



**ORDINARY MEETING OF COUNCIL  
TO BE HELD ON TUESDAY, 22 JUNE 2010 AT 7.00PM  
LEVEL 3, COUNCIL CHAMBERS**

**A G E N D A**  
**\*\* \*\* \* \*\* \* \*\* \***

NOTE: For Full Details, See Council's Website –  
[www.kmc.nsw.gov.au](http://www.kmc.nsw.gov.au) under the link to business papers

**APOLOGIES**

**DECLARATIONS OF INTEREST**

**CONFIRMATION OF REPORTS TO BE CONSIDERED IN CLOSED MEETING**

**ADDRESS THE COUNCIL**

**NOTE:** Persons who address the Council should be aware that their address will be tape recorded.

**DOCUMENTS CIRCULATED TO COUNCILLORS**

**CONFIRMATION OF MINUTES**

**Minutes of Ordinary Meeting of Council**

File: S02131  
Meeting held 8 June 2010  
Minutes numbered 154 to 167

**MINUTES FROM THE MAYOR**

**PETITIONS**



## GENERAL BUSINESS

- i. *The Mayor to invite Councillors to nominate any item(s) on the Agenda that they wish to have a site inspection.*
- ii. *The Mayor to invite Councillors to nominate any item(s) on the Agenda that they wish to adopt in accordance with the officer's recommendation allowing for minor changes without debate.*

### GB.1 **8th Tourism Futures National Conference** **1**

.  
File: S08278

To advise Council of the 8th Tourism Futures National Conference.

#### **Recommendation:**

That Council determine if it wishes to send delegates to the 8th Tourism Futures National Conference.

### GB.2 **Licence to Easy Care Gardening Inc, Turramurra** **11**

.  
File: S07507

To seek a resolution to grant Easy Care Gardening Inc a 5 year licence agreement.

#### **Recommendation:**

That Council grant Easy Care Gardening Inc a 5 year licence.

### GB.3 **Clothing Exchange Event 2010** **18**

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File: S08235

To advise Council of a community Clothing Exchange event to be held on Saturday, 21 August 2010 at the Ku-ring-gai Town Hall, Pymble.

#### **Recommendation:**

That Council support the community Clothing Exchange event to be held on Saturday, 21 August 2010 at the Ku-ring-gai Town Hall, Pymble.

### GB.4 **Investment Report as at 31 May 2010** **26**

.  
File: S05273

To present to Council investment allocations and returns on investments for May 2010.



**Recommendation:**

That the summary of investments and performance for May be received and noted. That the Certificate of the Responsible Accounting Officer be noted and the report adopted.

**GB.5 Mapping & Assessment of Key Vegetation Communities across the Ku-ring-gai Local Government Area 44**

.  
File: S06345

To provide Council with the final report on the mapping and assessment of key vegetation communities across Ku-ring-gai.

**Recommendation:**

That Council receive and adopt the report and continue to work with the NSW Department of Environment Climate Change and Water in regard to the ongoing refinement, updating and use of the information gathered as part of the mapping project.

**GB.6 Draft Ecologically Sensitive Lands Policy 197**

.  
File: S06560

To present to Council a policy for the protection and management of ecologically sensitive lands within Ku-ring-gai.

**Recommendation:**

That Council receive and adopt the draft Ecologically Sensitive Lands Policy.

**GB.7 Environmental Levy Small Grants Scheme - Round Ten 205**

.  
File: S04553

To seek Council's support to fund the tenth round of the Community Small Grants Scheme funded by the Environmental Levy.

**Recommendation:**

That Council support the decision to fund the seven (7) projects recommended by the small grants panel as part of the Environmental Levy.

**GB.8 Draft Climate Change Adaptation Strategy 210**

.  
File: S06055

To present to Council for exhibition a draft Climate Change Adaptation Strategy.

**Recommendation:**

That the draft Climate Change Adaptation Strategy be exhibited for public consultation.



GB.9 **Emergency Access over Community Land [Du Faur Reserve, North Turrumurra]** 273

.  
File: S02804

To obtain Council approval to impose a Positive Covenant over privately owned land known as Lot 1 DP858405, in order to effect a Land and Environment Court condition of consent.

**Recommendation:**

That Council impose a Positive Covenant on privately owned land known as Lot 1 DP858405, in order to effect a Land and Environment Court condition of consent Order No.10973 of 2001.

GB.10 **Heritage Reference Committee - Notes of Meeting held 19 April 2010** 298

.  
File: S07620

To advise Council of the notes of the Heritage Reference Committee meeting held 19 April 2010.

**Recommendation:**

That Council receive and note the Heritage Reference Committee meeting notes from 19 April 2010.

GB.11 **Status Report on Section 94E Direction by the Minister for Planning dated 4 June 2010** 303

.  
File: S05878

The purpose of the report is to provide Council with such information as is available on the recent decision by the Minister for Planning to cap all local development contributions to a maximum of \$20,000 per dwelling authorised by any consent.

**Recommendation:**

That the report be received and noted and that staff continue to seek clarity on this matter and keep Councillors informed as concrete information is obtained.

GB.12 **St Ives Showground & Precinct Options Paper & Expression of Interest** 315

.  
File: S02673/2

To seek Council endorsement of the draft Options Paper for the St Ives Showground and Precinct and approval to commence preparation of a draft Plan of Management for the Precinct incorporating the adopted preferred options for the sites.



**Recommendation:**

That Council support the revised option paper for the St Ives Showground and Precinct and that this be used to prepare a draft Plan of Management in consultation with the community and stakeholders and for the approval of the NSW Land and Property Management Authority.

**GB.13 Acceptance of Tender T21/2010 - Haulage of Works Depot Waste 395**

.  
File: S08205

For Council to consider the tenders for the haulage of works depot waste and accept the preferred tender.

**Recommendation:**

That DATS Environmental Services Pty Ltd be awarded Council's contract for the haulage of works depot waste.

**GB.14 Federal Nation Building Black Spot Projects 2010 to 2011 400**

.  
File: S06118/4

To seek acceptance of the 2010/11 Federal Nation Building Black Spot Grant for the upgrade to the intersection of Junction Road and Grosvenor Street, Wahroonga.

**Recommendation:**

That the Roads and Traffic Authority be advised of Council's acceptance of the grant and the terms and conditions associated with the grant.

**GB.15 Updated Rural Fire District Service Agreement & Rural Fire Service Zoning Agreement 407**

.  
File: S02542

To advise on the updated Service Agreement and Zoning Agreement with the NSW Rural Fire Service.

**Recommendation:**

That Council endorse the updated Service Agreement and Zoning Agreement with the NSW Rural Fire Service in accordance with the recommendations.



.  
File: FY00271

For Council to consider a request from Turramurra Rotary Club for additional funding to assist their graffiti removal program in the Turramurra area.

**Recommendation:**

That approval is given to provide additional funding of \$4000 for the ongoing support of graffiti removal in the Turramurra area.

**EXTRA REPORTS CIRCULATED AT MEETING**

**MOTIONS OF WHICH DUE NOTICE HAS BEEN GIVEN**

NM.1 **Extension of Council's Smoke Free Policy**

463

.  
File: S03433

**Notice of Motion from Councillor Cheryl Szatow dated 4 June 2010**

To protect the safety and amenity of our community and to extend the Council Resolution Minute Number 512 of Ordinary Meeting of Council, 19 October 2004 which delineated certain areas in Ku-ring-gai as smoke-free zones.

I move:

That a report be prepared on implementing a ban on smoking in the following areas:

- smoking in all Council owned buildings and within 10 metres of Council owned or managed buildings and gardens including balconies or covered areas of those buildings and gardens.
- a ban in all alfresco dining areas on public land.
- a ban on smoking in all covered bus shelters and taxi ranks.

**BUSINESS WITHOUT NOTICE - SUBJECT TO CLAUSE 241 OF GENERAL REGULATIONS**

**QUESTIONS WITHOUT NOTICE**

**INSPECTIONS COMMITTEE - SETTING OF TIME, DATE AND RENDEZVOUS**



## **CONFIDENTIAL BUSINESS TO BE DEALT WITH IN CLOSED MEETING - PRESS & PUBLIC EXCLUDED**

*The Item listed hereunder is recommended for consideration in Closed Meeting, Press & Public excluded for the reason stated below:*

### **C.1 Proposal to Acquire Open Space - St Ives**

**1**

File: S07257

In accordance with the *Local Government Act 1993* and the *Local Government (General) Regulation 2005*, in the opinion of the General Manager, the following business is of a kind as referred to in section 10A(2)(c) of the Act, and was dealt with in a part of the meeting closed to the public.

