - Garrawarra Hospital and Wilsons Creek Precinct

- § The land surrounding the Garrawarra Hospital E2 Environmental Conservation zone. The objectives of the zone support both the conservation and water quality values of the land. No additional development is proposed.
- § The Wilsons Creek Precinct is generally well suited to E3 – Environmental Management zoning with a 20m wide E2 – Environmental Conservation zone protecting Wilsons Creek to the rear of the properties in the subject area. The objectives of these zones support rural-residential land uses and the conservation and water quality values of the land. One dwelling per lot is proposed.
- § The southern portion of the Wilsons Creek precinct is characterised by uses including light industrial and commercial uses and also lots

characterised by undisturbed bushland. Given the general disturbed nature of the land it is recommended that the lots are zoned B6 Enterprise Corridor. The precinct is on the corner of Princes Highway and Parkes Street and is a gateway to Helensburgh urban township. The objectives of the zone support the existing uses light industrial and commercial uses and provide an opportunity to develop a 'gateway' to Helensburgh Township.

- § The 8 x small lots (600m²) fronting onto Rajani Rd are suited to E4 – Environmental Living as a transition between the R2 Low Density Residential zone to the east and E3 Environmental Management zone to the west of these properties.

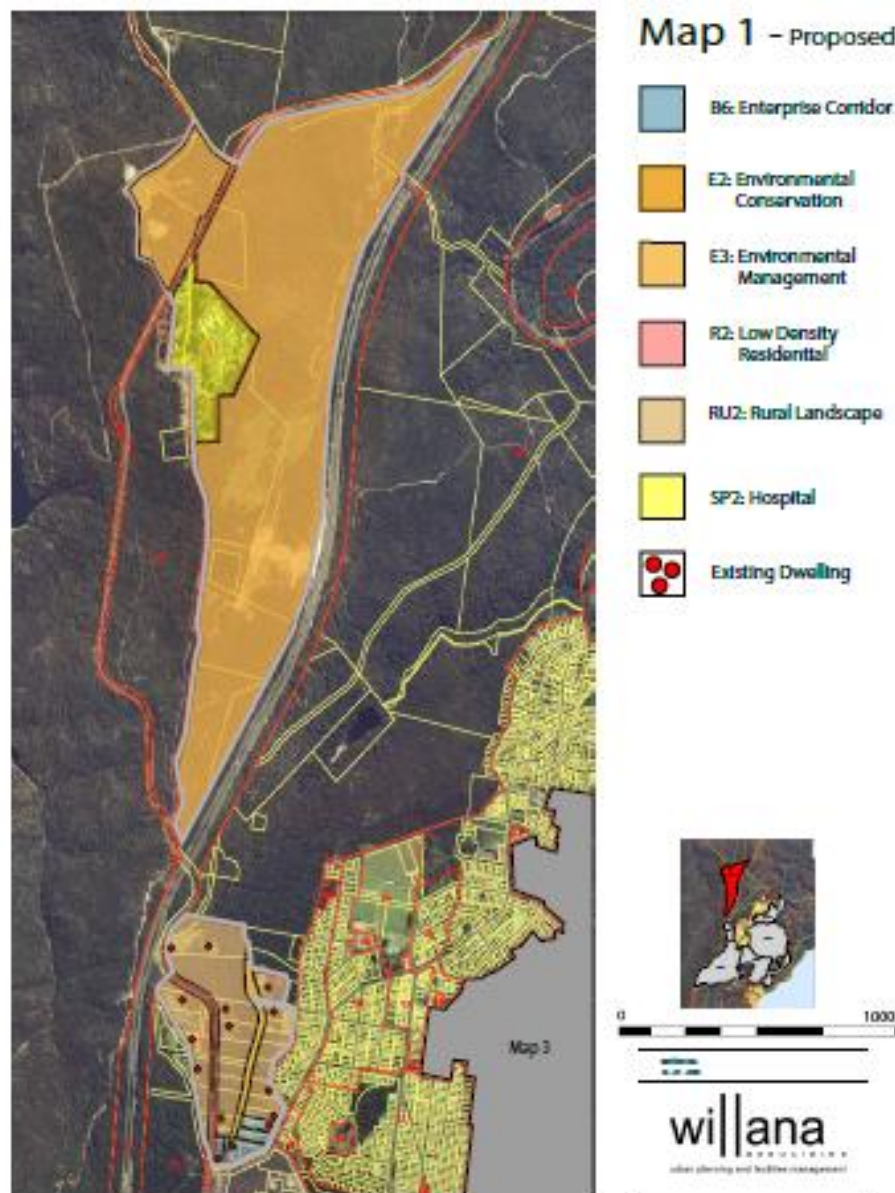


Figure 22: Proposed zoning - Garrawarra Hospital and Wilsons Creek Precinct

8.3.2 Map 2 - Lady Carrington Estate North and Colliery Precinct

- § Given the generally undisturbed nature of Lady Carrington Estate North, the slope of the land, its isolation to the Helensburgh town centre and lack of infrastructure, it is recommended that the land is zoned E2 - Environmental Conservation. The objectives of the zone support both the conservation and water quality values of the land.
- § The Colliery Precinct is characterised by the major land use in the area, i.e. the Metropolitan Colliery. This land is suitable for RU1 Primary Production zoning. The existing land use supports the objectives of the zone.
- § Land surrounding the colliery precinct is generally undisturbed bushland and lends itself to E2 Environmental Conservation. This zoning will serve as a buffer between the colliery and urban land uses to the north and west.
- § 3 lots off Old Farm Rd north of colliery with existing houses are recommended for E3 – Environmental Management (one dwelling/ lot). Any redevelopment of these lots would need to satisfy bushfire protection legislation.

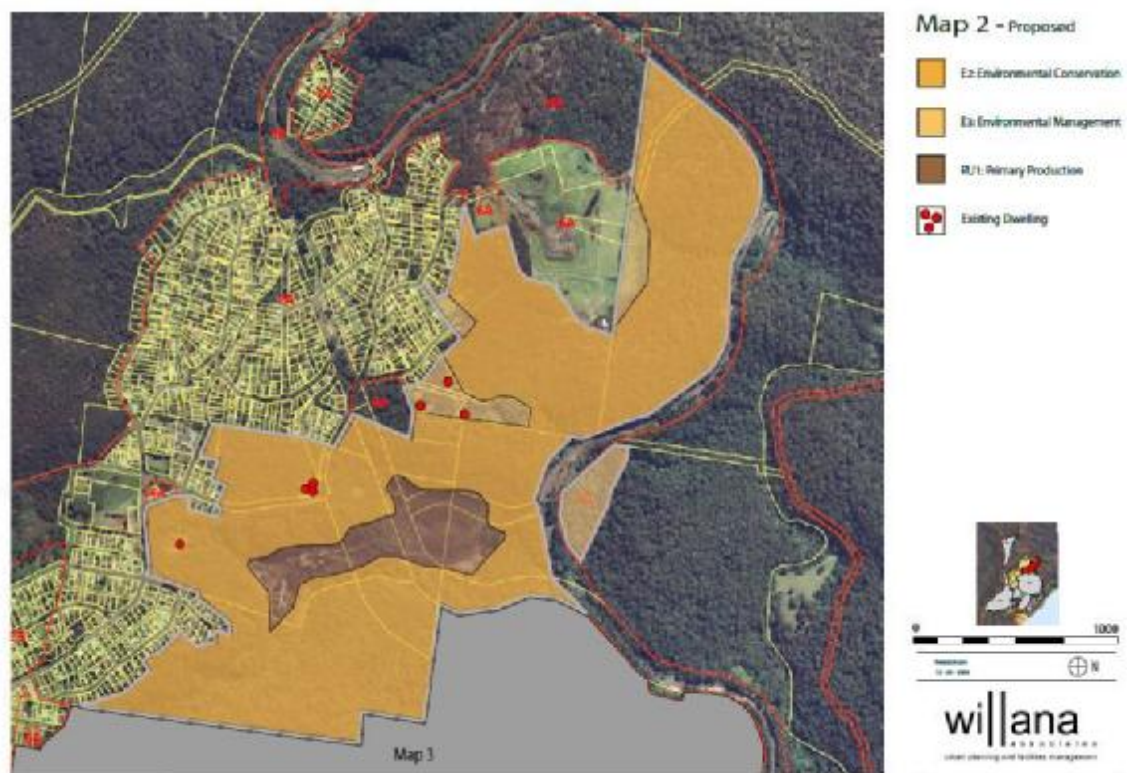


Figure 23: Proposed zoning - Lady Carrington Estate North and Colliery Precinct.

8.3.3 Map 3 - Lady Carrington Estate South Precinct

This precinct contains a significant amount of land with relatively undisturbed vegetation, steep terrain and supports numerous catchments. It is recommended that:

- § The area of land adjacent to the railway and containing the existing horse yards be zoned E3 Environmental Management.
- § The remainder of the site to be zoned E2 Environmental Conservation.
- § Land adjacent to the land pooling is generally cleared, under one ownership, generally flat, not inhibited by creeks and is a logical extension to the Helensburgh urban area. Subject to further site investigations through the Local Environmental Study (LES) process this area is recommended for residential zoning (R2 Low Density Residential) and RE2 Private Recreation (to serve as an asset protection zone).
- § Land located between Whitty Rd, Undola Rd and Walker St (also Ensile Land). Generally undisturbed bushland, steeply sloping, constrained by creek, and is generally not suitable for development. Recommended zoning E2 – Environmental Conservation. Portions of this area may be suitable for inclusion in the Royal National Park, subject to DECC and the land owner's agreement.

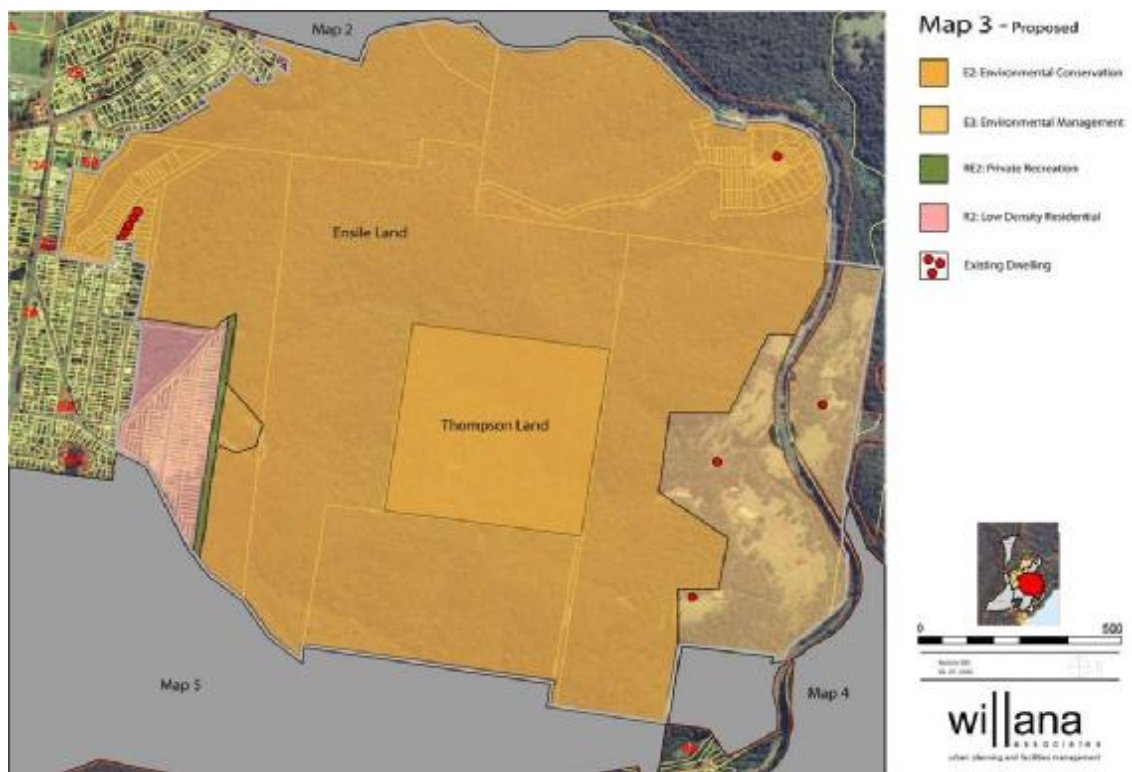


Figure 24: Proposed zoning - Lady Carrington Estate South Precinct.

8.3.4 Map 4 - Otford Precinct

- § The central precinct, adjacent to Otford station and village, (including Domville Rd and the unformed Station Road) contains existing dwellings and is suited to E4 Environmental Living subject to one dwelling/ lot.
- § Land on Lady Wakehurst Drive and west to the station is very steep terrain, undisturbed bush, is suited to E2 Environmental Conservation.
- § Southern lands – where cleared E3 Environmental Management (E3 to support rural and leisure uses such as horse related activities and skirmish).
- § Small lot subdivisions (some existing houses) on Lawrence Hargrave Dr and Otford Rd. Steep topography and uncleared bushland. E2 – Environmental Conservation.

