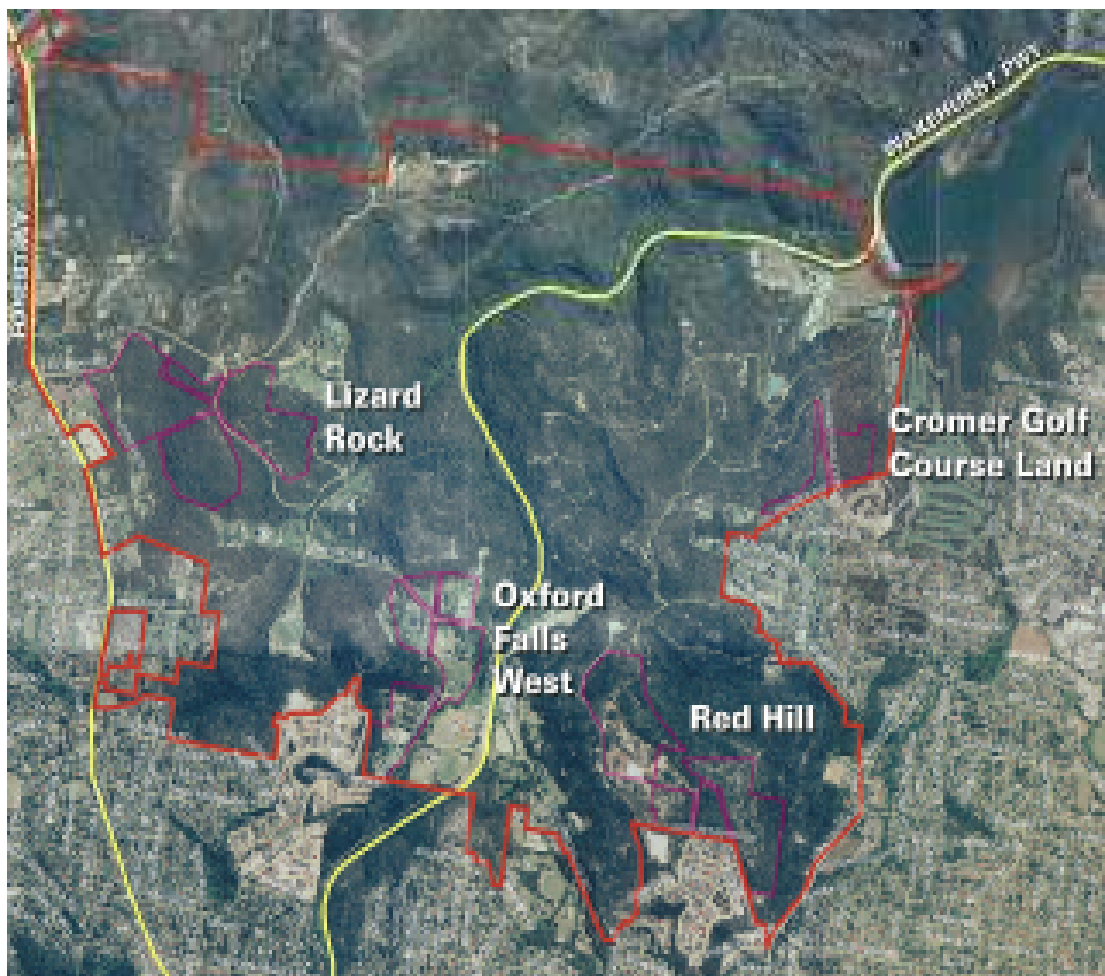


NSW PLANNING ASSESSMENT COMMISSION

**Planning Assessment Commission**  
**Review of Four Sites Within Oxford Falls Valley**  
**For Urban Development**



**April 2009**

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## EXECUTIVE SUMMARY

### Terms of reference

The Minister has requested the Commission to establish if any of the following sites in Oxford Falls Valley are capable of urban development and of sufficient size to function as an urban release area –

- Oxford Falls West
- Red Hill
- Lizard Rock
- Cromer Golf Club.

In this report, a reference to Oxford Falls Valley means the area zoned as B2 in Warringah LEP 2000.

In carrying out its review, the Minister requested the Commission to take into account the sustainability criteria in the Metropolitan Strategy, the relationship with existing urban development, and current and potential servicing capacity and transport services.

### Strategic planning context

Oxford Falls Valley is non-urban land. It has not been identified for urban development on the Metropolitan Development Program (MDP) or in the Metropolitan Strategy.

The draft NE Subregional Strategy provides that there is no necessity for the development of non-urban land not already identified on the MDP for at least 10 years, probably longer. However, the Strategy does highlight the need to regularly review dwelling targets and to identify non-urban lands for potential to meet long term housing demand, beyond 25 years.

Land may be added to the MDP to meet housing demand if it substantially meets all of the sustainability criteria specified in the Metropolitan Strategy.

### Assessment of four sites against sustainability criteria

None of the sites substantially meets the sustainability criteria in the Metropolitan Strategy and therefore currently, none are capable of urban development. In particular –

- The sites are currently relatively distant from existing centres and from public transport making them car dependent.
- Residential development of the sites will require augmentation of sewer and water systems and the high voltage network. Costing of upgrades to determine if the development is economically feasible is only appropriate when the future of development of Oxford Falls is identified.
- The projected need in the subregion is for affordable, medium and high density development in existing centres and not the detached low density housing proposed for these sites.
- Bushfires and steeply sloping land are significant hazards for much of the land within the four sites. Overcoming these hazards will reduce housing affordability.
- All sites have the potential to adversely impact on the already unsatisfactory water quality of Narrabeen Lagoon.
- There is a significant potential land use conflict with the Earth Satellite Station in Oxford Falls that needs to be resolved.
- The impact on biodiversity will need to be assessed in light of the regional conservation plan being prepared by the Department of Environment and Climate Change, due for completion in mid 2009.

Whilst it may be argued that some environmental constraints may be overcome by good design and engineering, and by effective management plans, major constraints remain. These include the distance of the sites from key centres and from public transport and the fact that the low density housing proposed is not the affordable medium and high density housing needed in the subregion. There is also the need to resolve the potential land use conflict with the Earth Satellite station.

In addition, the sites are too small and dispersed to justify increased public transport and local services and therefore too small to function as release areas.

### **Cumulative impacts - future of Oxford Falls Valley as a whole - review in 5 years time**

Of greater concern to the Commission in approving the urban release of the four sites is the issue of cumulative impacts.

The Commission received submissions from other landowners in the Valley who wish to develop their land. For example, the Department of Lands is examining the long term future use of its considerable land holding in the area to identify conservation areas that need to be protected and areas that may have potential for other uses, such as around the existing urban boundaries. Several other landowners in the area have also expressed interest in the future urban use of their properties.

The Commission has concluded that the potential for the urban release of any land within Oxford Falls Valley, including the four sites, requires an assessment of the future of the Oxford Falls Valley catchment area as a whole. In particular, there should be an assessment of cumulative impacts including on the water quality of Narrabeen Lagoon, on bushfire hazard and on transport links. The visual impacts of any further development must also be considered.

The Commission has identified some further studies that need to be undertaken to assess these cumulative impacts and to determine the urban capability of the area as a whole. These studies should be completed over the next five years so that their conclusions may be included in the next review of the North East Subregional Strategy in five years time. There is a considerable body of data already available to draw on in undertaking these studies.

### **Response to Minister's request for advice**

*Are any of the four identified sites ( Oxford Falls West, Red Hill, Lizard Rock and Cromer Golf Course) capable of urban development and of sufficient size to function as an urban release area, taking into consideration the sustainability criteria in the Metropolitan Strategy and relationship with existing urban development and current and potential servicing capacity and transport services?*

The Commission has concluded, on the basis of the information available to it for each site, that none of the sites will be capable of urban development for at least ten years. This conclusion was reached after assessing the sites against the sustainability criteria in the Metropolitan Strategy and against the draft North East Subregional Strategy. The sites do not substantially meet the sustainability criteria, particularly in relation to transport, access, housing diversity and some environmental and land use conflict constraints.

Furthermore, none of the sites are of sufficient size to function as an urban release area. They are too small and dispersed to justify the increased public transport and local services required to meet the sustainability criteria.

Of greater concern to the Commission in recommending the four sites for urban release is the issue of cumulative impacts. It is clear that other land owners in the Valley also wish to include their land in any urban releases.

## **Recommendations**

Accordingly, the Commission recommends that:

### *Recommendation 1*

To determine the future development potential of the Oxford Falls catchment area as a whole and manage cumulative impacts, the following major studies need to be undertaken –

- Transport and accessibility –road-network and bus-route potential in the Oxford Falls topography
- Management of bushfire hazard
- Water quality, aquatic ecology and hydrology of the Narrabeen Lagoon and its catchment (see Appendix D)
- Flora and fauna protection
- Visual analysis
- Satellite communication buffer zones.

### *Recommendation 2*

The Minister request Warringah Council to carry out these studies (in conjunction with Pittwater Council where necessary) as part of its ongoing responsibilities as the planning authority for the area. The studies should be carried out in consultation with the major land holders in the area especially the Metropolitan Aboriginal Land Council and the Department of Lands. It may be appropriate to form a Task Force to oversee the completion of the studies.

### *Recommendation 3*

Upon completion of these studies, the Council should determine the appropriate areas to be zoned for conservation and if appropriate, any areas suitable for urban development. For land proposed to be zoned for conservation, land owners should be consulted about an appropriate management structure.

### *Recommendation 4*

The Minister should indicate to land owners that land releases in the area are not required in the short term and will not be considered until the appropriate studies have been completed.

# **PART ONE – CONTEXT OF THE REVIEW**

## **1 Request for review**

### **1.1 Appointment**

On 23 December 2008, the Commission received a request from the Minister for Planning to undertake a review of the suitability of four sites in Oxford Falls Valley for future urban development.

The Commission consisted of Ms Janet Thomson (Chair), Ms Donna Campbell and Mr John Court.

### **1.2 Terms of Appointment**

The Minister directed the Planning Assessment Commission to:

*‘establish if any sites (Oxford Falls West, Red Hill, Lizard Rock and Cromer Golf Course) in Oxford Falls Valley are capable of urban development and are of sufficient size to function as an urban release area, taking into consideration the sustainability criteria in the Metropolitan Strategy and relationship with existing urban development and current and potential servicing capacity and transport services’.*

The Commission was requested to provide a final report to the Minister by 30 April 2009.

A copy of the terms of reference and maps identifying the four sites are at Appendix A. In this report, a reference to Oxford Falls Valley (OFV) means the area zoned as B2 in the Warringah LEP 2000.

## **2 Commission’s Review Process**

### **2.1 Consultation**

The Commission was briefed by Department of Planning staff and undertook a site visit of the four areas accompanied by Council staff.

The terms of reference required the Commission to invite submissions from relevant landowners and Warringah Council, and to invite other submissions as appropriate.

Invitations were sent to landowners of the four sites, the Oxford Falls Progress Association and the Oxford Falls Action Group. Optus, Reach Communications and Telstra were also invited to make submissions because of their possible interest in large satellite dishes on either side of Oxford Falls Rd.

The following public agencies were also invited to make submissions:

- NSW Department of Planning
- Roads and Traffic Authority
- Ministry of Transport
- Warringah Council
- State Emergency Service
- NSW Rural Fire Service
- Department of Primary Industry
- Sydney Water Corporation
- Energy Australia
- Pittwater Council
- Department of Planning

- NSW Department of Primary Industries
- Department of Environment and Climate Change
- Department of Water and Energy.

The Commission made further inquiries of some agencies arising from their submissions, and met with officers of the Department of Lands, a major landholder in the Valley.

## 2.2 Documents Reviewed

A list of documents reviewed by the Commission is at Appendix B

## 3 Description of the Sites Under Review and their Context

### 3.1 Context

Oxford Falls Valley is located within the Warringah local government area and has an area of 1,455 hectares. The Valley is densely vegetated with native species, with a small number of cleared sites. It forms a visual backdrop to the existing residential area at Oxford Falls.

Land parcels in the Valley are relatively large and land ownership is dominated by the Local Aboriginal Land Council and the Department of Lands.

Existing land uses in the area are generally low intensity and rural, for example, agriculture, animal breeding and boarding, rural residential and other semi rural uses. The area is also currently used for informal and illegal recreational purposes such as trail bike riding.

Oxford Falls Valley is one of several sub-catchments that flow into Narrabeen Lagoon. The Lagoon is a shallow coastal body of water consisting of three connected basins.

The Lagoon and its creeks are important for protection of local ecology and for recreational use. The sea grasses on the Lagoon bed provide a nursery for juvenile fish. The estuarine and wooded parts of the catchment support a range of native flora and fauna. A study in 2000 put typical week-day visitations to the Lagoon at 1,400 rising to 1,900 on weekend days (Estuary Process Study 2000, p 201)<sup>1</sup>. Activities range for active aquatic sports to walking in catchment bushland.

Oxford Falls Valley area<sup>1</sup> drains into the western-most basin of the Lagoon through South and Middle Creeks. Other sub-catchments of the Lagoon drain through Deep Creek, mainly from the Warigal National Park, Nareen Creek from North Narrabeen and Mullet Creek from Ingleside and Warriewood. These sub-catchments fall within the Warringah and Pittwater local government boundaries.

The Lagoon's narrow opening to the ocean can be closed off or experience 'breakouts' as a result of natural forces. Warringah Council has a scientifically-based management strategy for artificial intervention in the opening and closing processes. The Lagoon is well flushed near the opening, but poorly flushed in its western basins. It takes typically 3 months or more for an exchange of water in the western-most part of the Lagoon, compared to almost daily exchange near the ocean outlet.

