5.3 NON URBAN LANDS STUDY - STAGE 2

Reporting Officer

Manager Strategic Land Use Planning

Purpose

The purpose of this report is to present the findings of the transport and water quality studies required by Stage 1 of the Non Urban Lands Study and to recommend actions (including the preparation of a draft Local Environmental Plan) to finalise outstanding aspects of this project.

Summary

Stage 1 of the Non Urban Lands Study (NULS) identified areas of land that may be capable of increased development intensity and areas that have environmental constraints to development. Stage 2 of the NULS was undertaken to investigate the impact of development of those lands identified as potentially supporting increased intensity in terms of the transport system serving the northern beaches peninsula and on the water quality of the receiving waters draining the three catchments of Narrabeen Lagoon, Middle Harbour and Cowan Creek.

The results of the transport study (distributed under separate cover) reveal that the functionality of the transport system serving the northern beaches peninsula has progressively deteriorated since 1980. It was at this time the State Government first applied a Section 117 Direction preventing further increases in residential zoning until such time as evidence could be submitted demonstrating the transport situation has improved or there are more local employment opportunities. Indeed, the transport system will continue to deteriorate from infill and future planned development in the Pittwater, Manly and Warringah local government areas even without the release of the land identified for higher intensity development in the NULS. The study recommends that no land releases be considered until such time as substantial additional local employment is provided and/or the transport capacity of the region is improved.

The water quality study (distributed under separate cover) reveals that in order to ensure adequate protection of Narrabeen Lagoon consistent with Council's water quality responsibilities, Council could not rely solely on traditional stormwater management methods and would have to adopt a range of mechanisms consistent with the philosophy of Water Sensitive Urban Design in managing stormwater in any future release areas if and when the transport constraint can be addressed. This would require a combination of mechanisms to treat and store stormwater on each parcel and then within what traditionally is regarded as the public domain (ie on road verges, open space and drainage reserves). Such an approach will greatly influence the subdivision design to ensure appropriate treatments occurs and the various mechanisms have substantial initial construction and ongoing maintenance costs. The maintenance costs do vary from catchment to catchment and could only be fully passed onto

the developer if all development occurred under the Community Title Legislation in which case the developers and future residents would be responsible for those costs in perpetuity.

In terms of servicing capacity, Sydney Water has confirmed that, for all but one relatively small area, there are significant capacity constraints to servicing the land identified for higher intensity development with sewer and significant costs for water augmentation works, which will need to be quantified by further investigations if and when the transport capacity constraint can be addressed.

In order to finalise the remaining aspects of Stage 1 of the NULS it is recommended that a draft Local Environmental Plan be prepared to map as "Environmental Protection" those lands identified as such in NULS Stage 1 and provide a new General Principle entitled "Environment Protection". The amendment will generally not alter the existing permissible uses on land so identified, however, will require all development to be subject to the development assessment process. This amendment will also have the effect of clarifying where "SEPP 5" type development is appropriate.

Finally, in accordance with the Council resolution of 27 June 2000, this report recommends a number of amendments to the wording of individual Locality Statements to align them with changes outlined in NULS Stage 1 and reviewed by staff.

Recommendation of Director Strategy

1. That Council not proceed with the rezoning of any of the Non Urban Lands identified in Stage 1 of the Non Urban Lands Study as this would contravene Section 117 Direction S2 until such time as it can be demonstrated that improvements to the transport system and/or adequate employment opportunities have been provided within the Northern Beaches Peninsula.
2. That a meeting be held between SHOROC Councils to discuss the findings and implications of the transport study.
3. That if and when (1) above is addressed, Council note that the application of Water Sensitive Urban Design principles is most appropriate to facilitate the protection of the water quality of receiving waters. However, this approach could potentially be a significant burden on Council should any development not proceed under the Community Title Legislation with the developers and residents paying construction and maintenance costs.
4. Council forward copies of both studies to relevant government authorities..
5. Consistent with the recognition of environmentally sensitive land in Stage 1 of the Non Urban Lands Study, Council resolve to prepare and exhibit a draft Local Environmental Plan (Attachment 4) to provide an "Environment Protection" overlay for those lands within Narrabeen Lagoon Catchment and Middle Harbour Catchment, amend "Schedule 1 - Exempt Development" and the introduce a new General Principle entitled "Environment Protection".

6. That Council note that in all but one area there are sewer and water servicing constraints that require resolution prior to consideration of further releases in the non urban lands of Warringah should issues surrounding the Section 117 Direction be resolved.

7. That Council resolve to prepare and exhibit a draft Local Environmental Plan (Attachment 4) to amend the wording of individual non urban Locality Statements and remove the public open space zoning applying to Lot 210 DP 752017 Kulgoa Road Terrey Hills.

RECOMMENDED TO COUNCIL by the General Manager.

BODY OF REPORT

Reporting Officer

Manager Strategic Land Use Planning

Management Plan

Program:	Urban Development
Program Goal:	To achieve a built environment which complements and enhances natural areas, public spaces and the desired character for Warringah.
Program Function:	Strategic Land Use Planning
Strategy (if applicable):	Develop strategic plans for primary land use activities and areas that address current and projected future needs and issues.
Management Plan:	warringah PLAN 2000-2003

Purpose

The purpose of this report is to present the findings of the transport and water quality studies required by Stage 1 of the Non Urban Lands Study and to recommend actions (including the preparation of a draft Local Environmental Plan) to finalise outstanding aspects of this project.

Background

In March 1998, Council appointed PPK Environment and Infrastructure to undertake the Non Urban Lands Study. The draft Non Urban Lands Study was subsequently reported to Council on 27 October 1998 and at that meeting Council resolved to place the study on public exhibition for comment. It did not at that time adopt or endorse the study or any of its recommendations.

Following the public exhibition, the consultant's brief was extended to review the public submissions and make any consequential amendments to the study findings. Council considered the report on Stage 1 of the Non Urban Lands Study on 27 June, 2000 and resolved, among other things, that any proposal to increase the intensity of development (as recommended in the study) should not be considered until an Environmental Strategy and Transport Strategy is completed. These two studies/projects were included within the warringah PLAN 2000-2003. The two projects are identified as:

- Transport Strategy – Stage One
  Computer model examining impact of potential urban releases on road functioning.
- Examine impact of development within natural catchments project (identifying recommended urban releases).

Stage 1 of the NULS relied on a detailed 'urban capability analysis' based on the synthesis of constraints to identify land that may be capable of supporting increased development. The remaining lands were identified as environmentally sensitive with limited development

opportunities. The identification of lands for increased development was based on urban capability analysis alone and does not take account of other considerations such as how this land would contribute to providing an appropriate urban form or whether the release of such land is consistent with broader regional planning constraints such as impacts on the regional road network or maintaining water quality in sensitive catchments.

The recommendations of the NULS Stage 1 to prepare Transport and Environmental Strategies focus on unresolved regional planning issues concerning the functioning of the regional road network and maintenance of water quality in highly valued waterways should further releases occur. In this regard, it should be noted that:

a) The Warringah Peninsula is subject to a Section 117 Direction under the Environmental Planning and Assessment Act which prevents Council from preparing an LEP which would result in major increases in residential zoning unless there is evidence that additional local employment opportunities have been created and/or the capacity of the transport system has been upgraded. Also relevant to this issue is the State Government's "Action for Transport 2010" which has adopted targets to halt the growth in per capita vehicle kilometres travelled (vkt) by 2011 and halt the growth in total vkt by 2021.

b) Council has water quality and water flow responsibilities and sets objectives under relevant Stormwater Management Plans approved by the Environmental Protection Authority for a number of its catchments including Narrabeen Lagoon. Furthermore, in regard to Narrabeen Lagoon, the recent Issues Paper released by the Healthy Rivers Commission has stated that Councils need to ensure that provisions in statutory instruments are strongly influenced by assessments of the capabilities and limitations of coastal lakes and their wetlands.

Land Identified for Higher Intensity Development

The transport and water quality studies carried out are to assess specific impacts which may potentially emanate from releasing those lands identified as being capable of increased development intensity in NULS Stage 1. These lands are shown on the map at **Attachment 1** and are described as follows:

a) Extension to Terrey Hills Village (Cowan Creek Catchment)

Area A comprises an area of 38 hectares of land adjacent Terrey Hills Village. This area has been identified in the study as supporting an increase in density between 1 dwelling per hectare to 15 dwellings per hectare depending on infrastructure availability and costs.

b) Red Hill, Oxford Falls Road, Wakehurst Parkway and Forest Way (Narrabeen Lagoon Catchment)

The study identifies that much of the Narrabeen Lagoon catchment in these areas has severe environmental limitations to development. However, 4 areas are recognised as having potential for increased development intensity as follows:

Area B comprises an area of over 65 hectares of land adjacent Forest Way. This area has been identified in the study for urban release at a density of 15 dwellings per hectare. This area was considered suitable in the NULS as it is at the top of the catchment on flatter land and exhibits fewer environmental constraints than the remainder of the catchment.

Areas C, D and E comprise a 25 hectare area adjacent Morgan Road, a 92 hectare area adjacent the Wakehurst Parkway and a 58 hectare area adjacent Red Hill, respectively. These areas have been identified in the study for rural residential purposes at a density of 1 dwelling per 1 or 2 hectares, as opposed to conventional urban residential subdivision. These three areas exhibit some environmental constraints such as poor soils and steep and elevated slopes (with consequential visual impacts). NULS Stage 1 therefore recommended that these areas are more suitable for large lot subdivision of a rural residential nature only to overcome the constraints associated with this land and protect the natural character of these areas.

Area F is the remaining large area within Oxford Falls Valley and is in a relatively pristine condition unsuitable for development due to severe environmental constraints and the undesirable impact of intensively developing the majority of the Narrabeen Lagoon catchment.

c) West side of Forest Way in Belrose (Middle Harbour Catchment)

The study recommends 3 distinct new zonings west of Forest Way in Belrose.

Area G comprises the area bounded by Forest Way, Wyatt Avenue, Linden Ave and north of Bundaleer Street running parallel to Forest Way. It is proposed in the study that this area becomes a community support zone with a locality statement similar to the A4 Myoora Road Locality. This area is at the top of the catchment on flatter land and exhibits fewer environmental constraints than the remainder of the catchment.

Area H comprises two parcels with a total area of 45 hectares west of Linden Avenue and Ralston Avenue. It is proposed in the study that this area could accommodate 23 new dwellings at a density of 1 dwelling per 2 hectares.

Area I is the remaining large area the Belrose North area and is in a relatively pristine condition unsuitable for development due to severe environmental constraints. The study proposes that a bushland recreation area be recognised as an extension of the Bare Creek Locality as the remainder of the locality has significant environmental limitations and is suitable for only very low intensity land uses such as bushland reserves.

Transport and Water Quality Consultants and Assumptions

The transport study and modelling was undertaken by 'Transport and Traffic Planning Associates' in association with 'Sims Varley Traffic Systems Pty Ltd'. The catchment modelling and water impact analysis was undertaken by 'WBM Oceanics' in association with 'Lawson and Treloar'.

Both consultants were requested to undertake modelling or use existing models to ascertain the current state of the transport system and catchment of Narrabeen Lagoon, the state assuming all development potential under existing zonings is realised and then the impacts should land identified in Stage 1 of NULS for increased intensity of development be released, based on two scenarios as follows:

(a) Scenario One is the maximum development density (discussed above) based on the range of recommended densities for each area, ie varying between 15 dwellings per hectare (eg adjacent Forest Way) to 1 dwelling per 1 hectare (eg Oxford Falls and Red Hill).

(b) Scenario Two at a density consistent with the State Government preferred residential release rate of 15 dwellings per hectare, which was required for the Perentie and Dawes Roads release at Belrose. The latter scenario was used purely for sensitivity testing notwithstanding the constrained urban capability of some of the land as identified in the NULS study.

Issues

The progression of the recommendations contained in NULS Stage 1 requires examination of the specific issues concerning the transport system, water quality, servicing availability and amendments to the LEP to implement the outstanding recommendations to implement environment protection areas and changes to Locality Statements. These specific issues are discussed below.

Transport System Study

Background to S117 Direction

The Warringah Peninsula (also referred to in this report as the Northern Beaches Peninsula) comprising Warringah, Pittwater and Manly Councils are subject to a Section 117 Direction 'S2 Warringah Urban Release Areas' issued by the Minister in August 1980 which requires when considering new LEPs that:

> *"Any proposal for major increase in residential zoning on Warringah Peninsula, should be accompanied by evidence that additional employment opportunities exist or have been created and/or that the capacity of the transport system has been upgraded to cater for the proposal."*

The Section 117 Direction S2 is a direct response to the transport problem on the Northern Beaches Peninsula (NBP). The NBP has a major transport disability in comparison to other parts of the Sydney region in so far as it is physically separated by topographical constraints and waterways, has no mass rail transport system and hence relies exclusively on three roads linking the Peninsula with the remainder of Sydney. The three access points (with a maximum of eight exit and entry lanes) are at the Spit Bridge (Manly Road), Roseville Bridge (Warringah Road) and from St.Ives (Mona Vale Road) and are utilised by both cars and buses. The Spit and Roseville Bridge routes and to a lesser extent Mona Vale Road have a long history of capacity problems resulting in traffic delays and congestion, particularly during the peak periods.