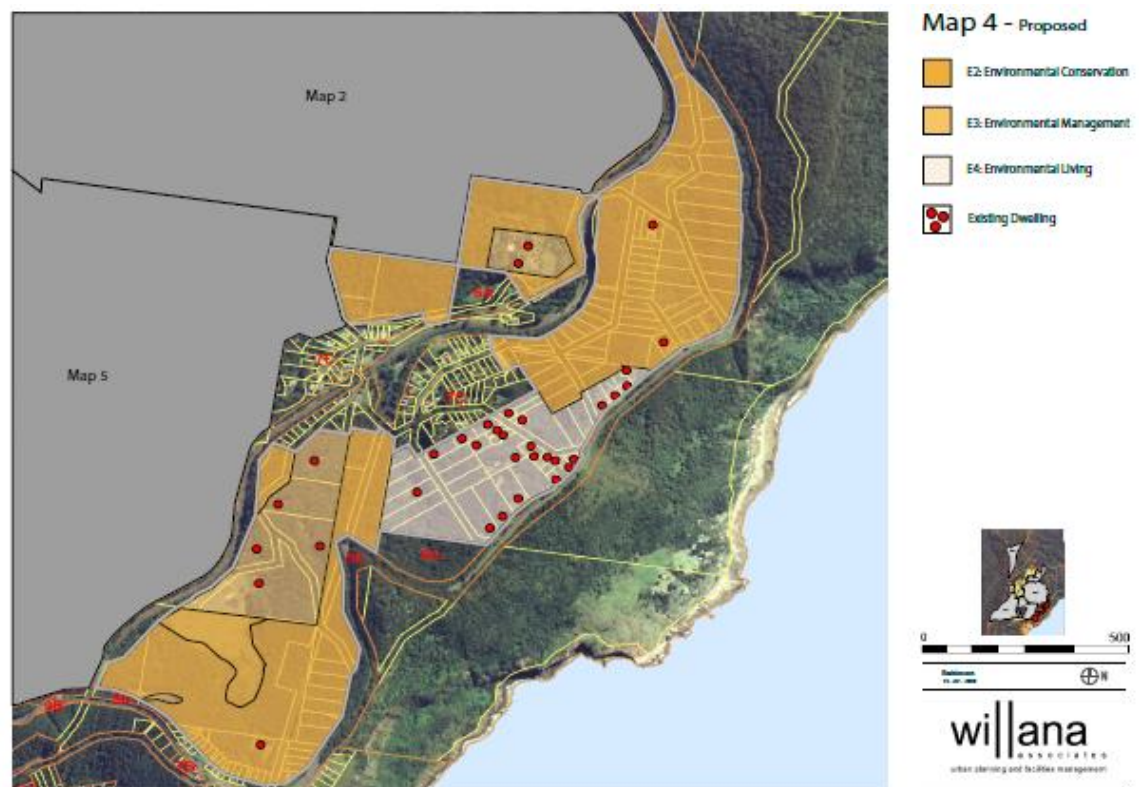


Figure 25: Proposed zoning – Otford Precinct.

8.3.5 Map 5 - Kellys Fall Precinct, Land Pooling and Lloyd Place

- § Lloyd Place & Otford Road– Due to the topography of the land, and the riparian corridor associated with Herbet Creek, and the corridor associated with the creek to the rear of the properties on the northern side of Otford Rd, this land is most suited to an E2 Environmental Conservation zone. The land is characterised by largely undisturbed bushland and steep terrain. The objectives of the zone support both the

conservation and water quality objectives of the land. The erection of dwellings on this land is not supported.

- § South of Lloyd Place – Where the land is cleared, it is suited to an E3 Environmental Management zone. The land consists of cleared rural lands, which are currently utilised for uses including horse related activities. The objectives of the zone support conservation, water quality, rural, and leisure uses of the land. Uncleared land is best suited to E2 Environmental Management.
- § South of land pooling precinct is a range of rural industrial uses. The land is cleared, serviced and generally provide a fire protection zone to the land pooling area itself. It is recommended that cleared land in this area lends itself to RU2 Rural Landscape Zone.
- § Uncleared land directly adjacent and south and east of the land pooling RE2 Private Recreation to provide an asset protection zone should the land pooling area be developed.
- § Land Pooling area - the land presents as a logical extension to the Helensburgh urban area. It is protected from fire risk to the north by the Helensburgh urban area and to the west and south by cleared rural industrial uses. However, much of the land is uncleared, and due to the fragmentation of land ownership it is difficult to determine how the land will be serviced by basic infrastructure. The land is recommended for a residential zoning (R2 Low Density Residential) subject to addressing issues of identification and protection of threatened species, offsets, bushfire protection for south western parcels of land, and how the land will be serviced by infrastructure. Until these issues are resolved, through an LES process, the land cannot be rezoned. It is likely that the land owners will need to resolve the ownership fragmentation in the first instance to move forward on a rezoning proposal.



Figure 26: Proposed zoning - Kellys Fall, Land Pooling and Lloyd Place Precinct.

8.3.6 Map 6 - Gills Creek Precinct, West of F6 Precinct and Princes Highway Precinct

- § Cleared land in this precinct is generally suited to RU2 Rural landscape zoning while undisturbed land is recommended for E2 Environmental Conservation zone or E3 Environmental Management.
- § Some uses within this zone such as the concrete batching plant are not consistent with the proposed zoning, however the area does not lend itself to an industrial zone. The objective is to maintain the rural and environmental landscape character of the area. Such uses will benefit from existing uses rights under the proposed zoning.
- § The Princes Highway precinct most contains land that has been relatively disturbed by previous and current land use activities. The existing land uses should dictate the rezoning of land. The proposed zoning for the precinct include SP3 Tourist, B6 Business Enterprise, SP2 Infrastructure, RU2 Rural Landscape and E2 Environmental Conservation zone.

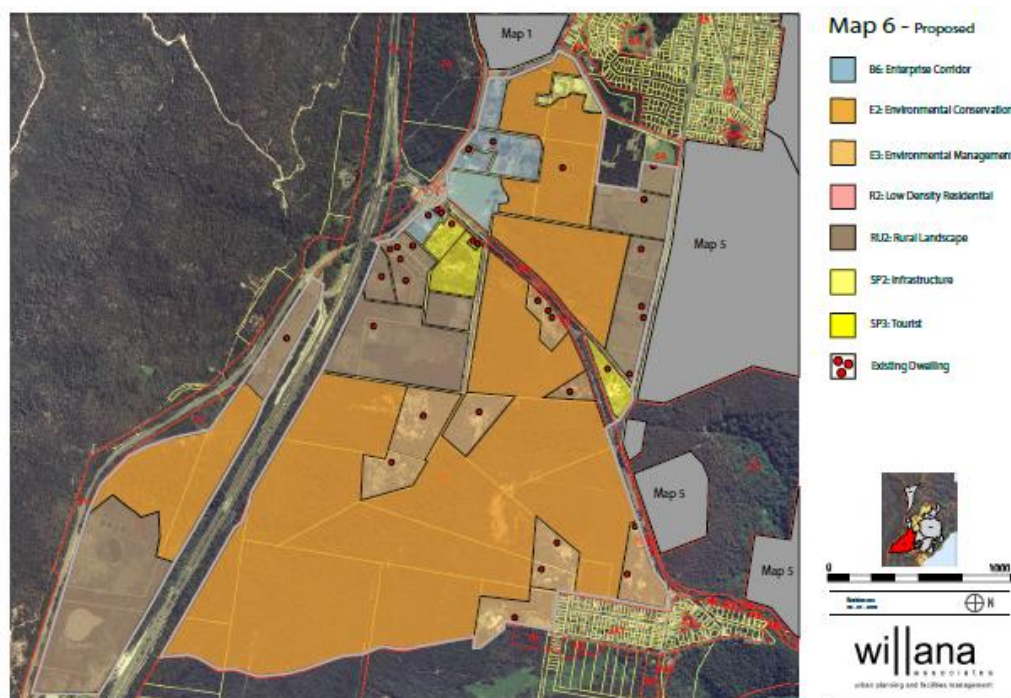


Figure 27: Proposed zoning - Gills Creek Precinct, West of F6 Precinct and Princes Highway Precinct

8.4 Potential Impacts

- § The proposed zonings for the study area have been identified after undertaking constraints mapping and land use analysis. Where land is recommended to be rezoned to allow development, this is generally to ensure existing uses are consistent with zone objectives. As these blocks are cleared and supporting uses that are not consistent with an environmental zoning, there will be limited impacts to the community, except perhaps the intensification of some uses on these sites.
- § It is recommended that the majority of the study area will retain its environmental zoning, resulting in limited development opportunities of these lots. The environmental (E2 – Environmental Conservation) zoning will apply to land that supports undisturbed bushland, is restricted by riparian corridors and are steep. The resulting impact on the community of maintaining environmental zoning across much of the study area is confirmation of the protection of the bushland character of the area. As these E2 areas generally support high quality bushland, they are unlikely to have a value under the BioBanking Scheme so should not be used as an offset to develop other land in the area. As a result, there should be no financial implications to the community. Some areas may be suitable for inclusion in the Royal National Park or Garrawarra State Conservation Area, subject to DECC and landowner agreement.
- § Sites recommended for residential zoning may result in additional dwelling houses being constructed in the area (approximately 302 additional dwellings, including 104 dwellings in the Land Pooling precinct). However, prior to the construction of these dwelling houses, further studies into the impact on the environment must be undertaken to the satisfaction of the Council.

8.5 Potential mitigation measures

- § The development of a Bushland and Fauna Preservation and Augmentation Policy will ensure that no site is developed without ensuring quality bushland is protected on the site or provided at a higher rate (in terms of hectares) offsite.
- § Legislation to protect dwelling houses from bushfire risk will be imposed on new developments, which will serve to further protect existing dwelling houses, community facilities and businesses in the Helensburgh, Otford and Stanwell Tops areas.
- § The development of a catchment management plan to the satisfaction of Council for the areas likely to support the largest population increase, i.e. the Land Pooling Precinct and Lady Carrington Estate South.

9 Conclusions

The desktop study has reviewed all the relevant environmental and socioeconomic issues relating to the study area, and on this basis has conducted a constraints mapping assessment to determine the best and highest use of land within the study area.

The main findings of this desk top study are:

- § A number of biophysical constraints including vegetation, bushfire, and steep terrain significantly affects the study area.
- § The study area is environmentally significant in terms of vegetation conservation and water quality in the Sydney basin.
- § The study area drains to Hacking River and its tributaries, and the Royal National Park which supports a diverse range of flora and fauna species.
- § The current pattern of land use in the study area is characterised primarily by conservation and water catchment uses, but also consists of rural activities, industrial uses, tourism and private recreation and dwelling houses.
- § The study area is subject to a number of State Environmental Planning Policies.
- § The study area is subject to a number of Regional Environmental Planning Instruments (deemed State Environmental Planning Policies as of 1 July 2009) including the *Drinking Water Catchments Regional Environmental Plan No. 1* and the *Illawarra Regional Strategy*.
- § The zoning scheme proposed facilitates and promotes economic, social, and environmental sustainability within the study area. The land use strategy proposed under the zoning scheme would facilitate both land use scenarios.
- § There is a need to resolve the current fragmented ownership pattern and dwelling entitlement issues.
- § A new long term vision is needed for the area, which addresses the historic issues of dwelling entitlements and the high conservation values of the area.

10 Recommendations



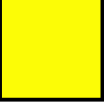


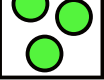
The recommendations of this study are:

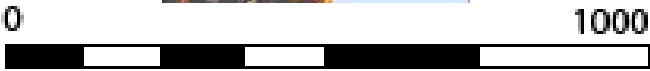
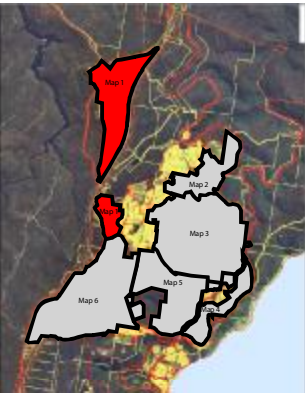
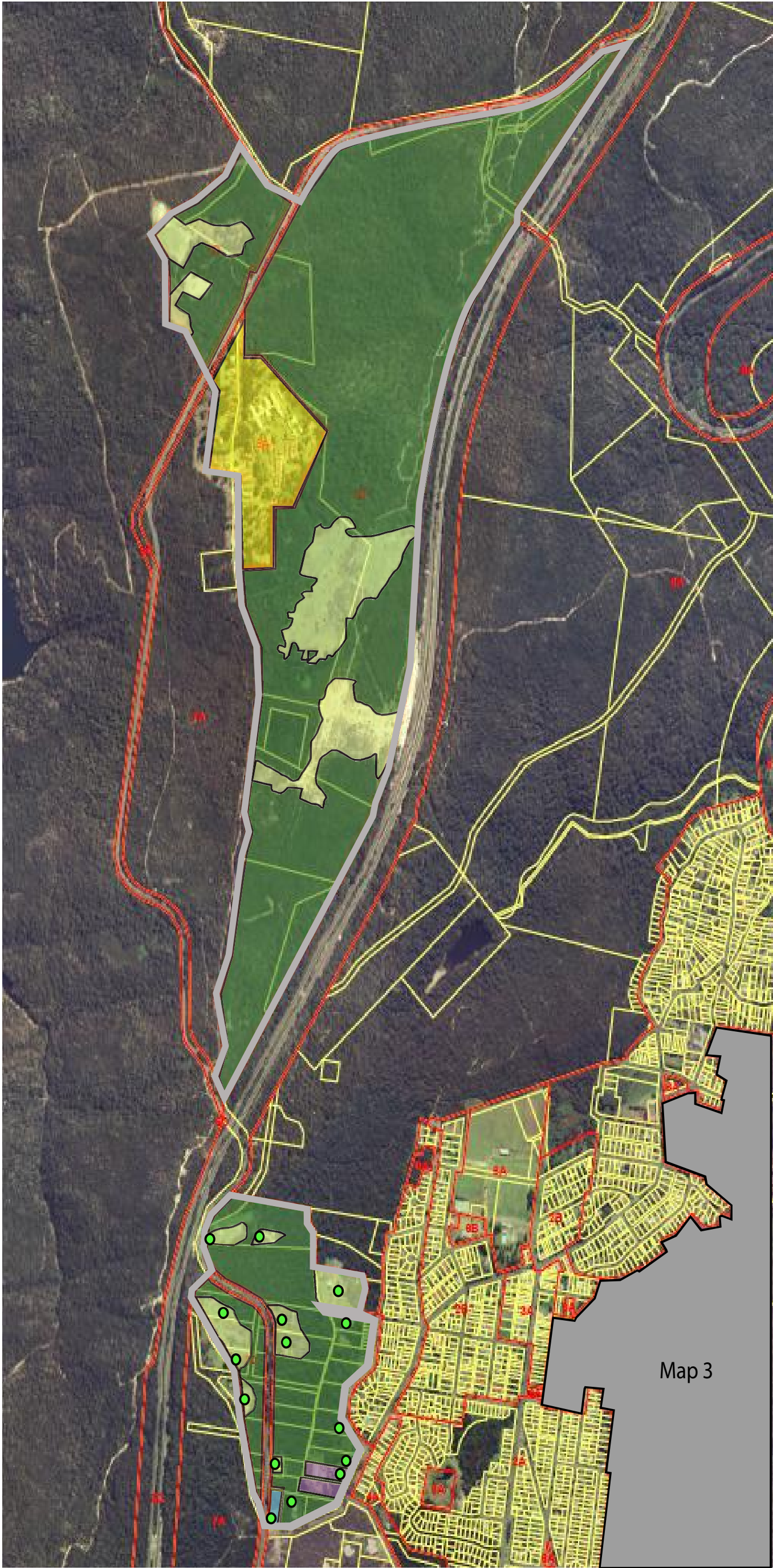
- § Council consult with the 7(d) landowners and the Helensburgh, Otford and Stanwell Park communities, on the draft proposals in this report.
- § Council consult with State Government agencies, including Department of Planning, Department of Environment and Climate Change (including the National Parks and Wildlife Service), Rural Fire Service, Roads and Traffic Authority, Integral Energy and Sydney Water, and the adjoining Sutherland Shire Council on the draft proposals in this report.
- § Council resolve to commence the preparation of a draft Local Environmental Plan to amend the planning controls for the 7(d) lands.
- § Following public consultation and analysis of submissions, if then appropriate, adopt the zoning scheme proposed for cleared land supporting existing uses.
- § Following public consultation and analysis of submissions adopt the zoning scheme proposed for all land identified to maintain its environmental (E2 – Environmental Conservation) zoning.
- § In conjunction with the landowners undertake a Local Environmental Study process to confirm the zoning scheme for land identified for residential zoning in the Land Pooling Precinct and Ensile's Lady Carrington Estate South.
- § Where the study area land is proposed to be rezoned to R2, E3 or E4, it is recommended that the draft Wollongong LEP 2009 be adjusted to allow 1 dwelling/ lot only where there is an existing allotment on the appointed day of adoption of the LEP.
- § It is also recommended that notwithstanding clause 4 Prohibited Development in the E2 Environmental Conservation Land Use Table, a special savings provision is included for lots with existing dwellings, that dwelling right is protected.