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<sup>1</sup>. See Appendix D for references

<sup>2</sup> The term Oxford Falls Valley (OFV) has been taken in this assessment to be the Council designated planning area as shown in the map at Appendix A. The hydrological catchment of Oxford Falls Creek discharges through Middle Creek into Narrabeen Lagoon. The hydrological catchment of other relevant parts of the OFV planning area (including Red Hill and Cromer Golf Course) discharge through South Creek and are not in the Oxford Falls hydrological catchment)



The extent of urbanisation of the total Lagoon catchment of 53 square kilometres was estimated to be approximately 28% in 2000 (Estuary Process Study 2000, p22). This urbanisation has occurred progressively since the beginning of the twentieth century. The Lagoon has been extensively modified by dredging, by artificial opening and closing and by the diverse impacts of urbanisation during this period.

### 3.2 Site Description

Table 1 Description of Sites

	<b>Oxford Falls West</b>	<b>Cromer GC Land</b>	<b>Lizard Rock</b>	<b>Red Hill</b>
<b>Ownership</b>	Multiple ownership	Cromer Golf Club	Local Aboriginal Land Council	Multiple ownership
<b>Area</b>	31.5ha	11ha	56ha	47.5ha
<b>Potential lot yield</b>	Not identified	45 proposed	430 proposed	400-600 proposed
<b>Existing Use</b>	Rural/Res, existing dwellings	Rural/Res,	Rural/Res	Rural/res existing dwellings
<b>Adjoins an urban area</b>	Yes at the southern end	Yes on the eastern side	A small portion to the South and West	Yes at southern end
<b>Electricity supply</b>	augmentation required	augmentation required	augmentation required	augmentation required
<b>Sewer and Water</b>	augmentation required	augmentation required	augmentation required	augmentation required
<b>Distance from the nearest major centre</b>	6.5km from Warringah Mall 6.2km from Dee Why	6.8km from Warringah Mall 4.1km from Dee Why	8.7km from Warringah Mall 8.4km from Dee Why	4.5km from Warringah Mall 4.2km to Dee Why
<b>Distance from site to nearest neighbourhood centre</b>	3.7km	0.9km	2.5km	3.9km
<b>Distance to the nearest bus service</b>	2.6km from the Centre of the site	0.5km from the site	1.5km from the centre of the site	0.8km from the site
<b>Distance to the nearest School</b>	0.5km	1.7km	1.8km	1.2km
<b>Vegetation</b>	Largely cleared, a small portion is within a wetland buffer	Vegetated riparian area and buffer present	Vegetated with some riparian area	Vegetated A large proportion is within a wetland area or buffer

	Oxford Falls West	Cromer Golf Club Land	Lizard Rock	Red Hill
<b>Wildlife corridor present</b>	Yes	Yes	Yes	No
<b>Bushfire</b>	Outer lots identified as bushfire prone	All identified as bushfire prone	All Identified as bushfire prone	All identified as bushfire prone
<b>Slopes</b>	Mostly equal to or less than 11	Mainly equal to or less than 11, a proportion is greater than 19 in slope	Less than 11 to equal or greater than 19	Eastern part of the site has slopes equal to or greater than greater than 19
<b>Land use conflict</b>	Likely conflict with satellite dishes located on Oxford Falls Rd	Possible conflict with satellite dishes located on Oxford Falls Rd	Likely conflict with satellite dishes located on Oxford Falls Rd Existing Urban/non-urban conflict	Possible conflict with satellite dishes located on Oxford Falls Rd

## 4 Planning of Oxford Falls Valley

### 4.1 Current Planning Controls

Oxford Falls Valley and the four sites are identified as B2 – Oxford Falls Valley under Warringah LEP 2000. This provides for low density residential development at one dwelling per 20hectares.

The LEP is unusual in that it does not include land use zones. Instead, it controls development through assessment against locality statements. The relevant locality statement is ‘B2 – Oxford Falls Valley’ below:

*‘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 detached style housing conforming to the housing density standards set out below and low intensity, low impact uses. There will be no new development on ridge tops or in places that will disrupt the skyline when viewed from Narrabeen Lagoon and the Wakehurst Parkway.*

*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.*

*A dense bushland buffer will be retained or established along Forest Way and Wakehurst Parkway. Fencing is not to detract from the landscaped vista of the streetscape.*

*Development in the locality will not create siltation or pollution of Narrabeen Lagoon and its catchment and will ensure that ecological values of natural watercourses are maintained.’*

## **4.2 History of Urban Development Planning in the Valley**

Oxford Falls Valley has been subject to urban development pressure over several decades. This pressure has resulted in encroachment and significant alternation of the urban and non-urban boundary.

In 1986, several non-urban and low density land releases occurred in Oxford Falls Valley as a result of Sydney *Regional Environmental Plan No. 21- Warringah Urban Release Areas*. These included: Lady Corymbia Circuit Frenchs Forest, land at Maybrook Avenue, Cromer and land at Red Hill. See Figure 1.0.

Housing for the aged and disabled has altered the urban and non-urban boundary following the making of *State Environmental Planning Policy No, 5- Housing for Aged and Disabled People* in 1982. Developments resulting from this Policy include 'Glenaeon' (Glenaeon Avenue Belrose), 'Maybrook Manor' (Jersey Place Cromer) and 'Wilandra Village' (Wilandra Rd Cromer). See Figure 1.0.

Land at Dawes and Perentie Rd Belrose was rezoned by Council in May 2000 to low density as it was subject to several aged housing development consents which would have permitted higher densities than low density zoning (see Figure 1.0).

Pressure for urban development prompted Council to undertake a Non-Urban Lands Study (NULS) to guide existing and future uses of non-urban lands within Warringah Shire including Oxford Falls Valley. This Study was completed in two stages from 1998 to 2001.

In 2001, Council sought to amend its LEP but it was not approved by the Department of Planning (then DUAP) due to concerns regarding the impact of proposed environmental protection provisions on future urban land releases.

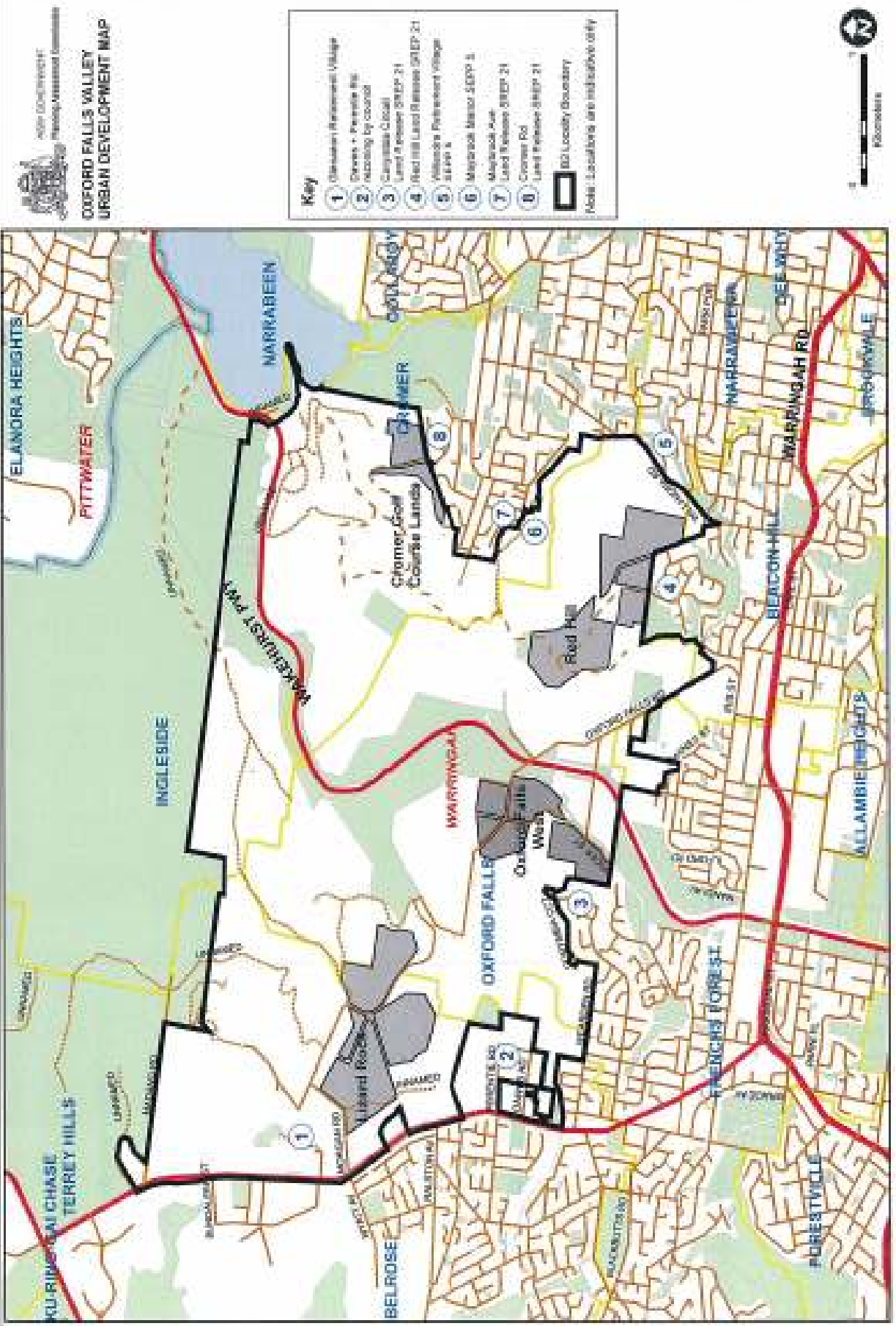


Figure 1 Urban Development History of Oxford Falls Valley

## **4.3 Proposals for Urban Development on the Four Sites**

### **Lizard Rock**

In 2005, consultants for the Metropolitan Local Aboriginal Land Council lodged an application with Council to rezone 57ha of their land for a development of 432 dwellings. This application was withdrawn in early 2005 after consideration of the constraints to development. Later the same year consultants submitted an application to the Department of Planning for the site to be classed as State Significant under Part 3A of the Act. This Proposal was for 430 dwellings. The Department is still assessing the State Significance of the application.

### **Cromer Golf Club**

In early 2005, Cromer Golf Club made representations to Council proposing the rezoning of 13ha of their land immediately east of the golf course for residential development. Council advised that the proposal would be unlikely to proceed due to environmental constraints, servicing issues and inconsistency with the Metropolitan Strategy. In 2006, JBA on behalf of the Golf Club requested that the site be placed on the MDP. In the same year, the Department met with the Golf Club and recommended that a written submission be provided to the Department.

### **Red Hill**

Representations were made to Council to rezone land at Red Hill for residential development. Due to the significant environmental and servicing constraints, the landowners were advised in 2003 that any proposal for the rezoning of this land did not have the in principle support of the Council.

In 2005 the owners then submitted a proposal to the Department for 400-600 new greenfield lots. In 2005, the then Minister advised the proponent that the Government would not look at their project in isolation from other proposals to develop contiguous land. In 2006, the owners then approached the Department seeking State Significant Site listing and for their proposal to be declared a 'major project'. The Director General declined to do so

An application for a seniors living development has been lodged for the northern part of the Red Hill site.

### **Oxford Falls West**

In 2004 several owners in Oxford Falls West (OFDA) made representations to Council regarding the potential subdivision of their land. This group have not made a formal application to Council. In March 2007, JBA submitted a rezoning proposal to the Department that sought to include land in the northern part of Oxford Falls West on the MDP and rezone it for residential development. The Department responded by advising JBA that their request should be forwarded to Warringah Council to be included in their constraints mapping.

## **5 Strategic Planning Framework for Future Urban Development**

### **5.1 Metropolitan Development Program**

The Metropolitan Development Program is the State Government's key program for managing land and housing supply in metropolitan Sydney. One of the key aims of the Program is to co-ordinate the provision of services ensuring that vacant sites for sale in subdivisions are fully serviced with roads, water, sewer, power and drainage with access to schools, community facilities and transport.

Land identified for future urban release is identified on the Program. Oxford Falls Valley is not currently listed, however new urban development may be added to the Program if it substantially meets sustainability criteria specified in the Metropolitan Strategy.

## **5.2 Metropolitan Strategy**

The NSW Government's Metropolitan Strategy 'City of Cities', released in 2005 sets out the strategic directions for future urban growth in Sydney for the next 25 years. This document reinforces existing urban centres as the locations of future growth and limits release areas on the urban fringe.

It proposes to locate over 80 percent of new dwellings within centres in the subregion over the next 25 years.

Oxford Falls Valley is not identified for future urban releases in the Metropolitan Strategy.

## **5.3 Draft North East Subregional Strategy**

The North East Subregion consists of Warringah, Manly and Pittwater local government areas. The North East Subregional Strategy interprets the broad policy objectives of the Metropolitan Strategy at regional and local levels. The Strategy was publicly exhibited in mid 2007 and the Department of Planning has advised that it will be finalised in late 2009.

The draft Strategy concludes that the Ingleside Release Area will provide sufficient green field land for new housing in the subregion until 2031.

The Strategy notes that the vast majority of the existing housing stock in the North East is detached dwellings, making up 62.4 per cent of housing stock. It identifies a need to complement the existing high level of low density housing with medium and high density housing. This will help meet centres and transport objectives and meet the demand from an ageing population to 'age in place'. It will also meet a demand for a more affordable means of entry into the North East housing market.

Accordingly, the draft Strategy provides for additional housing demand to be met through new housing in existing urban areas. Council considers that this is achievable.

The Department of Planning and Councils will regularly review achievement of housing targets and determine whether there is adequate excess capacity to meet subregional demands for the next 25 years. The first review is likely to be in 2014.