Whilst traffic delays and congestion are increasingly common to many areas of Sydney, it should be noted that the Warringah Peninsula remains uniquely disadvantaged as:

- Unlike the rest of Sydney which has relatively convenient access to mass rail transport and a number of road options to access that system, the nearest railway stations are located outside the NBP and can only be accessed by travelling through the constrained entry/exit points (Spit Road, Mona Vale Road and Warringah Road);
- There are no current proposals and limited scope to increase the capacity of the three existing entry/exit points;
- The options to provide new entry/exit points to the northern beaches peninsula is severely constrained by the waterways and National Parks which define the borders of the NBP;
- The public bus system (being the only mass transport system available) must also compete for space of the same constrained road system; and
- Without a corresponding increase in local jobs, any population growth will be car dependent and such will cause an increase in vkt, contrary to State Government objectives.

The Section 117 Direction was first reviewed by Warringah Council in 1984 when the local government area also comprised Pittwater Council. This review examined broad demographic and employment information and it concluded that up to 500-1000 additional lots could be released without compromising the transport system, given the improvements to the capacity of Mona Vale Road and the increased job opportunities outside Sydney CBD. It is apparent that DUAP relied on this information when it prepared REPs to release land at Frenchs Forest, Oxford Heights and Red Hill. That 1000 lot ceiling for residential releases has now been well exceeded in Warringah alone, let alone rezonings that have occurred by REP's in the other two local government areas.

In addition to the above and notwithstanding the Section 117 Direction, DUAP's urban consolidation policies saw the introduction of the dual occupancy legislation, which led to the approval of some 1550 dual occupancy dwellings between 1991 and 2000 in Warringah alone. Dual occupancies were also prevalent in the Pittwater and Manly Council areas. Additional dwelling densities under the various Residential Development Strategies prepared to gain exemption from SEPP 53 have also been required by the State Government in Warringah, Pittwater and Manly local government areas. It is therefore not surprising that

most criteria available on the capacity of the transport system suggest that the situation has deteriorated markedly since 1980 when the Section 117 Direction was first applied.

DUAP has only undertaken one review of the Section 117 Direction S2 in 1988 (when it undertook a blanket review of all Directions) and concluded the Direction S2 should continue to apply to Warringah Peninsula. A search of DUAP's files revealed that this was not based on a detailed analysis of the issues. Accordingly, it is imperative that detailed transport investigations and modelling occur to ascertain the continued status and relevance of the Section 117 Direction.

Consultant Brief

The Transport Study commissioned by Council is needed to address the Section 117 Direction. In particular, the consultants have been specifically asked to determine whether the Section 117 Direction S2 continues to be valid and justified for the Warringah Peninsula and if so, whether there is evidence that demonstrates that increases in residential density above what is already planned for in the area can occur on those lands identified in Stage 1 of the NULS.

The performance of the transport system for the Warringah Peninsula is a function of the transport capacity (road capacity) and the transport demand (hinging on the relationship between resident workforce and location and number of local jobs). There are a number of parameters by which one can compare the capacity and demand associated with the transport system in 1980 (when the Section 117 was first applied), to the current date and then into the future. Whilst this provides a comparative assessment of the transport system, ultimately its performance and future functioning can only be accurately measured through the preparation of a comprehensive network computer model, which has not previously occurred. To this end the consultant was asked to focus on:

1. The capacity of the transport system in 1980 (when the S117 was first applied) compared to 2001 and then any planned future improvements to the capacity of the transport system.

2. The transport demand in 1980 compared to 2001, based on journey to work information and demographics, and examine the future demand for transport based on development permitted by existing residential and employment zonings.

3. The transport demand from releasing the land identified in NULS at two development densities representing the two development scenarios.

4. The development of a computer model of the transport system (2001) based on the above which can test the impacts on the transport system assuming growth under existing zonings and the two NULS development scenarios at 2006 and 2021.

Transport Capacity

The capacity of the transport system on the NBP is a function of traffikable lanes within the Spit Bridge, Warringah & Mona Vale Road corridors. Since 1980, road improvements to increase the capacity of the transport system has been limited to Mona Vale Road with the construction of an additional 2 lanes completed in 1983 and Forest Way (a cross regional route) with the construction of 2 additional lanes completed in the early 1990's. Other improvements within the three corridors such the construction of the Burnt Bridge Deviation and bus bays on Warringah Road have not increased the capacity of the transport system at the critical crossings at the Spit and Roseville Bridges. There are no further major transport improvements proposed for the NBP until 2016 when Mona Vale Road will be increased to 4 lanes (2 lanes each way) between Mona Vale and Terrey Hills.

Despite no significant capacity improvements to the Spit Bridge and Warringah Road routes between 1985 and 2000 the daily vehicle movements increased by some 12,000 vehicles or 20% on Spit Road and some 8000 vehicles or 13% on Warringah Road. The increase in daily flows, however, was most pronounced on Mona Vale Road where weekday trips increased by some 25,000 vehicles or 95.5% (almost double) reflecting the increase in road capacity and redistribution of work opportunities at Macquarie Park, North Ryde and Austlink. Overall weekday trips on the three major road corridors increased by 45,000 vehicles or 30%. These results are set out below in Table 1.

Table 1: Average Daily Weekday Traffic Flows

Route	Direction	1985	2000	Change %
Spit Bridge	Citybound	30010	35102	+ 17.0
(Manly Road)	Outbound	30540	37568	+ 23.0
	Total	**60550**	**72670**	**+ 20.0**
Warringah Road	Citybound	32190	37682	+ 17.1
	Outbound	33110	35965	+ 8.6
	Total	**65300**	**73647**	**+ 12.8**
Mona Vale Road	Citybound	12710	26292	+ 106.9
	Outbound	13900	25732	+ 85.1
	Total	**26610**	**52024**	**+ 95.5**
Total	Citybound	74910	99076	+ 32.3
Entry/Exit	Outbound	77550	99265	+ 28.0
	Total	**152460**	**198341**	**+ 30.1**

Source: RTA Traffic Technology Branch

Increases in traffic flows in the two hour peak period also occurred between 1981 and 2000 within the three major corridors. Peak period movements increased on Spit Bridge, Warringah and Mona Vale Road by approximately 12%, 6% and 95% respectively. Overall peak period

flows on the three major corridors between 1981 and 2000 increased by 23%. These results are set out below in Table 2.

Table 2: Variations in Traffic Flows in the Peak Two Hour Periods on the Main Corridors

Route	Direction	AM (2 hours)			PM (2 hours)		
		1981	2000	Change %	1981	2000	Change %
Spit Bridge	Citybound	7650	6831	- 10.7	3010	3361	+ 11.7
(Manly Road)	Outbound	2400	3358	+ 39.9	6390	7146	+ 11.8
	Total	**10050**	**10189**	**+ 1.4**	**9400**	**10507**	**+ 11.8**
Warringah Road	Citybound	9190	9062	- 1.4	3150	4009	+ 27.3
	Outbound	2550	3227	+ 26.6	7860	7666	- 2.5
	Total	11740	**12289**	**+ 4.7**	**11010**	**11675**	**+ 6.0**
Mona Vale	Citybound	3240	5041	+ 55.6	1240	4024	+ 224.5
Road*	Outbound	1300	4576	+ 252	3000	4243	+ 41.4
	Total	**4540**	**9617**	**+ 111.8**	**4240**	**8267**	**+ 95.0**
Total	Citybound	20080	20934	+ 4.3	7400	11394	+ 54.0
Entry/Exit	Outbound	6250	11161	+ 78.6	17250	19055	+ 10.5
	Total	**26330**	**32095**	**+ 21.9**	**24650**	**30449**	**+ 23.5**

Source: RTA Traffic Technology Branch

* *The 1981 figures are from the station north of Woodlands Avenue Pymble and the 2000 figures were recorded at the permanent station west of Forest Way at Terrey Hills*

It is worth noting that in addition to the increases in traffic volumes within this 2 hour period the time span of the peak period has increased appreciably between 1980 and 2001.

Transport Demand

The increased number of trips on the road system, as discussed in the previous section, is a direct result of an increased demand for external trips from the NBP. Transport demand is a function of the resident workforce and the location of available jobs. A component of the Section 117 presumes that if more local jobs can be created this will take pressure off the transport system, particularly the need to travel out of the Warringah Peninsula.

In the period between 1981 and 1996, the NBP experienced an increase in the resident workforce of 24,000, despite a small population increase of 2,300 (based on the actual resident population recorded on census night). In the same period, the NBP had an increase of 18,000 local jobs. In 1996, about 51% of the resident population were employed and the percentage of residents working on the NBP remained at about 49%. To this end, there was a moderate decrease in the percentage of local jobs filled by NBP residents, falling from 88% to 81%.

By comparison to similar Local Government Areas (LGA's), the NBP has a very high local containment of employment. Despite this, the demand for travel to work outside the NBP increased from 38,000 work trips in 1981 to 44,000 work trips by 1996 representing a 16% increase in demand on the transport system. There has been a marked shift away from employment in the Sydney CBD between 1981 and 2000, which is evidenced by increased traffic movements on Mona Vale Road linking to Ryde, Parramatta etc.

Future Transport Demand based on Existing Zonings

The future transport demand to travel outside the NBP is dependent on the expected future population, their demographics and the availability of local jobs. Detailed estimates and review of the future resident population and number of new local jobs have been made based on the existing residential and employment zones of the NBP Councils. The estimates have been included in the future projections of transport demand which show:-

- Between 2001 and 2006, the resident population on the NBP is expected to increase by 13,500. This will result in an overall increase in the resident workforce population. To achieve a similar containment of the predicted resident workforce that existed in 1996 of 49%, 4,200 new jobs will have to be created, which, based on the employment projections may well be achieved. However, this will still result in an additional 3,600 residents commuting to work locations outside the NPB further exacerbating the demand on the transport system.

- Between 2001 and 2021, the population on the NBP is expected to increase by 45,000. This includes a significant number of persons (14,200) within the planned land release at Ingleside, as listed in DUAP's Urban Development Program, which will result in an overall increase in the resident workforce population in the NBP. To achieve a similar containment of the predicted resident workforce that existed in 1996 of 49%, the total number of local jobs needed to support this population is 14,000. As only 5,400 new local jobs are anticipated in this period, a very significant under supply of jobs and a significantly increased need to commute outside the NBP will occur, unless this imbalance can be addressed.

Future Transport Demand assuming Non Urban Land Releases

If all the land identified in Stage 1 of the NULS is released at the maximum recommended densities (Scenario 1), an additional population of 4,755 could be expected. Based on 1996 data, this equates to an additional resident workforce of 2,460. As the expected resident workforce resulting from existing residential areas will fill the balance of new jobs, this additional resident workforce would be forced to commute outside the NBP. This would place additional stress on the existing system.

If all the land identified in Stage 1 of the NULS is released at the State Governments preferred density of 15 dwellings per hectare (Scenario 2), an additional population 13,440 could be expected. This equates to an additional resident workforce of 6,960 that would be forced to commute outside the NBP on the already stressed transport system.

Computer Models

Transport models (NETANAL) have been developed for the current 2001 situation and future years (2006 and 2021) based on development permitted by existing residential and employment zonings (predicted growth). These models where then used to "test" the impacts of releasing the land identified in NULS at two development densities representing Scenarios 1 & 2.

The models test the impact of development on the transport system by investigating the performance of all intersections and roads within the NBP during AM and PM peak hours. Critical intersections have been assessed in detail to provide an indication of the impact on the three main road corridors. The model factors in proposed road, rail and ferry improvements within the NBP and Sydney Region.

This type of modelling is recognised in the transport planning field as providing an accurate and effective method of assessing road network operation and future planning strategies.

There are four main ways to measure the performance of the road system based on the modelling results. These are to:-

1. Focus on the performance of the three road corridors serving the NBP,

2. Examine the performance at the critical intersections within the transport system,

3. Examine vehicles kilometres travelled (vkt) within the transport system,

4. Examine any cost associated changes to the performance of the transport system.

The road network and intersection performance is best described by Average Vehicle Delay and the Degree of Saturation.

The Average Vehicle Delay (AVD) is a measure of the operational performance of an intersection used in the determination of Level of Service (LOS). The relationship between AVD and LOS as they relate to the operational performance of an intersection is described below:

- Average delays between 42 to 56 seconds, operating Near Capacity, LOS (D);
- Average delays between 56 and 70 seconds, operating At Capacity, LOS (E); and
- Average delays exceeding 70 seconds, operation is Unsatisfactory, LOS (F).

The average delay should be taken as a guide only for an intersection. Longer delays do occur but the average over the peak hour period is reported. **Attachment 2** contains a further explanation of the AVD and LOS.
The Degree of Saturation (DS) of an intersection is usually taken as the highest ratio of traffic volume on an approach to the intersection compared with its theoretical capacity, and is a measure of the utilisation of available green time. For intersections controlled by traffic signals, generally both queue length and delay increase rapidly as DS approaches 1.0. An

intersection operates satisfactorily when its DS is kept below 0.75. When DS exceeds 0.9, queues can be expected.

Model Results

1. Performance of three key access corridors

The model results for selected intersections within the three key road corridors serving the NBP near the entry/exit points are listed in the Tables 3 and 4.