appendix a

existing land use maps

Map 1- Land Uses

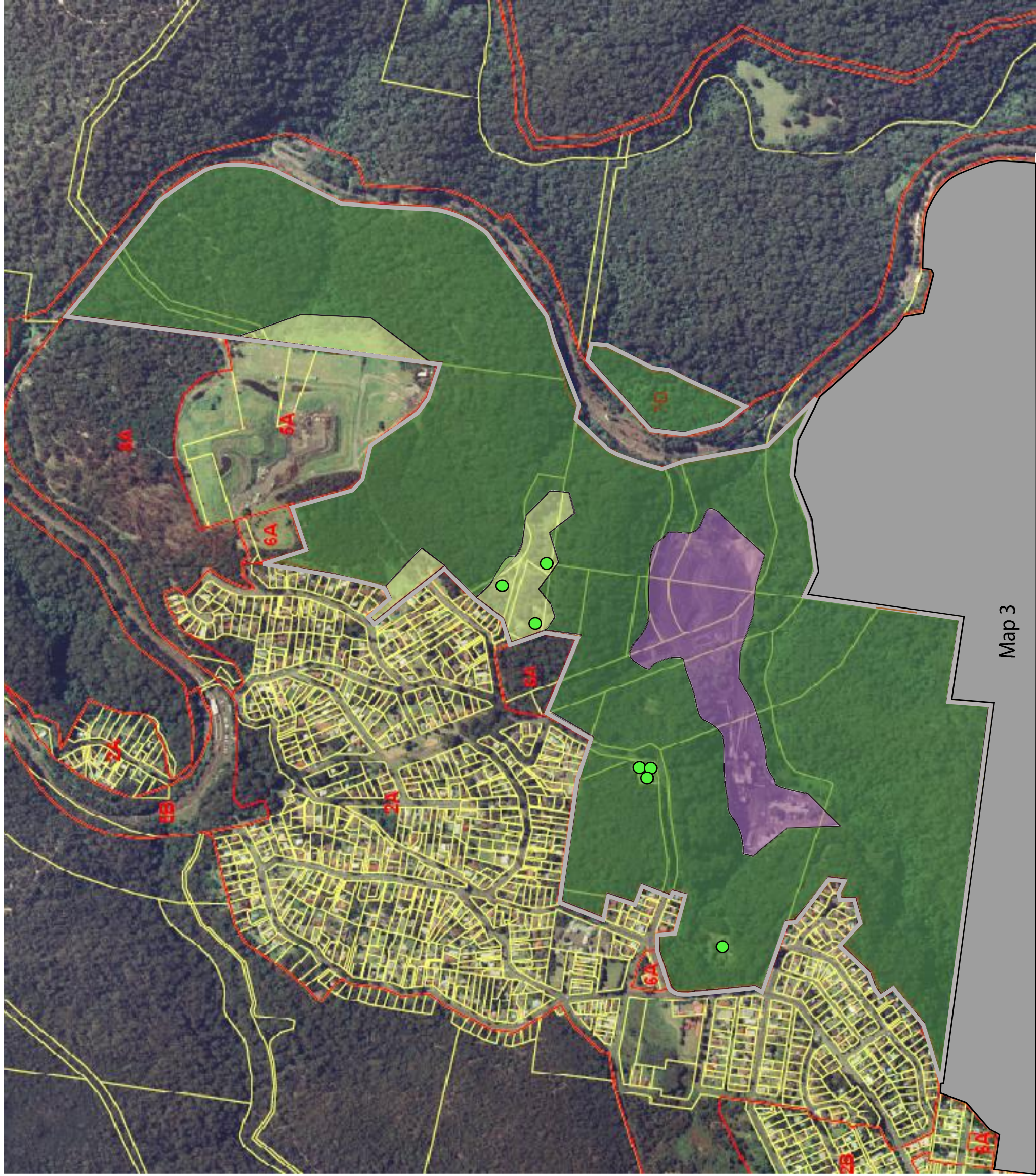
-  Bushland
-  Rural / Cleared Land
-  Special Uses
-  Industrial
-  Commercial
-  Existing Dwelling



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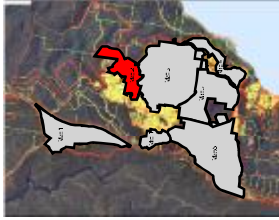


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Map 2 – Land Uses

- Bushland
- Rural / Cleared Land
- Extractive Industry
- Existing Dwelling



Revision 005
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Map 3 - Land Uses

Ensile Bushland

Ensile Rural / Cleared Land

Thompson Bushland

Existing Dwelling

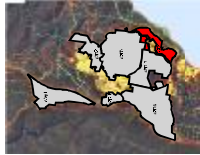
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Map 4 – Land Uses

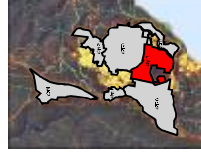
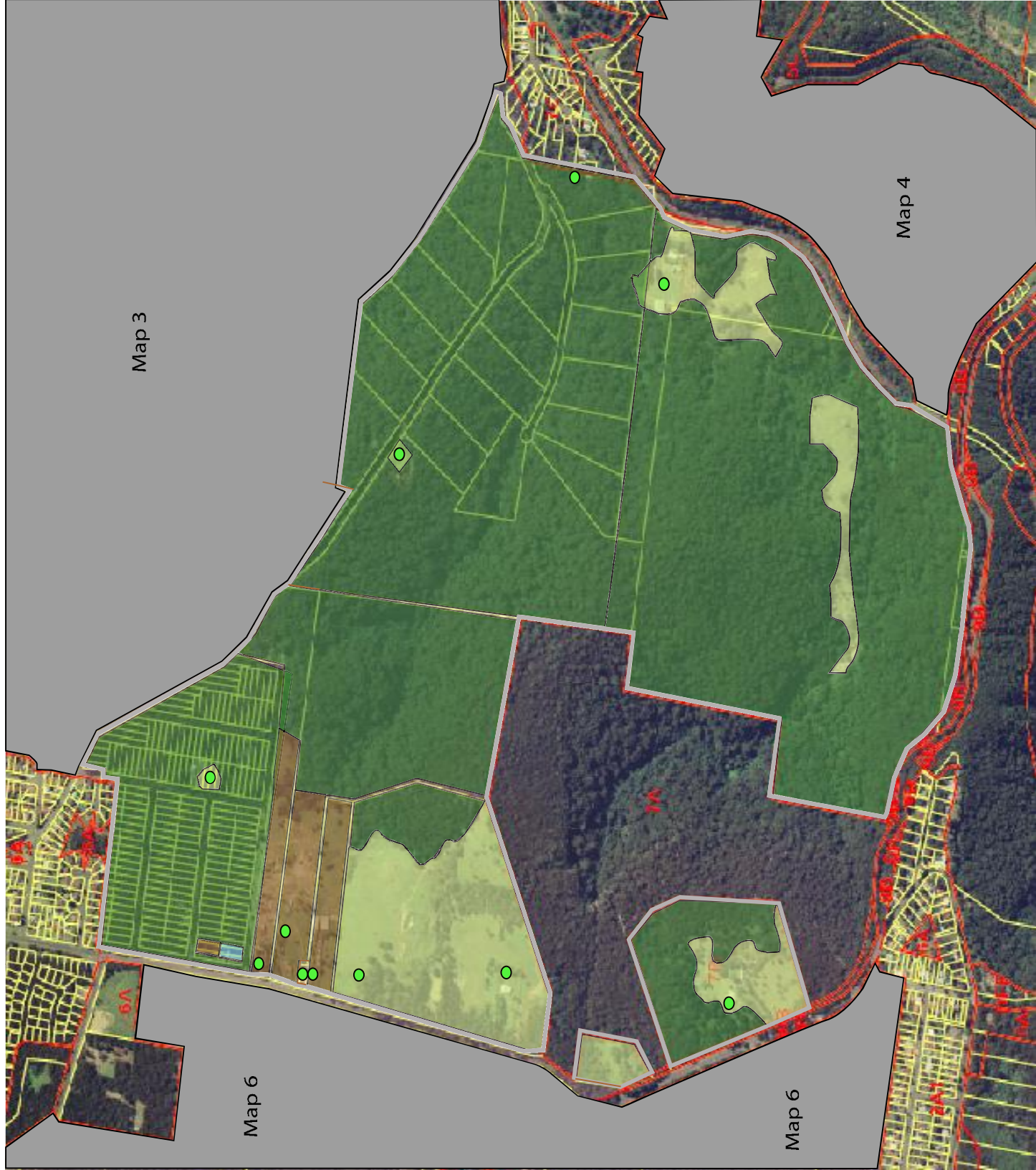
- Bushland
- Rural / Cleared Land
- Existing Dwelling



Revision 005
13-07-2009

Map 5 - Land Uses

- Bushland
- Rural / Cleared Land
- Rural Industry
- Commercial
- Existing Dwelling



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13-03-2009



Map 6 – Land Uses

- Bushland
- Rural / Cleared Land
- Light Industrial
- Rural Industry
- Special Uses
- Tourism / Private Recreation
- Commercial
- Existing Dwelling



Revision 005
12-03-2009

appendix b

bush fire safety compliance
desktop report

Bush Fire Safety Compliance Report

for

Proposed Re-Zoning Study

by

Willana Associates

for

Wollongong City Council

Helensburgh East – Area 1
Helensburgh South – Area 2
Otford Road – Area 3
Otford East – Area 4

May 2009

Roger Fenwick Bush Fire Consultant

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Executive Summary

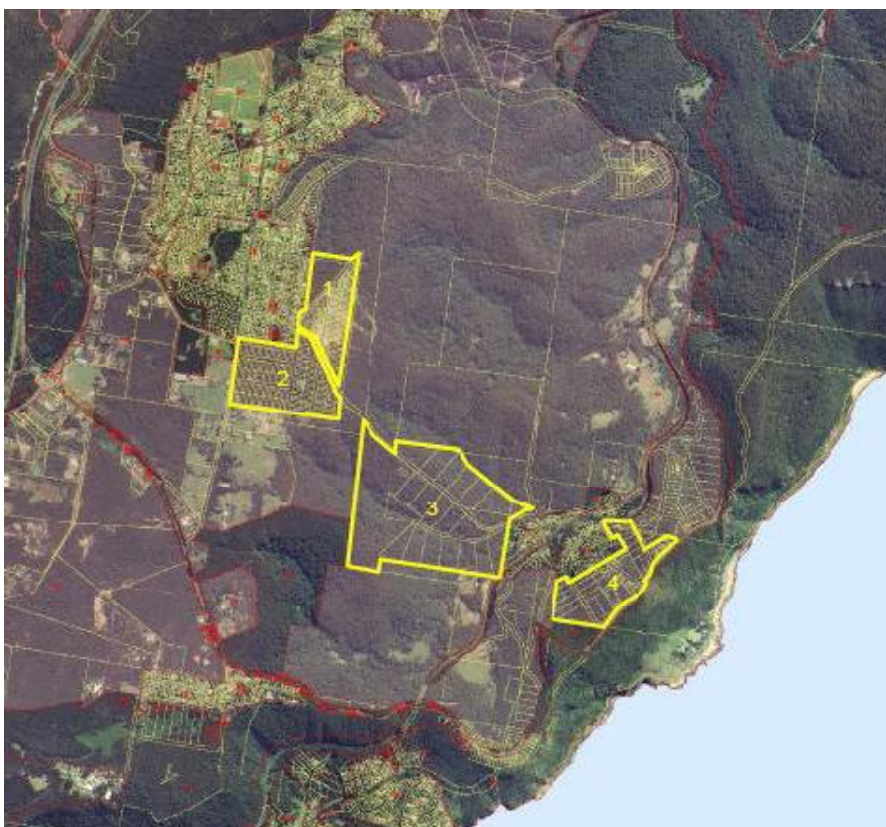
Wollongong City Council is considering re-zoning four parcels of land to allow single-dwelling use. To comply with current bushfire protection standards, some boundary adjustments may need to be made to accommodate setbacks from adjoining bushfire prone land, or appropriate setbacks created by modification of the vegetation on adjoining land.

It is recommended that development of Areas 1 (Ensile land – Lady Carrington South) & 2 (Land Pooling land) could proceed with very little boundary adjustment, and that development has potential benefits to adjoining areas.

Area 3 (Lloyd Place) presents mixed outcomes from a bushfire perspective. Acceptable building envelopes exist on thirteen (13) of the presently undeveloped lots, while the remaining eight (8) lots are either doubtful or will not be able to comply.

Area 4 (Otford Village) could be developed as is with no effects beyond its own boundaries.

The map below indicates the four areas subject to this bushfire study.