## **5.4 Draft Warringah LEP**

Council is currently preparing a draft Standard LEP and must demonstrate that it substantially meets the dwelling and employment targets in the Draft Subregional Strategy. The draft LEP has yet to be exhibited.

Council is proposing to zone the Oxford Falls Valley and the sites as E3 Environmental Management and limit dwelling houses to 1 per 20 hectares. .

An extract of the provisions regarding the E3 Zone from the Standard Instrument Order is below.

### **'1 Objectives**

*To protect, manage and restore areas with special ecological, scientific, cultural or aesthetic values.*

*To provide for a limited range of development that does not have an adverse effect on those values.*

### **2 Permitted without consent**

*Home occupations*

### **3 Permitted with consent**

*Dwelling houses*

### **4 Prohibited**

*Industries; Multi dwelling housing; Residential flat buildings; Retail premises; Seniors housing; Service stations; Warehouse or distribution centres; Any other development not specified in item 2 or 3'.*

## **6 SUBMISSIONS**

Thirty one submissions were received by the Commission, 14 of which were from government agencies. A summary of submissions received is at Appendix C.

## **PART TWO ASSESSMENT BY THE COMMISSION**

### **7 Major Issues Identified**

#### **7.1 Future Demand for Dwellings in the Subregion**

The Department of Planning advises that a total of 17,300 additional dwellings are required for the North East subregion by 2031, of which 10,300 are required in Warringah.

The draft NE Subregional Strategy provides that “there is no necessity for the development of non-urban lands (not already identified on the Metropolitan Development Program) to meet the dwelling targets for the North East Subregion to 2031.” (*Direction C1.1.2*)

Greenfield housing supply for the subregion will come mainly from the Ingleside release area and the balance of housing will be provided from infill development.

Council has advised the Department that total dwelling potential remaining from its existing urban lands is “approximately 9,600, which includes 4,900 dwellings around centres, 2,400 multi-unit housing areas; and 2,300 low density infill areas.” It is currently reviewing its housing policy but does not expect to find a need to develop non-urban lands to meet housing targets to 2031.

The Department of Planning and Council are likely to review achievement of housing targets in 2014 and 2019.

#### **7.2. Infrastructure and Access**

##### *7.2.1 Proximity to urban services*

As noted above, the Metropolitan Strategy requires residential development to be located around strategic and local centres. For Oxford Falls Valley, strategic centres are at Brookvale and Dee Why and local centres are at Belrose, Frenchs Forest, Narrweena and Cromer Heights.

The Department of Planning advises that it is unlikely people could travel from any of the four sites to strategic centres by public transport within 30 minutes and none of the local centres are within walking distance.

The Department’s submission notes that “In situations where new dwellings cannot meet the aim to locate 80 per cent of new housing within strategic and local centres (such as the Oxford Falls Valley sites), the draft North East Subregional Strategy proposes that the principles of centres based planning be followed, including access to high frequency public transport services, when considering such proposals.”

Without the establishment of a new local centre in the Valley and significant additional public transport services, further urbanisation in the Valley will not be able to satisfy these principles. The Commission agrees with the Department's conclusion that the four sites are too small and dispersed to generate the need for a new local centre.

### *7.2.2 Utilities*

In line with the Metropolitan Strategy, Sydney Water has not planned, costed or allocated funds to urbanise Oxford Falls Valley. Sydney Water has indicated that all four sites require augmentation of both water supply and sewerage systems as set out in Appendix E.

Energy Australia advises that the sites are "at the end of Energy Australia's existing network" and therefore require "substantially augmenting" the high-voltage network.

### *7.2.3 Transport and roads*

Consistent with patterns of transport in the region, all transport in Oxford Falls Valley is by road and therefore public transport will be by extension of existing bus services.

The Ministry of Transport said in its submission: "the proposed development sites are on isolated peninsulas of land with limited potential for connection to frequent bus services due to topography and the standard of local roads." Its preliminary estimate of the cost of providing a bus service to the Lizard Rock area is \$250,000 per annum. This recurrent cost would fall to the Government since "State infrastructure contributions to green field developments no longer include contributions for public transport services".

The Department of Planning noted that the sites are not within walking distance of public transport corridors, with the possible exception of Cromer Golf Club. The difficult topography militates against extensions of transport corridors into the Valley. Most journeys in the Valley must therefore revert to one of the major roads bounding the Valley.

The Department of Planning's submission concludes that transport by private vehicle will be the dominant mode for any further urbanization in the Valley. The terrain is generally too difficult for bicycle use other than for recreation. The Department of Environment and Climate Change commented on the need to reduce emissions of air pollutants and greenhouse gases by designing new urbanisation to favour public transport.

## **7.3 Environmental Constraints and Risks**

### *7.3.1 Impact on Water Quality*

Water quality is important for aquatic health, human recreational use, including fishing, and aesthetic amenity. Submissions from Warringah and Pittwater Councils, the Department of Environment and Climate Change and the site owners considered impacts of future development on the water quality of creeks and Narrabeen Lagoon.

The sustainability criteria in the Metropolitan Strategy require that new development maintain or improve existing environmental condition for water quality. The Commission notes that the waters in the Lagoon and some of its creeks fail generally to meet the current numerical criteria for the water quality. These criteria are the EPA's interim objectives of 2000 corresponding to the national ANZECC 2000 *Australian and New Zealand Guidelines for Fresh and Marine Water Quality (Guidelines)*.

Water quality in the Lagoon and its creeks was regularly monitored between 1980 and 2004. An estuary management study in 2000 concluded that water quality in the western basin of the Lagoon, South Creek and Middle Creek was "poor", caused by pollutant inputs from the Oxford Falls Valley catchment and the poor flushing capacity at this location.



This contrasted to the relatively good water quality in the well flushed section of the Lagoon near the entrance where Mullet Creek discharges from the Ingelside/Warriewood catchment, an aspect which favours future urbanisation in Ingelside over Oxford Falls Valley. A commissioned study of Warringah creeks in 2004 found that the ANZECC guidelines were exceeded in the Oxford Falls Valley creeks and that “virtually all of Warringah’s Creeks [were] at risk of further degradation”

Submissions from potential developers have claimed that use of Water Sensitive Urban Design (WSUD) in urban developments will offset the impacts of stormwater on the flow and water quality of creeks and on pollutants in the lagoon. While WSUD has potential to significantly reduced flow and quality impacts, claims for anything approaching complete offset following urbanisation are optimistic in the extreme, especially for urbanisation in the relatively steep bushland areas of the Oxford Falls Valley.

A comprehensive and integrated review of the large amount of water quality, aquatic biology and flow information available for Narrabeen Lagoon and its complete catchment is highly desirable before rezoning further land for urban releases in the Valley. Such a study coupled with predictive modelling could establish realistic limits to further urbanization both in the Valley and in other sub-catchments with a view to preserving and improving the waters of the Lagoon.

The review could also set site-specific water quality criteria as provided for in the ANZECC 2000 *Guidelines*, using a risk-based approach. This could, after further studies, result in a relaxation of the criteria presently applying to these waters, More information on such a review is set out in Appendix D.

### *7.3.2 Bushfire Hazards*

Most of the non-urban land in Oxford Falls Valley is bush-fire-prone land (Vegetation Category 1) with buffers around existing urbanisation. There are a few small areas of Vegetation Category 2 land in the cleared sections of Oxford Falls West and isolated parcels within or on the boundaries of existing urban areas.

New urbanisation in the Valley would advance the fire-protection buffer areas (needing to be maintained and partially cleared) further into existing areas of native vegetation. This would have consequent impacts on the ecology of remaining areas of native vegetation. The Department of Environment and Climate Change has drawn attention to this potentially negative impact on biodiversity.

However, there could be an improvement in hazard reduction to the extent that any new housing adjoining the buffer zones would most likely be built to a higher fire-protection standard than housing presently adjoining these zones. Increased housing cost is a likely consequence.

A key factor in fire risk management is establishing emergency evacuation routes from ‘peninsular’ type urban developments in the Valley. The possible cumulative impact of several such developments in proximity needing to use the same evacuation routes could be significant.

The NSW Rural Fire Service advises of necessary procedures and requirements for any developments in the bushfire prone lands.

Several respondents commented on the possibility of re-evaluation of bushfire hazards under the influence of climate change. The recent Victorian bushfires have highlighted this possibility and it is likely to be considered by the Royal Commission into the fires. Findings of

the Royal Commission may require a re-assessment of bushfire hazards in the Valley, where large urban areas are immediately adjacent to bushland.

### *7.3.3 Topographic and Landslips Constraints*

Much of the land in the Oxford Falls Valley has slopes greater than 11 degrees (Slope Constraints & Landslip Constraints Maps prepared by Warringah Council 2006). The extent and nature of sloping land on the four sites is set out in Appendix E.

Some existing urbanisation in the Valley and surround suburbs of Warringah and Pittwater has been established on steeply sloping lands. With adequate geotechnical engineering, steep-slope problems can be overcome, depending on underlying geology. However, resulting environmental issues, such as adequate management of stormwater runoff, may prove difficult to address in steep land, even when structural stability can be assured. Geotechnical measures also add substantially to building costs.

### *7.3.4 Flora and Fauna*

The Department of Environment and Climate Change (DECC) has advised that it is currently mapping regional biodiversity in the all the Sydney Catchment area and expects it to be completed by the end of June 2009. As noted by Council, it will be an important tool in assessing any proposals for urban development in Oxford Falls, including the four sites. The results of that mapping will be incorporated into the North East Subregional Strategy.

DECC completed an assessment of the Garigal-Oxford Falls area "as having very high fauna values, including a number of threatened species". There are survey records of at least six threatened species associated with the heath and sandstone vegetation communities in the area.

Mapping of vegetation communities by Council does not indicate any threatened communities on the four sites.

DECC raises the prospect of biobanking as an optional arrangement for offsetting regional losses in biodiversity, particularly in association with Aboriginal land councils.

Both DECC and Dept of Water and Energy (DWE) stress the importance of protecting riparian zones for preservation of biodiversity and for control of sediment movement, water quality and biodiversity. DWE outlined requirements for determining Core Riparian Zones (10m 1<sup>st</sup> order streams; 20m 2<sup>nd</sup> order and 20-40m 3<sup>rd</sup> order (merit based)), Vegetated Buffer Zones and Asset Protection Zones in relation to various classes of water courses. DWE also raised the issue of groundwater protection.

Riparian zones in the Valley have been mapped by the Council and present a degree of constraint to urbanisation, especially for the Oxford Falls West and Lizard Rock sites. However, the Commission notes that the study completed for the Lizard Rock development argues that the riparian zones established by nominal distance are not appropriate for the site and should be reduced.

### *7.3.5 Visual Amenity*

Loss of vegetation and the erection of urban structures on ridge tops and in valleys overlooked by urban areas significantly alters visual amenity. Loss of visual amenity can alter the character of an area and affect property values.

The Commission received no submissions addressing visual amenity for the whole Valley if urbanisation were to proceed beyond existing limits. A visual impact study associated with

the Lizard Rock development appeared to be a rather limited assessment around the local area at Belrose.

A comprehensive visual study of the Oxford Falls Valley from the view point of existing housing and observers and from possible future urbanisation would help in the assessment of changes to visual amenity.

#### *7.3.6 Landuse Conflict – Communication Satellite Services*

The two operators of overseas telecommunication satellite facilities in Oxford Falls West have objected in their submissions to any new urbanisation in the Valley on the grounds of potential interference with their operations. The objection was strongest for the proposed Lizard Rock development. Terrestrial noise sources can interfere with the reception of satellite signals and the sites also need to be immune from extraneous radio frequencies.

While the current operators have raised blanket objections to further urbanisation in the Valley, a communication from one operator to the Department of Lands in 2005 indicates that a buffer zone of 1 km to urban development and 2 km to industry may set a realistic constraint. Most of the Lizard Rock and Oxford Falls West sites would fall inside buffer zones of 1 km around the existing satellite facilities.

The Commission was advised by the current operators that precise buffer zones could be not calculated in time to be included in the report of this review.

### **8 Assessment Against Sustainability Criteria in the Metropolitan Strategy**

As already noted, none of the sites have been identified for land release in the Government's Metropolitan Development Program. Under the Metropolitan Strategy, any proposal for urban development of these sites is therefore expected to have exceptional environmental performance and not require major infrastructure. The proposal must also substantially meet sustainability criteria. (C1.2.1)

Appendix E contains a detailed assessment of each of the sites against the sustainability criteria specified in the Metropolitan Strategy.

Broadly, the Commission's conclusions are that none of the sites substantially meet the sustainability criteria for the following reasons -

- The sites are currently relatively distant from existing centres and from public transport making them car dependent.
- Residential development of the sites will require augmentation of sewer and water systems and the high voltage network. Costing of upgrades to determine if the development is economically feasible is only appropriate when the future of development of Oxford Falls is identified.
- The projected housing need in the subregion is for affordable, medium and high density housing in existing centres and not the detached low density housing generally proposed for these sites.
- Bushfires and steeply sloping land are significant hazards and impediments for much of the land within the four sites. Overcoming these hazards will reduce housing affordability.
- All sites have the potential to adversely impact on the already unsatisfactory water quality of Narrabeen Lagoon.
- There is a significant potential land use conflict with the Earth Satellite Station in Oxford Falls that needs to be resolved.
- The impact on biodiversity will need to be assessed in light of DECC's regional conservation plan due for completion at the end of June 2009.

Whilst it may be argued that some environmental constraints may be overcome by good design and engineering, and by effective management plans, major constraints remain. These include the distance of the sites from key centres and from public transport and the fact that the low density housing proposed does not meet the housing needs of the subregion. There is also the need to resolve the potential land use conflict with the Earth Satellite station.

In addition, the sites are too small and dispersed to justify increased public transport and local services and therefore too small to function as release areas.