Table 3: AM Operating Conditions for Three Key Access Corridors

Scenario	Burnt Bridge/Sydney Rd				Warringah Road/Starkey St				Mona Vale Rd/Forest Way			
	Volume	AVD	LOS	DS	Volume	AVD	LOS	DS	Volume	AVD	LOS	DS
2001	4779	34	F	0.78	6444	126	F	1.16	4871	105	F	1.1
2006 Permitted	5738	50	F	0.89	6213	125	F	1.16	5552	118	F	1.14
2006 Scenario 1	5865	54	F	0.9	6288	125	F	1.16	6035	119	F	1.14
2006 Scenario 2	6014	56	F	0.91	6236	122	F	1.15	6347	124	F	1.16
2021 Permitted	6415	69	F	0.98	6218	123	F	1.15	6662	135	F	1.18
2021 Scenario 1	6548	66	F	0.97	6608	131	F	1.17	7119	146	F	1.21
2021 Scenario 2	6766	80	F	1.02	6578	128	F	1.17	7166	146	F	1.21

Table 4: PM Operating Conditions for Three Key Access Corridors

Scenario	Burnt Bridge/Sydney Rd				Warringah Road/Starkey St				Mona Vale Rd/Forest Way			
	Volume	AVD	LOS	DS	Volume	AVD	LOS	DS	Volume	AVD	LOS	DS
2001	4776	88	F	1.05	5749	123	F	1.15	4796	106	F	1.1
2006 Permitted	5003	107	F	1.11	6637	135	F	1.18	5812	127	F	1.16
2006 Scenario 1	5156	111	F	1.12	6597	133	F	1.18	6232	140	F	1.19
2006 Scenario 2	5219	112	F	1.12	6883	137	F	1.19	6462	143	F	1.2
2021 Permitted	5229	111	F	1.12	6679	138	F	1.19	6784	155	F	1.23
2021 Scenario 1	5301	112	F	1.12	6874	142	F	1.2	7128	165	F	1.25
2021 Scenario 2	5326	112	F	1.12	6877	140	F	1.19	7377	171	F	1.26

Notes: Permitted – development under existing zonings
Scenario 1 – NULS recommended maximum densities
Scenario 2 – State Government preferred density (15 dwelling / hectare)
Volume- total volume (vehicles per hour including queued vehicles)
AVD-Average Vehicle delay (seconds per vehicle)
DS – Degree of Saturation
LOS – Level of Service (D = near capacity, E = at capacity, F = unsatisfactory)

The results indicate that the selected intersections are operating at capacity and under a high level of stress during peak hours.

As development permitted by existing zonings occurs, conditions at the three selected intersections are predicted to deteriorate, except for the Warringah Rd / Starkey St intersection in the AM peak. In fact between 2001 and 2021 delays will increase at Burnt Bridge / Sydney Road, and Mona Vale Rd / Forest Way in the AM peak by 103% and 29% respectively. Increases in delays are expected at Burnt Bridge / Sydney Road, Warringah Rd / Starkey St and Mona Vale Rd / Forest Way in the PM peak by 26%, 12% and 46% respectively.

The release of the land identified in NULS at Scenario 1 and 2 would exacerbate these delays.

2. Critical Intersections within the System

The operating conditions at 30 selected major intersections from the model results have been summarised in Table 5.

Table 5: Summary of Changes within the System

Scenario	LOS 'F'		LOS 'E'		LOS 'D'		AV AVD (secs)	
	AM	PM	AM	PM	AM	PM	AM	PM
2001 Base Case	5	9	2	2	5	5	147	135
2006 Permitted	10	11	3	3	1	6	159	164
2006 Scenario 1	12	12	4	2	1	10	171	171
2006 Scenario 2	11	15	5	2	4	10	178	184
2021 Permitted	16	21	2	4	4	2	208	227
2021 Scenario 1	19	24	2	1	3	2	226	236
2021 Scenario 2	20	25	1	2	4	0	234	246

Notes: Permitted – development under existing zonings
Scenario 1 – NULS recommended maximum densities
Scenario 2 – State Government preferred density (15 dwelling / hectare)
AVD-Average Vehicle delay (seconds per vehicle)
LOS – Level of Service (D = near capacity, E = at capacity, F = unsatisfactory)

Table 5 indicates that between 2001 and 2006, the number of intersections operating at LOS 'F' increases from 5 to 10 in the morning peak, with an increase in average delays from 147 to 159 seconds per vehicle and in the evening peak hour from 135 to 164 seconds. Further, delays will increase at major intersections by an average 8% and 22% in the AM and PM peaks between 2001 and 2006 and by 41% and 68% in the AM and PM peaks between 2001 to 2021, based on existing zonings. Other intersections within the NBP will also begin to deteriorate with worsening capacity problems.

Releasing the non urban land at the densities recommended in the NULS (Scenario 1) will impact significantly on major arterial roads and intersections in both 2006 and 2021. This coupled with the permitted development will exacerbate the stress on the existing system.

Releasing the non land identified in the NULS at the State Government preferred density of 15 dwellings per hectare will generally have a more dramatic impact.

3. Vehicle Kilometres Travelled (vkt)

The results of the modelling indicate that under existing zonings total vkt in the AM and PM peak will increase over time within in the NBP, contrary to the State Governments adopted transport targets as outlined in "Action for Transport 2010". The rate of this increase in the NBP will exceed the rate of increase within the Sydney region. In fact in the PM the rate of increase of vkt will be double the rate estimated for the Sydney region.

Releasing the identified land by 2006 at either Scenario 1 or 2 will result in a significant additional increase in vkt per hour of 9,730 km and 27,700 km in the AM peak and 11,700 km and 31,440 km in the PM peak respectively.

4. Cost per Vehicle

The modelling predicts that the cost per vehicle travelling within the NBP will increase over time. This cost is associated with increase vkt and increased delays within the system. Release of land identified in NULS at Scenarios 1 and 2 are predicted to increase vehicle costs within both the 2006 and 2021 models. The rate of increase in per vehicle cost is higher in the NBP than for the Sydney Region. Traditionally, however, the average cost per vehicle within the NBP compared with the Sydney Region has been low. This trend is predicted to continue.

Conclusions of Transport Study

The intent of the Section 117 Direction when first applied to Warringah in 1980 was to prevent the transport system deteriorating any further. By all of the measures available to assess the performance of a transport system it has deteriorated significantly and will continue to do so from just infill development under existing zonings and already planned releases (eg Ingleside). While the constrained transport system has provided a high degree of containment (ie local jobs going to local people), there will be insufficient jobs to maintain that balance in the future.

On this basis it is concluded that any further release of land under either Scenario 1 or 2 of the NULS should not be contemplated unless major transit improvements are provided and/or the supply of local employment is significantly increased.

In addition to the above, the study has confirmed that the original planning objectives of the Section 117 Direction as it applies to the NBP is still valid. In fact this Direction is more relevant now than when it was imposed in 1980. On this basis, it is recommended that the NBP Councils should not seek to have the Direction uplifted, nor is there any evidence that could support a draft LEP to facilitate any further residential development that is consistent with the Section 117 Direction.

Water Quality Study

The Non Urban Lands of Warringah contain a wide variety of land uses ranging from undisturbed bushland to intense urban development in the form of housing for aged and disabled people. It is apparent that much of the predominantly undeveloped land within these catchments contributes to the protection of the water quality of receiving waters such as Narrabeen Lagoon. Urban development (including rural residential development) has the potential to detrimentally impact water quality with increased flows and pollutant loads, if appropriate stormwater mechanisms are not put in place.

Council also has a responsibility to maintain, and where possible improve, the water quality of catchments to accord with water quality and water flow objectives fixed within and approved by the Environmental Protection Authority in the various Stormwater Management Plans. Accordingly, the water quality study must be capable of assessing the impacts of increased development densities against Council's water quality responsibilities. This can only be done where the impact of development upon the water quality of receiving waters is known.

Council's Environmental Services Unit recently had prepared the "Narrabeen Lagoon Estuary Processes Study" which examined the catchment and modelled the functioning of Narrabeen Lagoon. The resulting study found that the eastern and central basins of Narrabeen Lagoon are in a "healthy" state, largely due to the flushing of the Lagoon. However, the Study found that the western basin of Narrabeen Lagoon has poorer water quality due to the impact of urban development, the size of the basin relative to the catchment that drains to it (low assimilation capacity) and the distance from the marine flush point (being the seaward entrance of the Lagoon).

The consultant for the Stage 2 NULS investigation was appointed to embellish the model to examine the impacts of development identified in the Non Urban Lands Study upon the western basin of Narrabeen Lagoon. However, the consultant was requested to determine appropriate principles from this work which could be applied to the other catchments. In particular, the consultant for the Stage 2 water quality investigations was requested to:

- Undertake modelling of the land identified in NULS at two development densities representing two development scenarios.
- Consider a number of stormwater design solutions that may be incorporated into development proposals to reduce impacts.
- Cost the stormwater design solutions including construction and maintenance costs.
- Provide a written form of a "cost - benefit analysis" that identifies the costs (impacts) of development to Narrabeen Lagoon for each of the 2 development scenarios based on the drainage solutions investigated. This work was also to identify the costs for Council to maintain each of the design solutions/structures.

- A secondary "cost – benefit analysis" of the "costs" of construction and maintenance compared with the "benefit" of additional housing for Cowan Creek and Middle Harbour catchments.

Factors Relevant to Modelling

In order to measure the impacts of development at higher densities, the following factors required recognition or consideration in the model:

- Any development within the Narrabeen Lagoon Catchment, regardless of density, will have impacts on water quality;
- The more intensely land is developed, then the greater the volume and pollutant loads within stormwater;
- The land identified for higher intensity of development is relatively poor with slopes and shallow highly permeable soils;
- Any stormwater treatment structures should be at source (ie where the development occurs rather than further down in the catchment); and
- The selection and design of stormwater controls must be appropriate for the range of constraints typically found on the land and must consider the costs for construction and ongoing maintenance (calculated over a 50 year period).

Stormwater Design Solutions.

The study found that the relatively poor quality of the non urban lands identified for higher intensity development (including constraints such as steep slopes, shallow and sandy soils and high soil permeability) would create significant environmental and engineering difficulties if traditional stormwater quality control devices such as large above ground storage basins and constructed wetlands were constructed. The study found, however, that appropriate controls could be implemented by pursuing "Water Sensitive Urban Design" (WSUD) techniques.

The philosophy of WSUD seeks to capture water that falls onto a site and reuse it or allow it to infiltrate into the groundwater, thereby limiting runoff and its subsequent impact on natural catchments downslope. The philosophy focuses on designing subdivisions and development that manage stormwater until it leaves the neighbourhood. This includes practices such as limiting the width of roads and incorporating grass swales on road verges to allow for infiltration of water to designing a series of smaller 'at source' controls to form a "treatment train". A treatment train may include a combination of rainwater tanks, infiltration trenches, grass swales, filter strips, sediment traps that treat stormwater runoff and hence require a much smaller detention pond and constructed wetlands prior to final discharge. The proposed stormwater management practices must be incorporated in the subdivision design and will influence lot layout, building siting and design and potentially the type of, and restrictions on the land title issued (ie Community Title and/or use of Section 88B instruments).

The adoption of WSUD philosophy represents a significant shift from Council's existing stormwater management policies and practices including the certainty in being able to quantify the benefit of traditional methods if designed and constructed properly. Rather, with WSUD the range of mechanisms or controls deemed appropriate to address the stormwater impacts would have to be determined, in this case, as part of any local environmental study that would precede any rezoning.

The results of Stage Two of the Non Urban Lands Study clearly indicate that Council should not rezone land for greater intensity of development due to significant transportation limitations. However, the discussion in the Water Quality Study regarding the implementation of Water Sensitive Urban Design in Warringah is worthy of further consideration by Council. In this regard, it is noted that the draft Management Plan (Action NE.22) identifies a project investigating WSUD which states:

> *Develop a Water Sensitive Urban Design (WSUD) policy framework and implementation program. This would include revising existing on site detention provisions, guidelines for construction, design advice for water harvesting and re-use. This policy is to be progressively applied to Council projects and private development.*

The project is phased and includes a research and planning phase to June 2002, and a two stage implementation phase to June 2003 and June 2004, respectively. The WBM consultants report provides important data for this Council project and will assist in its completion.

Construction and Maintenance Costs

The study provided costings for both the construction and the maintenance of the likely range of stormwater management measures, for both development scenarios. The cost for construction of all stormwater management measures serving the entire subdivision could be met by any future developer(s), as is currently the case. However, any measures that are located in the public domain such as in road verges, parks and a water quality pond in a drainage reserve have been costed as if Council will undertake the maintenance, as has traditionally been the case. The maintenance costs were calculated over a 50 year period.

Table 6 below indicates, by catchment, the total costs for the construction of stormwater water quality controls and their maintenance over 50 years (on both private land and on the public domain) and, the maintenance costs that Council would be traditionally responsible for if any development does not proceed under Community Title legislation. The final column is a breakdown of the Council maintenance costs per lot per year over 50 years.