Section 10A(2)(c) of the Act permits the meeting to be closed to the public in respect of information that would, if disclosed, confer a commercial advantage on a person with whom the Council is conducting (or proposes to conduct) business.

This matter is classified confidential because it deals with the proposed acquisition of property.

It is not in the public interest to release this information as it would prejudice Council's ability to acquire this and other property on appropriate terms and conditions.

Report by Acting Director Strategy & Environment, Manager Strategic Assets & Property Services & Strategic Property Advisor dated 7 June 2010.

John McKee  
GENERAL MANAGER

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## MAYORAL MINUTE

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### QUEEN'S BIRTHDAY HONOURS 2010

I am pleased to inform you that nine Ku-ring-gai citizens, through their outstanding achievements and services to the community, have been awarded 2010 Queen's Birthday Honours.

We are very proud to have these dedicated and talented Australians as members of the Ku-ring-gai community.

I would like to read to you the names of these special Ku-ring-gai citizens and, on behalf of Council, congratulate them on their excellent contributions to Australian society.

- \* **Diana Mary CARMODY** of Roseville, for service to the community, particularly through the provision of support for children undergoing liver and renal treatment, and their families.
- \* **Roland George CHAMBERS** of Turramurra, for service to medicine as a general practitioner.
- \* **Herbert Edward CLIFFORD** of Wahroonga, for service to hospital administration, and to clinical practice at the Sydney Adventist Hospital.
- \* **Merril Elizabeth COULTON** of Roseville, for service to the community through volunteer roles at St Vincent's Private Hospital.
- \* **Jill Mary FORREST** of Wahroonga, for service to medicine as an academic, researcher and educator, and to music as a composer and carillon recitalist.
- \* **Ian Frederick STANWELL** of Killara, for service to business, particularly the insurance industry, through executive roles with a range of organisations, to professional development, and to ex-service, youth and aged care groups.
- \* **Robert Lyndsay SUTHERLAND** of Lindfield, for distinguished service to medicine as an international contributor to the research of cancer, the development of Australia's research capacity and through leadership roles in advisory bodies.
- \* **Michael William TRAILL** of Roseville, for service to not-for-profit organisations through the development and implementation of effective financial systems and mentoring, and as a facilitator for social change.
- \* **Richard Whittingham WHITE** of Warrawee, for service to the community, particularly through the Australian Rotary Health Research Fund.



Item 1

**S02767**  
**16 June 2010**

On behalf of Council, I congratulate all these award winners on their outstanding achievements.

Ku-ring-gai should be proud that it has so many citizens being recognised at the highest levels for their selfless dedication, commitment and contribution to local, national and international communities.

## **RECOMMENDATION**

- A. That Council acknowledge the outstanding contribution made by these recipients of 2010 Queen's Birthday Honours to the Ku-ring-gai community and to the well-being of our society.
- B. That the Mayor, on behalf of Council, write to the recipients to congratulate them.

Cr Ian Cross  
**Mayor**



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## 8TH TOURISM FUTURES NATIONAL CONFERENCE

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### EXECUTIVE SUMMARY

**PURPOSE OF REPORT:**

To advise Council of the 8th Tourism Futures National Conference.

**BACKGROUND:**

The Conference is to be held from 5 to 7 July 2010 in the Southbank precinct in Brisbane, Queensland.

**COMMENTS:**

The Program and Registration Form are **attached**.

**RECOMMENDATION:**

That Council determine if it wishes to send delegates to the 8th Tourism Futures National Conference.



## **PURPOSE OF REPORT**

To advise Council of the 8th Tourism Futures National Conference.

## **BACKGROUND**

The Conference is to be held from 5 to 7 July 2010 at the Southbank Institute of Technology in Brisbane.

## **COMMENTS**

The theme for the Conference is "Leaders Driving Innovation". The Conference will feature a number of keynote speakers along with forums and workshops.

The Conference Program is **attached**.

## **FINANCIAL CONSIDERATIONS**

The cost of attending the Conference is \$1,750.00.

Accommodation and travel expenses are additions.

Conference funds are available.

## **RECOMMENDATION**

That Council determine if it wishes to send delegates to the 8th Tourism Futures National Conference.

Geoff O'Rourke  
**Senior Governance Officer**

John McKee  
**General Manager**

**Attachments:**

- 1. Program - 2010/107376**
- 2. Registration Form - 2010/107374**





**Southbank**

**BRISBANE, AUSTRALIA**

**5 -7 July 2010**

**PROGRAM  
BROCHURE**

# Tourism Futures

**EIGHTH NATIONAL CONFERENCE**

*Leaders Driving Innovation*



Tourism Australia



Foundation Sponsor





# Tourism Futures

## EIGHTH NATIONAL CONFERENCE

Check out the details at [www.tourismfutures.com.au](http://www.tourismfutures.com.au)

## Theme

### Leaders Driving Innovation

The Australian tourism industry must respond to global consumer trends, keep pace with advances in technology, protect and sustain its unique natural and cultural assets and develop work practices that deliver consistent service excellence. This requires innovative leadership at every level. It means creating new opportunities that build on our strengths. Australia's strategic location in the Asia-Pacific region, its nature, open and friendly people, indigenous culture, climate, security, sporting prowess, and excellence in event management are well known. Capitalising on these strengths can only be fully achieved through the innovative actions of industry, government and the community.

**Tony Charters**  
Convenor

## Design Your own Tourism Futures

Choose your own program! Tourism Futures can be three one day conferences or one three day conference:

- |            |          |                                 |
|------------|----------|---------------------------------|
| <b>Day</b> | <b>1</b> | Tourism Futures Forums          |
| <b>Day</b> | <b>2</b> | Tourism Outlook                 |
| <b>Day</b> | <b>3</b> | Tourism Online Futures Workshop |

The content rich program demands 3 days of your attention, but if your diary is competing for your time choose the days of Tourism Futures you need the most.

## Forum and Workshop Topics

### Destination Management and Sustainability.

This forum is designed for destination managers and planners, policy makers, infrastructure providers and investors. It will focus on innovative destination management examples, tourism and conservation partnerships, and policy developments that facilitate more sustainable futures for communities, businesses and the environment.

- Spotlight on 'Tourism in Natural Areas'

### Innovative Marketing Futures

Designed for marketing professionals interested in best practice case studies, innovative campaigns and future trends in marketing. In an era when globalisation is shrinking the planet, developing key insights to more effective communication and marketing strategies is imperative. This forum will focus on tourism products and destination level marketing. Presentations and discussion will focus on trends in consumer culture; communication trends and brand strategies that have the most appeal in attracting domestic and international visitors.

### The Competitive Edge: Innovative Products & Market Insights.

Designed particularly for tourism planners, businesses and investors seeking insights into the kinds of products and service standards that will best meet the demands and expectations of future customers. Delegates will be exposed to the latest consumer research; spotlight emerging niche markets and innovative products. The forum will highlight key industry sector trends and reveal new business training and development tools.

- Spotlight on 'Education Tourism'

### Indigenous Tourism Futures.

Indigenous involvement in tourism is a valuable contributor to building and diversifying regional economies. This forum provides an insight into successful strategies for indigenous communities who wish to engage with tourism - as a source of income and employment; as a vehicle to celebrate, share and conserve culture; and as an opportunity for entrepreneurial endeavour. Speakers will address key trends in indigenous involvement in tourism and spotlight case studies of successful innovation.

### Tourism Online Futures.

Offered for the first time as a stand alone event this workshop has gained a huge following over the years. It is designed specifically for tourism online experts and enterprises building their online marketing and distribution presence. The workshop will have two parallel streams in the middle of the day, one offering newcomers to the online world practical and applied training - Online Essentials, the other, an Online Masterclass focusing on advanced online development skills and tools. Delegates will receive briefings from a diverse range of industry leaders and innovators across topics such as maximising the potential of websites, online booking systems, new communications technologies and social networking.

Principal Sponsors:



Partners:



International Keynote Hosts:





# TOURISM FUTURES - AT A GLANCE

## Networking Opportunities

The Tourism Futures National Conference 2010 offers an outstanding program of functions with stunning locations for an enjoyable dinner or cocktail to network with industry members:

**Sunday:** Gallery of Modern Art Champagne Welcome  
16:30 – 19:30

GoMA, Pavillion Balcony & Gallery Tour

**Monday:** Dinner with Industry Leaders  
19:30 – 22:30

Grand Ballroom, Brisbane Marriott Hotel

**Tuesday:** Networking Dinner  
19:30 – 22:00

The Restaurant, Southbank Institute of Technology

## Sunday 4 July

**16:30 – 19:30 Gallery of Modern Art Champagne Welcome**

Join your industry colleagues for this fantastic opportunity to watch the sunset over the Brisbane River, followed by a private tour of the gallery. This unique experience will be presented to you by the Director of GoMA, Mr. Tony Elwood. There is a chance to jump the morning rush and register for the conference at this function.