The table below summarises the assessment of each site against the criteria in the Metropolitan Strategy.

Table 2 Assessment against Sustainability Criteria in the Metropolitan Strategy

<b>Sustainability criteria</b>	<b>Oxford Falls West</b>	<b>Red Hill</b>	<b>Lizard Rock</b>	<b>Cromer Golf Course</b>
Infrastructure and access	No, does not substantially meet the sustainability criteria.	No, does not substantially meet the sustainability criteria.	No, does not substantially meet the sustainability criteria.	No, does not substantially meet the sustainability criteria.
Housing diversity	No, low density housing proposed	No, low density housing proposed	No, 8 dwellings per hectare proposed	No, low density housing proposed
Employment lands	No, does not substantially meet the sustainability criteria.	No, does not substantially meet the sustainability criteria.	No, does not substantially meet the sustainability criteria.	No, does not substantially meet the sustainability criteria.
Avoidance of risk	No, does not substantially meet the sustainability criteria.	No, does not substantially meet the sustainability criteria.	No, does not substantially meet the sustainability criteria.	No, does not substantially meet the sustainability criteria.
<i>bushfires</i>	<i>Outer lots are bushfire prone.</i>	<i>Extreme risk.</i>	<i>Extreme risk</i>	<i>Extreme risk</i>
<i>sloping land</i>	<i>Partial constraint</i>	<i>Significant constraint</i>	<i>Significant constraint</i>	<i>Significant constraint</i>
<i>land use conflict</i>	<i>Likely Impact on Earth Station - extensive buffer may be required.</i>	<i>Possible impact on Earth Station - extensive buffer may be required.</i>	<i>Likely Impact on Earth Station - extensive buffer may be required.</i>	<i>Possible impact on Earth Station - extensive buffer may be required.</i>
	<i>Loss of visual amenity for</i>	<i>Loss of visual amenity for</i>	<i>Visual impact study completed</i>	<i>Loss of visual amenity for</i>

<b>Sustainability criteria</b>	<b>Oxford Falls West</b>	<b>Red Hill</b>	<b>Lizard Rock</b>	<b>Cromer Golf Course</b>
	<i>existing housing.</i>	<i>existing housing.</i>	<i>showing no loss of visual amenity but study limited in scope</i>	<i>existing housing.</i>
Natural resources and environment protection	<i>Unresolved.</i>	<i>Unresolved.</i>	<i>Unresolved.</i>	<i>Unresolved.</i>
<i>water quality</i>	<i>Potential adverse effect on Narrabeen Lagoon.</i>	<i>Potential adverse effect on Narrabeen Lagoon.</i>	<i>Potential adverse effect on Narrabeen Lagoon.</i>	<i>Potential adverse effect on Narrabeen Lagoon.</i>
<i>biodiversity</i>	<i>Subject to findings of DECC regional conservation plan.</i>	<i>Subject to findings of DECC regional conservation plan.</i>	<i>Subject to findings of DECC regional conservation plan.</i>	<i>Subject to findings of DECC regional conservation plan.</i>
<i>Aboriginal heritage</i>	<i>Likely to have Aboriginal cultural values -study required.</i>	<i>Likely to have Aboriginal cultural values - study required.</i>	<i>yes, meets criteria</i>	<i>Not likely to have Aboriginal cultural values apart from upper slopes</i>
Quality and equity in services	No, because only accessible by car.	No, because only accessible by car.	No, because only accessible by car.	No, because only accessible by car.

## 9 Future of Oxford Falls

### 9.1 Cumulative Impacts

The phenomenon of ‘nibbling’ is a significant mechanism by which cumulative impact can occur over an extended period. A series of small, similar developments, that have minimal environmental impact individually, can accrue progressively over time to become significant, eventually leading to a major change in environmental quality.

The four sites nominated are only a small part of the Valley. Other owners, including the Department of Lands, are likely to lay equivalent claims for development in the future as demonstrated by a number of submissions received by the Commission. The Metropolitan Land Council and the Department of Lands own substantial parcels and the Department is currently developing long term plans for the conservation and development of its land.

The eventual consequence of such nibbling could be the almost complete urbanisation of the remaining bushland in the Valley, unless some clear boundaries can be established on reasonably definitive bases.

## **9.2 Further Studies Needed**

Cumulative impacts are usually addressed by modelling foreseeable impacts from potential development to establish limits to future development or establish requirements necessary to avoid the cumulative impacts. The Commission considers that it is important to look holistically at the whole Oxford Falls Valley area and its sub-catchments - indeed for some situations the whole Narrabeen Lagoon Catchment. Some candidates for establishing such limiting criteria based on cumulative impact assessment include:

- Transport and accessibility –road-network and bus-route potential in the Oxford Falls topography
- Management of bushfire hazard
- Water quality, aquatic ecology and hydrology of the Lagoon and its catchment
- Flora and fauna protection
- Visual analysis
- Satellite communication buffer zones

These warrant further studies considering the Valley as a whole, rather than focusing piecemeal on individual sites.

## **10 Planning Resolution of the Issues**

Currently, Warringah Council is reviewing its Local Environmental Plan to prepare a new instrument that complies with the Standard LEP provisions. However, this does not involve a review of the appropriateness of the proposed zones. Council is proposing to zone the Oxford Falls Valley area as E3 Environmental Management, with similar dwelling restrictions to those that exist at present.

The NE Subregional Strategy has concluded that the Ingleside Release Area will provide sufficient green field land for new housing in the sub regional area. The strategy also identified a need for greater housing choice in the area and significant demand for a broader range of housing types including affordable, medium and high density housing. This demand is to be met through the accommodation of new housing in the existing urban areas.

Warringah Council has indicated that it considers that it can meet the prescribed targets without the need for new urban release areas. However, the NE Subregional Strategy requires the Council to demonstrate it has sufficient zoned capacity to meet the 10 year dwelling targets and contribute to achieving the longer term 2031 housing needs in the subregion. The dwelling targets will be reviewed regularly, with reviews likely to be in 2014 and 2019.

It would seem prudent, for Warringah Council to look in detail at the future planning of the Oxford Falls Valley area during this 5 or 10 year time frame. If the Council is not meeting the prescribed dwelling targets at the 5 year review, or if there are issues with the release of land at Ingleside, then there will be increased pressures for the release of land in Oxford Falls Valley.

Council will have time before the first review to update and complete all the relevant studies so that informed decisions may be made about the future of the area.

The Commission considers that the studies may show that, from an environmental perspective, some areas in the Valley are capable of being developed for urban purposes

providing certain environmental measures are undertaken to manage cumulative impacts and meet the sustainability criteria. Other areas will need to be protected to enable ongoing conservation and management.

In the longer term, a blanket Environmental Management Zone over the entire area would not appear to be the most appropriate way to ensure planning objectives are met for the future planning of the Valley.

## **PART THREE CONCLUSION**

### **11 Conclusions**

#### **11.1 Do the sites meet the sustainability criteria?**

As indicated above, none of the sites substantially meets the sustainability criteria as required by the Metropolitan Strategy. Whilst it may be argued that some environmental constraints may be overcome by good design and engineering, and by effective management plans, major constraints remain. These include the distance of the sites from key centres and from public transport and the fact that the low density housing proposed is not the kind of housing needed in the subregion. There is also the need to resolve the potential land use conflict with the Earth Satellite station.

In addition, the sites are too small and dispersed to justify increased public transport and local services and therefore too small to function as release areas.

#### **11.2 Cumulative impacts**

Of greater concern to the Commission in recommending the urban release of the four sites is the issue of cumulative impacts.

Currently, the Department of Lands is examining the long term future use of its considerable land holding in the area to identify conservation areas that need to be protected and areas that might have potential for other uses, such as around the existing urban boundaries. Several other landowners in the area have also expressed interest in the future urban use of their properties.

Urban pressures could see the eventual urbanisation of most of the Oxford Falls Valley area. The Commission considers that the future planning of the area has to be carried out in a comprehensive and thorough way assessing cumulative impacts including on the water quality of Narrabeen Lagoon, on bushfire hazard and on transport linkages. The visual impacts of any further development must also be considered.

#### **11.3 Future of urban releases in the Valley**

Currently both the Metropolitan Strategy and the draft North East Subregional Strategy see no need for urban land releases in the Oxford Falls area. They have concluded that there is adequate land re-development potential available in the area to meet demand for at least 10 years and probably longer. This conclusion will be reviewed in 5 years time when the Strategies are updated. The submission to the Commission from the Department of Planning endorses this view.

In the event that there is a need in the future for further urban releases in the subregion, the Commission considers that there may be potential for some urban development in the Valley to substantially meet the sustainability criteria as required by the Metropolitan Strategy while

adequately protecting the environment. With the benefit of the further studies recommended below, the degradation caused by cumulative impacts may be avoided.

The future planning of Oxford Falls Valley is essentially an issue for Warringah Council. The planning should be undertaken in accordance with the Metropolitan Strategy and the North East Subregional Strategy. It should be noted in this process that there are considerable land holdings in the area in two ownerships: the Department of Lands and the Metropolitan Aboriginal Land Council.

In examining the urban development potential of the four sites, the Commission had varying levels of information available to it on each site. Comprehensive studies have been carried out of the Lizard Rock site which formed part of a submission to the Minister and studies had been carried out in respect of the other sites. These, together with the sustainability studies carried out by the Department of Planning and Warringah Council, indicate that there are areas that do not have significant environmental constraints on urban development, see the Department of Planning's map on the next page indicating limitations and restricted areas within Oxford Falls Valley.

However, in all cases the sites were looked at individually and not in the context of providing a comprehensive change of use for the Oxford Falls Valley area and the implications of this for other parts of the valley. The identification of any areas for future urban development in the area must result from comprehensive environmental studies of the cumulative impact of development on the entire area and not solely on the impacts on the individual sites.

The Commission has identified further studies that need to be updated or completed before any decisions on land release should be made. As there is no urgency in the need for additional land releases in the area, there is time for these studies to be undertaken.



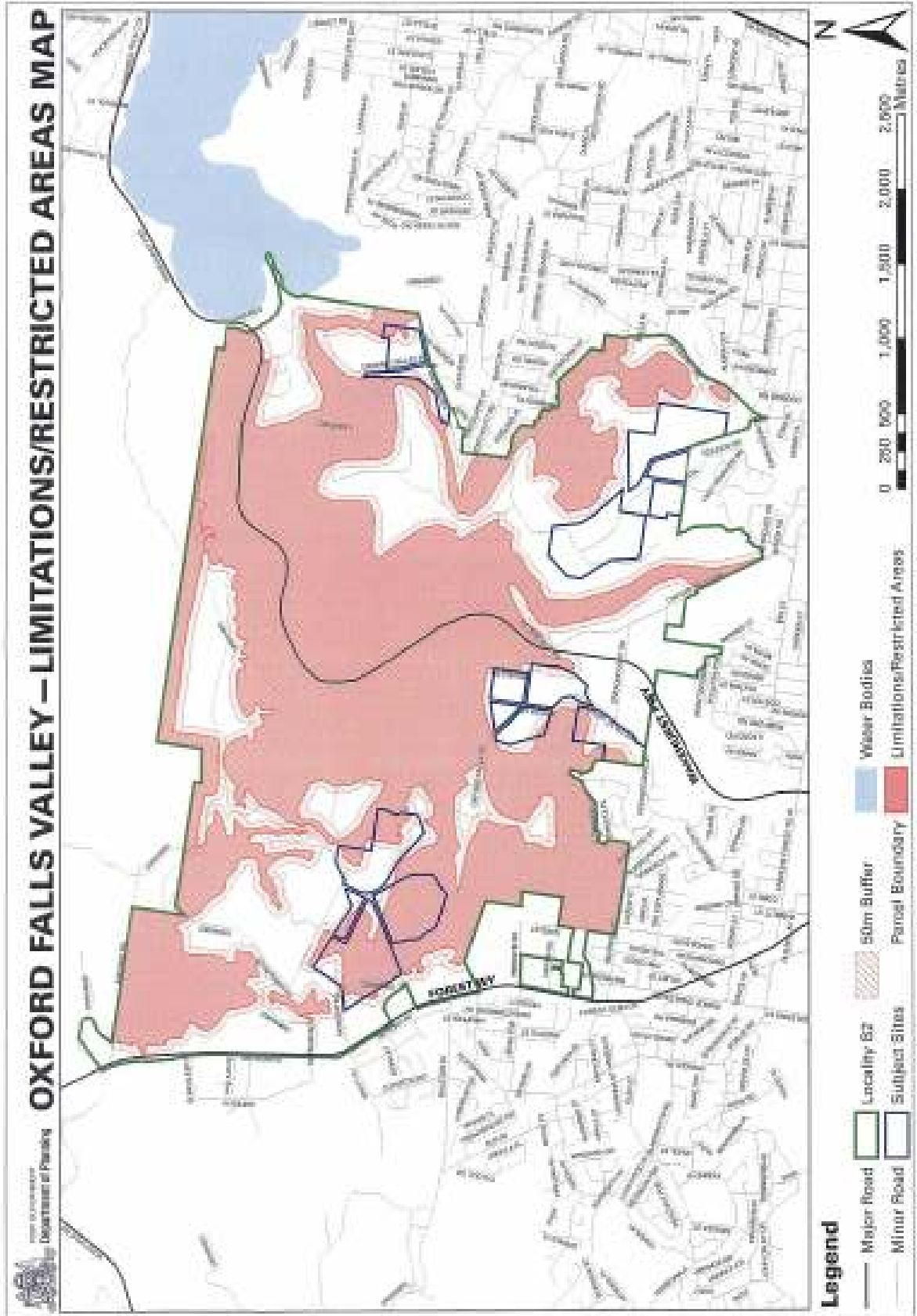


Figure 2 Limitations/Restricted Areas Map  
Source: NSW Department of Planning.