Table 6 – Stormwater construction and maintenance costs

Catchment and Scenario	**Total construction and maintenance costs over 50 years**	**Maintenance costs Council responsible for**	**Council cost per lot per year**
Narrabeen Lagoon Scenario 1	$14,315,000	$6,900,000	$120.00
Narrabeen Lagoon Scenario 2	$54,556,000	$28,800,000	$160.00
Cowan Creek Scenario 1	$0 as no stormwater controls are required due to existing zoning	$0	$0
Cowan Creek Scenario 2	$9,360,000	$4,474,500	$157.00
Middle Harbour Scenario 1	$4,820,000	$3,169,400	$2756.00 (due to low lot yield)
Middle Harbour Scenario 2	$9,860,000	$4,455,000	$132.00

As Council is aware, rates are the key source of revenue for Council and are expended in Council's administration and also in ongoing services and functions such as child care centres, libraries, local road improvements and the like. Council's Rates Team has advised that at the beginning of this year, the average rate for all residential properties (excluding the majority of residential flat buildings) is $848.23. These figures do not include the additional garbage collection costs of $187 or $242 for each property, depending on the requested level of service.

The potential maintenance costs of stormwater structures for both Scenarios 1 and 2 in Narrabeen Lagoon catchment would represent approximately 15% and 20% of rate income receivable from these areas which could not be used to fund other Council services. The only way Council could avoid these maintenance costs is if all development proceeded under the 'community title' legislation, in which case future residents would be responsible for all maintenance costs in perpetuity.

Sydney Water Advice on Services

Council staff have consulted with Sydney Water in regard to the servicing availability at a rural residential and urban density for those lands identified for increased intensity of development in NULS Stage 1.

Rural Residential Density Requirements

Sydney Water indicated that, as a matter of policy, it was not obliged to service "rural residential" land at 1 dwelling per 1 hectare or 2 hectares as recommended in NULS Stage 1. Further, Sydney Water confirmed that the water mains serving these existing non urban areas are sized for the existing number of rural lots only and hence any new connections are likely to require major upgrading works. Sydney Water advised that the servicing of rural residential land was of low priority. However, it would only allow connection of future rural residential subdivisions to their system so long as:

(i) there is sufficient capacity for connection and
(ii) all costs are met by the developer/owner.

Urban Density Requirements

The discussion below summarises the existing capacity within the systems which serve each of the areas identified in the NULS as having potential for increased development assuming a residential density, (although some of the areas are not recommended to be released at these densities:-

Area A - Terrey Hills

Sydney Water confirmed that the extension to Terrey Hills Village could not occur until such time as servicing is provided to the future Ingleside release as nominated on the Urban Development Program. The sizing would permit the extension of the Terrey Hills Village at 15 dwellings per hectare as described in NULS Stage 1 subject to augmentation of the sewer line to Ingleside. However, there was no immediate capacity or opportunity for this land.

Furthermore, the provision of potable water would require amplification works and these costs could not at this time, be estimated and would need to be met by developers.

Areas B, C and D - Southern Oxford Falls Valley

Land adjacent Oxford Falls Road, adjacent Wakehurst Parkway and along Forest Way drains to the Warriewood Sewerage Treatment Facility. Sydney Water confirmed that the Parkway Carrier was very close to capacity and could only support calculated small scale urban infill within the existing urban zones. Based on current information there is no capacity for urban releases or even large scale SEPP 5 developments in these areas.

The costs to prepare a Servicing Strategy to investigate and cost options for the provision of sewer and water supply systems for the servicing of the three areas

mentioned above, would need to be prepared by Sydney Water. The costs for a similar study in Warriewood Valley were $70,000 for water investigations and $70,000 for the sewer investigations. The investigations take 3 to 4 months to complete. Such costs would need to be met by developers and the ultimate feasibility of providing servicing would relate the costs of infrastructure to the size of the release.

Area E - Red Hill
Sydney Water confirmed that for sewer, over 95% of the Red Hill land owned by the Catholic Church drained to the Willandra Road Carrier to Dee Why and on to North Head. Sydney Water indicated that there is some sewer capacity to a ceiling of approximately 320 lots in the system subject to amplification works. The provision of water was not raised as an issue of concern. Sydney Water indicated that all costs for the servicing of the Red Hill land would need to be met by the developers of the land.

Area F
This area is identified as environmentally constrained and is not recommended for any investigations in Stage 1 of NULS

Areas G and H - Middle Harbour
Sydney Water has advised that the areas west of Forest Way currently have no additional sewer availability beyond that allocated for infill development in existing urban areas. It is not envisaged that sewer will be available to these areas in the future.

Conclusions

The advice from Sydney Water indicates substantial constraints to any holistic decision regarding rezoning of all land pursuant to the Non Urban Lands Study. Indeed, Sydney Water indicated that only the land adjacent to Red Hill could be serviced in the short term, although amplification works would be required at the developers cost. Sydney Water indicated that 320 lots would be the likely limit of the amplification works. However, the NULS recommends only an increase of up to 58 dwellings based on the urban capability analysis of the land. Any rezoning decision should await resolution of the transport capacity issue.

Other considerations

As Council is aware, there is a development application and an appeal to the Land and Environment Court for land in the vicinity of Red Hill. Council determined on 20 February 2001 to prepare a draft LEP and a Local Environmental Study for the rezoning of land at Red Hill for residential purposes, subject to the withdrawal of appeals to the Land and Environment Court. The solicitors for the land owners have submitted correspondence to Council indicating that relevant issues such as stormwater, water and sewer, bushfire management, visual amenity, protection of the escarpment and access to community facilities and retail centres have been addressed. The correspondence submits that a significant portion of this area has the capacity to support a density consistent with conventional residential

development and requests the preparation of a LEP to rezone their land for "residential and other associated purposes".

As stated above, any decision regarding this land must await resolution of the transport issue to be considered consistent with the Ministers Section 117 Direction.

Environment Protection of Non Urban Lands

Whilst Stage 2 of NULS focussed on factors associated with those lands identified for higher intensity development, it is also appropriate to address the other recommendations of NULS which include identifying environmentally sensitive land. Since the preparation of NULS Stage 1, there are other studies which identify other environmental attributes for this land. The findings of the NULS plus other studies are discussed below:-

NULS Recommendations

The focus of Stage 1 of the Non Urban Lands Study relied on a detailed 'urban capability analysis' of the land to identify that land capable of supporting higher intensity of development with the remaining being environmentally sensitive. Environmental matters taken into consideration included flora, fauna, catchment management, soils, slope and terrain, and visual catchments. This report appropriately recommends the formal recognition of these lands as environmentally sensitive and their inclusion on a map indicating environmental sensitivity in the Warringah LEP (to be distributed at Council meeting). This recommendation applies to the Narrabeen Lagoon and Middle Harbour Catchments only.

Protecting Sydney's Wetlands

A Model Development Control Plan for the protection of Sydney's coastal wetlands has been prepared by the Protecting Wetland Steering Committee and the Sydney Coastal Councils and it nominates certain wetlands in the Non Urban Lands of Warringah. The model is an initiative to protect Sydney's remaining wetland areas and it provides a template document that Council may use or apply when developing wetland protection controls. The Model DCP was received at Council in May this year. The draft Warringah Plan 2001-2004 identifies the adoption of the draft regional model wetlands development control as a project to be completed in 2002.

The maps that accompany the document indicate Wetland Zones and Wetland Protection Areas in the non urban areas and even on some small areas of land that has been identified as having increased development potential in Stage 1 of the study. Any decision to rezone land and the subsequent Local Environmental Study will need to take into consideration any impacts upon the Wetland Protection Areas and/or Wetland Zones.

Bushfire Hazard

The Warringah Pittwater Bush Fire Management Committee in accordance with Part 3 Division 4 of the Rural Fires Act 1997, prepared a Bush Fire Risk Management Plan. This

Plan identifies that the majority of the non urban lands of Warringah has a "High Bush Fire Hazard Class". This classification adds further weight to the recognition of environmental sensitivity of the land proposed for inclusion in the "Environment Protection" area.

Conclusion

Since the identification of areas of land as environmentally sensitive in Stage 1 of the NULS, a number of additional studies have supported the environmental sensitivity of areas of non urban land throughout Warringah. It is appropriate that formal recognition of the environmentally sensitive lands be undertaken through an Environment Protection overlay to be included as part of the hazard mapping accompanying Warringah LEP 2000.

The effect of the Environment Protection overlay is to ensure that an appropriate level of assessment for development proposals on environmentally sensitive land is required. In this regard, development proposals that were formally 'exempt development' will now require approval through the Development Application process. A formal Environment Protection overlay of properties will not sterilise existing development opportunities. The currently permitted land uses and development opportunities that exist today on these will not be removed through their recognition as Environment Protection. However, as a result of recognising land as Environment Protection in the Warringah LEP 2000, land on which housing for older people or persons with a disability will be clarified with the principles and legal framework applying under State Environmental Planning Policy No.5.

Locality Statement Amendments

Stage 1 of NULS recommended a number of amendments to individual locality statements, which were reported to Council in June 2000. It is now appropriate to finalise these amendments for inclusion in Warringah LEP 2000. The recommended locality statements are at **Attachment 3**.

In reviewing the planning controls for the Non Urban Lands of Warringah, a mapping anomaly has been identified for Lot 210 Kulgoa Road Duffys Forest. This report recommends the amendment of the Warringah LEP to correctly identify the land, owned by the Department of Land and Water Conservation, as not being 'Public Open Space'.

Conclusions

This report does not recommend any rezoning of land to permit additional development potential in the Non Urban Lands of Warringah. The areas identified in Stage 1 as being capable of increased development potential can not be rezoned as the Transport Study confirms that there is inadequate transport capacity on the Northern Beaches Peninsula and that servicing by Sydney Water is in most cases constrained or not possible. However, the land should be maintained in the current zoning until such times as:-

(i) there are future improvements to the transportation system on the NBP, such as the programmed rail link from Chatswood to Brookvale/Dee Why, and

(ii) the amplification of sewerage services by Sydney Water with the programmed land release at Ingleside or in accordance with other initiatives.

It is recommended that the findings of Stage 1 of the Non Urban Lands Study be finalised, including the recognition of environmentally sensitive land in the Warringah LEP through an Environment Protection overlay and insertion of a new General Principle, and the finalisation of amendments to locality statements. The mapping anomaly for Lot 210 Kulgoa Road should also be addressed by inclusion in the draft LEP.

Consultation

In preparing this report, consultation was undertaken with the Catchment Management Team, the Rates Team, the Local Approvals Services Unit the Department of Land and Water Conservation, and Pittwater and Manly Councils.

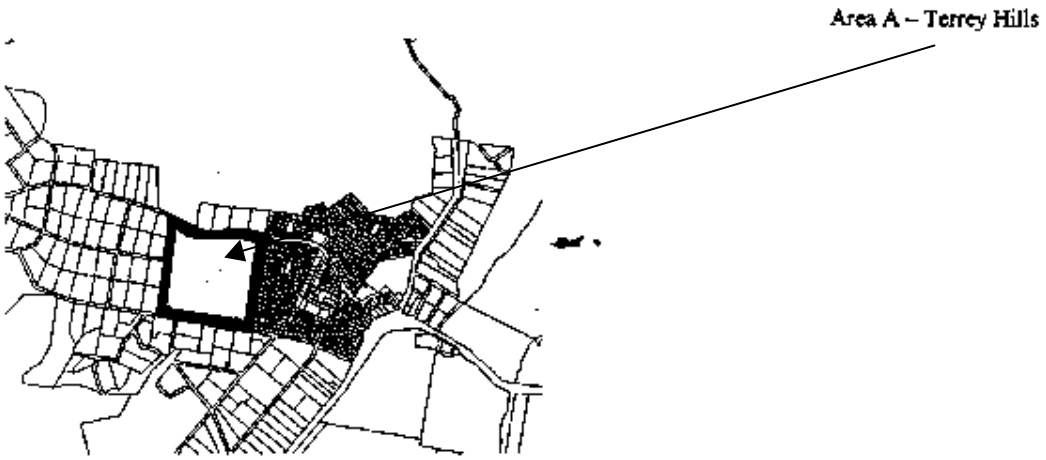
Options and Financial Considerations

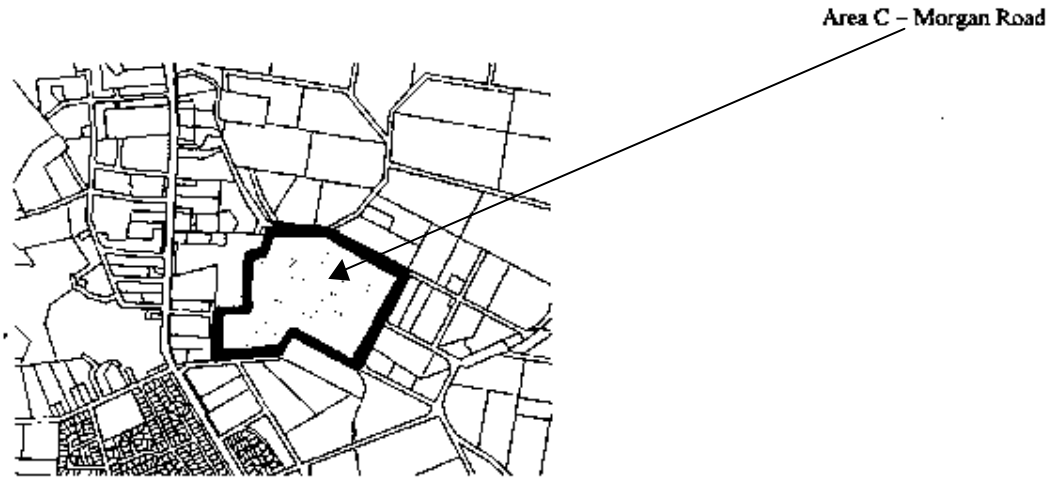
1. Impact on Council Budget
The recommendations contained in this report will not impact upon existing budgets.