Proudly hosted by the Gallery of Modern Art

QUEENSLAND ART GALLERY | GALLERY OF MODERN ART

## DAY ONE

### Monday 5 July

**08:30 – 17:00 Tourism Futures Forums**

Today will feature informative presentations from a diverse array of tourism industry professionals.

Choose to attend one of the following forums:

1. Destination Management and Sustainability
2. Innovative Marketing Futures
3. The Competitive Edge: Innovative Products and Market Insights
4. Indigenous Tourism Futures

Visit [www.tourismfutures.com.au](http://www.tourismfutures.com.au) for full details of each forum.

**17:00-18:00 Networking Drinks**

**19:00-22:30 Dinner with Industry Leaders**

Brisbane Marriott Hotel

Tonight join us for a beautiful dinner in the Grand Ballroom at the Brisbane Marriott Hotel. The evening will also feature a Parkinson style interview with leading tourism identities, facilitated by Nick Bryant, BBC World News.

Proudly hosted by Brisbane Marriott



Endorsed by:



## DAY TWO

### Tuesday 6 July

**TOURISM OUTLOOK**

Facilitated by Ms. Sofie Formica, Host, *The Great South East*

**08:30-08:35 Songwoman Maroochy Barambah Turrbal People**

Welcome to Country

**08:35-08:45 Official Opening**

General Australian Tourism Policy Overview

**08:45-08:55 Minister's Welcome**

**08:55-09:00 Mr. Tony Charters**

Convenor's Overview

**09:00-09:30 Mr. Taleb Rifai**, Secretary-General

UNWTO, Jordan

Global Tourism Overview

**09:30-10:00 Mr. Chris Richardson**, Director

Access Economics Pty Limited

*The Coming Year – what next?*

**10:00-10:30 Dr. Auliana Poon**, Managing Director

Tourism Intelligence International, Germany

*The Changing Face of Travel and Tourism – Implications for Australia*

Proudly hosted by Griffith University



**10:30-11:00 Morning Tea**

**11:00-11:30 Mr. Azran Osman-Rani**, CEO, AirAsia, Malaysia

*Low-Cost Long-Haul: Accelerating Australia's Tourism Through New Global Air Connectivity*

**11:30-12:00 Mr. Nick Talbot**, Design Director,

Seymourpowell, UK

*Innovative Approaches to the Future of Tourism*

Proudly hosted by Tourism Queensland



**12:00-12:30 Expert Panel** – Interactive Discussion

**12:30-13:30 Lunch**

**13:30-13:40 Mr. Anthony Hayes**, CEO, Tourism Queensland

*Innovation & Leadership: The role of a State Tourist Office*

**13:40-13:50 Ms. Michele Levine**, CEO, Roy

Morgan Research

*Consumer Trends: the big picture*

**13:50-14:00 Mr. Brett Gale**, Executive Director,

Tourism and Transport Forum

*Addressing the Tourism Trade Deficit*

**14:00-14:10** Speaker announced soon

**14:10-14:20 Mr. Andrew McEvoy**, Managing

Director, Tourism Australia

*Driving Destination Marketing Innovation*

**14:20-15:00 Expert Panel** – Interactive Discussion

**15:00-15:30 Afternoon Tea**

**15:30-15:50 Mr. Noel Pearson**, Executive Director, Cape York Institute

*A track from dreaming to reality*

**15:50-16:10 The Hon. Bruce Baird AM**, Chairman,

Tourism and Transport Forum

*International Education and its Future Impact on Tourism*

**16:10-17:30 Leaders' Forum and Close**

**17:30-17:35 Mr. Anthony Hayes**, CEO, Tourism Queensland

*Close - Overview*

**17:45-18:45 Networking Drinks**

**19:30-22:00 Networking Dinner**

Southbank Institute of Technology

## DAY THREE

### Wednesday 7 July

**09:00 – 10:30 Tourism Online Futures**

**Presentations**

Features presentations from a selection of key leading tourism online experts.

Speakers announced soon.

**10:30 – 11:00 Morning Tea**

**11:00 – 12:30 Tourism Online Workshops**

Choose to attend one of the following workshops:

1. *Tourism Online Masterclass* – designed for people who are professionally involved in the online world.
2. *Tourism Online Essentials* – aimed at operators who are entering the world of online marketing and enterprise or wish to upgrade their basic knowledge.

**12:30 – 13:30 Lunch**

**13:30 – 14:30 Tourism Online Workshops**

*Workshops Continue*

**14:30 – 15:00 Afternoon Tea**

**15:00 – 16:30 Tourism Online Futures**

**Presentations**

Features presentations from a selection of key leading tourism online experts.

Speakers announced soon

**16:30 – 17:00 Wrap-up and Close**

Tourism Online Futures proudly hosted by Yahoo!7



**17:00 – 18:00 Networking Drinks**

Proudly hosted by Yahoo!7







# Tourism Futures

## EIGHTH NATIONAL CONFERENCE

Speaker info at [www.tourismfutures.com.au](http://www.tourismfutures.com.au)

### Dates

Monday 5 July to Wednesday 7 July 2010

### Register

[www.tourismfutures.com.au](http://www.tourismfutures.com.au)

### Venue

The Southbank Institute of Technology is partnering with Tourism Futures in 2010 to host the conference in their brand new state of the art conference facilities located right within the Southbank precinct – home of the Queensland Cultural Centre, restaurants and hotels.

### Contact

**Management Solutions (Qld) Pty Ltd**  
Conference Secretariat  
[info@managementsolutions.net.au](mailto:info@managementsolutions.net.au)

**Hotline: 07 3210 0021**

"Tourism Futures is one of the sustainable parts of this industry, it has really carved out a niche. It is an area where you can come and talk about serious issues to serious people. Not something our industry has done enough of for many years."

Christopher Brown  
Managing Director  
Tourism and Transport Forum.



### Outstanding Speakers & Facilitators

Below is a sample of the diverse array of national and international speakers and facilitators assembled for forums, plenary sessions and workshops.



**Mr. Andrew McEvoy**  
Managing Director  
Tourism Australia



**Dr. Auliana Poon**  
Managing Director  
Tourism Intelligence International



**Mr. Nick Bryant**  
Sydney Correspondent  
BBC World News



**Mr. Nick Talbot**  
Design Director  
Seymourpowell



**Mr. Chris Richardson**  
Director  
Access Economics Pty Limited



**Ms. Sofie Formica**  
Host  
The Great South East



**Mr. Azran Osman Rani**  
CEO  
AirAsia X



**Mrs. Deborah Fuschtei**  
Director  
Urramunja Arts Centre



**Mr. Erminio Putignano**  
Managing Director  
FutureBrand Australia



**Ms. Maree Tetlow**  
Chief Executive  
Tourism NT



**Mr. Marcus Solomon**  
Chair  
Kaikouri Charitable Trust



**Mr. Noel Pearson**  
Executive Director  
Cape York Institute



**Mr. Anthony Hayes**  
Chief Executive Officer  
Tourism Queensland



**Mr. Taleb Rifai**  
Secretary-General  
UNWTO

*This is an excellent opportunity to strengthen bonds between Australia's and New Zealand's state and national tourism commissions and the UNWTO' Taleb Rifai, Secretary-General, UNWTO*

Supporters:



Wine Supporter:



Preferred Suppliers:







## Registration Form

HOME



indicates a compulsory field

(required)

TOURISM FUTURES 2010



VENUE



PREVIOUS CONFERENCES



CONTACT US



SEARCH



Title

First name

(required)

Surname

(required)

Position

Branch/Division

Organisation

(required)

Postal address

Postal address (line 2)

City

State

(required)

Country

Postcode

Business telephone

Mobile number

Fax number

Email

(required)



## Registration Form (continued)

<b>Special needs (dietary, access, etc)</b>	<div style="border: 1px solid black; height: 20px;"></div>
<b>Preferred name for name badge</b>	<div style="border: 1px solid black; padding: 2px;">Title, First Name, Surname</div>
<b>My organisation is interested in sponsoring opportunities</b>	<input type="radio"/> Yes <input type="radio"/> No
<b>May we include your name on the final delegate listing?</b>	<input type="radio"/> Yes <input type="radio"/> No

### A) REGISTRATION FEES

#### Step 1. Please indicate whether you are

<input type="radio"/>	Full-Time Student	50% discount
<input type="radio"/>	2009 Tourism Award Winner	50% discount
<input type="radio"/>	2009 Tourism Award Finalist	25% discount
<input type="radio"/>	None	

NOTE: If you are a *full-time student*, your registration Form must be accompanied by a faxed copy of your student identification. A valid student card must be presented on-site to gain admission.