## 11.4 Summary of conclusions

Accordingly, the Commission has come to the following conclusions:

1. None of the four sites substantially meets the sustainability criteria as required by the Metropolitan Strategy. (The Commission notes that under the Strategy there is no need for any of the sites to be developed for urban purposes in the next 10 years. Although the Strategy plans to 2030, it will be reviewed in 5 and 10 years.)
2. The sites fail to meet the sustainability criteria relating to access because of their distance from key centres and from public transport. Furthermore, the sites are too small and dispersed to justify increased public transport and local services and therefore too small to function as release areas.
3. The low density housing generally proposed on the sites is not the kind of housing needed in the subregion.
4. There is a potential land use conflict with the Earth Satellite station in Oxford Falls West, particularly for Lizard Rock and Oxford Falls West.
5. Parts of the four sites may be able to meet the sustainability criteria relating to environmental constraints. However, the cumulative impact of development on the sites must be assessed before any decisions are made to release the land for urban development.
6. The assessment of cumulative impact requires an assessment of the impact of future urban release areas in the whole Oxford Falls Valley area. This requires the update or completion of further studies.

## 12 Response to Minister's Request for Advice

*Are any of the four identified sites ( Oxford Falls West, Red Hill, Lizard Rock and Cromer Golf Course) capable of urban development and of sufficient size to function as an urban release area, taking into consideration the sustainability criteria in the Metropolitan Strategy and relationship with existing urban development and current and potential servicing capacity and transport services?*

The Commission has concluded, on the basis of the information available to it for each site, that none of the sites will be capable of urban development for at least 10 years. This conclusion was reached after assessing the sites against the sustainability criteria in the Metropolitan Strategy and against the Draft NE Subregional Strategy. The sites do not substantially meet the sustainability criteria, particularly in relation to transport, access, housing diversity and some environmental and land use conflict constraints.

Furthermore, none of the sites are of sufficient size to function as an urban release area. They are too small and dispersed to justify the increased public transport and local services required to meet the sustainability criteria.

Of greatest concern to the Commission in approving urban releases on the four sites is the issue of cumulative impacts. It is clear that other land owners in the Valley also wish to include their land in any urban releases.

### 13 Recommendations

The Commission recommends that:

#### Recommendation 1

To manage cumulative impacts, the following major studies need to be undertaken to determine the future development potential of the Oxford Falls catchment area as a whole:

- Transport and accessibility –road-network and bus-route potential in the Oxford Falls topography
- Management of bushfire hazard
- Water quality, aquatic ecology and hydrology of the Lagoon and its catchment (see Appendix D)
- Flora and fauna protection
- Visual analysis
- Satellite communication buffer zones.

#### Recommendation 2

The Minister request Warringah Council to carry out these studies (in conjunction with Pittwater Council where necessary) as part of its ongoing responsibilities as the planning authority for the area. The studies should be carried out in consultation with the major land holders in the area especially the Metropolitan Aboriginal Land Council and the Department of Lands. It may be appropriate to form a Task Force to oversee the completion of the studies.

#### Recommendation 3

Upon completion of these studies, the Council determine the appropriate areas to be zoned for conservation and if appropriate, and any areas suitable for urban development. For land to be zoned for conservation, land owners should be consulted about an appropriate management structure.

#### Recommendation 4

The Minister indicate to the land owners that land releases in the area are not required in the short term and will not be considered until the appropriate studies have been completed.



Janet Thomson  
PAC Member



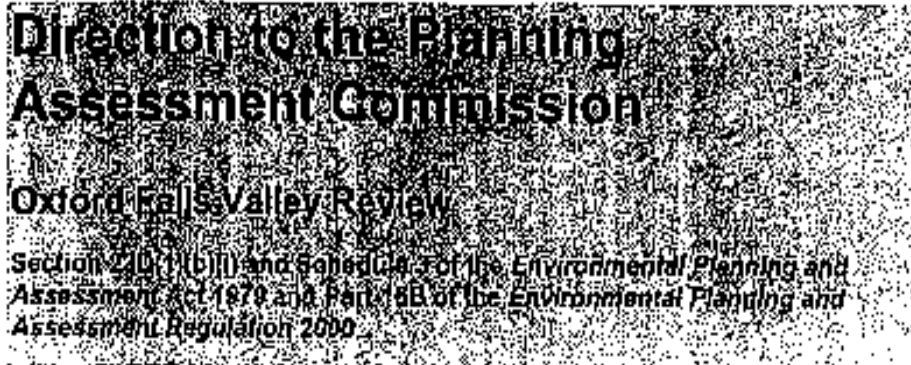
John Court  
PAC Member



Donna Campbell  
PAC Member

## Appendix A

### Terms of Reference



I, the Minister for Planning, request and direct the Planning Assessment Commission (PAC):

1. To review and provide advice on the future development potential of Oxford Falls Valley as set out in Schedule 1 to this Direction.
2. To constitute a panel of 3 members for the purposes of carrying out the Review, with expertise in the fields specified in Schedule 2 to this Direction;
3. To invite submissions from relevant landowners and Warringah Council, and invite other submissions as appropriate; and
4. To provide its final report in relation to the Review to me by 30 April 2008.

The Hon Kristina Koneally MP  
Minister for Planning

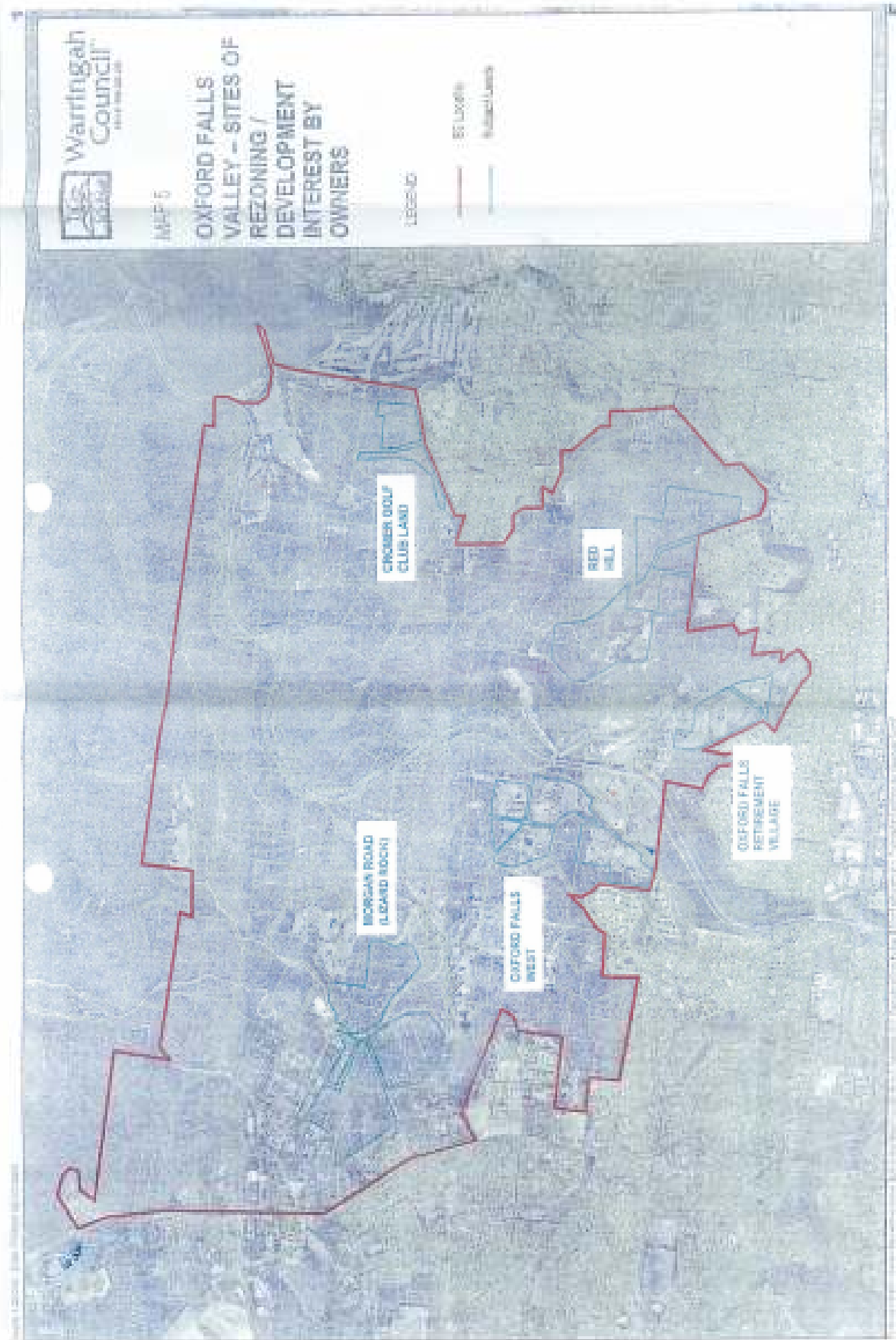
Sydney *10 Dec* 2008

#### SCHEDULE 1

1. To establish if any sites in Oxford Falls Valley identified in the map tagged 'A' are capable of urban development and are of sufficient size to function as an urban release area, taking into consideration the sustainability criteria in the Metropolitan Strategy and relationship with existing urban development and current and potential servicing capacity and transport services;

#### SCHEDULE 2

1. Experience in flora/fauna impacts, bushfire assessment, riparian corridors and development on sensitive sites;
2. Broad experience in natural and aboriginal significance; and
3. Experience in land supply, economics and demographics.



Map Tagged 'A'

## Appendix B

### List of Documents reviewed

BBC Consulting Planners (2005) *Lizard Rock Project, Morgan Rd Belrose Masterplan Development Application, Statement of Environmental Effects Volumes A, B and C.*

Ecowise Environmental (2009) *Middle Creek Aquatic Ecology Survey*, prepared for Warringah Council.

Laxton, J.H (1980-1995) and (1994-1999) *Water Quality Monitoring Summary Reports for Warringah Lagoons.*

Department of Lands (2005) *Assessment of Crown Land at Belrose, Cromer and Oxford Falls.*

Department of Planning (2007) *North East Subregion Draft Subregional Strategy.*

Department of Planning (2009) *Metropolitan Development Program 2007/08 Report Residential Forecasts 2007/08 - 2015/16*

Source: <http://www.planning.nsw.gov.au/programservices/mdp.asp>.

NSW Government (2006) *Local Environmental Plan Standard Instrument Order.*

PPK (1998) *Warringah Non – Urban Land Study*, prepared for Warringah Council.

The Ecology Lab (2008) *Narrabeen Lagoon Restoration Project*, prepared for Warringah Council.

Transport and Traffic Planning Associates (2001) *Warringah Council Transport Investigations and Modelling Northern Beaches Peninsula - Transport and Traffic Study*, prepared for Warringah Council.

Warringah Council (2000) *Warringah LEP 2000.*

Warringah Council (2004) *Creek Management Study.*

Warringah Council (2007) *Planning Report – Oxford Falls Valley Assessment of Rezonong/Development Proposals.*

WBM Oceanics Australia (2000) *Narrabeen Lagoon Process Study*, prepared for Warringah Council.

WBM Oceanics Australia (2002) *Narrabeen Lagoon Estuary Management Study*, prepared for Warringah and Pittwater Councils.

WBM Oceanics Australia (2002) *Narrabeen Lagoon Estuary Management Plan*, prepared for Warringah and Pittwater Councils.

## Appendix C

### Summary of Submissions

SUBMITTOR	ISSUE
Department of Environment and Climate Change	<ul style="list-style-type: none"> <li>- Biodiversity impacts</li> <li>- Vegetation Communities and Threatened Species</li> <li>- Impact on Biodiversity Values of Development in Bushfire Prone Land</li> <li>- Impacts on Aboriginal Cultural Heritage Values</li> <li>- Strategic Location for Urban Release Areas.</li> <li>- Water Quality</li> <li>- Floodplain Risk Management</li> <li>- Biobanking Option</li> </ul>
Department of Primary Industries	<ul style="list-style-type: none"> <li>- Area contains one quarry site which operates on an intermittent basis and two quarries which are no longer operating.</li> <li>- A Petroleum Exploration Licence covers the area.</li> </ul>
Department of Water and Energy	<ul style="list-style-type: none"> <li>- Riparian protection</li> <li>- Surface water management</li> <li>- Groundwater protection</li> <li>- Sustainable water supply</li> <li>- Sewerage service and Effluent Treatment</li> <li>- Statutory and Policy Considerations</li> </ul>
Rural Fire Service	<ul style="list-style-type: none"> <li>- All identified sites are identified as bushfire prone land on Warringah's bushfire prone land map.</li> <li>- Future development will need to comply with the requirements of Planning for Bushfire Protection.</li> </ul>
Ministry of Transport	<ul style="list-style-type: none"> <li>- There is limited potential for connection of the sites to a frequent bus service.</li> <li>- MoT may consider establishing a bus service to Lizard Rock pending further detailed consideration.</li> <li>- Potential bus service costs for lizard Rock alone are \$250,000 per annum.</li> </ul>
Department of Lands	<ul style="list-style-type: none"> <li>- DoL is unable to comment at the moment as they have recently commissioned a Draft Plan of Management for Crown Land within Oxford Falls Valley.</li> </ul>
Roads and Traffic Authority	<ul style="list-style-type: none"> <li>- Future development must take into account the government's transport objectives.</li> <li>- A TMAP would need to be undertaken to ascertain the cumulative impacts of the development.</li> <li>- A traffic impact assessment should be undertaken in the initial stages of any proposal.</li> <li>- How developer contributions will be determined should be established.</li> </ul>
Energy Australia	<ul style="list-style-type: none"> <li>- The existing network will not be able to supply the identified sites without substantially augmenting the network.</li> </ul>
State Emergency Service	<ul style="list-style-type: none"> <li>- Unable to determine the full extent of hazards at the current time.</li> </ul>
Sydney Water	<ul style="list-style-type: none"> <li>- Sydney Water does not have any plans or funds allocated for additional infrastructure needed to</li> </ul>