2. Timing
The adoption of the recommendations of this report will be placed on public exhibition as soon as possible following consultation with the Department of Urban Affairs and Planning (LEP process).

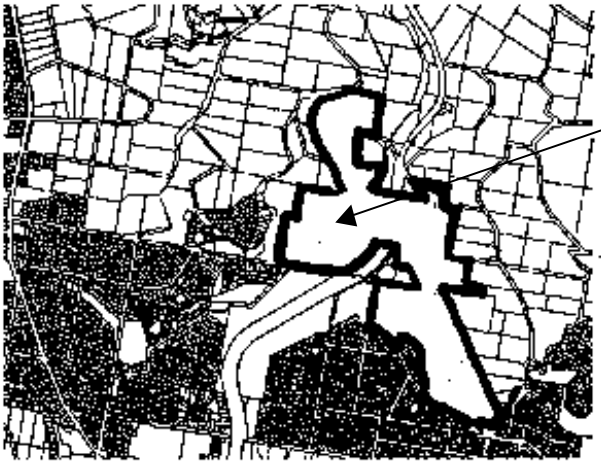
3. Public Presentation
Not applicable.

NULS STAGE 1 IDENTIFIED AREAS

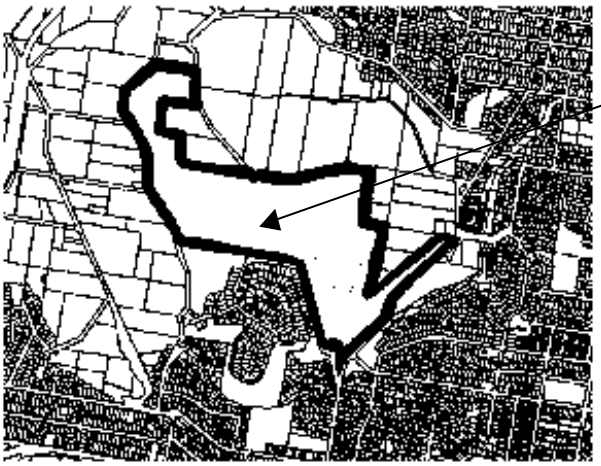




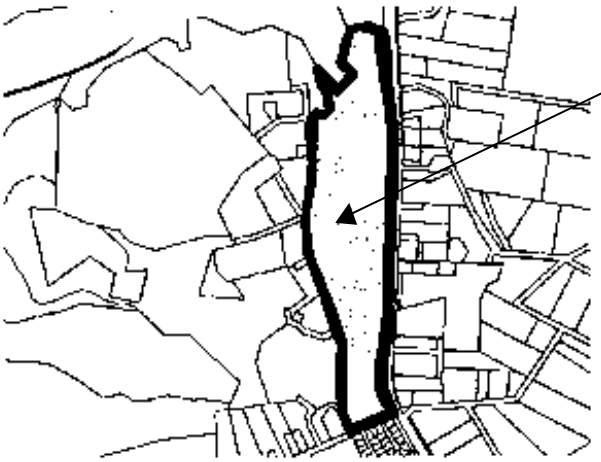
Area D –Adjacent Wakehurst Parkway



Area E – Adjacent Red Hill

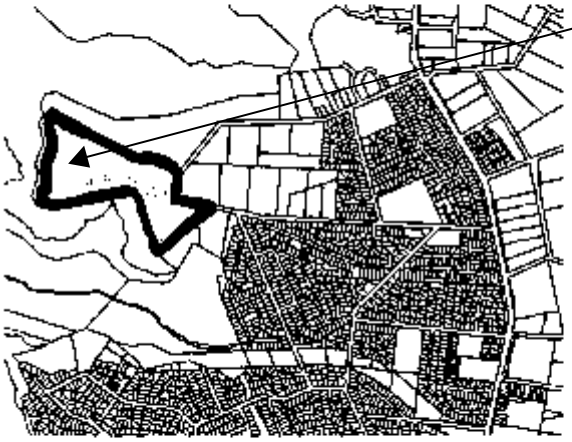


Area G – West side of Forest WAy



Area H(a) – west of Linden Avenue, Belrose

Area H(b) –west of Ralston Avenue, Belrose



TRANSPORT PERFORMANCE INDICATORS

The network performance is best described by Average Vehicle Delay (AVD) and the degree of saturation (DS) of its major intersections during peak hours. The intersection performance indicators are described below.

1. Level of Service (LOS) - Average Vehicle Delay (AVD)

The AVD is a measure of the operational performance of an intersection used in the determination of LOS. The average delay should be taken as a guide only for an intersection. Longer delays do occur but the average over the peak hour period is reported.

LOS	Average Vehicle Delay (secs)	Traffic Signals & Roundabouts	Give Way & Stop Signs
A	1 to 14	Good operation	Good operation
B	14 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	28 to 42	Satisfactory	Satisfactory, but accident study required
D	42 to 56	Operating near capacity	Near capacity, accident study required
E	56 to 70	At capacity, excessive delays; r/bout requires other control mode	At capacity; requires other control mode
F	Exceeding 70	Unsatisfactory; requires additional capacity	Unsatisfactory, requires other control mode

2. Degree of Saturation (DS)

The DS of an intersection is usually taken as the highest ratio of traffic volume on an approach to the intersection compared with its theoretical capacity, and is a measure of the utilisation of available green time.

For intersections controlled by traffic signals, generally both queue length and delay increase rapidly as DS approaches 1.0. An intersection operates satisfactorily when its DS is kept below 0.75. When DS exceeds 0.9, queues can be expected.

Source: RTA Guidelines, "*Guide to Traffic Generating Developments*"

AMENDED NON URBAN LOCALITY STATEMENTS

LOCALITY A2 BOORALIE ROAD

DESIRED FUTURE CHARACTER

The Booralie Road locality will remain a non-urban area consisting of houses in distinctly non-urban settings and occasionally ***low intensity, low impact*** business or community uses that are compatible with the non-urban nature of the locality and predominant scale of existing development.

The impact of new development on views from the adjacent National Park will be minimised by the use of articulated building forms, generous landscaped spaces around buildings and building materials that blend in with the colours and textures of the natural landscape.

Emphasis will be given to protecting and where possible enhancing the natural landscape, including landforms and vegetation. The increased planting of indigenous canopy trees will be strongly encouraged.

LAND USE

Category One

Development for the purpose of the following:

- housing
- agriculture

Category Two

Development for the purpose of the following:

- animal boarding or training establishments
- child care centres
- community facilities
- health consulting rooms
- housing for older people or people with disabilities (on land described in the initial paragraph (b) under the heading “Housing density” below)
- retail plant nurseries

- veterinary hospitals
- other buildings, works, places or land uses that are not prohibited or in Category 1 or 3.

Category Three

Development for the purpose of the following:

- bulky goods shops
- business premises
- entertainment facilities
- further education
- heliports
- hire establishments
- hospitals
- hotels
- industries
- medical centres
- motor showrooms
- offices
- places of worship
- primary schools
- recreation facilities
- registered clubs
- restaurants
- service stations
- shops
- short term accommodation
- vehicle repair stations
- warehouses

PROHIBITED DEVELOPMENT

Development for the purpose of the following is prohibited within this locality:

- brothels
- extractive industries
- housing for older people or people with disabilities (other than on land described in the initial paragraph (b) under the heading "Housing density" below)
- potentially hazardous industries
- potentially offensive industries

· vehicle body repair workshops

Canal estate development is also prohibited within this locality.

Note. Before granting consent to the following:

· composting facilities or works,
· waste management facilities or works,
· marinas,
· maintenance dredging and extractive operations,
· sewerage systems or works,

within this locality, the Council must consult with the Hawkesbury Nepean Catchment Management Trust in accordance with the relevant Code of Practice for consulting with the Trust.

BUILT FORM

Housing density

The maximum housing density is 1 dwelling per 2 ha of site area, except:

(a) where this standard would prevent an existing allotment accommodating one dwelling, or

(b) on land that adjoins a locality which is used primarily for urban purposes, but only if the development is for the purpose of "housing for older people or people with a disability" and the development complies with the minimum standards set out in clause 29.

However, consent may be granted for development that will contravene these housing density standards but, if by more than 10 per cent, only with the concurrence of the Director.

The matters which shall be taken into consideration in deciding whether concurrence should be granted are:

(a) whether non-compliance with the development standard in issue raises any matter of significance for State or regional environmental planning, and

(b) the public benefit or maintaining the planning controls adopted by this plan.

To measure housing density:

- the site area is divided by the number of dwellings proposed on the site, including any existing dwellings which are to be retained, and
- the site is the allotment which existed on the day this plan came into effect, and
- granny flats are not considered to be a dwelling and are limited to one per allotment.

Building height

Buildings are neither to exceed 2 storeys nor 8.5 metres.

Buildings must comply with both the maximum height measured in storeys and the maximum height measured in metres.

To measure the height of a building:

- the maximum height in metres is the distance measured vertically between the topmost point of the building (not being a vent or chimney or the like) and natural ground level below,
- a storey is the space between two floors, or the space between any floor and its ceiling or roof above,
- foundation spaces, garages, workshops, store rooms and the like which do not project more than 1 metre above natural ground level (at any point) are not counted as storeys, and
- the number of storeys is the maximum number of storeys which may be intersected by the same vertical line, not being a line which passes through any wall of the building.

Buildings are not to exceed 2 storeys in height except where on significantly sloping land and if the additional storey:

- does not exceed the 8.5 metre height standard, and
- is designed and located to minimise the bulk of the building, and
- has minimal visual impact when viewed from the downslope sides of the land.

Front building setback

Development is to maintain a minimum front building setback.
The minimum front building setback is 20 metres.
The minimum front building setback area is to be landscaped and free of any structures, carparking or site facilities other than driveways, letterboxes and fences.

Rear and Side building setback

Development is to maintain minimum rear and side building setbacks.
The minimum rear and side building setback is 10 metres.
The rear and side setback areas are to be landscaped and free of any structures, carparking or site facilities other than driveways, and fences.

Landscaped space

The minimum area of landscaped space is 30 per cent of the site area.
To measure an area of landscaped open space:

- **impervious surfaces such as driveways, paved areas, roofed areas, tennis courts, car parking and stormwater structures, decks and the like and any areas with a width or length of less than 2 metres are excluded from the landscaped space area, and**
- **the water surface of swimming pools and impervious surfaces which occur naturally such as rock outcrops are included in the landscaped space area, and**
- **landscaped space must be at ground level, and**
- **the minimum soil depth of land that can be included as landscaped space is 1 metre.**

NATIONAL PARK SETBACK

Development is to maintain a minimum setback from National Park boundaries of 20 metres. The minimum setback area is to be fire fuel reduced zone, landscaped with local species.

COMPLYING DEVELOPMENT

The following table shows the development which is complying development in this locality. Column A describes the development and Column B shows the requirements that the development must comply with for it to be complying development.

Column A Development for the purpose of:	**Column B**
Single storey detached houses, being: · construction of new single storey houses. · alterations to single storey houses. · additions to single storey houses. · constructions of carports, garages and outbuildings associated with a dwelling.	As described in Schedule 12—Part A
Swimming pools	As described in Schedule 12—Part B

LOCALITY A4 MYOORA ROAD

DESIRED FUTURE CHARACTER

The Myoora Road locality will provide an environment for low intensity business, community and leisure uses which do not rely on exposure to passing trade for their continued operation. Along Mona Vale Road a dense bushland buffer will be **retained or** established.

New development or further intensification of existing development will provide safe vehicular access to the satisfaction of the Council and the Roads and Traffic Authority.

Only small, non obtrusive and non illuminated signs that identify the use of a site are to be visible from Mona Vale Road. Signs that are of such size, height or visual appearance that are designed to attract passing trade, will not be permitted. All signs are to be in keeping with the colour and textures of the natural landscape.

Articulated building forms, generous landscaped spaces around buildings and building materials that blend with the colours and textures of the natural landscape will be used to minimise the visual impact of development on long distance views of the locality.

LAND USE

Category One

Development for the purpose of the following:

- agriculture
- animal boarding or training establishments
- further education
- housing
- primary schools
- recreation facilities
- restaurants
- retail plant nurseries
- veterinary hospitals

Category Two

Development for the purpose of the following:

- short term accommodation
- child care centres
- community facilities
- health consulting rooms
- hospitals
- housing for older people or people with disabilities (on land described in the initial paragraph (b) under the heading "Housing density" below)
- places of worship
- registered clubs
- other buildings, works, places or land uses that are not prohibited or in Category 1 or 3.

Category Three

Development for the purpose of the following:

- bulky goods shops
- business premises
- entertainment facilities
- heliports
- hire establishments
- hotels
- industries
- medical centres
- motor showrooms
- offices
- service stations
- shops
- vehicle repair stations
- warehouses

PROHIBITED DEVELOPMENT

Development for the purpose of the following is prohibited within this locality:

- brothels
- extractive industries

- housing for older people or people with disabilities (other than on land described in the initial paragraph (b) under the heading "Housing density" below)
- potentially hazardous industries
- potentially offensive industries
- vehicle body repair workshops

Canal estate development is also prohibited within this locality.

Note. Before granting consent to the following:

- composting facilities or works,
- waste management facilities or works,
- marinas,
- maintenance dredging and extractive operations,
- sewerage systems or works,

within this locality, the Council must consult with the Hawkesbury Nepean Catchment Management Trust in accordance with the relevant Code of Practice for consulting with the Trust.