NOTE: *Tourism Award winners* or *finalists* must be operators, one discounted representative per organisation is permitted.

#### Step 2. Please select one of the following options

<input type="radio"/>	3 Day Registration	Day 1, 2 & 3	Forums, Tourism Outlook & Online Workshop + Networking Drinks	\$1750 (save \$705)	\$ <div style="border: 1px solid black; width: 40px; text-align: center;">0</div>
		Day 1, 2	Forums & Tourism Outlook + Networking Drinks Days 1 & 2	\$1450 (same \$285)	\$ <div style="border: 1px solid black; width: 40px; text-align: center;">0</div>
<input type="radio"/>	2 Day Registration	Day 2, 3	Tourism, Outlook & Online Workshop + Networking & Drinks Days 2 & 3	\$1450 (save \$285)	\$ <div style="border: 1px solid black; width: 40px; text-align: center;">0</div>
		Day 1, 3	Forums & Online Workshop + Networking Drinks Days 1 & 3	\$1430	\$ <div style="border: 1px solid black; width: 40px; text-align: center;">0</div>
<input type="radio"/>	1 Day Registration	Day 1	Forums + Networking Drinks	\$715	\$ <div style="border: 1px solid black; width: 40px; text-align: center;">0</div>
		Day 2	Tourism Outlook + Networking Drinks	\$1025	\$ <div style="border: 1px solid black; width: 40px; text-align: center;">0</div>
		Day 3	Online Workshop + Networking Drinks	\$715	\$ <div style="border: 1px solid black; width: 40px; text-align: center;">0</div>



## Registration Form (continued)

**Step 3.** Please select a forum topic for Day 1:

**Step 4.** Please select a workshop for Day 3:

**Sub Total (Registration Fees)**      \$

### B) NETWORKING PROGRAM

Please indicate the number of tickets required for each event:

<input type="text" value="0"/>	Evening Cocktails and Registration	Sunday, 4 July 2010	\$75	\$ <input type="text" value="0"/>
<input type="text" value="0"/>	Dinner with Industry Leaders	Monday, 5 July 2010	\$135	\$ <input type="text" value="0"/>
<input type="text" value="0"/>	Networking Dinner	Tuesday, 6 July 2010	\$115	\$ <input type="text" value="0"/>

**Sub Total (networking program)**      \$

### C) ACCOMMODATION

<input type="radio"/>	Brisbane Marriott	Standard Room	\$235	\$ <input type="text" value="0"/>
<input type="radio"/>	Sofitel Brisbane Central	Superior Room (including 1 breakfast)	\$215	\$ <input type="text" value="0"/>
<input type="radio"/>	Mantra Southbank	One Bedroom Apartment	\$235	\$ <input type="text" value="0"/>
<input type="radio"/>	Royal on the Park	Deluxe King	\$194	\$ <input type="text" value="0"/>
<input type="radio"/>		Deluxe Twin Room	\$194	\$ <input type="text" value="0"/>
<input type="radio"/>	Mercure Brisbane	Superior City View	\$184	\$ <input type="text" value="0"/>
<input type="radio"/>		Superior River View	\$214	\$ <input type="text" value="0"/>
<input type="radio"/>	Ibis Brisbane	Standard Room	\$159	\$ <input type="text" value="0"/>
No accommodation/I will make my own arrangements				

**Check In**     

**Check Out**



## Registration Form (continued)

<b>Number of people</b>	<input style="width: 90%;" type="text" value="0"/>
<b>Sub Total (accommodation)</b>	<input style="width: 90%;" type="text" value="0"/>

### D) PREVIOUS CONFERENCE PROCEEDINGS

<input type="checkbox"/>	2008 Tourism Futures Online Proceedings	\$145 (inc. p&h)	\$ <input style="width: 80%;" type="text" value="0"/>
<input type="checkbox"/>	2009 Tourism Futures Online Proceedings	\$145 (inc. p&h)	\$ <input style="width: 80%;" type="text" value="0"/>
<b>Sub Total (conference proceedings)</b>		\$ <input style="width: 80%;" type="text" value="0"/>	

### PAYMENT SUMMARY

<b>Registration</b>	\$ <input style="width: 80%;" type="text" value="0"/>
<b>Networking</b>	\$ <input style="width: 80%;" type="text" value="0"/>
<b>Accommodation</b>	\$ <input style="width: 80%;" type="text" value="0"/>
<b>Previous Conference Proceedings</b>	\$ <input style="width: 80%;" type="text" value="0"/>
<b>Total</b>	\$ <input style="width: 80%;" type="text" value="0"/>

### PAYMENT METHOD

**PLEASE NOTE:** All payments must be finalised before attending the conference, unless a government purchaser

**Payment method** -Please Select- (required)

**Selection of Mastercard, Visa or Amex will direct you to a secure payment gateway. Management Solutions (Qld) manages delegate registration and payments on behalf of Tourism Futures.**

**CANCELLATION POLICY**  
 All cancellations must be made in writing to the Registration Officer.  
 Cancellations made **before** 5 June 2010 incur a 25% penalty. There will be no refunds **after** this date.  
 Substitute delegates are welcome, however the Registrations Officer must be advised in writing of any substitute delegates who will be attending.  
 Sharing of registration with other parties is not permitted.

**Please select this box to indicate your acceptance of this cancellation policy** (required)

☐

**Comments**

send



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## LICENCE TO EASY CARE GARDENING INC, TURRAMURRA

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### EXECUTIVE SUMMARY

**PURPOSE OF REPORT:**

To seek a resolution to grant Easy Care Gardening Inc a 5 year licence agreement.

**BACKGROUND:**

Easy Care Gardening Inc has been in occupation of the Home and Community Care (HACC) building since 1995. The previous licence agreement expired and is holding over until the new licence agreement is completed.

**COMMENTS:**

Easy Care Gardening Inc provides a frontline community service to the elderly and disabled of Ku-ring-gai through the provision of gardening care and maintenance.

**RECOMMENDATION:**

That Council grant Easy Care Gardening Inc a 5 year licence.



## PURPOSE OF REPORT

To seek a resolution to grant Easy Care Gardening Inc a 5 year licence agreement.

## BACKGROUND

Council is the owner of the premises known as 5-7 Gilroy Road, Turrumurra, (Lot 1 DP 840070) known as the Home and Community Care (HACC) building.

This building is a shared facility for the provision of HACC services. Other services co-located are Meals on Wheels and Ku-ring-gai Community Transport Services.

The building is zoned Business 3 (b) (B2) Commercial Services and is classified as Operational Land.

Easy Care Gardening Inc has been in occupation of the HACC building since 1995. They provide a frontline community service to the elderly and disabled of Ku-ring-gai local area by way of:

- Converting existing gardens to ones of low maintenance
- Providing low cost lawn mowing
- Ensuring gardens are safe

The previous licence agreement expired on January 31 2008 and Easy Care Gardening Inc remains in tenure via the holding over provisions contained in the old licence agreement.

## COMMENTS

Easy Care Gardening Inc occupies the following areas in the HACC building:

- Easy Care Gardening office
- Part of shared office
- Storage facility
- Double Garage including storage for tools/trailers and workbench
- Access to common areas of the HACC building, including bathrooms and kitchen.

The agreed licenced times remain consistent with the previous licence being 8.00am to 6.00pm Monday to Friday, with additional hours, as permitted by the building's Management Committee.

Under the terms of the licence agreement, Easy Care Gardening Inc pays for its services, including all assessments such as electricity/power, telephone, trade waste and water rates and usage as per the Management Plan.

Public Liability cover for \$20 million is mandatory.



**Item 2**

**S07507  
31 May 2010**

A 'special Relocation Provision' is to be included in the licence agreement, to be relied upon in the event of Council requiring the premises during the term of the licence.

If the premises are required, Council must provide Easy Care Gardening Inc with 3 months written notice and provide the licensee with alternative premises 'fit for the purposes' of carrying out their activities, for the term of the licence.

The inclusion of this clause provides surety for both parties to the licence agreement. Otherwise, the licence agreement will consist of same provisions as the preceding agreement.

## **CONSULTATION**

The Manager of Easy Care Gardening Inc has been consulted in conjunction with the writing of this report.