Introduction

Roger Fenwick Bushfire Consultant (RFBC) has been commissioned by Willana Associates on behalf of Wollongong City Council to advise on perimeter bushfire protection measures which would be required to allow residential development on bushfire prone land under investigation for rezoning. Brief comments are also sought on the consequences for perimeter defence for existing residential areas in Helensburgh and Otford if Areas 1, 2 &/or 4 are not developed.

Area 3 consists of existing large lots on which house construction either will, or will not, meet the current standards without boundary adjustments, and this report is to assess this Area on that basis only.

Areas 1 & 2 are to be assessed to determine the extent of setbacks required within their existing boundaries, plus consideration of what would be required to create the minimum allowable setbacks off-site, on adjoining land.

The parcels of land in Area 4 are to be assessed for suitability for house construction based on the existing lot layout, and re-assessed if internal boundary adjustments would be required to create adequate Asset Protection Areas (APZs).

There are many additional conditions which need to be met in order to create an acceptable subdivision, or to comply with desirable if not mandatory standards for infill development. In this evaluation it has been assumed that designs which would necessitate extensive vegetation clearing for APZ construction on slopes exceeding 18° should be avoided, as well as vegetation modification to the extent necessary for Inner Protection Area (IPA) (but not Outer Protection Area (OPA)), creation within 10m of watercourses. The problem of access within the large lots within Area 3 has been considered, to avoid road construction on gradients exceeding 15°.

Council may have additional restrictions which would need to be considered when proposing house construction in a specific location on a lot. The existence of a suitable building envelope does not create a right to build anywhere on the site. In addition, compliance of the proposed internal roads with current guidelines may be an issue. Even if a perimeter did not need to be adjusted, a need to make internal roads wider would force adjustment of the present lots.

Location

Helensburgh and Otford are within the Illawarra/Shoalhaven Fire Weather Area, in which proposed developments are assessed by reference to Table A2.4 of Planning for Bushfire Protection.

Area 1 is about 550m long (N-S) and 250m wide (E-W) lying immediately to the east of the southeasterly part of the present Helensburgh built up area, and north of the Otford Road. The owner of this land also owns the 125m wide strip of land to the immediate east of Area 1. It has been assumed that all of the land within the outermost boundary of the perimeter road easements is included within this Area (*see Figure 1 - Details of Area 1, page 10*).

Area 2 is about 625m E-W and 375m N-S to the south of the southeasterly part of the present Helensburgh built up area, south of Area 1, and south of the Otford Road.

Area 3 consists of 22 evident building lots about 750m N-S by about 1km E-W, straddling the Otford Road and part of Herbert s Gully, to the immediate west of Otford.

Area 4 is about 250m by about 750m long, lying to the east and southeast of Otford and west of Lady Wakehurst Drive.

Adjoining Vegetation

Area 1

§ North

Dry sclerophyll forest

§ East

Dry sclerophyll forest, partly cleared in patches which are maintained as roughly slashed grassland, and partly underslashed to maintain a woodland type setting. For fire planning purposes, Woodland is usually not recognised as a type found in this area, and is normally required to be treated as forest.

§ South

Presently Dry sclerophyll forest, to become housing with the development of Area 2.

§ West

Presently a short border in the centre with existing residential development; to the south, adjoining land to be developed for housing in Area 2; to the north, a wedge of Dry sclerophyll forest (contiguous with surrounding Dry sclerophyll forest) to be retained in the NW corner of this Area.

Area 2

§ North
Existing housing

§ East
Presently Dry sclerophyll forest, the northern half of which will become residential with the development of Area 1.

§ South
The western half adjoins developed light industrial land, and the southern half heavily cleared and underscrubbed Dry sclerophyll forest used as a trail bike recreation area and apparent temporary storage area for soil and mulch products generated on the light industrial estate to the west.

The Fire Prone Land map recognises the partial clearing beside the eastern part of this boundary, defining a narrow strip of buffer to the adjoining forest vegetation (*see Figure 2 – details of Area 2, page 12*). If Council is satisfied that this will be maintained in perpetuity in that condition, then it can be considered to be a part of the protection measures needed beside it in Area 2.

§ West
Cleared agricultural land.

Area 3

North-facing upper slopes are mainly Dry sclerophyll forest, and south-facing plus gully vegetation is mainly Wet sclerophyll forest.

Lot 251 of DP ? (formerly Lot 22, DP 241582?) on the eastern side to the south of Otford Rd (also known as Illawarra Rd) adjoins partially (but inadequately, for fire protection purposes) cleared existing residential lots.

Lots 1 & 2 of DP 242135 adjoin cleared agricultural land which appears to be accessed via an informal right of way through both Lots 1 and 2.

Area 4

§ North
Dry sclerophyll forest

§ East
Tall Heath on the southern half, a short patch of Low Heath, and then Tall Heath becoming Wet sclerophyll forest at the northern end.

§ South
Wet sclerophyll forest.

§ West
Dry sclerophyll forest and (mostly adequately) cleared existing residential development.

Topography

Note – RFBC has used the NSW Rural Fire Services (RFS) notation, whereby a downslope means that the fuel (vegetation) is below the reference point, giving fire an upslope run. All slopes are expressed in degrees, not percent. Slopes were measured over 100m. No slope details are provided for cleared, residential or agricultural land. For general subdivision protection planning purposes, downslopes are clustered in groups of 5° increments, while all upslopes and level ground are considered to be the same as each other. For individual house location assessment, precise slope measurements can be considered.

Area 1

§ North

A downslope of 3°.

§ East

Average downslope of 4° within 100m of the boundary of this Area. Beyond that limit, slopes of up to 7° occur at the heads of two gullies.

§ South

Downslope of 1° towards proposed Area 2.

§ West

Downslope of 3° within the wedge towards the residential land along Werrong Road.

Area 2

§ North

There is a 1° upslope to the vegetation on the northern side of Otford Rd, in Area 1.

§ East

Downslope of 4° for 80m from the edge of the proposed road, and then a short steep (16°) drop into the head of a gully.

§ South

Downslope of 7° at the SE corner, becoming 4° half-way along the partly treed area.

Area 3

The Otford Road has an average gradient of 6° down to the SE near the NW corner of Area 3, becoming 13° over most of its length to Lloyd Place.

There is a roughly 30m width beside the road with an average slope of 9° prior to it becoming about 22° down to the un-named drainage to the north of Otford Road over most of the length of this Area. The creekline is about 200m from the road, and more or less forms the northern boundary of most of the lots.

On the south side of Otford Road down to Herbert Gully, the average slope is 23° at the western end, decreasing to 19° nearer the junction with Lloyd Place.

On the southern side of Herbert Gully, the land slopes up to the south at about 20° at the western end, decreasing to 7° where the creek crosses the road. The southern boundaries of the lots to the south of Lloyd Place are close to another drainage line, but the slope down to it is both short and only about 3°. The ridgeline forming a spine for these lots rises to the west at about 9°.

The creek has a gradient of 1°, down to the east.

Area 4

§ North

3° downslope facing north, and 12° downslope facing west.

§ East

The fall from the road edge down to the shore varies from 28° to 35°.

§ South

The land to the south is almost level to slightly upsloping to the west.

§ West

Vegetation along the west-facing strip at the southern end of this Area is on an upslope of 5°.

Significant Environmental Features

Apart from all being Bush Fire Prone properties, by virtue of supporting defined fire prone vegetation or being within the buffer area to it, no environmental issues have been investigated.

In forming an opinion on whether specific parcels of land could qualify for approval under the guidelines, the need to carry out significant clearing of vegetation for APZ creation on slopes exceeding 18° has been avoided as well as avoiding disturbing vegetation to the extent needed for an IPA within 10m of creeklines. It has also been considered whether it appears that suitable access could be provided, avoiding excessive side-cuts and gradients over 15° (sealed surface) or 10° (natural surface).

Proposed Development

Area 1

a) APZs within the boundary

This would see all of the land within the Area virtually pooled in order to create the necessary APZ and perimeter road width, and a revised lot layout created if the present perimeter lots failed to support a suitable building envelope.

b) External APZs

This assumes that APZs of adequate (to be specified) width will be created outside the present building lots, but utilising the existing road easement.

Area 2

a) APZs within the boundary

This would see all of the land within the Area virtually pooled in order to create the necessary APZ and perimeter road width, and a revised lot layout created if the present perimeter lots failed to support a suitable building envelope.

b) External APZs

While this is not considered by Council to be feasible, RFBC has considered what could be provided using this option from a technical point of view.

Area 3

Each of the existing lots has frontage to an adequate public road, either Otford Road or Lloyd Place.

The only question related to lots in this area is: Is there an acceptable building envelope on some or all of them? There already is a relatively new dwelling on one lot, and for infill development, the RFS will usually allow a residence to be built (to a very high construction standard) even where the guidelines related to APZs cannot be met, on appropriately zoned land.

Area 4

Some of these lots already have houses on them. Some dwellings appear to be located on the only reasonable site from a construction point of view, but without setbacks to current standards.

Potential Fire Exposure

Asset protection Areas

Within this report, references to guidelines or PBP means the 'Planning for Bush Fire Protection 2006' publication by the NSW Rural Fire Service (RFS). References to Levels of house construction are as prescribed in AS 3959, 'Construction of buildings in bushfire-prone areas'. Minimum clearances as in

the table below require Level 3 construction standards. As the setback from fire-prone vegetation increases, lower Levels of construction are acceptable.

Forest	Upslope/flat	>0 – 5°	>5 – 10°	>10 – 15°	>15 – 18°
OPA	10	10	15	25	30
IPA	10	15	20	25	30
APZ	20	25	35	50	60
Tall Heath	15	15	20	20	20
Short Heath	10	10	10	15	15

Area 1

The entire perimeter of this Area falls within the Forest, greater than zero to 5 degree downslope class, for which a 25m setback is required.



Figure 1 - Details of Area 1

Along the southern side, adjoining Otford Rd, an APZ of 25m would be required. Otford Rd is 20m wide, and a 5m building line setback from the road edge would provide an adequate APZ. Whether Area 2 is developed or not, this edge of Area 1 will comply.

Along the northern edge of Area 1 a road 20m in width will connect (existing) Shannon Drive with the new eastern perimeter road. This will have bush on both sides, and plays no part in the fire protection assessment for the north of the Area.

Along Lilyvale Road, the average downslope/ vegetation combination requires a setback of 25m. The road reserve is 20m in width, and a 5m building line setback would create the necessary clearance without further work being done. The present lot layout suggests that each lot has an acceptable building envelope.

The wedge of vegetation (**labelled 3 in Figure 1**) to be retained in the northwestern part of this Area abuts existing houses on Shannon Drive, and provision of a degree of protection against fire within that bush would be prudent. Given that the houses (although not associated sheds) are set back from the rear boundary, the lie of the land is more or less a shallow gully running up to the SSW, and there is a limited potential fire run from the east directly towards them, RFBC suggest that an APZ of 15m to IPA standards, or 10m IPA plus 10m OPA, or 5m IPA plus 25m OPA, would be appropriate. This should be considered whether or not rezoning and development of Area 1 proceeds.

a) APZs within the boundary

There is a road reserve 20m in width along the eastern boundary, from Otford Rd to Lilyvale Rd. When combined with a 5m building line setback, building envelopes exist on each of the existing lots except the ones at each end of this boundary. Those two north-south aligned lots appear to be too shallow to allow house construction when a 5m road setback and a 1m side boundary setback are subtracted from what appears to be a 15m wide lot (**lots adjacent to labels 2a and 2b in Figure 1**). This problem would still apply if a wider APZ were created beyond the Area boundary, as the too-narrow character of the lot is a function of setback from street standards rather than a fire safety issue.

b) External APZs

Creation of external APZs would necessitate some form of formal arrangement to enable, and ensure, their maintenance in perpetuity.

Along the eastern side, it appears that clearing to OPA standards a strip 4m in width on the eastern side of each of the corner lots would suffice for fire protection purposes. However, if street building line setback requirements require a 5m setback in any case, the 25m will be met – although that would create an impossibly narrow building envelope on the lot.

If an additional APZ width were created along the eastern and northern sides beyond the boundaries of this Area, then the distance in from the perimeter at which lower Levels of house construction could be used would vary accordingly. With no external APZ contribution, Level 3 is required within 29m, Level 2 applies beyond that up to 40m, and Level 1 for any structure beyond the Level 2 line but within 100m of the perimeter. Effectively, an additional 4m of external clearing would downgrade all of the perimeter houses to Level 2 construction requirements. Alternatively, perimeter homeowners could voluntarily sacrifice an additional 4m beyond the assumed mandatory 5m road setback and qualify for the lower level of construction costs. Additional external APZ width in appropriate increments could lower the perimeter to Level 1, or move the internal Level 1 or Level 2 locations approximately as follows:-

All measurement from the external boundary, & assume 20m road with and a 5m building line setback.

External APZ	0	4m	15m	25m
L3 within	29m	(none)	(none)	(none)
L2 within	40m	36m	(none)	(none)
L1 within	100m	96m	60m	50m

Thus with an external APZ of 25m, effectively moving the line of the defined fire prone vegetation further from the boundary of the site, and with external lots 50m in depth, the perimeter row of houses would require Level 1 construction standards, and the second row of houses and inwards would be exempt.

Area 2

Along Otford Rd a 20m setback would suffice. This will be provided by Otford Road, and no other measures need be specified. The normal 5m roadside building line setback will create additional protection, in the absence of development of Area 1.



Figure 2 – details of Area 2

In the absence of development of this Area, the tongue of vegetation (**see location 1 in Figure 2**) on the southern edge of the existing development to the immediate north of this Area should be treated. At present, fire has a potential run of about 350m from the south, and then for about 100m into the already built up area, burning on a 50m width at the poorly accessible rear of about a dozen houses. The proposed treatment of that boundary (**see location 2 in Figure 2**) is not clear from the diagram of the nominal existing subdivision. The purpose of the additional road easement beside Walker St also needs to be considered (**see location 3 in Figure 2**).

The northern and western sides of this Area need no treatment to provide protection against bushfire. The western half of the southern side adjoins

cleared light industrial land, and adequate protection against potential grassfires will be provided by the perimeter road 20m in width.

a) APZs within the southern boundary

Beside the westernmost block of lots to the east of the dividing north-south road (**see location 4 in Figure 2**), a total setback of 25m will suffice. That can be provided by the 20m road width and the normal 5m road side building line setback. However, the southernmost row of lots would not then support adequate building envelopes (**see location 5 in Figure 2**).