SUBMITTOR	ISSUE
	<p>service these areas.</p> <ul style="list-style-type: none"> <li>- Existing wastewater and water systems would need to be augmented.</li> <li>- Sydney Water's forward planning for infrastructure for urban growth in this area only makes provision for the Ingleside development.</li> </ul>
Pittwater Council	<ul style="list-style-type: none"> <li>- Inconsistent with the Metropolitan Strategy</li> <li>- Draft North East Subregional Strategy</li> <li>- Metropolitan Strategy</li> <li>- Impact on demand for lots within Warriewood Valley</li> </ul>
Department of Planning	<ul style="list-style-type: none"> <li>- Do not support the urban development of the sites.</li> <li>- Inconsistent with: <ul style="list-style-type: none"> <li>- State Plan</li> <li>- Metropolitan Strategy</li> <li>- Draft North East Subregional Strategy</li> <li>- Metropolitan Development Program</li> <li>- Warringah LEP</li> <li>- Draft Comprehensive LEP</li> <li>- Access to transport services</li> <li>- Sustainability Criteria and Key Constraints</li> </ul> </li> </ul>
Warringah Council	<ul style="list-style-type: none"> <li>- Does not support urban development in this area.</li> <li>- Government policy</li> </ul>
Lipman properties	<ul style="list-style-type: none"> <li>- Property at 8 Penrhyn Drive is suitable for development.</li> <li>- Currently preparing a development application for 70 independent living units for older people and intend to submit to Council in April 2009.</li> </ul>
Terrance William Moss	<ul style="list-style-type: none"> <li>- Does not support rezoning of Oxford Falls for residential development.</li> <li>- If development were approved, larger allotments would be of benefit to Narrabeen Lagoon and could be accommodated within road transport and other infrastructure.</li> </ul>
Christian City Church	<ul style="list-style-type: none"> <li>- Christian City Church is a major landowner within Oxford Falls West.</li> <li>- Oxford Falls West has development potential.</li> <li>- Supports further investigation.</li> </ul>
Trustees of the Good Samaritan	<ul style="list-style-type: none"> <li>- Have recently lodged an application for a retirement village of 66 self-contained dwellings and communal facilities.</li> </ul>
Oxford Falls and District Progress Association	<ul style="list-style-type: none"> <li>- Suggests that all residents should be contacted.</li> </ul>
Leon Penrose	<ul style="list-style-type: none"> <li>- Oxford Falls has acted as a buffer between native bush and suburban land.</li> <li>- Unserviced</li> <li>- Recreational value</li> <li>- Narrabeen Lagoon</li> </ul>
Mr R and Ms L Gumbert Mr A and Ms J Ng	<ul style="list-style-type: none"> <li>- Request PAC review to be extended to cover their land on Oxford Falls Road and Wakehurst Parkway.</li> <li>- Access to three hospitals and a proposed hospital</li> <li>- Access to beaches, parks and shopping centres</li> <li>- Could accommodate a range of uses</li> <li>- Conditions of consent could help maintain existing</li> </ul>



SUBMITTOR	ISSUE
	<ul style="list-style-type: none"> <li>visual amenity</li> <li>- There is existing commercial and industrial development within the Valley</li> <li>- Wakehurst Parkway and Dreadnought and Oxford Falls roads often become congested</li> </ul>
Catholic Archdiocese of Sydney	<ul style="list-style-type: none"> <li>- Owns 3.28ha within the area under review</li> <li>- The site is covered by native bush with the exception of some parts, which have been cleared.</li> <li>- There are impediments to the development of their land including bushfire risk and ecological factors.</li> <li>- Intend to subdivide it for single dwelling houses.</li> </ul>
Ms G and Mr B Condon	<ul style="list-style-type: none"> <li>- Support rezoning of the subject areas for residential development</li> <li>- Welcome placement of the Metro Strategy</li> <li>- The natural environment is degraded and there is a long history of agricultural and extractive industry use.</li> <li>- The area has a history of small allotments and multiple occupancies.</li> <li>- No lots within the area are 20ha</li> <li>- Existing uses within the area are not consistent with Council's vision of the area.</li> <li>- The area has an aging population, which makes it difficult for them to access their sites.</li> <li>- The area is not pristine.</li> <li>- Narrabeen Lagoon – existing siltation issues could be ameliorated through moving existing sand.</li> <li>- Development of the area would reduce the nutrient load in Narrabeen Lagoon.</li> <li>- Existing unmade roads could be formalised to provide access to properties.</li> <li>- Previous developments have been approved in the area; these would have been required to comply with bushfire provisions.</li> <li>- Standard stormwater control practices will reduce impact of stormwater runoff.</li> <li>- Existing sewerage infrastructure.</li> </ul>
Helen Adams	<ul style="list-style-type: none"> <li>- Non urban land at Cromer is able to satisfy the Threshold Sustainability Criteria for development.</li> <li>- Infrastructure provision</li> <li>- Access</li> <li>- Housing Diversity</li> <li>- Employment</li> <li>- Avoidance of Risk</li> <li>- Natural Resources</li> <li>- Environmental Protection</li> <li>- Quality and Equality in services</li> </ul>
Mr Tim Kaufer	<ul style="list-style-type: none"> <li>- Parts of land on Cromer Rd have no environmental Constraints</li> <li>- Large block size and adjoins the Cromer Golf Club development.</li> <li>- Could contribute to a range of housing alternatives.</li> <li>- Infrastructure and services are easily accessible for all non urban land in Cromer.</li> </ul>

SUBMITTOR	ISSUE
	<ul style="list-style-type: none"> <li>- Non-urban landuse conflicts with adjoining residential use.</li> <li>- RFS could upgrade existing fire trails.</li> <li>- Development would encourage the upgrade of existing shopping centres.</li> <li>- House design could ensure the protection of the natural environment.</li> <li>- There is no future alternative use for non-urban land in Cromer.</li> </ul>
JBA and Cromer Golf Club	<ul style="list-style-type: none"> <li>- Proposed for residential development</li> <li>- Infrastructure servicing</li> <li>- Transport services</li> <li>- Open space</li> <li>- Access</li> <li>- Housing diversity</li> <li>- Avoidance of risk</li> <li>- Bushfire</li> <li>- Natural Resources and Environmental Protection</li> <li>- Quality and Equity</li> </ul>
JBA Oxford Falls West	<ul style="list-style-type: none"> <li>- Proposed residential development</li> <li>- Planning Strategies</li> <li>- Sustainability Criteria for Urban Housing</li> </ul>
Mauri Nowtarger	<ul style="list-style-type: none"> <li>- Support urban development of the area</li> <li>- Not subject to flooding</li> <li>- Land is surrounded by development and is thus not subject to bushfire risk</li> <li>- Existing infrastructure services</li> <li>- Close proximity to shopping centres, schools.</li> <li>- Can drive to railway stations, RNSH and airport.</li> <li>- Private bus service could be provided when demand arises.</li> <li>- Non urban lands study found there were few constraints to urban development of the subject site on Spicer Rd South.</li> </ul>
Malcolm McIntyre	<ul style="list-style-type: none"> <li>- Adjoining land is serviced</li> <li>- Development would reduce potential fire hazard</li> <li>- There are no threatened species on their land</li> <li>- Oxford Falls is in close proximity to the City</li> </ul>
SD Masterplan	<ul style="list-style-type: none"> <li>- Part 3A application to the DoP for urban development of MLALC site.</li> </ul>
Spicer Holdings	<ul style="list-style-type: none"> <li>- Current zoning of B2 should be retained and that it be amended so landowners can develop land for residential purposes.</li> <li>- Mixed use, medium density with cluster development would be the optimum use of the land.</li> <li>- Housing crisis</li> <li>- Sustainability and environmental impact</li> </ul>
REACH Communications	<ul style="list-style-type: none"> <li>- Landuse conflict with satellite dishes on Oxford Falls Rd, potential interference with operation of dishes.</li> </ul>
Optus Communications	<ul style="list-style-type: none"> <li>- Landuse conflict with satellite dishes on Oxford Falls Rd, potential interference with operation of dishes.</li> </ul>

## Appendix D

### Water Quality of Narrabeen Lagoon

#### Significance

Water quality is important for aquatic health, human recreational use, including fishing, and aesthetic amenity. Water quality in a coastal lake such as Narrabeen Lagoon depends on the movement of runoff water from the catchment, interchange of water with the ocean and the transport of pollutants from the catchment to the lake. The quality of the Lagoon is strongly dependent on what happens in its catchment.

Submissions from Warringah and Pittwater Councils, the DECC and some site owners considered impacts on the water quality of creeks and Narrabeen Lagoon arising from future development. However, none commented on the failure of the waters in Lagoon and some of its creeks to meet consistently the numerical criteria for the quality objectives that presently apply.

In 2000 the Environment Protection Authority (now incorporated into the DECC) set interim water quality objectives for Narrabeen Lagoon and its catchment (DECC 2006) for protection of the following values:

- aquatic ecosystems;
- visual amenity;
- secondary contact recreation;
- primary contact recreation (as a medium-term objective, within 5-10 years); and
- aquatic foods (cooked).

These objectives correspond to the national ANZECC 2000 Guidelines (ANZECC 2000) for water quality.

Some of the numerical criteria have been set as pollutant indicators include:

- phosphorus,
- nitrogen,
- turbidity,
- dissolved oxygen and
- faecal coliforms.

Except for faecal coliforms, which address the risk to health from bacterial sewage pollution while engaging in recreation, the above criteria relate to protection of aquatic ecosystems and prevention of algal blooms.

#### Existing water quality does not meet criteria

Systematic monitoring of these criteria was carried out in the Lagoon and its tributaries for Warringah Council from 1980 to 2004 (Laxton 1996, 2000). While the results have not been subject to rigorous statistical analysis to determine the extent of non-compliance with the interim criteria, a cursory review of this data indicates that they are frequently exceeded in the Lagoon and its creeks.

In 2004 Warringah Council received a commissioned study of the health, ecology and quality all its creeks. The study that found water quality in Oxford Falls Valley creeks were above the ANZECC 2000 Guidelines. It further found that “virtually all of Warringah’s Creeks are at risk of further degradation” (MWH 2004).

The Estuary Process Study for Narrabeen Lagoon reviewed existing water quality data and did further monitoring. It concluded that water quality in the western basin of the Lagoon, South Creek and Middle Creek was “poor”, caused by pollutant inputs from the catchment and the poor flushing capacity at this location. This contrasts to the relatively good water quality in Lagoon waters near the entrance where Mullet Creek discharges from the Ingelside/Warriewood catchment. The Estuary Management Study also undertook some preliminary modelling of water quality inputs from the catchments and concluded that full urbanisation would lead to an approximate doubling of nitrogen and phosphorus loads to the Lagoon (WBM 2000).

### **Water sensitive urban design**

Submissions on behalf of the four nominated sites in the Oxford Falls Valley catchment have claimed that impacts on the flow and quality of stormwater from any developments will be managed by the application of Water Sensitive Urban Design (WSUD). WSUD involves harvesting of stormwater, modifying discharges from impervious surfaces to mimic natural runoff characteristics and the removal of pollutants such as sediments, nitrogen, phosphorus, oils and toxic materials by passive types of biological treatment, e.g. bioretention basins and biofiltration devices.

While WSUD has potential to significantly reduce water impacts compared to conventional urban development, it is not generally capable of preventing an increased export of pollutants pursuant to urban development. Claims that developers typically make for high removal efficiencies of nitrogen and phosphorus have yet to be demonstrated in sustained, catchment-wide performance. Another essential element for success with WSUD is ongoing maintenance and harvesting of the devices installed. This is often difficult to ensure as the responsibility for many small control devices typically reverts to the relevant local government body several years after urbanisation occurs.

It would be optimistic in the extreme to assume that further WSUD-style urbanisation in native-bushland areas of the Oxford Falls Valley catchment would not increase the load of pollutants discharging to Narrabeen Lagoon. This is especially so in that much WSUD development and experimentation has occurred in catchments significantly different to the steep slopes and rapid creek flows characteristic of the Oxford Falls Valley Area.

### **Need for catchment-wide study/review**

There is need for a comprehensive review and assessment of all the water quality and flow information available for Narrabeen Lagoon and its catchments. This should be done in conjunction with modelling studies to determine on a catchment-wide basis the limits to and location of additional urbanisation. Only by following this path can Narrabeen Lagoon and its creeks be reliably protected and improved. Input from real experience of runoff from WSUD-developed urban areas extended over realistic time scales would also be a valuable input to such a review.

There is provision in the ANZECC (and EPA/DECC) guidelines for site specific-water quality criteria to be set using a risk-based approach. Such an approach could result in a relaxation of the criteria presently applying to these waters, but studies similar and complementary to those outlined above, probably with further monitoring, would be essential in arriving at any site-specific criteria.