Additionally, the Council must consult with the Director-General of National Parks and Wildlife regarding applications for maintenance dredging and extractive operations unless the Director already has a concurrence role in accordance with Part 4 of the Act.

BUILT FORM

Housing density

The maximum housing density is 1 dwelling per 2 ha of site area, except:

(a) where this standard would prevent an existing allotment accommodating one dwelling, and

(b) on land that adjoins a locality used primarily for urban purposes, where there is no housing density standard if the development is for the purpose of "housing for older people or people with a disability" and the development complies with the minimum standards set out in clause 29.

However, consent may be granted for development that will contravene these housing density standards but, if by more than 10 per cent, only with the concurrence of the Director.

The matters which shall be taken into consideration in deciding whether concurrence should be granted are:

(a) whether non-compliance with the development standard in issue raises any matter of significance for State or regional environmental planning, and

(b) the public benefit of maintaining the planning controls adopted by this plan.

To measure housing density:

- the site area is divided by the number of dwellings proposed on the site, including any existing dwellings which are to be retained,
- the site is the allotment which existed on the day this plan came into effect, and
- granny flats are not considered to be a dwelling and are limited to one per allotment.

Building height

Buildings are neither to exceed 2 storeys nor 8.5 metres.

Buildings must comply with both the maximum height measured in storeys and the maximum height measured in metres.

To measure the height of a building:

- the maximum height in metres is the distance measured vertically between the topmost point of the building (not being a vent or chimney or the like) and natural ground level below,
- a storey is the space between two floors, or the space between any floor and its ceiling or roof above,
- foundation spaces, garages, workshops, store rooms and the like which do not project more than 1 metre above natural ground level (at any point) are not counted as storeys, and
- the number of storeys is the maximum number of storeys which may be intersected by the same vertical line, not being a line which passes through any wall of the building.

Buildings are not to exceed 2 storeys in height except where on significantly sloping land and if the additional storey:

- does not exceed the 8.5 metre height standard, and
- is designed and located to minimise the bulk of the building, and
- has minimal visual impact when viewed from the downslope sides of the land.

Front building setback

Development is to maintain a minimum front building setback. The minimum front building setback to Mona Vale Road is 30 metres.

The minimum front building setback to other roads is 20 metres.

The minimum front building setback area is to be densely landscaped using locally occurring species of canopy trees and

shrubs. The minimum front building setback area is to be free of any structures, carparking or site facilities other than driveways and letterboxes. Carparking may encroach up to a maximum of 15 metres into the 30 metre setback if it covers no more than 50% of this area and dense screen landscaping is maintained.

Rear and Side building setback

Development is to maintain minimum rear and side building setbacks.
The minimum rear and side building setback is 7.5 metres.
The rear and side setback areas are to be landscaped and free of any structures, carparking or site facilities other than driveways, and fences.

Building site coverage

The maximum building site coverage is 20 per cent of the site area except on allotments of an area of less than 3,500m^2 where the maximum building site coverage is 30 per cent.
To measure building site coverage:

- the total building footprint/s is expressed as a percentage of the site area.

Landscaped open space

The minimum area of landscaped open space is 70 per cent of the site area except on allotments of an area of less than 3,500m^2 where the minimum landscaped open space is 50 per cent.
To measure an area of landscaped open space:

- impervious surfaces such as driveways, paved areas, roofed areas, tennis courts, car parking and stormwater structures, decks and the like and any areas with a width or length of less than 2 metres are excluded from the landscaped open space area, and

- the water surface of swimming pools and impervious surfaces which occur naturally such as rock outcrops are included in the landscaped open space area, and
- landscaped open space must be at ground level, and
- the minimum soil depth of land that can be included as landscaped open space is 1 metre.

COMPLYING DEVELOPMENT

The following table shows the development which is complying development in this locality. Column A describes the development and Column B shows the requirements that the development must comply with for it to be complying development.

Column A Development for the purpose of:	**Column B**
Single storey detached houses, being: · construction of new single storey houses. · alterations to single storey houses. · additions to single storey houses. · construction of carports, garages and outbuildings associated with a dwelling.	As described in Schedule 12—Part A

LOCALITY A5 McCARRS CREEK ROAD

DESIRED FUTURE CHARACTER

The McCarrs Creek Road locality will remain a non-urban area consisting of houses in distinctly non-urban settings and occasionally ***low intensity and low impact*** business or community uses that are compatible with the non-urban nature of the locality and predominant scale of existing development.

The impact of new development on views from the adjacent National Park will be minimised by the use of articulated building forms, generous landscaped spaces around buildings and building materials that blend in with the colours and textures of the natural landscape.

Emphasis will be given to protecting and where possible enhancing the natural landscape, including landforms and vegetation. The increased planting of indigenous canopy trees will be strongly encouraged.

LAND USE

Category One

Development for the purpose of the following:

- housing
- agriculture

Category Two

Development for the purpose of the following:

- child care centres
- community facilities
- health consulting rooms
- housing for older people or people with disabilities (on land described in the initial paragraph (b) under the heading "Housing density" below)
- other buildings, works, places or land uses that are not prohibited or in Category 1 or 3.

Category Three

Development for the purpose of the following:

- animal boarding or training establishments
- bulky goods shops
- business premises
- entertainment facilities
- further education
- heliports
- hire establishments
- hospitals
- hotels
- industries
- medical centres
- motor showrooms
- offices
- places of worship
- primary schools
- recreation facilities
- registered clubs
- restaurants
- retail plant nurseries
- service stations
- shops
- short term accommodation
- vehicle repair stations
- veterinary hospitals
- warehouses

PROHIBITED DEVELOPMENT

Development for the purpose of the following is prohibited within this locality:

- brothels
- extractive industries
- housing for older people or people with disabilities (other than on land described in the initial paragraph (b) under the heading "Housing density" below)
- potentially hazardous industries
- potentially offensive industries
- vehicle body repair workshops

Canal estate development is also prohibited within the locality.

Note. Before granting consent to the following:

- composting facilities or works,
- waste management facilities or works,
- marinas,
- maintenance dredging and extractive operations,
- sewerage systems or works,

within this locality, the Council must consult with the Hawkesbury Nepean Catchment Management Trust in accordance with the relevant Code of Practice for consulting with the Trust.

BUILT FORM

Housing density

The maximum housing density is 1 dwelling per 2 ha of site area, except:

(a) where this standard would prevent an existing lawfully created allotment accommodating one dwelling, or

(b) on land that adjoins a locality primarily used for urban purposes, where there is no housing density if the development is for the purpose of "housing for older people or people with a disability" and the development complies with the minimum standards set out in clause 29.

However, consent may be granted for development that will contravene these housing density standards but, if by more than 10 per cent, only with the concurrence of the Director.

The matters which shall be taken into consideration in deciding whether concurrence should be granted are:

(a) whether non-compliance with the development standard in issue raises any matter of significance for State or regional environmental planning, and

(b) the public benefit of maintaining planning controls adopted by this plan.

To measure housing density:

- the site area is divided by the number of dwellings proposed on the site, including any existing dwellings which are to be retained,
- the site is the allotment which existed on the day this plan came into effect, and
- granny flats are not considered to be a dwelling and are limited to one per allotment.

Building height

Buildings are neither to exceed 2 storeys nor 8.5 metres.

Buildings must comply with both the maximum height measured in storeys and the maximum height measured in metres.

To measure the height of a building:

- the maximum height in metres is the distance measured vertically between the topmost point of the building (not being a vent or chimney or the like) and natural ground level below, and
- a storey is the space between two floors, or the space between any floor and its ceiling or roof above, and
- foundation spaces, garages, workshops, store rooms and the like which do not project more than 1 metre above natural ground level (at any point) are not counted as storeys, and
- the number of storeys is the maximum number of storeys which may be intersected by the same vertical line, not being a line which passes through any wall of the building.

Buildings are not to exceed 2 storeys in height except where on significantly sloping land and if the additional storey:

- does not exceed the 8.5 metre height standard, and
- is designed and located to minimise the bulk of the building, and
- has minimal visual impact when viewed from the downslope sides of the land.

Front building setback

Development is to maintain a minimum front building setback.
The minimum front building setback is 20 metres.
The minimum front building setback area is to be landscaped and free of any structures, carparking or site facilities other than driveways, letterboxes and fences.

Rear and Side building setback

Development is to maintain minimum rear and side building setbacks.
The minimum rear and side building setback is 10 metres.
The rear and side setback areas are to be landscaped and free of any structures, carparking or site facilities other than driveways, and fences.

Landscaped space

The minimum area of landscaped space is 30 per cent of the site area.
To measure an area of landscaped open space:

- **impervious surfaces such as driveways, paved areas, roofed areas, tennis courts, car parking and stormwater structures, decks and the like and any areas with a width or length of less than 2 metres are excluded from the landscaped space area, and**
- **the water surface of swimming pools and impervious surfaces which occur naturally such as rock outcrops are included in the landscaped space area, and**
- **landscaped space must be at ground level, and**
- **the minimum soil depth of land that can be included as landscaped space is 1 metre.**

NATIONAL PARK SETBACK

Development is to maintain a minimum setback from National Park boundaries of 20 metres. The minimum setback area is to be fire fuel reduced zone, landscaped with local species.

COMPLYING DEVELOPMENT

The following table shows the development which is complying development in this locality. Column A describes the development and Column B shows the requirements that the development must comply with for it to be complying development.

Column A Development for the purpose of:	**Column B**
Single storey detached houses, being: · construction of new single storey houses. · alterations to single storey houses. · additions to single storey houses. · construction of carports, garages and outbuildings associated with a dwelling.	As described in Schedule 12—Part A
Swimming pools	As described in Schedule 12—Part B

LOCALITY B2 OXFORD FALLS VALLEY

DESIRED FUTURE CHARACTER

The present character of the Oxford Falls Valley locality will remain unchanged except in circumstances specifically addressed as follows.

Future development will be limited to new houses conforming with the housing density standards set out below and low intensity, low impact uses. There will be no new development on ridgetops or in places that will disrupt the skyline when viewed from Narrabeen Lagoon and the Wakehurst Parkway. **Along Forest Way and Wakehurst Parkway a dense bushland buffer will be retained or established.**

The natural landscape including landforms and vegetation will be protected and, where possible, enhanced. Buildings will be located and grouped in areas that will minimise disturbance of vegetation and landforms whether as a result of the buildings themselves or the associated works including access roads and services. Buildings which are designed to blend with the colours and textures of the natural landscape will be strongly encouraged.

Development in the locality will not create siltation or pollution of Narrabeen Lagoon.

LAND USE

Category One

Nil.

Category Two

Development for the purpose of the following:

- agriculture
- housing

- housing for older people or people with disabilities (on land described in paragraph (c) under the heading "Housing density" below)
- other buildings, works, places or land uses that are not prohibited or in Category 1 or 3.

Category Three

Development for the purpose of the following:

- animal boarding or training establishments
- bulky goods shops
- business premises
- child care centres
- community facilities
- entertainment facilities
- further education
- health consulting rooms
- heliports
- hire establishments
- hospitals
- hotels
- industries
- medical centres
- motor showrooms
- offices
- places of worship
- primary schools
- recreation facilities
- registered clubs
- restaurants
- retail plant nurseries
- service stations
- shops
- short term accommodation
- vehicle repair stations
- veterinary hospitals
- warehouses

PROHIBITED DEVELOPMENT

Development for the purpose of the following is prohibited within this locality:

- brothels
- extractive industries
- housing for older people or people with disabilities (other than on land described in paragraph (c) under the heading "Housing density" below)
- potentially hazardous industries
- potentially offensive industries
- vehicle body repair workshops

Canal estate development is also prohibited within this locality.

BUILT FORM

Housing density

The maximum housing density is 1 dwelling per 20 ha of site area, except:

(a) where this standard would prevent the erection of one dwelling on an existing parcel of land, being all adjacent or adjoining land held in the same ownership on 8 March 1974 and having a combined area of not less than 2 ha, and

(b) on Portions 199, 200, 985, 986, 1001, 1002, 1003, 1004, 1011, 1012, 1018 and 1019 Parish of Manly Cove and Lot 33 DP 870625 Pinduro Place, Cromer, where one dwelling may be erected provided the land exceeds 4,000m^2 in area and was lawfully created prior to 13 August 1982, or was otherwise lawfully created, and

(c) on land that adjoins a locality primarily used for urban purposes and on which a dwelling house is permissible, where there is no maximum housing density if the development is for the purpose of "housing for older people or people with a disability" and the development complies with the minimum standards set out in clause

29 **unless identified as environment protection on the map deposited in the office of the Council.**

However, consent may be granted for development that will contravene these housing density standards but, if by more than 10 per cent, only with the concurrence of the Director.

The matters which shall be taken into consideration in deciding whether concurrence should be granted are:

(a) whether non-compliance with the development standard in issue raises any matter of significance for State or regional environmental planning, and

(b) the public benefit of maintaining the planning controls adopted by this plan.

To measure housing density:

- the site area is divided by the number of dwellings proposed on the site, including any existing dwellings which are to be retained,
- the site is the allotment which existed on the day this plan came into effect, and
- granny flats are not considered to be a dwelling and are limited to one per allotment.

Building height

Buildings are neither to exceed 2 storeys nor 8.5 metres.