Beside the easternmost block of lots to the west of the dividing north-south road, a total setback of 35m will be required. That condition could be met by sacrificing the two most southerly lots, effectively adding their 15m width to the 20m road (**see location 6 in Figure 2**).

Alternatively, if the existing partial clearing off-site (**see location 7 in Figure 2**) is accepted as a permanent condition, not needing to be perpetuated by some form of covenant, then sufficient clearance within the Area boundary already exists. There would still be the issue of roadside setbacks, but fire protection needs would be met.

To the east of the eastern side, south of Otford Road, a 25m setback is needed. This can be achieved within the Area boundaries by a combination of the 20m road plus 5m of roadside building line setback, which would appear to affect only the north-south aligned lot closest to Otford Rd (**see location 8 in Figure 2**).

b) External APZs beside the southern boundary

If it were determined that without some means of ensuring its maintenance in perpetuity the present partial clearing within the southern buffer area could not be relied upon, it would be necessary to create a narrow APZ to OPA standards. However, that would not overcome the issue of roadside building line setbacks, and not really achieve any improved yield within the Area.

Similarly, an external APZ on the eastern side near Otford Rd would still not allow construction of a house on the affected lot.

hard-nosed approach could disqualify most of them. As a new subdivision, this Area would probably not qualify in any respect for construction of more than one house. For infill on already created lots, where owners have an expectation of being allowed to build a house, some safe enough settings can be found.

Building envelopes of 10m square have been assumed, and adding the IPA & OPA dimensions, measuring from West to East, and then from North to South. A required setback of 10m of OPA, 20m of IPA, **10m** house, IPA 15m and OPA 20m would be shown as W (or N) 10/20/**10**/15/20. If part of an APZ covers a section of a road, the road counts and no addition on its other side is needed.

These assessments are approximate, and the dimensions of each estimated APZ are not guaranteed. They are intended to allow an assessment of the likely consequences of rezoning to be made.

RFBC estimate of the potential of each lot is shown as OK, Maybe, Doubtful or No.

§ Eastern point, DP 33693?

All fire approach would be downhill.

W&N 10/10/**10**/10/10. Access direct from Otford Rd. OK

§ Lot 104 DP 226579

May benefit from clearing to create a building envelope on Lot 21 DP 241582 to its immediate north, and generally on slopes which may be cleared with care.

Direct access from Otford Rd.

W 10/10/**10**/10/10, N 25/25/**10**/15/10? Maybe

§ Lot 21 DP 241582

Own battleaxe access handle direct from Otford Rd, and adequate internal access to bottom of lot. W 10/15/**10**/10/10, N 10/10/**10**/10/10. OK.

§ Lots 18, 19 & 20 DP241582

Access may be the problem on these lots. The only reasonable building envelopes are close to the bottom of the gully, as anything near Otford Rd has exposure to a fire with a 200m run up a 20° slope from the gully, requiring an APZ 60m wide in that direction. A shared access Right of Way commencing from Otford Rd on Lot 20, angling across Lot 19, turning on Lot 18 and heading back past possible building sites on each of these 3 lots could work. W & N 10/10/**10**/10/10. OK

§ Lots 16 & 17 DP241582

There may not be sufficient space to create the depth of protection required, as the northern lot boundary is well short of the creekline, allowing a significant upslope run of fire. Difficult access, even if shared. W 10/10/**10**/10/10, N 30/30/**10**/10/10. Doubtful

§ Lot 500? DP 788539?

This is the large assumed residual lot, and a house has already been constructed on it.

§ Lot 11 & 12 DP 241582

If located at the top of the blocks, building envelopes would require very large APZs on excessive slopes. There is no access from the bottom of the slope, and even shared access from the top to a location as far downslope as possible would be problematic. W 10/10/10/20/15 N 10/10/10/30/30. No

§ Lots 13 & 14 DP 241582

Building envelopes exist off Lloyd Place, although they would be on steep slopes. Access across the creek would be an issue. W & N 10/10/10/10/10. Doubtful.

§ Lot 15 DP 241582

Access from Lloyd Place would not be an issue, and there appears to be enough sufficiently flat land to allow house construction on this lot. W & N 10/10/10/10/10. OK.

§ Lots 1 – 6 DP 242135

Access from Lloyd Place should be adequate. Envelopes should be able to be located along the lower slopes of 4, 5 & 6, and further up the slope (away from the road) for 1, 2 & 3. All W 10/10/10/15/10 4,5,6 N 10/10/10/10/10. 1,2,3 N 15/20/10/10/10. OK.

§ Lot 251 DP ?

Not a problem. W 10/10/10/10/10, N 10/15/10/10/10. OK.

§ DP 242135

This lot at the end of Lloyd Place pretty much straddles the creek, and I see no prospect of finding an acceptable building envelope on it because of riparian vegetation disturbance. W & N 10/10/10/15/10. No.

Totals- 1 exists, 13 OK, 1 Maybe, 4 Doubtful and 3 No of a total of 22.

Area 4

Many of the lots in this subdivision already have houses, and as a general rule, as the building density increases, so does overall safety as a result of the clearing associated with each new development and its access. In this Area, it appears that up to 17 new dwellings could be built in addition to the about 28 already constructed.

The northernmost block of undeveloped lots is between Domville (**see location 1 in Figure 4**) and Beaumont Rds (**see location 2 in Figure 4**), and would involve construction in the headwaters of a minor drainage line with little apparent sensitivity from an environmental protection point of view. Fire within that area at present could present something of a problem to the houses on Domville Rd that back onto the gully. Associated road construction would provide access to an area presently isolated from fire vehicles.



Figure 4 - Details of Area 4

Fires approaching the northern undeveloped part of the Area (*see location 3 in Figure 4*) would be burning on level ground or in fuels upslope from possible building envelopes, which would require APZs 20m in total width. These new owners should be required to tidy up the undergrowth in their rear yards for the primary purpose of protecting themselves and their neighbours, but with a view to maintaining a degree of filtering of overland flow into the drainage line.

The second as yet undeveloped part of this Area (*see location 4 in Figure 4*) includes most of the upper catchment area of another minor drainage. The area is not particularly exposed to approaching fire, being the centre of a north-facing open bowl facing into an already developed residential area. Fire approach from the sides of this Area would be burning downhill, and minimal disturbance should be required to provide adequate protection.

Fire approaching the southern part of the Area would similarly be burning downhill, and require only 20m wide APZs made up of 10 of OPA and 10m of IPA around each dwelling. It is considered that there is no significant consequences to overall area fire protection whether this area is developed or not, but it appears that each existing lot in the present subdivision layout would be capable of meeting its own APZ requirements within its own boundaries.

Protection against fires coming up the steep scarp from the coast with its Heath vegetation will be provided by the width of the coastal road, Lady Wakehurst Drive (*see location 5 in Figure 2*), and the usual roadside building line setback. While the steepness of the scarp is off the scale for predicting fire behaviour, the possible new housing in close proximity would be on the other side of a minor ridge-line from that fire, or atop a bare vertical rock wall facing the road, and in both cases well protected from direct exposure.

Conclusion

From a bushfire protection perspective the suburban type development envisaged for Areas 1 and 2 could proceed almost as planned, with minimal loss of existing implied building 'rights', as the required asset protection Areas are almost provided already. It is doubtful whether creating APZs on adjoining land would affect the yield within these Areas, but could be used to move the boundaries affecting the Levels of Construction within the subdivision.

The majority of the existing lots within Area 3 could support individual residences, but a degree of mutual support may be necessary to allow some of the marginal ones to be developed. Some lots appear to be totally unable to be developed in compliance with safety guidelines.

It is considered that from a bushfire perspective there should be no problem in allowing development on the vacant lots within Area 4.

Annex 1 – *cv*

Curriculum vitae

Roger Fenwick

CURRICULUM VITAE

Name: **Roger FENWICK**

Born: 1946

Qualifications: B Sc (For), Australian National University, Canberra, 1969. Member, Institute of Foresters of Australia. Member, Fire Protection Association of Australia.

Language: English

Positions Held:

1988-Present	Consultant
1986-87	Chief Fire Control Officer, (CFCO) ACT Bush Fire Council
1985	Secretary, ACT Bush Fire Council
1982-1984	Experimental Officer, CSIRO, Project Aquarius
1979-1981	Field Service Representative for Chemonics Industries, USA
1976-1978	CFCO of the ACT Bush Fire Council
1972-1975	Deputy CFCO, including one year of acting CFCO, ACT Bush Fire Council
1971	Assistant Forester at Pierces Creek Forest, and assistant to the CFCO
1970	Assessment Section, ACT Forests, and assistant to the CFCO of the ACT Bush Fire Council

Fields of Special Competence:

Fire risk assessment and control measures to minimise fire risk, fire control and organisation and management of rural fire fighting services, fire forensic investigations, training in bush fire fighting, fire fighting equipment selection and maintenance, and chemical fire retardant use.

2008

Preparation of fire safety guidelines and fire safety compliance reports to accompany applications for development of proposed subdivisions and single residences, NSW.

2007

Preparation of fire safety guidelines and fire safety compliance reports to accompany applications for development of proposed subdivisions and single residences, NSW.

2006

Preparation of fire safety guidelines and fire safety compliance reports to accompany applications for development of proposed subdivisions and single residences, NSW & South Australia.

2005

Preparation of fire safety guidelines and fire safety compliance reports to accompany applications for development of proposed subdivisions and single residences, NSW and SA.

Assist with preparation of a Development Control Plan and Structured Growth Management Plan for Nambucca Shire Council, and a DCP for Penrith Council.

2004

Preparation of fire safety guidelines and fire safety compliance reports to accompany applications for development of proposed subdivisions and single residences, NSW.

Investigate and report on fire causation in connection with civil litigation in Tasmania

2003

Provide advice to ACT Government on protection measures appropriate to Black Mountain Reserve.

Provide advice to Monash City Council in Victoria on preparation of fire management plans for various Reserves, Victoria.

Assist with a study of fire station design for the CFA in Victoria.

Preparation of Maximum Probable Loss estimates for plantations in SA and WA for insurance purposes, and evaluate small-holding plantation insurance proposals.

Preparation of fire safety guidelines and fire safety compliance reports to accompany applications for development of proposed subdivisions and single residences, NSW.

Preparation of Fire Management Plans for the Department of Defence at 2 sites in NSW, and update fire season preparation recommendations for 5 sites in Victoria.

Engaged to investigate and report on fire causation and fire management practice in connection with civil litigation in both NSW and the ACT.

2002

Preparation of fire safety guidelines and fire safety compliance reports to accompany applications for development of proposed subdivisions and single residences, NSW.

Preparation of Fire Management Plans for the Department of Defence at 6 sites, Vic.

2001

Preparation of fire safety guidelines and fire safety compliance reports to accompany applications for development of proposed subdivisions and single residences, NSW.

2000

Preparation of Fire Management Plans for 2 military establishments, NSW.

Investigate and provide expert evidence in connection with litigation arising from injuries to a crew of fire-fighters, NSW.

Preparation of fire safety guidelines and fire safety compliance reports to accompany applications for development of proposed subdivisions and single residences, NSW.

1999

Preparation of fire safety guidelines and fire safety compliance reports to accompany applications for development of proposed subdivisions in NSW.

Engaged to investigate and report on fire causation and fire management practice in connection with civil litigation in NSW.

1998

Preparation of fire safety guidelines and fire safety compliance reports to accompany applications for development of proposed subdivisions, NSW.

Engaged to investigate and comment upon the practices relevant to the cause of a fire on agricultural land in NSW in connection with civil litigation.

1997

Preparation of fire safety guidelines and fire safety compliance reports to accompany applications for development of proposed subdivisions in NSW, and appearances in the Land and Environment Court of NSW.

Fire Management Consultant in FORTECH team preparing a report on plantation risk evaluation for a firm of agricultural insurance brokers.

1996

Investigate the cause and origin of an escaped fire resulting in loss of life, property and stock on a NSW estate.

Fire Management Consultant in FORTECH team developing a draft Fire Management Plan for the Murrumbidgee National Park, for NSW National Parks and Wildlife Service.

Preparation of fire safety guidelines and a fire safety compliance report to accompany an application for development of a proposed sub-division, NSW.

1995

Carried out inspections and provided technical reports for presentation to the Land and Environment Court on fire safety compliance in contested development applications in southern coastal NSW.

Fire Consultant carrying out an assessment of the probable maximum loss for a major pine plantation estate in the Green Triangle of South Australia.

Inspections, technical advice and report preparation on fire safety guideline compliance for various development applications within NSW.

1994

Preparation of fire safety guidelines and a fire safety compliance report to accompany an application for development of proposed sub-divisions, NSW.

Expert witness in the matter of an escaped bushfire in the Bungendore area, NSW.

1993

Preparation of a detailed bush fire control training manual for the Department of Defence, specific to the needs of Puckapunyal Training Area, Victoria. This assignment follows on from earlier work in which a fire management plan was prepared.

Expert witness in the matter of two escaped bushfires in the Mudgee and south coast areas of NSW. The investigations required determination of the cause and origin of the fires.

Preparation of fire safety guidelines and a fire safety compliance report to accompany an application for development of proposed sub-divisions, NSW.

1992

Consultant to Shoalhaven City Council in southern NSW responsible for the interpretation and mapping of the "subdivision strategy for high bushfire risk areas" which was developed in a related project in 1991.

Fire Management Specialist on Puckapunyal Bushfire Management Plan study for Department of Defence. This major study involved 9 specialist consultants and produced an operational plan for fire management including hazard reduction and control strategies, training and equipment needs, emergency fire procedures and the role of bushfire decision support systems in augmenting current expert land management systems. The Fire Management Plan adapted to current land management systems and as such required a full appreciation of the Puckapunyal environmental rehabilitation program, training needs and demands these placed on the environment and the stock grazing arrangements in place at the time. Because of the sensitivity of bushfire management, a full community consultation program was implemented to address issues raised by neighbouring landowners and communities. Impacts of various fire management scenarios on wildlife populations were assessed and considered in making the final recommendations.

Expert witness responsible for provision of technical advice and investigation of the conduct of a roadside hazard reduction burn in NSW.

Preparation of fire safety guidelines and a fire safety compliance report to accompany an application for development of proposed sub-divisions, NSW.

Expert witness investigating origin and cause of grassfire in the Hunter Valley, NSW.