## **FINANCIAL CONSIDERATIONS**

An independent market valuation was undertaken to ascertain the current rental value. The valuation advised the rental value to be \$20,799.00 per annum. Under Council's Policy for Community and Recreation Land and Facilities, Easy Care Gardening Inc is entitled to a 90% rebate on this rental valuation – the rental per annum therefore will be \$2,080.00. This amount is exclusive of GST and escalated by CPI each year.

In accordance with the Policy for Community and Recreation Land and Facilities, Easy Care Gardening Inc are also obliged to pay Council's legal costs, estimated to \$1,500 plus GST. A one-off \$250.00 administration fee to Council, for administrative costs incurred associated with the preparation of the licence agreement.

## **CONSULTATION WITH OTHER COUNCIL DEPARTMENTS**

Staff from Community department have been consulted in association with this report.

## **SUMMARY**

Easy Care Gardening Inc occupies administration space in Council's Home and Community Care building in Gilroy Road, Turrumurra. The current licence for the premises has expired and a new 5 year licence is proposed.

The proposed licence agreement ensures tenure is uninterrupted for the next 10 years, so attention can be focussed on the provision of this service to the community.



**Item 2**

**S07507**  
**31 May 2010**

The licence agreement has been negotiated in accordance with the Policy for The Management of Community and Recreation Land and Facilities and Easy Care Gardening Inc has agreed to all the terms and conditions disclosed in the Heads of Agreement (Attachment).

**RECOMMENDATION**

- A. Council resolve to grant Easy Care Gardening Inc a 5 year licence.
- B. Under their delegation powers, the Mayor and General Manager sign and affix Council's Seal to the Licence Agreement for execution.

Michelle Makler  
**Lease and Licence Officer**  
**Community & Recreation Services**

Janice Bevan  
**Director Community**

**Attachments: Heads of Agreement - 2010/013705**





## COMMUNITY & RECREATION SERVICES

818 Pacific Highway, Gordon NSW 2072 | Locked Bag 1056, Pymble NSW 2073  
**T** 02 9424 0754 **F** 02 9424 0207 **DX** 8703 Gordon **TTY** 02 9424 0875  
**E** recreationbookings@kmc.nsw.gov.au **W** www.kmc.nsw.gov.au **ABN** 86 408 856 411

### HEADS OF AGREEMENT Licence Agreement

GENERAL DETAILS	
Licensor	Ku ring gai Council
Licensee	Easy Care Gardening Inc
Name of authorised representative and postal address for notices	
Incorporation No	ABN 96-338-250-354
Leased/Licenced Premises/Area	<p>HACC Building 5-7 Gilroy St, Turramurra</p> <p>Area: As per expired licence to include –</p> <ul style="list-style-type: none"> <li>○ Easy Care Gardening Office,</li> <li>○ part of shared office,</li> <li>○ storage facility,</li> <li>○ double garage including storage for tools/trailers and workbench</li> <li>○ common areas of HACC building including bathrooms and kitchen.</li> </ul>
Usage	Between 8.00am and 6.00pm Monday to Friday and additional hours as permitted by the Management Committee.
Term Commencing to Termination Date	<p>5 years</p> <p>1 July, 2010</p> <p>30 June, 2015</p>
Options	N/A
Special Termination Provision	<p>To be included in Licence in the event of Council requiring the premises</p> <p>Then the Licensor shall be entitled to determine the Licence upon giving three (3) months' written notice of the intention to so. If so, then Council will provide to the Licensee alternative premises fit for the purposes of the specified use, for the balance of the term at a licence fee no greater than the current licence fee.</p>
Holding Over Clauses	Limited to one year after the termination date.



<b>FINANCIAL DETAILS</b>	
Rent, review and rebate structure	Full Rent: \$ 20,799.00 Rebate @ 90%: \$ <u>18,719.00</u> Rent for year 1: \$ <u>2,080.00</u>
	The Licensor may grant the Licensee a Rebate on the payment of licence fee in accordance with the Policy for Management of Community and Recreation Land and Facilities.
GST inclusive	Yes
Outgoings	Licensee shall pay all charges for electricity, gas, water separately metered and telephone services connected to the Premises and all other charges and impositions imposed by any public utility or authority for the supply of any service separately supplied to the premises including rates, insurance, land tax, sewer, drainage, excess water and rates.
Payment Frequency	Invoiced once per year on the anniversary date.
<b>SECURITY DEPOSIT</b>	Nil
<b>REPAIRS AND MAINTENANCE</b>	As per maintenance schedule
<b>COMPLIANCE</b>	
Council Policies	The Licensee must comply with Council's policies as deemed to be applicable to the Premises and the Licensee's permitted use thereof.
Insurance	Licensee to insure for: <ul style="list-style-type: none"> <li>○ Chattels, fittings, accessories and stock</li> <li>○ Theft, vandalism, fire and other risks eg vandalism, water, storm and rainwater damage.</li> <li>○ Public Risk to \$20m – in joint names of Licensee and Lessor</li> <li>○ Glass</li> </ul>
Risk	The Licensee uses the Premises at the sole risk of the Licensee
Annual Reporting	During each year of the term and within 14 days of the Licensee's Annual General Meeting, the Licensee will provide to the Lessor: <ul style="list-style-type: none"> <li>○ Annual report of the Licensee and copy of audited financial statements, if not included in an annual report</li> <li>○ Other financial details as reasonably requested by the Licensor, (including but not limited to) the Licensees bank Statements and other financial records in case of any default under the Licence.</li> </ul> <p>On the anniversary of the Commencing Date of the Licence and annually thereafter for the duration for the term the Licensee must provide the Licensor with:</p> <ul style="list-style-type: none"> <li>○ Copies of current insurance certificates</li> <li>○ Names and phone numbers of Committee, executive or other Governing Body of the Licensee and details of the postal address for correspondence and servicing of notices.</li> </ul>
DA	Compliance of DA and relevant DA conditions.
OH&S	Evidence of OH&S Compliance



<b>COMPLIANCE</b>	
Liquor	N/A
Working with Children	N/A
<b>SUB-LICENCE OR ASSIGNMENT</b>	Not permitted
<b>PUBLIC NOTICE</b>	Public Notification as per Council's Public Notice policy, if applicable.
<b>ENVIRONMENTAL ISSUES</b>	As per Council's standard Terms
<b>LICENCE DOCUMENTATION LEGAL COSTS AND ADMINISTRATION</b>	<p>On terms as prepared by the Licensor.</p> <p>The Licensee must pay to the Licensor the Licensor's reasonable costs and disbursements in connection with this licence, estimated to \$1500 including the Licensor's legal costs and Licensor's administration fee of \$250. GST is exclusive of these amounts.</p> <p>The Licensee is responsible for its own legal costs.</p>

## STATEMENT OF AGREEMENT

We, on behalf of \_\_\_\_\_ agree to the terms and conditions and that all relevant disclosure have been made by both parties. No further changes will be required.

Name \_\_\_\_\_

Signature \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_

Name of organisation \_\_\_\_\_

Date \_\_\_\_\_



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## CLOTHING EXCHANGE EVENT 2010

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### EXECUTIVE SUMMARY

**PURPOSE OF REPORT:**

To advise Council of a community Clothing Exchange event to be held on Saturday, 21 August 2010 at the Ku-ring-gai Town Hall, Pymble.

**BACKGROUND:**

Operating since 2004, the Clothing Exchange hosts regular clothes swapping events with schools, councils and community organisations. It was created with the intention of reducing 'fashion waste', which constitutes a national expenditure of \$1.7 billion annually.

**COMMENTS:**

The Clothing Exchange involves community members swapping unwanted clothes. The exchange is badged as a Ku-ring-gai Council event and is promoted through Council's publicity channels. The event has benefits for both environmental and social sustainability.

**RECOMMENDATION:**

That Council support the community Clothing Exchange event to be held on Saturday, 21 August 2010 at the Ku-ring-gai Town Hall, Pymble.



## PURPOSE OF REPORT

To advise Council of a community Clothing Exchange event to be held on Saturday 21 August 2010 at the Ku-ring-gai Town Hall, Pymble.

## BACKGROUND

Operating since 2004, the Clothing Exchange hosts regular clothes swapping events with schools, councils and community organisations. It was created with the intention of reducing 'fashion waste', which constitutes a national expenditure of \$1.7 billion annually.