### **Possible Components of a study/review of aquatic factors in Narrabeen Lagoon and catchment**

- Assemble all existing water quality, aquatic ecology and water flow data for Narrabeen Lagoon and its catchment waters into a suitable data base.
- Assess the data for reliability and scientific quality

- Assess compliance with existing water quality objectives and criteria for Narrabeen Lagoon and its catchment waters.
- Determine whether site-specific criteria warrant development for Narrabeen Lagoon and its catchment waters.
- Determine where additional or supplementary data needs to be collected and initiate implementation programs.
- Assess up-to-date performance information for Water Sensitive Urban Design in urbanised catchments such as Narrabeen Lagoon.
- Assess the potential for reduction of sewer overflows and other forms of bacterial and toxic contamination (residual septic systems and garbage tips) in OFV and other sub-catchments
- Apply appropriate flow and quality modelling techniques to model the impacts of urbanisation in various locations in the catchment on water quality, flow and aquatic ecology in Narrabeen Lagoon and its catchment waters.
- From the above studies determine limits to the extent of urbanisation in the Narrabeen Lagoon catchment needed to protect water quality, aquatic ecology and flow regimes.

The process should be overseen by an advisory committee comprising appropriate public and private sector expertise. It would be appropriate for Warringah and Pittwater Councils to convene such a body and manage the process.

## References

- Australian and New Zealand Environment and Conservation Council (ANZECC) (2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (National Water Quality Management Strategy, Canberra.
- DECC (2006) *Narrabeen Lagoon and Catchment, Water quality objectives* Source: [http://www.environment.nsw.gov.au/ieo/Gosford/report-02.htm#P120\\_1432](http://www.environment.nsw.gov.au/ieo/Gosford/report-02.htm#P120_1432) accessed 6/2/2009
- Laxton J H (1996) *Water quality of Narrabeen Lagoon (1980-95)*, report prepared for Warringah Council.
- Laxton J H (2000) *Water quality of Warringah Lagoons (1994-99)*, report prepared for Warringah and Manly Councils.
- Montgomery Watson Harza (MWH) (2004) *Final Creek Management Study*, report prepared for Warringah Council.
- WBM Oceanics Australia (WBM) (2000) *Narrabeen Lagoon Estuary Process Study* prepared for Warringah Council.
- WBM Oceanics Australia (WBM) (2002) *Narrabeen Lagoon Estuary Management Plan* prepared for Warringah Council.

## Appendix E

### Assessment of Each Site Against the Sustainability Criteria in the Metropolitan Strategy

#### Oxford Falls West

##### Infrastructure Provision

*“Mechanisms in place to ensure utilities, transport, open space and communications are provided in a timely and efficient manner”*

In accordance with the Metropolitan Development Program, Sydney Water’s forward planning only makes provision for Ingleside development and does not support growth in Oxford Falls.

The site is located within the Belrose Water Supply Zone and would connect to the Warriewood Wastewater Network. Both water and waste water systems would require augmentation. Sydney Water has advised the Dept of Planning that there are undersupply issues and it is unable to service the area for the next 5 years.

Sydney Water has advised that costing of upgrades is only appropriate when the future of development within Oxford Falls is identified.

Energy Australia has advised that the site is located at the end of its existing network and will require augmentation of its High Voltage Network. The extent of and cost of this augmentation will depend on the increased numbers of residences in the area.

The landowners have indicated they are willing to enter into a planning agreement for the delivery of infrastructure needed to support the development, however the costs are currently unknown.

##### Access

*“Accessible transport options for efficient and sustainable travel between homes, jobs, services and recreation to be existing or provided”*

The Department of Planning submission concludes that it is unlikely that future residents of the site will be within a 30 minute travel distance of a major or neighbourhood centre. This is inconsistent with Direction C2.1 of the draft NE Subregional Strategy and State Plan Priority E5 “Jobs Closer to Home”.

Warringah Council notes that the site is close enough to a number of employment centres in the northern beaches but is concerned that the lack of public transport solutions would make the area predominately car dependent.

Whilst there are several bus services in the surrounding area, the nearest bus route is located 2.6 kms from the centre of the site. The Ministry of Transport has advised there is limited potential for connection of the site to a frequent bus service.

##### Housing Diversity

*“Provide a range of housing choices to ensure broad population can be housed”*

The proponent argues that development of the site has the potential to contribute to the supply of new low density housing forms in the Warringah Council area.

However, the draft NE Subregional Strategy notes that the vast majority of the existing housing stock in the North East is detached dwellings, making up 62.4per cent of housing stock. It identifies a need to complement the existing high level of low density accommodation with more medium and high density housing. This will help meet centres and transport objectives and meet the demand from an ageing population to 'age in place'. It will also be a more affordable means of entry into the NE housing market.

### **Employment Lands**

*"Provide regional/local employment opportunities to support Sydney's role in the global economy".*

No employment generating land uses are proposed.

### **Avoidance of Risk**

*"Land use conflicts, and risk to human health and life avoided"*

#### *Flooding*

Warringah Council's flooding and natural drainage data suggest that the development will not be subject to any unreasonable levels of flood inundation.

#### *Bushfires*

In relation to risk of bushfires, the centre of site (about 25%) has no bushfire prone land. Of the remaining outer land, 17% is Vegetation Category 1 and 58% is Vegetation Buffer- 100 metres and 30 metres. However, the site is surrounded by Vegetation Category 1 land.

The Department of Planning's submission notes that the location and shape of the site means that it is vulnerable if a bushfire were to occur in the southern sector of Oxford Falls west, particularly dwellings in the northern portion of the site that are largely disconnected from the urban areas.

The proponent recognises that a full bushfire report would be necessary before any development could proceed but believes that bushfire measures could be implemented to meet the Planning for Bushfire Guidelines 2006.

#### *Sloping land*

According to Council's contour data, only small sections of the perimeter are restricted by significantly sloping land.

The proponent's submission recognises that geotechnical studies will be needed for steeper areas

#### *Land use conflict – Earth Station*

A submission from REACH has raised the possibility of a significant land use conflict with its operation of the Oxford Falls Earth Station. The Earth Station provides international voice and satellite services in Asia and is listed as a critical infrastructure site for Australian security.

International communications via satellite have been provided from the site in Oxford Falls since 1987 when it was selected by the Overseas Telecommunication Commission. Requirements for the site include that it must be immune from radio frequency interference

and have unobstructed visibility of the satellite to the north east down to an elevation angle of 10 degrees.

The operator of the Station is concerned that development in Oxford Falls West may have a severe impact on its operations. It has requested that no development should occur until the extent of appropriate buffer zones is determined. The submission advised that this could not be done in advance of the Commission finalising its report because it is a complex task involving a study of the topography of the land.

### **Natural Resources and Environmental Protection**

*“Natural resource limits not exceeded / environmental footprint minimise”.*

*“Protect and enhance biodiversity, air quality, heritage, and waterway health”.*

Warringah Council notes the site has never been used or earmarked as productive resource land or agricultural land. However, the Council also notes the Metropolitan Strategy’s direction of containing Sydney’s urban footprint (Action E3.1) and focusing land release within growth centres (Action E4.2.1).

#### *Water quality*

Both DECC and Council note that the proposal has the potential to reduce the recreational water quality of Narrabeen Lagoon and affect the health of its tributaries. The Lagoon is already under pressure and Council believes that it is highly unlikely that the development will be able to maintain the Lagoon’s existing conditions. DECC identified the need for comprehensive reports addressing impacts on water quality and quantity on receiving waterways and any limitations on stormwater management.

The proponent suggests that these impacts can be managed through water management plans as the land has sufficient area and characteristics to be able to manage water appropriately. This would need to be demonstrated rigorously in the design.

#### *Biodiversity*

There is as yet no regional conservation plan applying to the land. DECC is currently mapping regional biodiversity and this will form part of the North Eastern Subregional Strategy. Council has noted that this mapping will be important in assessing the proposal and Oxford Falls in general.

Whilst the site is predominately cleared, Council has identified that some of it is a Priority 1 Designated Wildlife Corridor, linking three of the four largest bushland areas in Warringah. The site also contains vegetation that is potential habitat for at least two threatened species plants and nine threatened fauna species.

The proponent recognises that an ecological report will be required to be undertaken before any residential development may occur.

#### *Aboriginal cultural heritage*

DECC has noted that the site is likely to have Aboriginal cultural heritage values. The proponent has also recognised that an Aboriginal heritage study of the site will be needed.

### **Quality and equity in Services**

*“Quality health, education, legal, recreational, cultural and community development and other government services are accessible”.*



The broader Warringah area contains a broad range of essential services. Council notes that the residents of the proposed development would be able to access these services but not by public transport. Residents would be predominately car dependent.



## Red Hill

### Infrastructure Provision

*“Mechanisms in place to ensure utilities, transport, open space and communications are provided in a timely and efficient manner”.*

In accordance with the Metropolitan Development Program, Sydney Water’s forward planning only makes provision for Ingleside development and does not support growth in Oxford Falls.

The site is located within the Warringah Water Supply Zone and would connect to the North Head Wastewater Network. Both water and waste water systems would require augmentation. Sydney Water has advised the Dept of Planning that there are undersupply issues and it is unable to service the area for the next 5 years.

Sydney Water has advised that costing of upgrades is only appropriate when the future of development within Oxford Falls is identified.

Energy Australia has advised that the site is located at the end of its existing network and will require augmentation of its High Voltage Network. The extent of and cost of this augmentation will depend on the increased numbers of residences in the area.

### Access

*“Accessible transport options for efficient and sustainable travel between homes, jobs, services and recreation to be existing or provided”*

The Department of Planning advises that it is unlikely that future residents of the site will be within a 30 minute travel distance of a major or neighbourhood centre. This is inconsistent with Direction C2.1 of the draft North Eastern Subregional Strategy and State Plan Priority E5 “Jobs Closer to Home”.

Warringah Council notes that the site is close enough to a number of employment centres in the northern beaches but is concerned that the lack of public transport solutions would make the area predominately car dependent.

Whilst there are several bus services in the surrounding area, the nearest bus route is located approximately 0.8kms from the site and therefore not within walking distance. The Ministry of Transport has advised there is limited potential for connection of the site to a frequent bus service.

### Housing Diversity

*“Provide a range of housing choices to ensure broad population can be housed”*

The proponent’s submission advises that the development will be for single dwelling houses and there is no intention to propose any higher densities or Senior’s living development.

However, the draft North Eastern Subregional Strategy notes that the vast majority of the existing housing stock in the North East is detached dwellings, making up 62.4per cent of housing stock. It identifies a need to complement the existing high level of low density accommodation with more medium and high density housing. This will help meet centres and transport objectives and meet the demand from an ageing population to ‘age in place’. It will also be a more affordable means of entry into the NE housing market.

## **Employment Lands**

*“Provide regional/local employment opportunities to support Sydney’s role in the global economy”.*

No employment generating land uses are proposed.

## **Avoidance of Risk**

*“Land use conflicts, and risk to human health and life avoided”.*

### *Flooding*

Warringah Council’s flooding and natural drainage data suggest that although some lots will be slightly affected along Wheeler Creek, the development will not be subject to any unreasonable levels of flood inundation.

### *Bushfires*

The proponent has submitted a preliminary bushfire assessment of the site undertaken by Australian Bushfire Protection Planners Pty Ltd. The assessment concludes the site is at extreme risk from damaging bushfire events. It is located on the Council’s Bushfire Prone Land Map and is surrounded by Vegetation Category 1 land.

The anticipated lots will remain highly vulnerable to severe bushfire events as a result of direct flame and ember attacks from the strong north westerly and westerly fire weather winds. The risk is made more extreme because of the extent of bushfire fuel on the unmanaged lands that adjoin the site. Evacuation routes would be exposed to significant bushfire risk and there remains only one formal entry/exit point to the whole of the existing Lady Penrhyn Drive Estate.

Because of the extreme risk, the proponent’s report concludes that the development would require Asset Protection Zones of 60 metres width, fire access trails, water supply for fire fighting operations and housing construction standards that address the high impacts.

### *Sloping land*

According to Council’s contour data, large portions of the site are restricted by significantly sloping land. Portions of the site are affected by slopes of greater than 1 in 3.

Development on sloping land is discouraged by Council due to the high susceptibility of land within the Narrabeen Lagoon catchment to soil erosion and the build of sediments downstream.

The submission from the Department of Planning notes that the central part of the site is less affected by slope constraints but advises that any development proposals should be supported by appropriate studies.

### *Land use conflict – Earth Station*

A submission from REACH has raised the possibility of a significant land use conflict with its operation of the Oxford Falls Earth Station. The Earth Station provides international voice and satellite services in Asia and is listed as a critical infrastructure site for Australian security.

International communications via satellite have been provided from the site in Oxford Falls since 1987 when it was selected by the Overseas Telecommunication Commission. Requirements for the site include that it must be immune from radio frequency interference and have unobstructed visibility of the satellite to the north east down to an elevation angle of 10 degrees.

The operator of the Station is concerned that development in Red Hill may impact on its operations. It has requested that no development should occur until the extent of appropriate buffer zones is determined. The submission advised that this could not be done before the Commission finalised its report because the task is complex involving a study of the topography of the land.

### **Natural Resources and Environment Protection**

*“Natural resource limits not exceeded / environmental footprint minimised”.*

*“Protect and enhance biodiversity, air quality, heritage, and waterway health”.*

Warringah Council notes the site has never been used or earmarked as productive resource land or agricultural land. However, the Council also notes the Metropolitan Strategy’s direction of containing Sydney’s urban footprint (Action E3.1) and focusing land release within growth centres (Action E4.2.1).

#### *Water quality*

Warringah Council has noted that the proposal is inconsistent with Council’s creek management Study which lists Wheeler’s Creek as a category A creek. The Wheeler Creek sub catchment is predominately non- urban, in its original condition and therefore sensitive. The Study recommends that development within the sub catchment be strictly limited and Council notes that even with strict controls it is likely that the creek system will be irreversibly damaged.

Both DECC and Council note that the proposal has the potential to reduce the recreational water quality of Narrabeen Lagoon and affect the health of its tributaries. DECC identified the need for comprehensive reports addressing impacts on water quality and quantity on receiving waterways and any limitations on stormwater management. (Note comments on capability of WSUD in Appendix D, Water Quality)

#### *Biodiversity*

There is as yet no regional conservation plan applying to the land. DECC is currently mapping regional biodiversity and this will form part of the North Eastern Subregional Strategy. Council has noted that this mapping will be important in assessing the proposal and Oxford Falls in general.