1991

Preparation of fire safety guidelines and a fire safety compliance report to accompany applications for development of proposed sub-divisions and single dwellings, NSW.

Consultant to the Shoalhaven City Council in Southern NSW responsible for the preparation of a "subdivision strategy for high bush fire risk areas" within the city of 4600 square kilometres. The task involved identifying a set of objective criteria by which subdivision applications could be assessed in respect of bush fire danger. The

consultant worked with a committee involving Council and State Government Land and Fire Management Agency representatives.

1990

Preparation of fire safety guidelines and a fire safety compliance report to accompany applications for development of proposed sub-divisions and single dwellings, NSW.

Team Member in a study for the NSW Government Insurance Office to assist in the defence of a Supreme Court writ against a NSW Government land manager.

1989

Preparation of fire safety guidelines and a fire safety compliance report to accompany applications for development of proposed sub-divisions and single dwellings, NSW.

1985-87

Chief Fire Control Officer for ACT Bush Fire Council responsible for fire management planning and co-ordination of fire suppression activities in forest and grass fires in and around the ACT. In this and previous roles with Bush Fire Council attended or attended to (from Control Room) over 1000 fires in grass, heath, eucalypt forest and pine plantations. Responsible for training and co-ordination of volunteer fire fighters.

1984

Consultant in court case arising from 1980 Ash Wednesday fires in South Australia. Provided expert opinions as to probable course of events in respect of these fires.

1982-84

As experimental officer with CSIRO Project Aquarius was team member in several major fire investigations to determine fire behaviour including fire spread rates, intensity and origin. Investigated the major Mt Hickey fire in Victoria which was one of the first using new aerial suppression techniques.

1984

Consultant and expert witness for Tasmanian Crown Law Department investigating the probable cause and origin of a fire in the Deloraine area.

1981

USA For the East Bay Regional Parks District prepared a hazard reduction and fire management plan for the Lake Chabot Eucalyptus plantation near Berkeley, California.

1979-81

USA As field service representative for Chemonics Industries, USA advised on use of chemical fire retardants in a variety of fuel and fire types in west coast USA. Team member in US Forest Service Investigations involving fire forensic work to determine cause and origin of wild fires in various locations.

1972-78

As Deputy then Chief Fire Control Officer of ACT Bush Fire Council, responsible for fire management planning and co-ordination of fire suppression activities in and around the ACT. Lectured in fire behaviour, fire management and fire planning at graduate level at Australian National University and Canberra College of Advanced Education.

1970-71

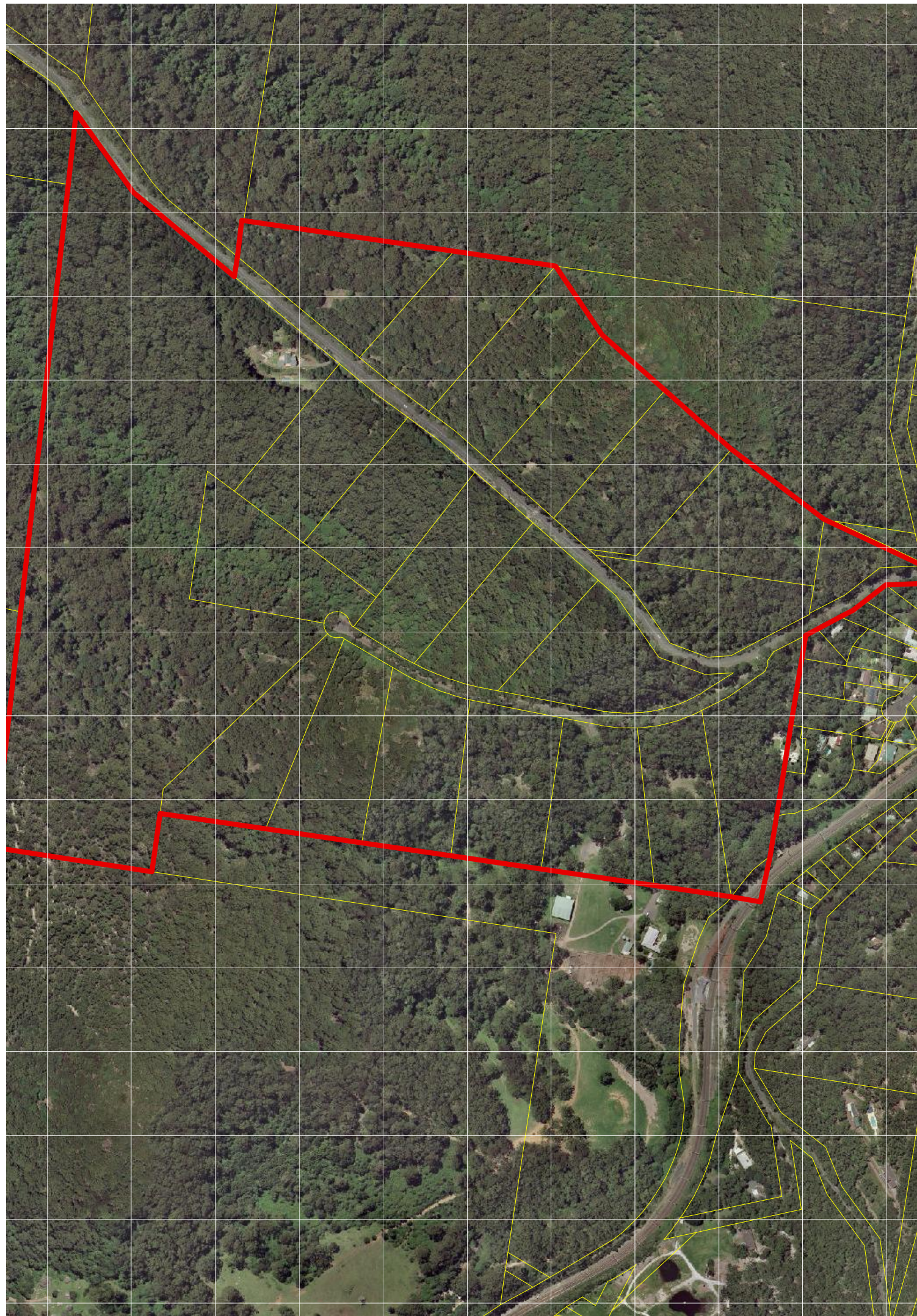
In varying capacities assisted the Chief Fire Control Officer of the ACT.

Annex 2 – maps

Maps and Plans











7D Land Helensburgh & Otford

Drawn By: H. Jones
 Date: 21/04/2005
 GIS ref: 10-2100001-0000-1-2-000

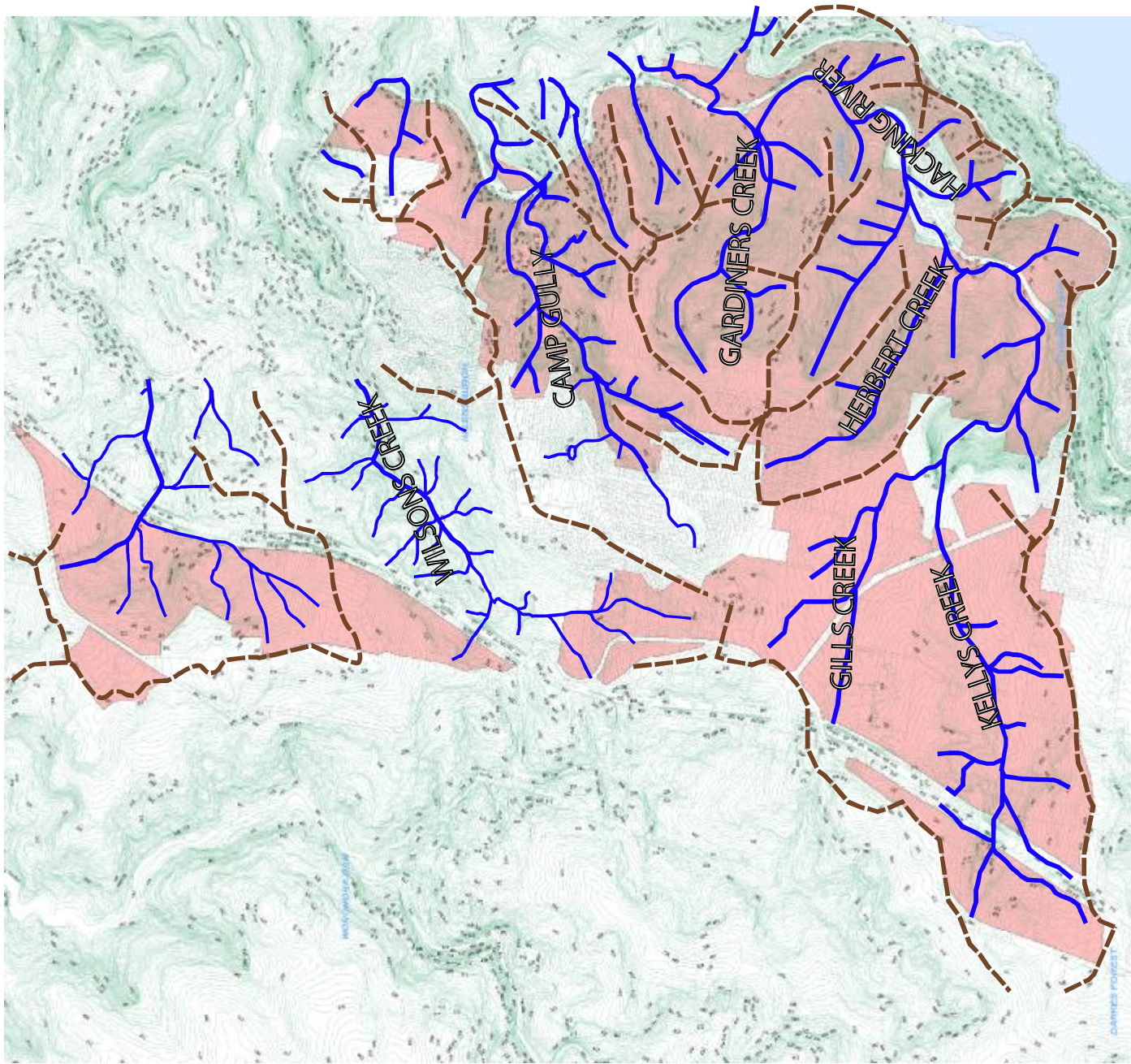


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This map is a representation of the land parcels in the area of Helensburgh & Otford. It is not a legal document and should not be used for legal purposes. The map is based on the best available information and is subject to change without notice.

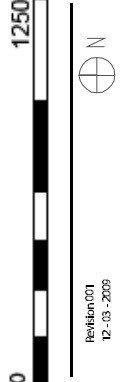
appendix c

constraints map (creeks,
ridges, slope)



Catchment

- Water Runoff / Creek
- Ridge Line
- Study Area



appendix d

liverpool development control
plan 2008, part 1.1, chapter 4 –
bushland and fauna habitat
preservation

Appendix D

4. Bushland and Fauna Habitat Preservation

Applies to

This section applies to:

- a) All land, which contains or is adjacent to bushland.
- b) Any Land zoned:
 - W1 - Natural Waterways
 - SP1 - Drainage
 - Land shown on the Environmental Significant Land Maps of the *Liverpool IEP 2008*.
 - E2 - Environmental Conservation
 - E3 - Environmental Management
 - Any land under the definition of a waterbody in the *Liverpool IEP 2008*.
- c) Development that has potential to directly or indirectly destroy or adversely affect bushland.

Background

Bushland provides a variety of positive values to an urban area, including education, conservation, scientific and aesthetic values. It consists of native groundcovers, shrubs and trees that combine to produce a community that provides habitat for fauna. In many areas only a small number of native species remain and their health and existence are increasingly threatened by urban development.

As well the positive contributions at a local level to the urban and rural environments, bushland preservation contributes to total catchment health and preservation of biodiversity.

Objectives

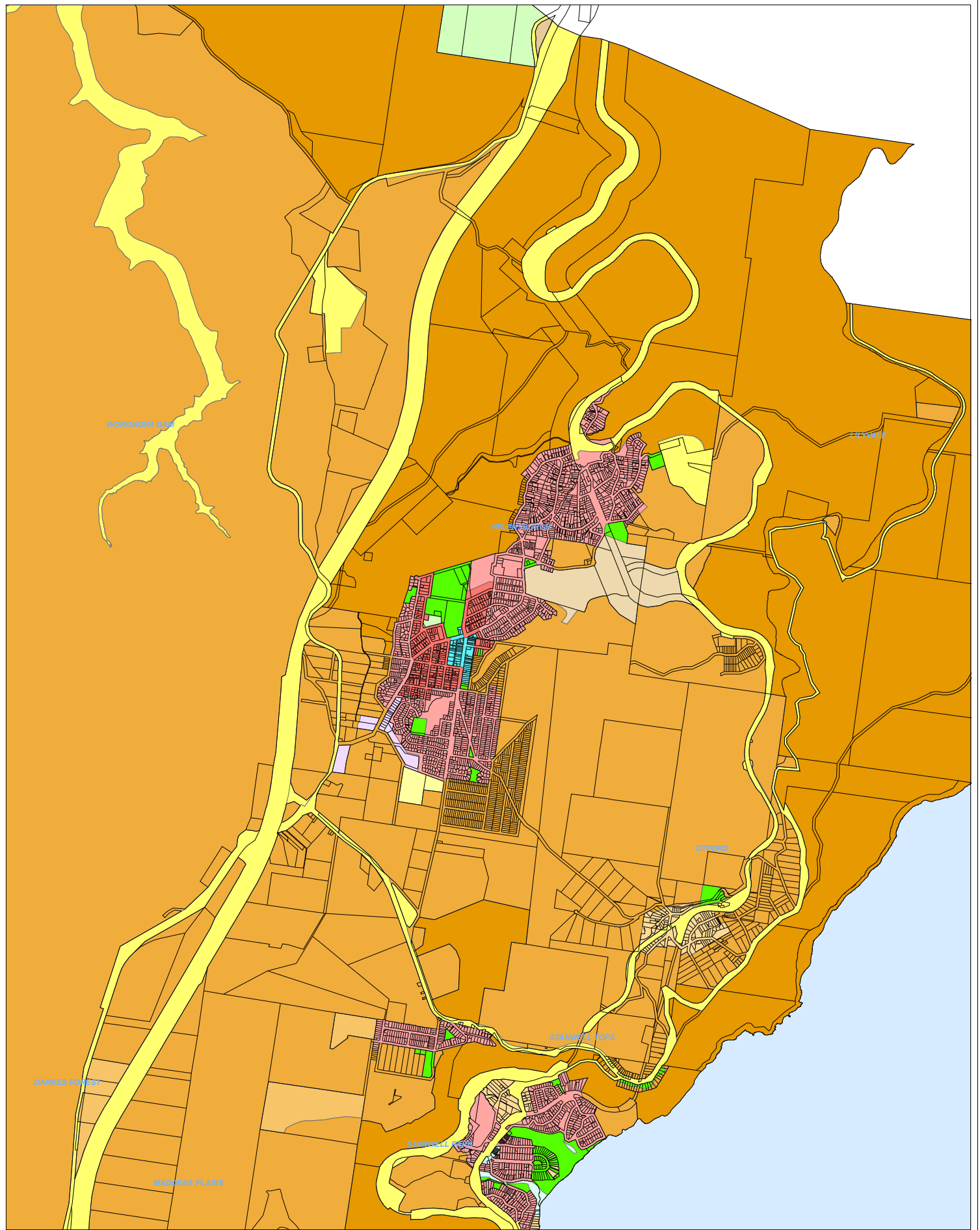
- a) To protect and manage natural assets in association with the development of land.
- b) To conserve the natural heritage of Liverpool.
- c) To maintain and improve the amenity and scenic qualities of Liverpool.
- d) To maintain and enhance the biodiversity and natural ecology of Liverpool.