The company promotes 'sustainable fashion' and has hosted many successful events including:

- 2006-2008 Fashion Week
- 2008 Sustainable Living Festival
- 2009 Melbourne Spring Fashion Festival
- 2009 Whitehorse City Council Earth Hour Exchange

## COMMENTS

The event involves community members bringing garments they value but no longer wear to swap for something they will. Buttons, the currency for the exchange, are issued when the clothing is brought in; and the exchange-rate is one button per item.

The company provides all equipment, insurance and promotional material for the event. Council staff will provide assistance on the day of the exchange. The cost to Council is \$1,650, which will be funded through the Environmental Levy.

The exchange is badged as a Ku-ring-gai Council event and is promoted through Council's publicity channels.

The event has benefits for both environmental and social sustainability, through the reuse of unwanted clothing combined with a fun community event.

By having the event on 21 August, Council is able to promote the event through the July Ku-ring-gai Update, which goes to 36,000 ratepayers in Ku-ring-gai at the end of July.

## CONSULTATION

Not applicable.

## FINANCIAL CONSIDERATIONS

The cost to Council for the exchange is \$1,650. The event can be funded through the Environmental Levy Community Partnerships program, as a promotions and initiatives project. Other associated



**Item 3**

**S08235**  
**11 June 2010**

costs such as planning, promotions and staffing for the event will be met through the Community department.

## **CONSULTATION WITH OTHER COUNCIL DEPARTMENTS**

The Community and Strategy and Environment departments were consulted in the writing of this report.

## **SUMMARY**

Council staff, together with The Clothing Exchange, have organised a community clothing exchange for 21 August 2010.

The Clothing Exchange runs community Clothing Exchange events for schools, councils and community groups. The events reduce fashion waste and promote both social and environmental sustainability through the reuse of unwanted clothing combined with a fun community event.

The exchange is badged as a Ku-ring-gai Council event.

The cost is \$1650 and includes all equipment, insurance and a promotional material. Council will fund this event through the Environmental Levy.

## **RECOMMENDATION**

That Council support the community Clothing Exchange event to be held on Saturday, 21 August 2010 at the Ku-ring-gai Town Hall, Pymble.

Tiffany Kellar  
**Manager Communications**

Janice Bevan  
**Director Community**

**Attachments:**      **Clothing Exchange Expression of Interest - 2010/098323**





COUNCIL EXPRESSION OF INTEREST

# The Clothing Exchange







# 1.0 *Introduction*

## THE STORY

Created with the intention of reducing 'fashion waste' which constitutes a national expenditure of \$1.7 billion annually. The Clothing Exchange hosts regular clothes swapping events and is now taking the swaps to schools, councils and community organisations.

These events provide the opportunity for people to bring the garments they value but no longer wear to swap for something they will. Buttons, the currency for the exchange, are issued when the clothing is bought in; and the exchange-rate is one button per item.

The Clothing Exchange pop up store quickly fills up as racks are laden with clothes. The search for new outfits begins and participants enjoy sharing garment histories and relish the thrill of the hunt.

The Clothing Exchange is not an isolated venture but rather sits within the area of sustainable fashion more broadly. It is a practice of sustainable consumption, an event and most importantly, a stimulant for and explosion of sustainability-thinking. Conceptually, the exchange aims to shift people's understanding and treatment of "fashion waste". Instead, garments that were in closeted detention are released and adopted by grateful new owners who enjoy seeing their wardrobe expand without costing the earth (literally and metaphorically!).

## BRINGING LIFE TO A PLACE

The Clothing Exchange is an event that can "pop-up" at any place or space. It is a self-contained set-up that can be assembled quickly and disassembled quicker, without a trace. In the past, The Clothing exchange has inhabited vacant stores in the beautiful Georges Building, beside the whale skeleton at the Melbourne Museum, as well as taking place within the thoroughfare of the Federation Square Atrium.

The Clothing Exchange can now bring an event to your chosen venue and even position an event within your festival program.

Additionally, The Clothing Exchange has been included within existing events or festivals. In 2006-08, the swaps have featured in the cultural program for the L'Oreal Melbourne Fashion Week. In 2008, they became a part of the Sustainable Living Festival. For the last 2 years, The Clothing Exchange has been part of the State of Design Festival in Melbourne. For 2009, The Adelaide TCE team featured an event in Adelaide Fashion Week, and the Melbourne team brought a new event to the Melbourne Spring Fashion Festival. The Clothing Exchange is an entertaining and social spectacle suited to any place or program.

## SWAP CAPACITY BUILDING PROGRAM

In response to the demand from councils and like-organisations, The Clothing Exchange is focused on sharing their swapping success with members of the community throughout Australia. Ideally, there will be a swap in reach of every person who'd like to shrink their ecological footprint while expanding their fashionable wardrobe.

We have heard that councils and schools are short on time and funding, but love the big idea of swapping for sustainability. So we have created the 'Swap-Capacity-Building-Program' so that little swap teams around Australia can use The Clothing Exchange's recipe to host successful swaps.

While an exchange may seem simple from the outside, mediating the exchange of people's precious possessions can be tricky business. The Clothing Exchange has spent 5 years developing a professional swapping service that they are keen to share.

Councils and schools that have adopted the SCBP so far have been delighted by the excitement the swaps generated, have enjoyed the professionalism and friendliness of The Clothing Exchange team and have appreciated the community and sustainability-oriented aspects of the exchange events.

(For a reference from Whitehorse City Council, refer to page 4)



# 2.0

# Swap-Capacity-Building-Program



## THE OFFERING

As a council, school or community organisation, The Clothing Exchange will now bring a swap to your chosen venue. All you need to do is contact [info@clothingexchange.com.au](mailto:info@clothingexchange.com.au) and request an event for your chosen date.

In the lead up to the event, TCE will organise a planning conference call to pin down all the details unique to your event. They will develop a custom designed invitation that includes your organisations name and logo. On the day, the Clothing Exchange will bring all equipment required to host a swap for between 40-80 people, 2-3 event staff and a training kit for your organisation.

Essentially, the planning, equipment and responsibility is all outsourced to The Clothing Exchange which has Public Liability Insurance. By involving your volunteers, you will have a team that can run future exchange events within your locale.

On the day of the event, the schedule will resemble:

2.00pm - 1 hr training session with organisations volunteers (a group of 4-5)  
(This is optional)

3.00pm - event set-up

4.00pm - garment check-in commences as patrons arrive

4.30pm - Opening address and the swapping begins

6.00pm - Pack-up

This is just a guide as smaller events are much quicker than large scale events and depending on the nature of the event, patrons may swap in a leisurely fashion or dash in and out of the exchange.

When selecting your venue be mindful that modesty is important to patrons and the less stairs, the easier the set-up.



## THE COSTS OF SERVICE

Event planning, invite and full event hosting service (40-80 pp) with 2 TCE staff, volunteer training and hosting kit  
Sydney = \$1650  
NSW = \$1850  
Outside NSW = \$2450  
Payment terms- 50% prior to the event, 50% post-event. You determine whether to charge admission (<\$25) to recoup costs or offer the event free of charge.



# *A Glowing Review* 3.0

Friday 24th April, 2009

Dear Kate Luckins and The Clothing Exchange team,

I would like to express my gratitude on behalf of the Environment team at Whitehorse City Council for your organisation and running of the successful Clothing Exchange at our Earth Hour Celebrations in Box Hill Gardens on Saturday 28th March, 2009.

Through the initial meetings while scoping the event, you showed professionalism and flexibility to ensure the needs of the event and the Whitehorse residents were met.

The Clothing Exchange added a fun and classy element to the Earth Hour Celebrations and generated a new audience to our sustainability event. It succeeded in terms of numbers at the event, and feedback from participants was very positive. It was great to spread the sustainability message in an enjoyable and interactive way.

I thank you for all your work and support, and I look forward to working with your team again in upcoming events.

Yours sincerely

Kate Patkin  
Environmental Project & Education Officer  
ENGINEERING & ENVIRONMENTAL



Whitehorse City Council  
Earth Hour Exchange 28/3/09





[sydney@clothingexchange.com.au](mailto:sydney@clothingexchange.com.au)  
[www.clothingexchange.com.au](http://www.clothingexchange.com.au)

Thankyou to our funding partner  
RMIT University SEEDS for their  
support with this program





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## INVESTMENT REPORT AS AT 31 MAY 2010

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### EXECUTIVE SUMMARY

**PURPOSE OF REPORT:**

To present to Council investment allocations and returns on investments for May 2010.

**BACKGROUND:**

Council's investments are made in accordance with the Local Government Act (1993), the Local Government (General) Regulation 2005 and Council's Investment Policy which was adopted by Council on 20 April 2010.

**COMMENTS:**

The Reserve Bank of Australia (RBA) increased the official cash rate by 25bps to 4.50% in May 2010.