Buildings must comply with both the maximum height measured in storeys and the maximum height measured in metres.

To measure the height of a building:

- the maximum height in metres is the distance measured vertically between the topmost point of the building (not being a vent or chimney or the like) and natural ground level below, and
- a storey is the space between two floors, or the space between any floor and its ceiling or roof above, and
- foundation spaces, garages, workshops, store rooms and the like which do not project more than 1 metre above natural ground level (at any point) are not counted as storeys, and
- the number of storeys is the maximum number of storeys which may be intersected by the same vertical line, not

being a line which passes through any wall of the building.

Buildings are not to exceed 2 storeys in height except where on significantly sloping land and if the additional storey:

- does not exceed the 8.5 metre height standard, and
- is designed and located to minimise the bulk of the building, and
- has minimal visual impact when viewed from the downslope sides of the land.

Front building setback

Development is to maintain a minimum front building setback.

The minimum front building setback to all roads is 20 metres. On corner allotments fronting Forest Way or Wakehurst Parkway the minimum front building setback is to apply to these roads and the side setback is to apply to the secondary road.

The minimum front building setback area is to be **densely landscaped using locally occurring species of canopy trees and shrubs** and free of any structures, carparking or site facilities other than driveways, letterboxes and fences.

Rear and Side building setback

Development is to maintain minimum rear and side building setbacks.

The minimum rear and side building setback is 10 metres.

The rear and side setback areas are to be landscaped and free of any structures, carparking or site facilities other than driveways, and fences.

Landscaped space

The minimum area of landscaped space is 30 per cent of the site area.

To measure an area of landscaped open space:

- **impervious surfaces such as driveways, paved areas, roofed areas, tennis courts, car parking and stormwater**

structures, decks and the like and any areas with a width or length of less than 2 metres are excluded from the landscaped space area, and

- **the water surface of swimming pools and impervious surfaces which occur naturally such as rock outcrops are included in the landscaped space area, and**
- **landscaped space must be at ground level, and**
- **the minimum soil depth of land that can be included as landscaped space is 1 metre.**

NATIONAL PARK SETBACK

Development is to maintain a minimum setback from National Park boundaries of 20 metres. The minimum setback area is to be fire fuel reduced zone, landscaped with local species.

COMPLYING DEVELOPMENT

The following table shows the development which is complying development in this locality. Column A describes the development and Column B shows the requirements that the development must comply with for it to be complying development.

Column A Development for the purpose of:	**Column B**
Single storey detached houses, being: · construction of new single storey houses. · alterations to single storey houses. · additions to single storey houses. · construction of carports, garages and outbuildings associated with a dwelling.	As described in Schedule 12—Part A
Swimming pools	As described in Schedule 12—PartB

HERITAGE ITEMS

The following items of **local heritage significance** are within this locality:

- Oxford Falls Public School, Dreadnought Road, Oxford Falls

CONSERVATION AREAS

- Land adjacent to Wakehurst Parkway as shown on the map

LOCALITY B9 MONA VALE ROAD EAST

DESIRED FUTURE CHARACTER

The present character of the Mona Vale Road East locality will remain unchanged except in circumstances specifically addressed as follows.

The natural landscape including landforms and vegetation will be protected and, where possible, enhanced. Buildings will be grouped in areas that will result in the minimum amount of disturbance of vegetation and landforms and buildings which are designed to blend with the colours and textures of the natural landscape will be strongly encouraged.

Development will be limited to new houses conforming with the housing density standards set out below and low intensity, low impact uses.

Along Forest Way and Wakehurst Parkway a dense bushland buffer will be retained or established

Development in the locality will not create siltation or pollution of Narrabeen Lagoon.

LAND USE

Category One

Nil.

Category Two

Development for the purpose of the following:

- agriculture
- community facilities
- housing
- other buildings, works, places or land uses that are not prohibited or in Category 1 or 3.

Category Three

Development for the purpose of the following:

- animal boarding or training establishments
- bulky goods shops
- business premises
- child care centres
- entertainment facilities

- further education
- health consulting rooms
- heliports
- hire establishments
- hospitals
- hotels
- industries
- medical centres
- motor showrooms
- offices
- places of worship
- primary schools
- recreation facilities
- registered clubs
- restaurants
- retail plant nurseries
- service stations
- shops
- short term accommodation
- vehicle repair stations
- veterinary hospitals
- warehouses

PROHIBITED DEVELOPMENT

Development for the purpose of the following is prohibited within this locality:

- brothels
- extractive industries
- housing for older people or people with disabilities
- potentially hazardous industries
- potentially offensive industries
- vehicle body repair workshops

Canal estate development is also prohibited within this locality.

BUILT FORM

Housing density

The maximum housing density is 1 dwelling per 20 ha of site area, except where this standard would prevent the erection of one dwelling on an existing parcel of land, being all adjacent or adjoining land held in the same ownership on 8 March 1974 and having a combined area of not less than 2 ha.

However, consent may be granted for development that will contravene these housing density standards but, if by more than 10 per cent, only with the concurrence of the Director.

The matters which shall be taken into consideration in deciding whether concurrence should be granted are:

(a) whether non-compliance with the development standard in issue raises any matter of significance for State or regional environmental planning, and

(b) the public benefit of maintaining the planning controls adopted by this plan.

To measure housing density:

- the site area is divided by the number of dwellings proposed on the site, including any existing dwellings which are to be retained, and
- the site is the allotment which existed on the day this plan came into effect, and
- granny flats are not considered to be a dwelling and are limited to one per allotment.

Building height

Buildings are neither to exceed 2 storeys nor 8.5 metres.

Buildings must comply with both the maximum height measured in storeys and the maximum height measured in metres.

To measure the height of a building:

- the maximum height in metres is the distance measured vertically between the topmost point of the building (not being a vent or chimney or the like) and natural ground level below, and

- a storey is the space between two floors, or the space between any floor and its ceiling or roof above, and
- foundation spaces, garages, workshops, store rooms and the like which do not project more than 1 metre above natural ground level (at any point) are not counted as storeys, and
- the number of storeys is the maximum number of storeys which may be intersected by the same vertical line, not being a line which passes through any wall of the building.

Buildings are not to exceed 2 storeys in height except where the site consists of significantly sloping land and if the additional storey:

- does not exceed the 8.5 metre height standard, and
- is designed and located to minimise the bulk of the building, and
- has minimal visual impact when viewed from the downslope sides of the land.

Front building setback

Development is to maintain a minimum front building setback. The minimum front building setback from Mona Vale Road is 20 metres.
Otherwise, the minimum front building setback is 10 metres.
The minimum front building setback area is to be **densely landscaped using locally occurring species of canopy trees and shrubs** and free of any structures, carparking or site facilities other than driveways, letterboxes and fences.

Rear and Side building setback

Development is to maintain minimum rear and side building setbacks.

The minimum rear and side building setback is 10 metres.

The rear and side setback areas are to be landscaped and free of any structures, carparking or site facilities other than driveways, and fences.

Bushland setting

A minimum of 50 per cent of the site area is to be of natural bushland or landscaping with local species.

NATIONAL PARK SETBACK

Development is to maintain a minimum setback from National Park boundaries of 20 metres. The minimum setback area is to be fire fuel reduced zone, landscaped with local species.

COMPLYING DEVELOPMENT

The following table shows the development which is complying development in this locality. Column A describes the development and Column B shows the requirements that the development must comply with to be complying development.

Column A Development for the purpose of:	**Column B**
Single storey detached houses, being: · construction of new single storey houses. · alterations to single storey houses. · additions to single storey houses. · construction of carports, garages and outbuildings associated with a dwelling.	As described in Schedule 12—Part A
Swimming pools	As described in Schedule 12—Part B

LOCALITY C8 BELROSE NORTH

DESIRED FUTURE CHARACTER

The present character of the Belrose North locality will remain unchanged except in circumstances specifically addressed as follows.

The natural landscape including landforms and vegetation will be protected and, where possible, enhanced. Buildings will be grouped in areas that will result in the minimum amount of disturbance of vegetation and landforms and buildings which are designed to blend with the colours and textures of the natural landscape will be strongly encouraged.

Development will be limited to new houses conforming with the housing density standards set out below and low intensity, low impact uses.

Along Forest Way a dense bushland buffer will be retained or established.

Development in the locality will not create siltation or pollution of Middle Harbour.

LAND USE

Category One

Development for the purpose of extractive industries (on land covered by Licence Number 64/193 Metropolitan, Belrose—Warringah Gravel and Stone Supplies).

Category Two

Development for the purpose of the following:

- agriculture
- housing
- housing for older people or people with disabilities (on land described in initial paragraph (b) under the heading "Housing density" below)
- other buildings, works, places or land uses that are not prohibited or in Category 1 or 3.

Category Three

Development for the purpose of the following:

- animal boarding or training establishments
- bulky goods shops
- business premises
- child care centres
- community facilities
- entertainment facilities
- extractive industries, unless this Locality Statement provides otherwise
- further education
- health consulting rooms
- heliports
- hire establishments
- hospitals
- hotels
- industries
- medical centres
- motor showrooms
- offices
- places of worship
- primary schools
- recreation facilities
- registered clubs
- restaurants
- retail plant nurseries
- service stations
- shops
- short term accommodation
- vehicle repair stations
- veterinary hospitals
- warehouses

PROHIBITED DEVELOPMENT

Development for the purpose of the following is prohibited within this locality:

- brothels
- housing for older people or people with disabilities (other than on land described in initial paragraph (b) under the heading "Housing density" below)
- potentially hazardous industries
- potentially offensive industries
- vehicle body repair workshops

Canal estate development is also prohibited within this locality.

BUILT FORM

Housing density

The maximum housing density is 1 dwelling per 20 ha of site area, except:

(a) where this standard would prevent the erection of one dwelling on an existing parcel of land, being all adjacent or adjoining land held in the same ownership on 8 March 1974 and having a combined area of not less than 2 ha, and

(b) on land that adjoins a locality primarily used for urban purposes and on which a dwelling house is permissible, where there is no maximum housing density if the development is for the purpose of "housing for older people or people with a disability", and the development complies with the minimum standards set out in clause 29 **unless identified as environment protection on the map deposited in the office of the Council.**

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However, consent may be granted for development that will contravene these housing density standards but, if by more than 10 per cent, only with the concurrence of the Director.

The matters which shall be taken into consideration in deciding whether concurrence should be granted are:

(a) whether non-compliance with the development standard in issue raises any matter of significance for State or regional environmental planning, and

(b) the public benefit of maintaining the planning controls adopted by this plan.

To measure housing density:

- the site area is divided by the number of dwellings proposed on the site, including any existing dwellings which are to be retained, and
- the site is the allotment which existed on the day this plan came into effect, and
- granny flats are not considered to be a dwelling and are limited to one per allotment.

Building height

Buildings are neither to exceed 2 storeys nor 8.5 metres.

Buildings must comply with both the maximum height measured in storeys and the maximum height measured in metres.

To measure the height of a building:

- the maximum height in metres is the distance measured vertically between the topmost point of the building (not being a vent or chimney or the like) and natural ground level below, and
- a storey is the space between two floors, or the space between any floor and its ceiling or roof above, and
- foundation spaces, garages, workshops, store rooms and the like which do not project more than 1 metre above natural ground level (at any point) are not counted as storeys, and
- the number of storeys is the maximum number of storeys which may be intersected by the same vertical line, not being a line which passes through any wall of the building.

Buildings is not to exceed 2 storeys in height except where on significantly sloping land and if the additional storey:

- does not exceed the 8.5 metre height standard, and
- is designed and located to minimise the bulk of the building, and
- has minimal visual impact when viewed from the downslope sides of the land.

Front building setback

The minimum front building setback to all roads is 20 metres. On corner allotments fronting Forest Way the minimum front building setback is to apply to this road and the side setback is to apply to the secondary road.

The minimum front building setback area is to be **densely landscaped using locally occurring species of canopy trees and shrubs** and free of any structures, carparking or site facilities other than driveways, letterboxes and fences.

Rear and Side building setback

Development is to maintain minimum rear and side building setbacks.
The minimum rear and side building setback is 10 metres.
The rear and side setback areas are to be landscaped and free of any structures, carparking or site facilities other than driveways, and fences.

Bushland setting

A minimum of 50 per cent of the site area is to be of natural bushland or landscaping with local species.

NATIONAL PARK SETBACK

Development is to maintain a minimum setback from National Park boundaries of 20 metres. The minimum setback area is to be fire fuel reduced zone, landscaped with local species.

Extractive industry

In this provision, *the quarry* means the quarry operated by Warringah Gravel and Stone Supplies at the appointed day.

- Consent is not to be granted for extractive industry at the quarry unless the consent authority:
  - (a) has considered the effect of the proposed development on flood behaviour, the water quality and the quantity and hydrodynamics of Bare Creek or underground waters, and
  - (b) has considered a rehabilitation plan for the site, and
  - (c) is satisfied that rehabilitation measures will be carried out in accordance with the guidelines in the *Managing Urban Stormwater, Soils and Contamination Handbook* (1998) prepared by the Department of Housing, and
  - (d) is satisfied that, while development is being carried out, noise and vibration levels will be in accordance with the Environment Protection Authority's guidelines.
- The consent authority will consult with the Director-General of the Department of Mineral Resources when considering an application for extractive industry. The consent authority will also consider the recommendations for future extraction outlined in the "Extractive Industry Report" in considering such an application.
- New development will not be permitted in the vicinity of the quarry which may be adversely affected by noise, dust, vibration or reduced visual amenity because of the

operation of the quarry or which may hinder or prevent the quarry from realising its full economic potential.