Controls

- 1. Bushland, particularly that identified as a threatened community or habitat for a threatened species shall be substantially retained and incorporated within a development. Clearing of bushland in association with any development shall be limited to the extent necessary to facilitate the safe and orderly use of the land.
- 2. Any substantial clearing of bushland shall only be considered where an offsetting is proposed. Any development application containing an offsetting proposal shall be supported by an Offsetting Management Plan.
- 3. Where bushfire management measures are required that involve clearance or alteration to bushland, details of proposed measures shall be submitted. Clearing for the purposes of bushfire management involving a substantial loss of bushland shall not be permitted.

appendix e

draft wollongong local
environmental plan 2009, land
use table



Legend

- B1 Neighbourhood Centre
- B2 Local Centre
- B3 Commercial Core
- B4 Mixed Use
- B6 Enterprise Corridor
- B7 Business Park
- E1 National Parks & Nature Reserves

- E2 Environmental Conservation
- E3 Environmental Management
- E4 Environmental Living
- IN1 General Industrial
- IN2 Light Industrial
- IN3 Heavy Industrial
- IN4 Working Waterfront

- R1 General Residential
- R2 Low Density Residential
- R3 Medium Density Residential
- R4 High Density Residential
- R5 Large Lot Residential
- RE1 Public Recreation
- RE2 Private Recreation

- RU1 Primary Production
- RU2 Rural Landscape
- RU4 Rural Small Holdings
- SP1 Special Activities
- SP2 Infrastructure
- SP2R Infrastructure Road & Rail
- SP3 Tourist

- W1 Natural Waterways
- W2 Recreational Waterways
- W3 Working Waterways

DLEP 2009 Helensburgh & Otford

Drawn By: H. Jones

Date: 09.01.2009

Gis ref: DLEP 2009 Helensburgh Base.mxd

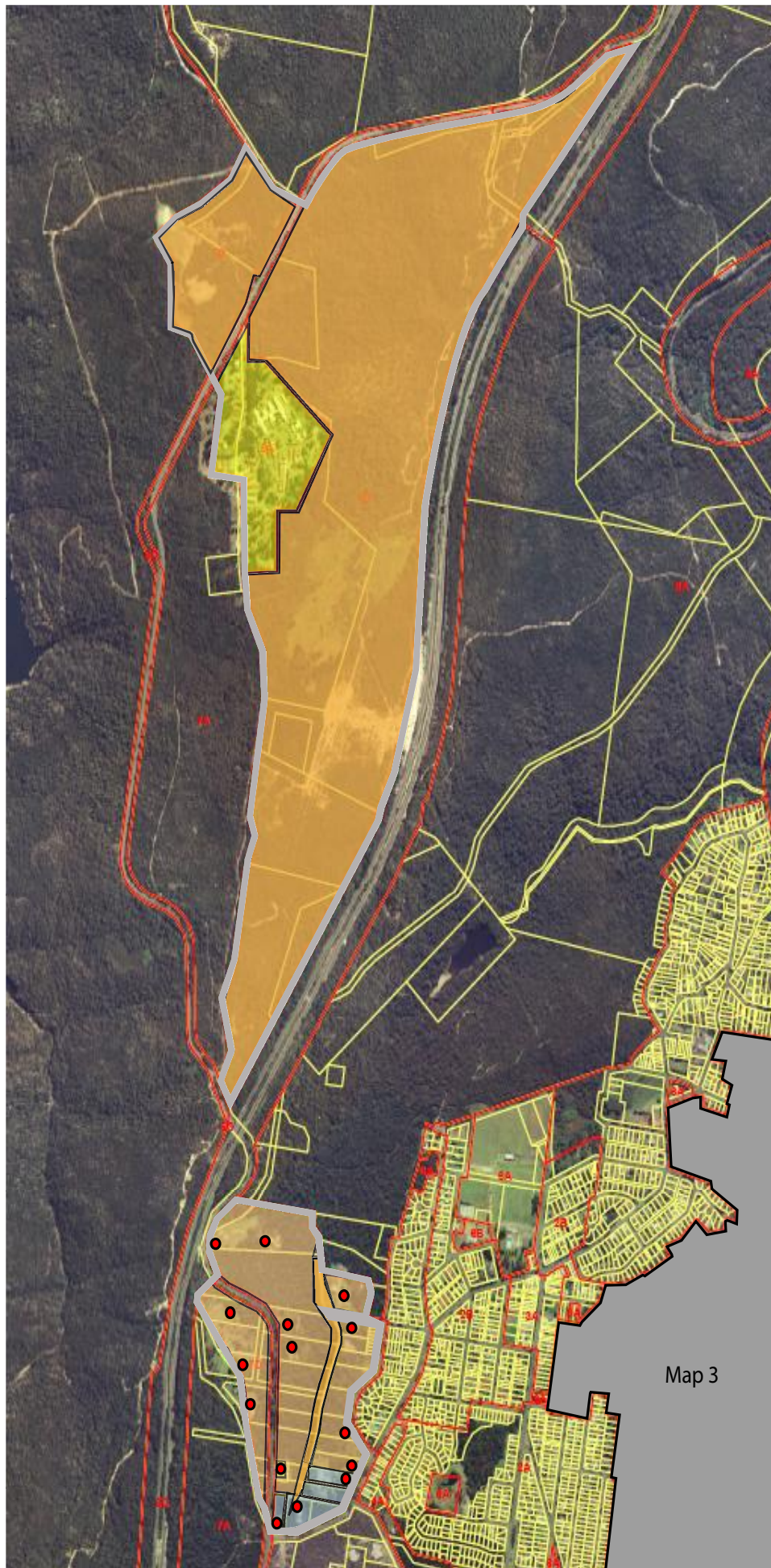


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



This map is a copy of the LEP 1990 Zone Maps, Section 149 Certificates should be applied for to receive official advice of the zoning of the land.
While every effort has been made to ensure the highest possible quality of data, no liability will be accepted for any inaccuracy of the information shown.

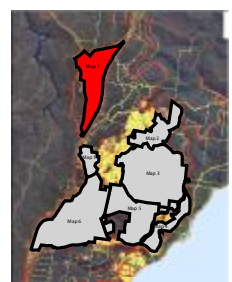
appendix f

proposed zoning maps



Map 1 - Proposed

-  B6: Enterprise Corridor
-  E2: Environmental Conservation
-  E3: Environmental Management
-  R2: Low Density Residential
-  RU2: Rural Landscape
-  SP2: Hospital
-  Existing Dwelling

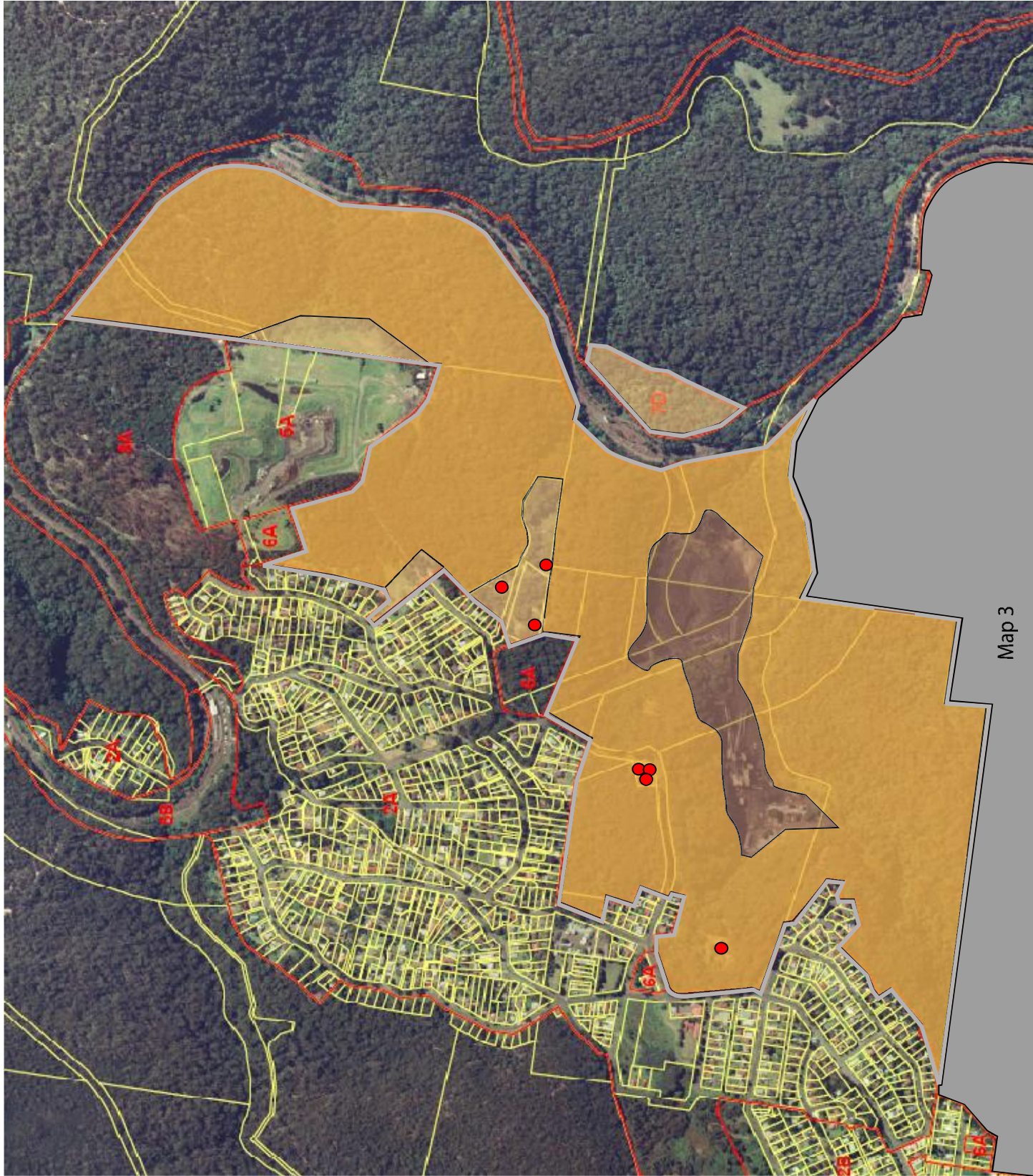


Revision 005
13 - 07 - 2009

willana
associates
urban planning and facilities management

Map 2 - Proposed

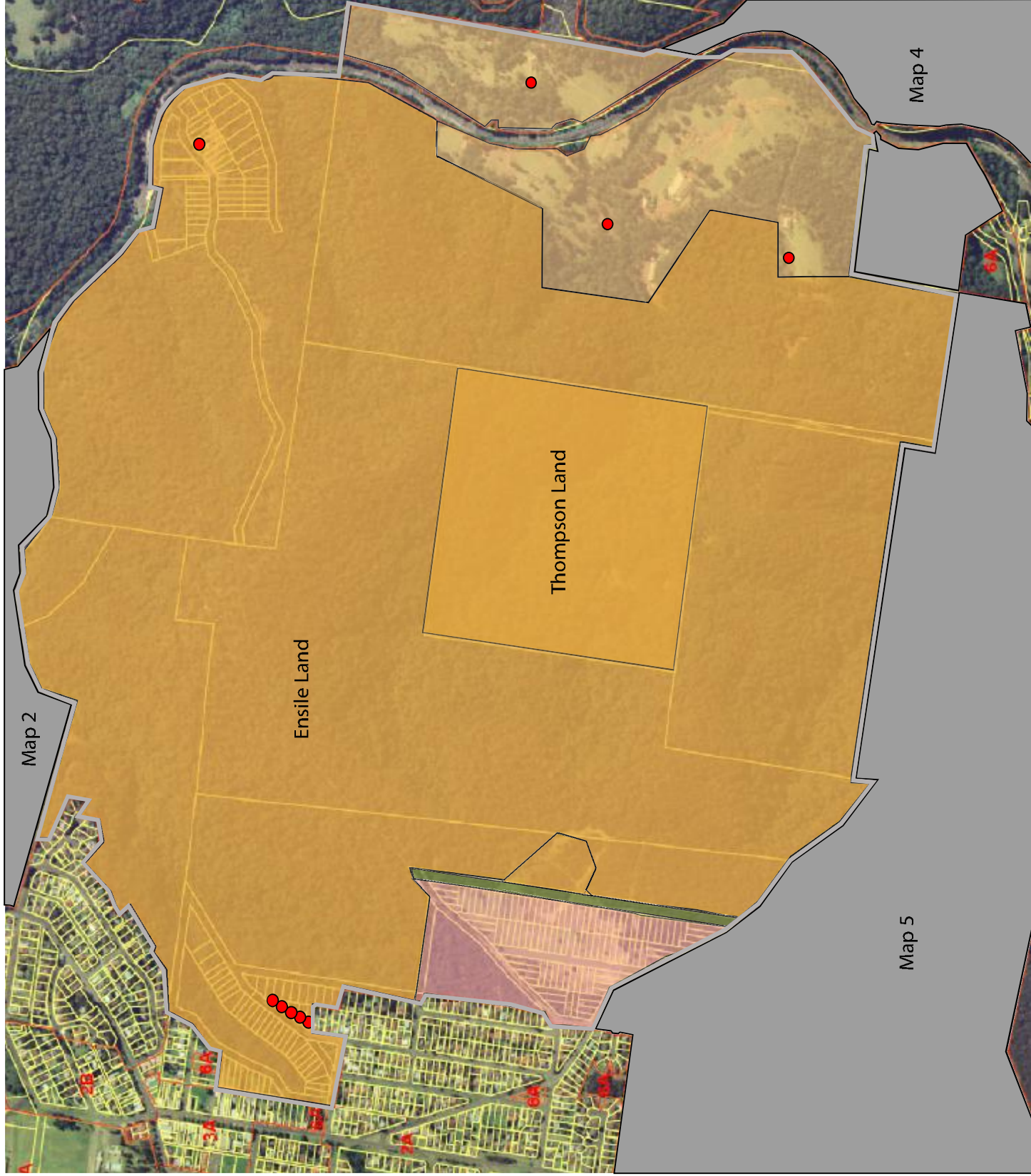
- E2: Environmental Conservation
- E3: Environmental Management
- RU1: Primary Production
- Existing Dwelling








revision 004
12-03-2009

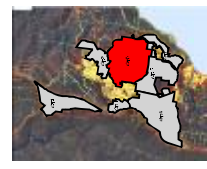


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associates
urban planning and facilities management