**RECOMMENDATION:**

That the summary of investments and performance for May be received and noted.  
That the Certificate of the Responsible Accounting Officer be noted and the report adopted.



## PURPOSE OF REPORT

To present to Council investment allocations and returns on investments for May 2010.

## BACKGROUND

Council's investments are made in accordance with the Local Government Act (1993), the Local Government (General) Regulation 2005 and Council's Investment Policy which was adopted by Council on 20 April 2010.

## COMMENTS

During the month of May, Council had a net cash inflow of \$2,871,576 and a net investment gain (interest and capital) of \$524,220.

Council's total investment portfolio at the end of May 2010 is \$85,843,099. This compares to an opening balance of \$75,066,501 as at 1 July 2009, an increase of \$10,776,598.

## PERFORMANCE MEASUREMENT

Council's investment portfolio is monitored and assessed based on the following criteria:

- **Management of General Fund Bank Balance**

The aim is to keep the general fund bank balance as low as possible and hence maximise the amount invested on a daily basis.

- **Funds Performance against the UBS Bank Bill Index**

This measures the annualised yield (net of fees and charges) for Council's portfolio. The weighted average return for the total portfolio of funds is compared to the industry benchmark of the UBS Bank Bill Index.

- **Allocation of Surplus Funds**

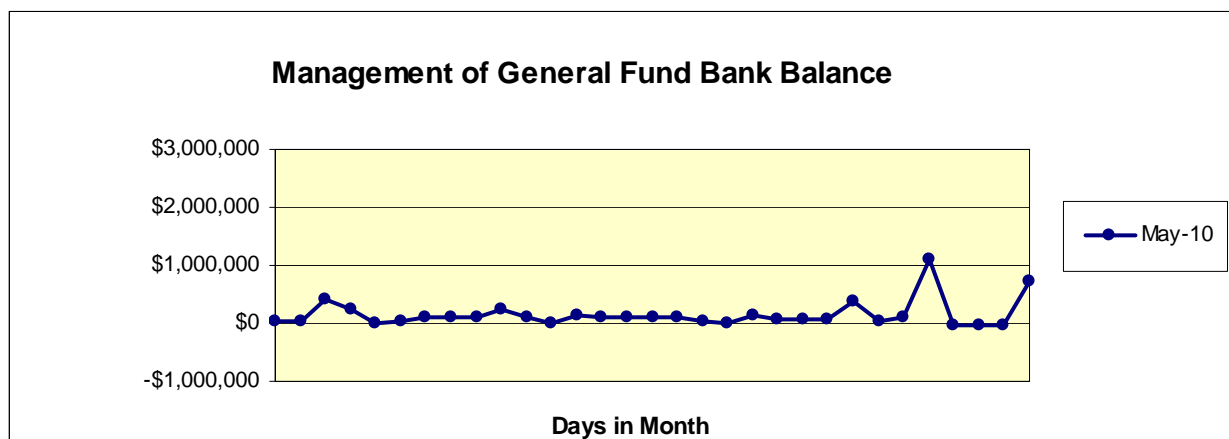
This represents the mix or allocation of surplus funds in appropriate investments that maximise returns and minimise risk.

### Management of General Fund Bank Balance

During May Council had a net inflow of funds of \$2,871,576.



## Item 4

S05273  
9 June 2010**Investment Portfolio**

Council's investment portfolio consists of the following types of investments:

**1. Floating Rate Notes (FRN)**

FRNs are a contractual obligation whereby the issuer has an obligation to pay the investor an interest coupon payment which is based on a margin above bank bill. The risk to the investor is the ability of the issuer to meet the obligation.

The following investments are classified as FRNs

ANZ sub-debt AA-	purchased 18/12/07 at discount
ANZ sub-debt AA-	purchased 20/12/07 at discount
Bendigo Bank BBB+	purchased 9/11/07 at par
ANZ sub-debt AA-	purchased 17/1/08 at par
HSBC Bank AA-	purchased 14/3/08 at par
BOQ senior-debt BBB+	purchased 08/09/08 at discount
Phoenix Notes A (downgraded from AA+ by S&P)	purchased 31/07/07 at par
St. George Bank FRN AA	purchased 11/09/09 at discount
ING Bank Australia FRN A+	purchased 14/09/09 at discount

With the exception of Phoenix Notes, these FRNs are all sub-debt or senior debt which means that they are guaranteed by the bank that issues them with sub-debt notes rated a notch lower than the bank itself. The reason for this is that the hierarchy for payments of debt in event of default is:

1. Term Deposits
2. Senior Debt
3. Subordinated Debt
4. Hybrids
5. Preference shares
6. Equity holders



## Item 4

S05273  
9 June 2010

In the case of default, the purchaser of subordinated debt is not paid until the senior debt holders are paid in full. Subordinated debt is therefore more risky than senior debt.

These types of investment are classified as Held to Maturity assets and they are therefore measured at amortised cost using the effective interest method in accordance with AASB 139: Financial Instruments: Recognition and Measurement.

In terms of reporting, these investments are shown at their purchase price which is then adjusted up or down each month in accordance with the amortisation of the discount or premium. The effect of this is to show the investment at face value at maturity.

## 2. Fixed Interest Notes, Term Deposits, Transferable Deposits and Bonds

Fixed interest notes and term deposits pay a fixed amount of interest on a regular basis until their maturity date. The following investments are held by Council:

Westpac Fixed sub-debt AA-	purchased 25/02/08 at discount
Investec Bank Term Deposit BBB	purchased 03/09/08 at par
St George Bank Term Deposit (11 Months) AA	purchased 02/09/09 at par
National Australia Bank Term Deposit (11 Months) AA	purchased 02/09/09 at par
Westpac Term Deposit (1 Year) AA	purchased 03/12/09 at par
National Australia Bank Term Deposit (1 Year) AA	purchased 04/12/09 at par
Westpac Bank Term Deposit (5 Year) AA	purchased 12/01/10 at par
St George Bank Term Deposit (3 Year) AA	purchased 18/02/10 at par
Bendigo Bank (1 Year) BBB+	purchased 01/03/10 at par
Commonwealth Bank Term Deposit (3 Year) AA	purchased 05/03/10 at par
AMP Credit Union Term Deposit (1 Year) AAA	purchased 17/03/10 at par
SGE Credit Union Term Deposit (13 Months) AAA	purchased 19/03/10 at par
HUE Credit Union Term Deposit (1 Year) AAA	purchased 22/03/10 at par
Rural Bank Term Deposit (18 Months) BBB	purchased 22/03/10 at par
Bank of Queensland (3 Years) BBB+	purchased 31/05/10 at par

As with FRNs, these investments are shown at purchase price with the discount or premium amortised over the period to maturity.

A Transferable Certificate of Deposit is a bank deposit (ie fixed interest) that may be transferred from one party to another. Council has three transferable deposits.

ANZ Transferable Deposits AA-	purchased 22/04/08 at par
Deutsche Bank Transferable Certificates of Deposit A+	purchased 04/09/09 at discount
Commonwealth Bank Transferable Certificates of Deposit AA	purchased 11/09/09 at premium

A bank bond is a debt security, in which the authorised bank owes the holders a debt and is obliged to repay the principal and interest (the coupon) at a later date, termed maturity.



Item 4

S05273  
9 June 2010

Council has two fixed rate bank bonds with senior debt obligations:

BOQ Bank Bond BBB+	purchased 04/09/08 at discount
Suncorp Metway Bank Bond A+	purchased 04/09/08 at premium

### 3. Collateralised Debt Obligations (CDO)

The following investments are classified as CDOs:

Titanium A+ (downgraded from AAA by S&P)	purchased at discount
Maple Hill 11 CCC- (downgraded from AA by S&P)	purchased at par
Oasis Portfolio Note CCC- (downgraded from AAA by S&P)	purchased at par

(Please refer to comments on Individual Investment Performance section for details.)

A CDO is a structured financial product whose returns are linked to the performance of a portfolio of debt obligations. It is split into tranches, whereby the riskiest or lowest tranche, the "equity tranche", receives the highest returns. Higher rated tranches offer protection against the risk of capital loss, but at proportionately diminishing returns.

These investments are also classified as held to maturity assets and are therefore measured at amortised cost using the effective interest method in accordance with AASB 139: Financial Instruments: Recognition and Measurement. These investments are reported in the same manner as FRNs.