- Subdivision of land within 50 metres of an access road to the quarry which will allow the erection of a dwelling will not be permitted.
- Consent must not be granted to allow the quarry to be used for the disposal of waste brought from other land. Consent must not be granted for extractive industry at the quarry unless the consent authority is satisfied that the extraction will be carried out in such a way as maximises the quality of the material and minimises the creation of waste.

COMPLYING DEVELOPMENT

The following table shows the development which is complying development in this locality. Column A describes the development and Column B shows the requirements that the development must comply with to be complying development.

Column A Development for the purpose of:	**Column B**
Single storey detached houses, being: · construction of new single storey houses. · alterations to single storey houses. · additions to single storey houses. · construction of carports, garages and outbuildings associated with a dwelling.	As described in Schedule 12—Part A
Swimming pools	As described in Schedule 12—Part B

LOCALITY C10 MONA VALE ROAD WEST

DESIRED FUTURE CHARACTER

The present character of the Mona Vale Road West locality will remain unchanged except in circumstances specifically addressed as follows.

The natural landscape including landforms and vegetation will be protected and, where possible, enhanced. Buildings will be grouped in areas that will result in the minimum amount of disturbance of vegetation and landforms and buildings which are designed to blend with the colours and textures of the natural landscape will be strongly encouraged.

Development will be limited to new houses conforming with the housing density standards set out below and low intensity, low impact uses.

Along Mona Vale Road a dense bushland buffer will be retained or established.

Development in the locality will not create siltation or pollution of Middle Harbour.

LAND USE

Category One

Nil

Category Two

Development for the purpose of the following:

- agriculture
- housing
- other buildings, works, places or land uses that are not prohibited or in Category 1 or 3.

Category Three

Development for the purpose of the following:

- animal boarding or training establishments
- bulky goods shops
- business premises
- child care centres
- community facilities
- entertainment facilities
- further education
- health consulting rooms
- heliports
- hire establishments
- hospitals
- hotels
- industries
- medical centres
- motor showrooms
- offices
- places of worship
- primary schools
- recreation facilities
- registered clubs
- restaurants
- retail plant nurseries
- service stations
- shops
- short term accommodation
- vehicle repair stations
- veterinary hospitals
- warehouses

PROHIBITED DEVELOPMENT

Development for the purpose of the following is prohibited within this locality:

- brothels
- extractive industries
- housing for older people or people with disabilities

- potentially hazardous industries
- potentially offensive industries
- vehicle body repair workshops

Canal estate development is also prohibited within this locality.

BUILT FORM

Housing density

The maximum housing density is 1 dwelling per 20 ha of site area, except where this standard would prevent the erection of one dwelling on an existing parcel of land, being all adjacent or adjoining land held in the same ownership on 8 March 1974 and having a combined area of not less than 2 ha.

However, consent may be granted for development that will contravene this housing density standard but, if by more than 10 per cent, only with the concurrence of the Director.

The matters which shall be taken into consideration in deciding whether concurrence should be granted are:

(a) whether non-compliance with the development standard in issue raises any matter of significance for State or regional environmental planning, and

(b) the public benefit of maintaining the planning controls adopted by this plan.

To measure housing density:

- the site area is divided by the number of dwellings proposed on the site, including any existing dwellings which are to be retained,
- the site is the allotment which existed on the day this plan came into effect, and
- granny flats are not considered to be a dwelling and are limited to one per allotment.

Building height

Buildings are neither to exceed 2 storeys nor 8.5 metres.

Buildings must comply with both the maximum height measured in storeys and the maximum height measured in metres.

To measure the height of a building:

- the maximum height in metres is the distance measured vertically between the topmost point of the building (not being a vent or chimney or the like) and natural ground level below, and
- a storey is the space between two floors, or the space between any floor and its ceiling or roof above, and
- foundation spaces, garages, workshops, store rooms and the like which do not project more than 1 metre above natural ground level (at any point) are not counted as storeys, and
- the number of storeys is the maximum number of storeys which may be intersected by the same vertical line, not being a line which passes through any wall of the building.

Buildings are not to exceed 2 storeys in height except where on significantly sloping land and if the additional storey:

- does not exceed the 8.5 metre height standard, and
- is designed and located to minimise the bulk of the building, and
- has minimal visual impact when viewed from the downslope sides of the land.

Front building setback

Development is to maintain a minimum front building setback.

The minimum front building setback from **Mona Vale Road** is 20 metres.

Otherwise, the minimum front building setback is 10 metres.

The minimum front building setback area is to be **densely landscaped using locally occurring species of canopy trees and shrubs** and free of any structures, carparking or site facilities other than driveways, letterboxes and fences.

Rear and Side building setback

Development is to maintain minimum rear and side building setbacks.

The minimum rear and side building setback is 10 metres.

The rear and side setback areas are to be landscaped and free of any structures, carparking or site facilities other than driveways, and fences.

Bushland setting

A minimum of 50 per cent of the site area is to be of natural bushland or landscaping with local species.

NATIONAL PARK SETBACK

Development is to maintain a minimum setback from National Park boundaries of 20 metres. The minimum setback area is to be fire fuel reduced zone, landscaped with local species.

COMPLYING DEVELOPMENT

The following table shows the development which is complying development in this locality. Column A describes the development and Column B shows the requirements that the development must comply with to be complying development.

Column A Development for the purpose of:	**Column B**
Single storey detached houses, being: · construction of new single storey houses. · alterations to single storey houses. · additions to single storey houses. · construction of carports, garages and outbuildings associated with a dwelling.	As described in Schedule 12—Part A
Swimming pools	As described in Schedule 12—Part B

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979
WARRINGAH LOCAL ENVIRONMENTAL PLAN 2000
(AMENDMENT NO. 4)

I, the Minister for Urban Affairs and Planning, in pursuance of section 70 of the Environmental Planning and Assessment Act 1979, make the local environmental plan set out hereunder. (……)

Minister for Urban Affairs and Planning.

Sydney, 2001

_____

1. What is the name of this plan?

The name of this plan is Warringah Local Environmental Plan 2000 (Amendment No. 4).

2. Where does this plan apply?

This plan applies to land identified within Locality Statements A2 Booralie Road, A4 Myoora Road, A5 McCarrs Creek Road, B2 Oxford Falls Valley, B9 Mona Vale Road East, C8 Belrose North and C10 Mona Vale Road West.

3. What are the purposes of this plan?

This plan aims to:

(a) implement controls that ensure the protection of land identified as environmentally sensitive, and
(b) to amend non urban land Locality Statements.

4. What effect has this plan on other environmental planning instruments?

This plan amends Warringah Local Environmental Plan 2000 in the manner set out in clause 5.

5. Amendment of Warringah Local Environmental Plan 2000

Warringah Local Environmental Plan 2000 is amended by:

a) inserting clause 55A:

"55A ENVIRONMENT PROTECTION

Land identified as environment protection on the map is environmentally sensitive. All development on land identified as environment protection shall be carried out with the consent of Council. On environment protection land, development is to have regard to, but not be limited to, environmental considerations such as impact upon flora, impact upon fauna, impact upon water quality within catchments, the soil capability of the land, topographical constraints and the visual integration with the natural landscape and topography.

For the purpose of this clause, "development" on such land includes:
(a) the erection of a fence or any other structure at all on the land; and
(b) the removal of soil or rock from the land; and
(c) the deposit of soil, rock or any other matter on the land; and
(d) the destruction or removal of any tree or other vegetation on the land."

b) inserting in Schedule 1 Exempt Development in clause 1(c) the words "environment protection or" after the words "is on land that is"

c) inserting in the Locality Statement B2 Oxford Falls Valley in "Housing density" subclause (c), after the words "the minimum standards set out in clause 29", the words "unless identified as environmental protection on the map deposited in the office of the Council."

d) inserting in the Locality Statement C8 Belrose North in "Housing density" subclause (b), after the words "the minimum standards set out in clause 29", the words "unless identified as environmental protection on the map deposited in the office of the Council."

e) inserting at the end of the definition of "the map" in the Dictionary the following words:

Warringah Local Environmental Plan 2000 (Amendment No. 4) Sheets 1 and 2;

f) insert in Locality A2 Booralie Road Desired Future Character in paragraph 1 after the words "settings and occasionally" the words "low intensity, low impact".

g) insert in Locality Statements A2 Booralie Road, A5 McCarrs Creek Road and B2 Oxford Falls Valley immediately before the heading "Complying Development" the following:

"Rear and Side building setback

Development is to maintain minimum rear and side building setbacks.

The minimum rear and side building setback is 10 metres.

The rear and side setback areas are to be landscaped and free of any structures, carparking or site facilities other than driveways, and fences.

Landscaped space

The minimum area of landscaped space is 30 per cent of the site area.

To measure an area of landscaped open space:

- impervious surfaces such as driveways, paved areas, roofed areas, tennis courts, car parking and stormwater structures, decks and the like and any areas with a width or length of less than 2 metres are excluded from the landscaped space area, and
- the water surface of swimming pools and impervious surfaces which occur naturally such as rock outcrops are included in the landscaped space area, and
- landscaped space must be at ground level, and
- the minimum soil depth of land that can be included as landscaped space is 1 metre.

National Park Setback

Development is to maintain a minimum setback from National Park boundaries of 20 metres. The minimum setback area is to be fire fuel reduced zone, landscaped with local species."

h) inserting in Locality Statements B9 Mona Vale Road East, C8 Belrose North and C10 Mona Vale Road West immediately before the heading "Complying Development" the following:

"Rear and Side Building Setback

Development is to maintain minimum rear and side building setbacks.

the minimum rear and side building setback is 10 metres.

The rear and side setback areas are to be landscaped and free of any structures, carparking or site facilities other than driveways, and fences.

Bushland Setting

A minimum of 50 per cent of the site area is to be of natural bushland or landscaping with local species.

National Park Setback

Development is to maintain a minimum setback from national park boundaries of 20 metres. The minimum setback area is to be fire fuel reduced zone, landscaped with local species."

i) insert in Locality A4 Myoora Road Desired Future Character in paragraph 1 the words "retained or" after the words "bushland buffer will be".

j) delete in Locality A4 Myoora Road Desired Future Character in paragraph 2 the words "Signs will not be permitted where they are visible from Mona Vale Road" and insert between paragraph 3 and 4 the following paragraph:

"Only small, non obtrusive and non illuminated sign that identify the use of a site are to be visible from Mona Vale Road. Signs that are of such size, height or visual appearance that are designed to attract

passing trade, will not be permitted. All signs are to be in keeping with the colour and textures of the natural landscape."

k) inserting in Locality A4 Myoora Road after the Front Building Setback built form control a new built form control as follows:

"Rear and side building setback

Development is to maintain minimum rear and side building setbacks.

The minimum rear and side building setback is 7.5 metres.

The rear and side setback areas are to be landscaped and free of any structures, carparking or site facilities other than driveways, and fences."

l) insert in Locality B2 Oxford Falls Valley Desired Future Character between paragraphs 3 and 4 the paragraph "Along Forest Way and Wakehurst Parkway a dense bushland buffer will be retained or established".

m) delete in Locality B2 Oxford Falls Valley Front Building Setback built form control the sentence "The minimum front building setback from the street alignment is 20 metres" and insert the following:

"The minimum front building setback to all roads is 20 metres. On corner allotments fronting Forest Way or Wakehurst Parkway the minimum front building setback is to apply to these roads and the side setback is to apply to the secondary road."

n) delete in Locality B2 Oxford Falls Valley Front Building Setback built form control the word "landscaped" and insert the words "densely landscaped using locally occurring species of canopy trees and shrubs".

o) insert in Locality B9 Mona Vale Road East Desired Future Character between paragraph 3 and 4 the following paragraph "Along Mona Vale Road a dense bushland buffer will be retained or established".

p) delete in Locality B9 Mona Vale Road East Front Building Setback built form control the word "landscaped" and insert the words "densely landscaped using locally occurring species of canopy trees and shrubs"

q) insert in Locality C8 Belrose North Desired Future Character between paragraphs 3 and 4 the paragraph "Along Forest Way a dense bushland buffer will be retained or established".

r) delete in Locality C8 Belrose North Front Building Setback built form control the sentence "The minimum front building setback from Forest Way is 20 metres. Otherwise, the minimum front building setback is 10 metres" and insert the following:

> "The minimum front building setback to all roads is 20 metres. On corner allotments fronting Forest Way the minimum front building setback is to apply to this road and the side setback is to apply to the secondary road."

s) delete in Locality C8 Belrose North Front Building Setback built form control the word "landscaped" and insert the words "densely landscaped using locally occurring species of canopy trees and shrubs"

t) insert in Locality C10 Mona Vale Road Desired Future Character between paragraphs 3 and 4 the paragraph "Along Mona Vale Road a dense bushland buffer will be retained or established".

u) delete in Locality C10 Mona Vale Road West in the Front Building Setback built form control the words "Forest Way" and insert the words "Mona Vale Road".

v) delete in Locality C10 Mona Vale Road West Front Building Setback built form control the word "landscaped" and insert the words "densely landscaped using locally occurring species of canopy trees and shrubs".