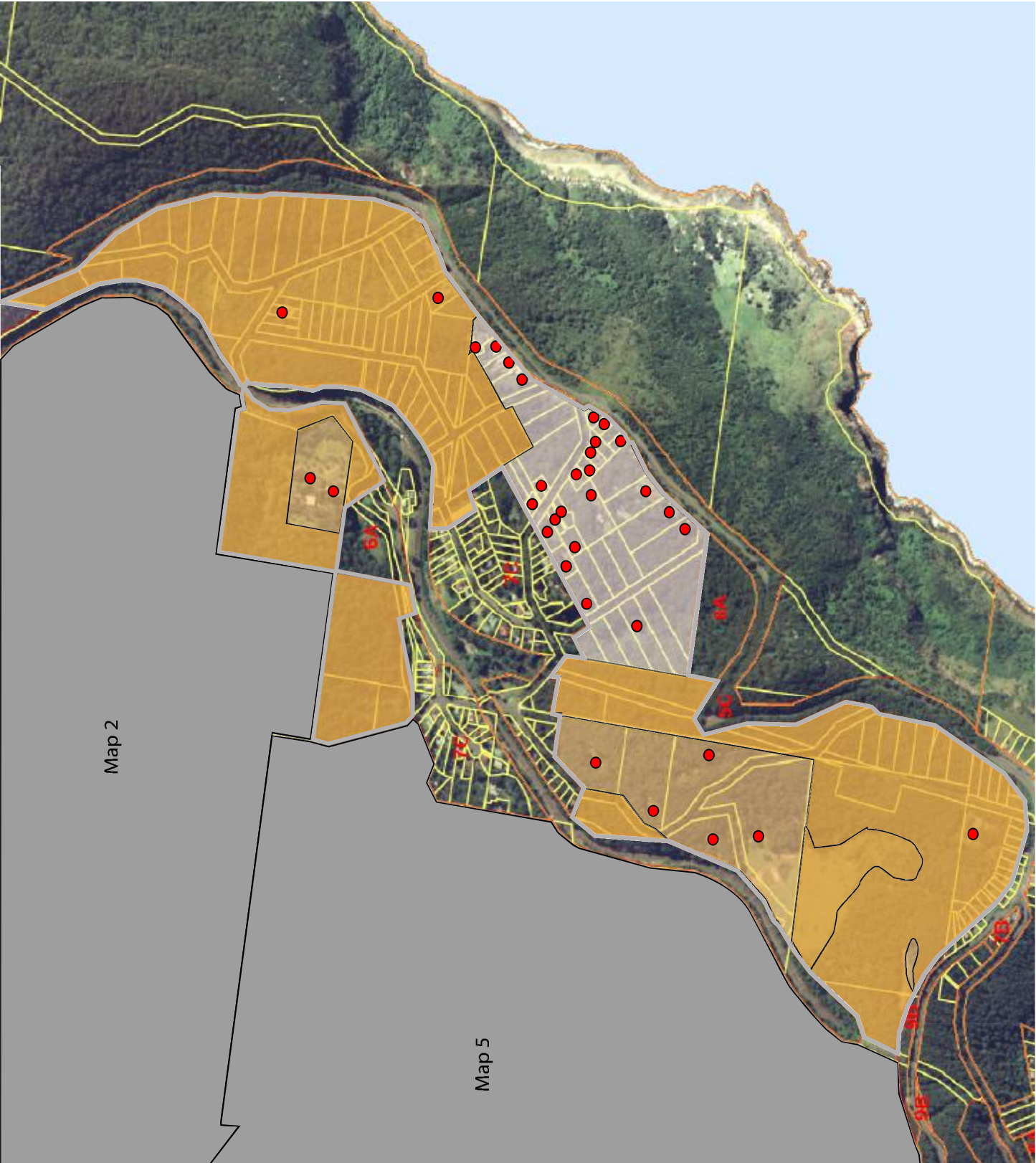


Map 3 – Proposed





-  E2: Environmental Conservation
-  E3: Environmental Management
-  RE2: Private Recreation
-  R2: Low Density Residential
-  Existing Dwelling

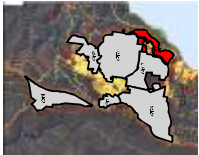


Revision 005
08-07-2009

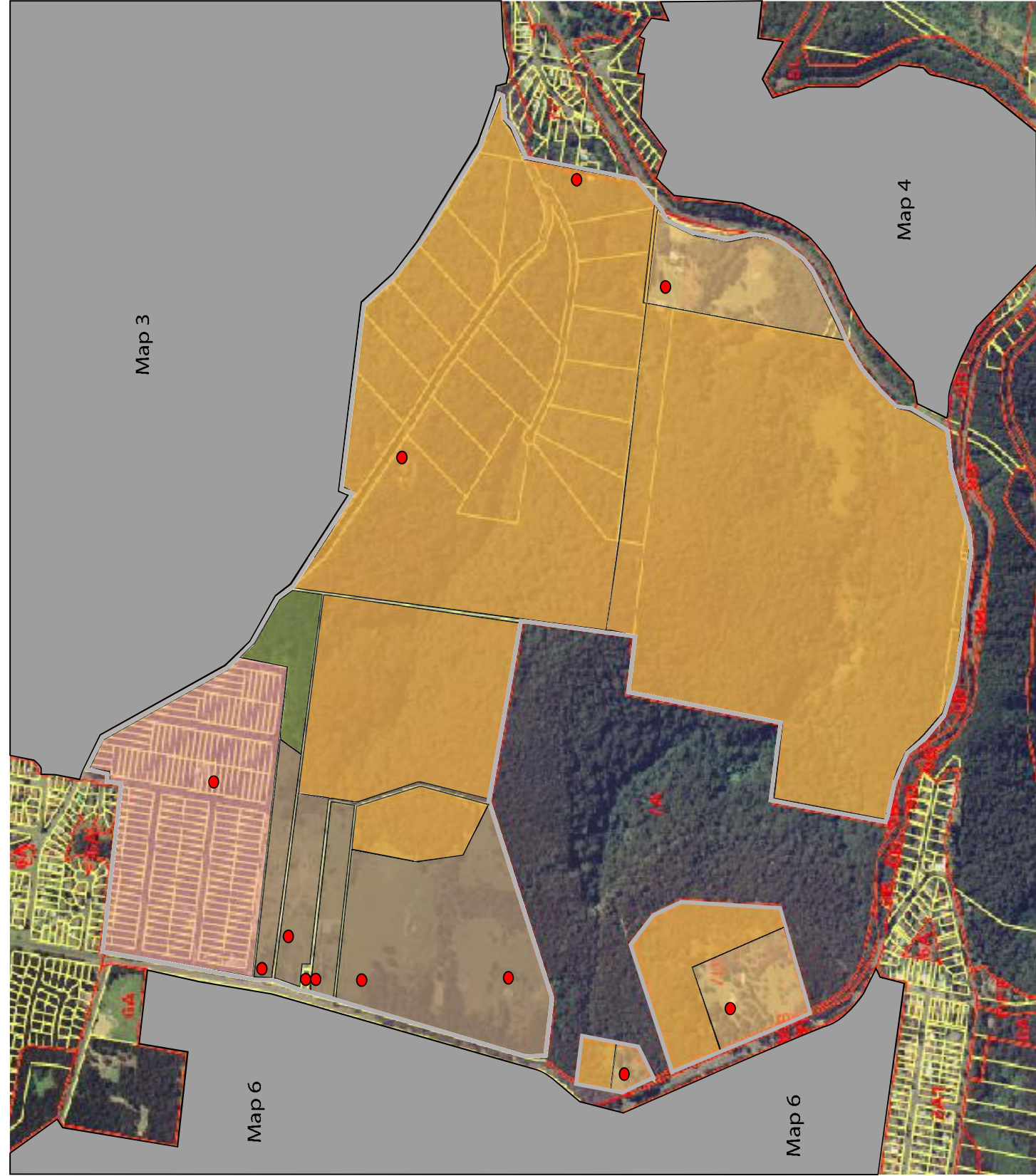


Map 4 - Proposed

-  E2: Environmental Conservation
-  E3: Environmental Management
-  E4: Environmental Living
-  Existing Dwelling

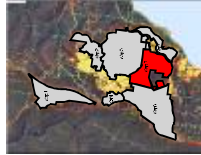


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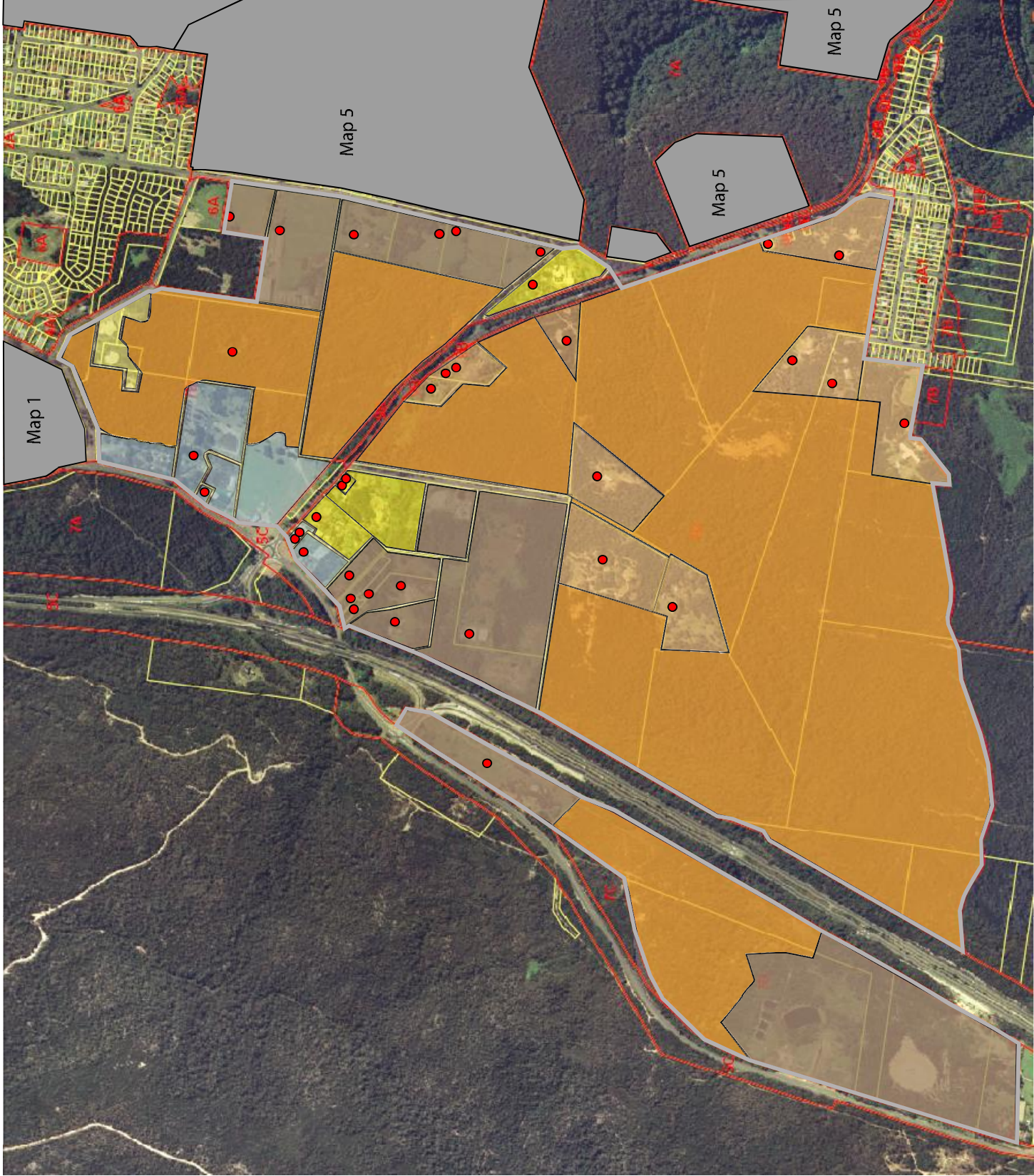


Map 5 - Proposed

- E2: Environmental Conservation
- E3: Environmental Management
- R2: Low Density Residential
- RE2: Private Recreation
- RU2: Rural Landscape
- Existing Dwelling

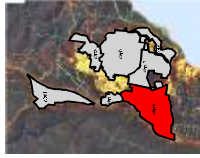


revision 005
12-03-2009



Map 6 - Proposed

- B6: Enterprise Corridor
- E2: Environmental Conservation
- E3: Environmental Management
- R2: Low Density Residential
- RU2: Rural Landscape
- SP2: Infrastructure
- SP3: Tourist
- Existing Dwelling



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Revision 005
08-07-2009

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RURAL
LANDSCAPE AND BUILT-UP MANAGEMENT