The proponent has submitted a detailed flora and fauna assessment that concludes that the proposed development is unlikely to have a significant impact on threatened species, populations, or endangered ecological communities or their habitats.

#### *Aboriginal cultural heritage*

DECC has noted that the site is likely to have Aboriginal cultural heritage values.

### **Quality and equity in Services**

*“Quality health, education, legal, recreational, cultural and community development and other government services are accessible”*

The broader Warringah area contains a broad range of essential services. Council notes that the residents of the proposed development would be able access these services but not by public transport. Residents would be predominately car dependent.

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## Lizard Rock

### Infrastructure Provision

*“Mechanisms in place to ensure utilities, transport, open space and communications are provided in a timely and efficient manner”*

In accordance with the Metropolitan Development Program, Sydney Water’s forward planning only makes provision for Ingleside development and does not support growth in Oxford Falls.

The site is located within the Belrose Water Supply Zone and would connect to the Warriewood Wastewater Network. Both water and waste water systems would require augmentation. Sydney Water has advised the Dept of Planning that there are undersupply issues and it is unable to service the area for the next 5 years.

Sydney Water has advised that costing of upgrades is only appropriate when the future of development within Oxford Falls is identified.

Energy Australia has advised that the site is located at the end of its existing network and will require augmentation of its High Voltage Network. The extent of and cost of this augmentation will depend on the increased numbers of residences in the area.

The proponent has indicated that the proposal will not require funding from any level of government. It is willing to enter into a planning agreement for the delivery of infrastructure needed to support the development, up to \$33,000 per lot. However, the costs of delivering the necessary infrastructure are currently unknown.

### Access

*“Accessible transport options for efficient and sustainable travel between homes, jobs, services and recreation to be existing or provided”.*

The Department of Planning submission advises that the site is relatively distant from existing centres and not within walking distance of a bus route. The proposal is therefore inconsistent with Direction C2.1 of the draft North Eastern Subregional Strategy and State Plan Priority E5 “Jobs Closer to Home”.

Warringah Council notes that the site is close enough to a number of employment centres in the northern beaches but is concerned that the lack of public transport solutions would make the area predominately car dependent.

Whilst there are several bus services in the surrounding area, the nearest bus route is located 1.5 kms from the centre of the site. The Ministry of Transport has advised there is limited potential for connection of the site to a frequent bus service.

The proponent proposes to supplement access to public transport by providing a community bus.

### Housing Diversity

*“Provide a range of housing choices to ensure broad population can be housed”*

The proponent proposes varying density of development but with overall development of 8 dwellings per hectare.

However, the draft North Eastern Subregional Strategy notes that the vast majority of the existing housing stock in the North East is detached dwellings, making up 62.4 per cent of housing stock. It identifies a need to complement the existing high level of low-density accommodation with more medium and high density housing that will help meet centres and transport objectives and meet the demand from an ageing population to 'age in place'. It will also be a more affordable means of entry into the NE housing market.

### **Employment Lands**

*"Provide regional/local employment opportunities to support Sydney's role in the global economy".*

No employment generating land uses are proposed.

### **Avoidance of Risk**

*"Land use conflicts, and risk to human health and life avoided"*

#### *Flooding*

Warringah Council's flooding and natural drainage data suggest that the development will not be subject to any unreasonable levels of flood inundation.

#### *Bushfires*

In relation to risk of bushfires, the site is located within an area of regular bushfire events and is identified as Bushfire Prone Land – Vegetation Category 1 (approx 98 %). The site is also surrounded on all sides by Vegetation Category 1 land.

The proponent argues that the development will comply with the appropriate standards for bushfire protection and will significantly reduce the bushfire risk to existing development in the locality that is particularly vulnerable to higher intensity fire.

Warringah Council strongly opposes any residential development on the grounds of bushfire risk. The Council argues that the broader contextual issues prejudice the site against more effective bushfire mitigation. These include significant topographical and access constraints limiting the creation and maintenance of asset protection zones, particularly the northern, eastern, south western and southern edges of the site that are subject to high to extreme bushfire exposure levels. In addition, past bushfire events suggest that evacuation routes are often cut off due to the traditional bushfire paths.

#### *Sloping land*

According to Council's contour data, the proposed development will be on significantly sloping land. In particular, dwellings for the north eastern, eastern, and south western portions of the site are affected by slopes of greater than or equal to 1 in 3.

Development on sloping land is discouraged due to the high susceptibility of land within the Narrabeen Lagoon catchment to soil erosion and the build of sediments downstream.

The submission from the Department of Planning also considers that the extent of sloping land on the site makes it generally unsuitable for residential development.

#### *Land use conflict – Earth Station*

A submission from REACH has raised the possibility of a significant land use conflict with its operation of the Oxford Falls Earth Station. The Earth Station provides international voice and satellite services in Asia and is listed as a critical infrastructure site for Australian security.

International communications via satellite have been provided from the site in Oxford Falls since 1987 when it was selected by the Overseas Telecommunication Commission. Requirements for the site include that it must be immune from radio frequency interference and have unobstructed visibility of the satellite to the north east down to an elevation angle of 10 degrees.

The operator of the Station is concerned that development in Lizard Rock may have a severe impact on its operations. It has requested that no development should occur until the extent of appropriate buffer zones is determined. The submission advised that this could not be done before the Commission finalised its report because the task is complex involving a study of the topography of the land.

## **Natural Resources and Environment Protection**

*Natural resource limits not exceeded / environmental footprint minimised*  
*“Protect and enhance biodiversity, air quality, heritage, and waterway health”*

Warringah Council notes the site has never been used or earmarked as productive resource land or agricultural land. However, the Council also notes the Metropolitan Strategy’s direction of containing Sydney’s urban footprint (Action E3.1) and focusing land release within growth centres (Action E4.2.1).

### *Water quality*

The site is located in the upper reaches of Snake Creek that eventually drains into Narrabeen Lagoon. Warringah Council’s Creek Management Study notes that Snake Creek and Oxford Creek form part of a natural area and that Snake Creek contains the best overall water quality of all creeks within Warringah ( except for Deep Creek in Garigal National Park) . The riparian buffer zones to Snake Creek are recommended for restricted development. Council notes that the Lizard Rock proposal has significant development proposed within these zones.

The proponent argues that the water quality of Snake Creek will be improved through engineered wetlands within the site. A copy of its stormwater management strategy was included in its submission.

### *Biodiversity*

There is as yet no regional conservation plan applying to the land. DECC is currently mapping regional biodiversity and this will form part of the North Eastern Subregional Strategy. Council has noted that this mapping will be important in assessing the proposal and Oxford Falls in general.

The proponent has submitted a detailed flora and fauna assessment that concludes that the proposed development is unlikely to have a significant impact on threatened species, populations, or endangered ecological communities or their habitats.

Warringah Council agrees but subject to any findings of the mapping exercise being undertaken by DECC.

### *Aboriginal cultural heritage*

The concept plan has been developed with the significance of the site as a primary consideration. Large buffer areas have been incorporated in the design and there is an intention to develop an interpretative centre.

## **Quality and equity in Services**

*“Quality health, education, legal, recreational, cultural and community development and other government services are accessible”*

The broader Warringah area contains a broad range of essential services. Council notes that the residents of the proposed development would be able to access these services but not by public transport. Residents would be predominately car dependent.

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## **Cromer Golf Course**

### **Infrastructure Provision**

*“Mechanisms in place to ensure utilities, transport, open space and communications are provided in a timely and efficient manner”*

In accordance with the Metropolitan Development Program, Sydney Water’s forward planning only makes provision for Ingleside development and does not support growth in Oxford Falls.

The site is located within the Warringah Water Supply Zone and would connect to the North Head Wastewater Network. Both water and waste water systems would require augmentation. Sydney Water has advised the Dept of Planning that there are undersupply issues and it is unable to service the area for the next 5 years.

Sydney Water has advised that costing of upgrades is only appropriate when the future of development within Oxford Falls is identified.

Energy Australia has advised that the site is located at the end of its existing network and will require augmentation of its High Voltage Network. The extent of and cost of this augmentation will depend on the increased numbers of residences in the area.

The proponent is willing to enter into a planning agreement for the provision of the necessary infrastructure however this is yet to be costed.

### **Access**

*“Accessible transport options for efficient and sustainable travel between homes, jobs, services and recreation to be existing or provided”*

The Department of Planning advises that while Cromer Golf Course is relatively distant from major centres, it is located in reasonably close proximity to a neighbourhood centre and public transport. There are several bus services in the area.

Warringah Council notes that the area is well served by public buses and adequate pedestrian and cycle linkages to nearby parks and walking trails.

### **Housing Diversity**

*“Provide a range of housing choices to ensure broad population can be housed”*

The proponent’s submission advises that the development will be for low density housing.

However, the draft North Eastern Subregional Strategy notes that the vast majority of the existing housing stock in the North East is detached dwellings, making up 62.4per cent of housing stock. It identifies a need to complement the existing high level of low–density accommodation with more medium and high density housing. This will help meet centres and transport objectives and meet the demand from an ageing population to ‘age in place’. It will also be a more affordable means of entry into the NE housing market

### **Employment Lands**

*“Provide regional/local employment opportunities to support Sydney’s role in the global economy”*

No employment generating land uses are proposed.

## **Avoidance of Risk**

*“Land use conflicts, and risk to human health and life avoided”*

### *Flooding*

Warringah Council's flooding and natural drainage data suggest that the development will not be subject to any unreasonable levels of flood inundation.

### *Bushfire*

In relation to risk of bushfires, the site is located within an area of regular bushfire events and is identified as Bushfire Prone Land – Vegetation Category 1. The site is also surrounded by Vegetation Category 1 land.

DECC and Warringah Council have expressed major concerns with bushfire risk both to the proposed residences and to evacuation routes.

The proponent notes that the most significant risk with the development is bushfire hazard and has submitted an expert report arguing that the development will be able to comply with the appropriate standards for bushfire protection and will significantly reduce the bushfire risk to existing residences in the locality that are particularly vulnerable to higher intensity fire.

### *Sloping land*

According to Council's contour data, the proposed development will be on significantly sloping land. In particular, dwellings for the south western and north/ north eastern portions of the site are affected by slopes of greater than or equal to 1 in 3.

Development on sloping land is discouraged due to the high susceptibility of land within the Narrabeen Lagoon catchment to soil erosion and the build of sediments downstream.

Both Council and DECC have submitted that the slope constraints reduce the suitability of this site for urban development.

The proponents have submitted a geotechnical assessment that concludes the site is developable provided good engineering practices are adopted. It recognises that the site is typical of sites in the surrounding area, having rock close to the surface and a very high potential for erosion.

### *Land use conflict*

A submission from REACH has raised the possibility of a significant land use conflict with its operation of the Oxford Falls Earth Station. The Earth Station provides international voice and satellite services in Asia and is listed as a critical infrastructure site for Australian security.

International communications via satellite have been provided from the site in Oxford Falls since 1987 when it was selected by the Overseas telecommunication Commission. Requirements for the site include that it must be immune from radio frequency interference and have unobstructed visibility of the satellite to the north east down to an elevation angle of 10 degrees.

The operator of the Station is concerned that further development in Cromer may impact on its operations. It has requested that no development should occur until the extent of appropriate buffer zones is determined. The submission advised that this could not be done before the Commission finalised its report because the task is complex involving a study of the topography of the land.

## **Natural Resources and Environmental Protection**

*Natural resource limits not exceeded / environmental footprint minimised*

*“Protect and enhance biodiversity, air quality, heritage, and waterway health”*

Warringah Council notes the site has never been used or earmarked as productive resource land or agricultural land. However, the Council also notes the Metropolitan Strategy’s direction of containing Sydney’s urban footprint (Action E3.1) and focusing land release within growth centres (Action E4.2.1).

### *Water quality*

Both DECC and Council note that the proposal has the potential to reduce the recreational water quality of Narrabeen Lagoon and affect the health of its tributaries. The Lagoon is already under pressure and Council believes that it is highly unlikely that the development will be able to maintain its existing conditions. DECC identified the need for comprehensive reports addressing impacts on water quality and quantity on receiving waterways and any limitations on stormwater management.

The proponent argues that these impacts may be appropriately managed through water management plans including using run off to irrigate the golf course. It is proposed to capture water run off in a retention pond where regulated flows can be discharged to Narrabeen Lagoon via open creek filtration through the golf course. The effectiveness of this proposal would need to be tested comprehensively in view of the steeply sloping site, the extent of stormwater flows already being received on the golf course which is near the mouth of South Creek and poor flushing characteristics of the Lagoon at this point.

### *Biodiversity*

There is as yet no regional conservation plan applying to the land. DECC is currently mapping regional biodiversity and this will form part of the North Eastern Subregional Strategy. Council has noted that this mapping will be important in assessing the proposal and Oxford Falls in general.

The proponent has prepared an ecological report that concludes that the development is not likely to have a significant effect on biodiversity if recommendations in the report are adopted for the management of remaining bushland on the site and a water management plan for managing impacts on Narrabeen Lagoon.

### *Aboriginal cultural heritage*

The proponent has prepared an aboriginal archaeological assessment that concludes there are no sites or objects but that an additional survey should be carried out on the upper slope rock outcrops that are proposed to be conserved.

Warringah Council has advised that this is satisfactory

## **Quality and equity in Services**

*“Quality health, education, legal, recreational, cultural and community development and other government services are accessible”.*

The broader Warringah area contains a broad range of essential services and Cromer is adequately served by public transport.

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