### 4. Constant Proportion Debt Obligations (CPDO)

The following investment is classified as a CPDO:

ABN AMRO CPDO PP AA-	purchased at par
----------------------	------------------

This is an investment whose returns are based on trading credit default swap (CDS) contracts. A CDS is a contract between two parties where one agrees to accept the risk that a company will default on its loan repayment obligations in return for payment of a fee. Only contracts on investment grade organisations in the CDX (US) and ITraxx (Europe) indices are permissible.

### 5. Growth Investments

Investments that have been purchased on the basis of an anticipated growth in asset value rather than returns being based on an interest coupon have been classified as Growth Investments. The following investments are included in this category:

Longreach STIRM A+ (downgraded from AA- by S&P)
Longreach s26 Property A+ (downgraded from AA by S&P)
KRGC TCorp LTGF unrated

These investments are valued at fair value where the capital gain is credited to the Income Statement and a capital loss is debited to the Income Statement. All of these investments except the KRGC TCorp LTGF are principal guaranteed. The value shown in the monthly investment



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report is based on the redeemable Net Asset Value (NAV). The NAV is the total current market value of all securities plus interest or dividends received to date. This is the price or value of the investment at the time of preparing the report. Although the investments are principal guaranteed, reports are based on the NAV even when it falls below the par value.

The principal is guaranteed by the investment issuer monitoring the net asset value and selling the investments if the NAV falls below the level where a risk free investment will return the principal at the maturity date. Thus the worst case scenario, provided that the issuer remains solvent, for these investments is that overall return will be returns received to date plus return of principal at maturity date and no further interest payments for the remaining period.

While accounting and reporting for these investments is in accordance with the above, the following information is provided for each:

**Longreach STIRM:** This investment pays a fixed coupon of 2.5% and a floating coupon of 125% of the quarterly performance. A cap is applied to the total coupon at BBSW+25bps with any additional income going into the NAV. The worst case performance scenario is no coupon is paid due to 100% of investors' funds being redeemed from the STIRM strategy and invested in a discount security to guarantee principal is returned at maturity.

**Longreach Global Property:** This investment pays a fixed coupon of 7% pa payable semi annually. This coupon is contingent on 100% of funds being invested in the Global Property basket. The worst case performance scenario is no coupon is paid and 100% is redeemed from the Global Property basket and invested in a discount security to guarantee principal is returned at maturity.

**KRGC TCorp LTGF NSW Treasury Corporation:** This is a fund managed by the NSW Treasury Corporation which invests in a range of Australian shares 31%, international shares 31%, bonds, listed property and cash 38%. The return is based on the fund's unit price at month end supplied by the fund. There is no principal guarantee with this fund and it is unrated.



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## Funds Performance against the UBS Bank Bill Index

Issuer	Investment Name	Investment Rating	Invested @ 31st May 2010 \$000's	Period Return (%)	Annualised YTD Return (%)	Performance Since purchase/inception (%)	% of Total Invested	Valuation M=Mark to Market H=Hold to Maturity	Maturity
<b>Working Capital (0-3 Months)</b>									
BlackRock Investment	BlackRock Diversified Credit	A	947	0.39	6.38	*	1.10	M	0-3 mths
Westpac Bank	Council Westpac Business Cheque Plus Account	AA	6,458	0.35	3.49	*	7.52	M	0-3 mths
<b>Short Term (3-12 mths)</b>									
St. George Bank	St. George Bank 11 Months Term Deposit	AA	3,000	0.42	5.20	*	3.49	M	3-12 mths
National Australia Bank	National Australia Bank 11 Months Term Deposit	AA	3,000	0.42	5.20	*	3.49	M	3-12 mths
Westpac Bank	Westpac Bank 1 Year Term Deposit	AA	2,500	0.55	6.80	*	2.91	M	3-12 mths
National Australia Bank	National Australia Bank 1 Year Term Deposit	AA	2,500	0.55	6.80	*	2.91	M	3-12 mths
Select Access Investments	Titanium AAA	A+	2,000	0.44	4.73	6.72	2.33	H	3-12 mths
Bank of Queensland	Bank of Queensland Bond	BBB+	1,982	0.67	8.30	8.29	2.31	H	3-12 mths
Bank of Queensland	Bank of Queensland FRN	BBB+	1,991	0.46	5.11	5.57	2.32	H	3-12 mths
ING Bank Australia	ING Bank Australia FRN	A+	997	0.42	4.71	4.71	1.16	H	3-12 mths
Bendigo Bank	Bendigo Bank Term Deposit	BBB+	500	0.51	6.30	*	0.58	M	3-12 mths
AMP Credit Union	AMP Credit Union 1 Year Term Deposit	AAA	1,000	0.55	6.75	*	1.16	M	3-12 mths
Hunter United Employees Credit Union	HUE Credit Union 1 Year Term Deposit	AAA	1,000	0.53	6.59	*	1.16	M	3-12 mths
State Government Employees Credit Union	SGE Credit Union 13 Month Term Deposit	AAA	1,000	0.57	7.00	*	1.16	M	3-12 mths
Suncorp Metway	Suncorp Metway Bond	A+	2,014	0.65	8.06	8.05	2.35	H	3-12 mths
<b>Short - Medium Term (1-2 Years)</b>									
Rural Bank	Rural Bank 18 Month Term Deposit	BBB	1,000	0.57	7.10	*	1.16	M	1-2 yrs
NSW Treasury Corp	KRGC Tcorp LTGF	UNRATED	1,913	-2.09	19.49	-1.20	2.23	M	1-2 yrs
St. George Bank	St. George Bank FRN	AA	3,731	0.40	4.50	4.50	4.35	H	1-2 yrs
ABN AMRO/Nomura	Phoenix Notes	A	2,000	0.53	5.91	7.82	2.33	H	1-2 yrs
UBS AG London	Longreach STIRM	A+	1,111	-1.95	15.05	3.41	1.29	M	1-2 yrs
ANZ Bank	ANZ Sub FRN	AA-	2,968	0.43	4.83	6.26	3.46	H	1-2 yrs
Commonwealth Bank	Commonwealth Bank TCD FRN	AA	2,025	0.42	4.62	4.62	2.36	H	1-2 yrs
Westpac Bank	Westpac Subdebt	AA-	960	0.79	9.78	9.78	1.12	H	1-2 yrs
<b>Medium Term (2-5 Years)</b>									
HSBC Australia	HSBC MTN (Medium Term Notes)	AA-	4,000	0.55	6.21	7.55	4.66	H	2-5 yrs
ANZ Bank	ANZ Transferable Deposit	AA-	2,000	0.48	5.17	6.32	2.33	H	2-5 yrs
Investec Bank	Investec Term Deposit	BBB	3,000	0.56	6.40	6.93	3.49	H	2-5 yrs
Deutsche Bank	Longreach S26 Prop	A+	807	2.12	7.00	-6.46	0.94	M	2-5 yrs
Deutsche Bank	Deutsche Bank TCD FRN	A+	1,964	0.49	5.39	5.39	2.29	H	2-5 yrs
CBA/Helix Capital Jersey	Oasis Portfolio Note	CCC-	2,000	0.42	4.65	6.66	2.33	H	2-5 yrs
HSBC Bank	Maple Hill 11	CCC-	3,000	0.56	6.12	7.94	3.49	H	2-5 yrs
St. George Bank	St. George Bank 3 Year Term Deposit	AA	3,000	0.57	7.10	*	3.49	M	2-5 yrs
Commonwealth Bank	Commonwealth Bank 3 Year Term Deposit	AA	3,000	0.57	7.10	*	3.49	M	2-5 yrs
Bank of Queensland	Bank of Queensland 3 Year Term Deposit	BBB+	1,000	0.57	7.00	*	1.16	M	2-5 yrs
Westpac Bank	Westpac Bank 5 Year Term Deposit	AA	5,000	0.64	8.00	*	5.82	M	2-5 yrs
<b>Long Term (5 Years+)</b>									
Bendigo Bank	Bendigo Bank FRN	BBB+	500	0.49	5.09	6.62	0.58	H	5 yrs +
ANZ Bank	ANZ Sub FRN	AA-	2,975	0.45	4.79	6.26	3.47	H	5 yrs +
ANZ Bank	ANZ Subdebt 2018	AA-	1,000	0.47	5.09	6.48	1.16	H	5 yrs +
ABN AMRO Bank London	CPDO PP	AA-	6,000	3.06	3.82	5.50	6.99	H	5 yrs +
<b>TOTAL /WEIGHTED AVERAGE</b>			<b>85,843</b>				<b>100</b>		

Matured/Traded Investments - Weighted YTD Average Return (%)

4.09

Weighted Average Overall Return Year To Date (%)

5.62

Benchmark Return: UBSWA Bank Bill Index(%)

3.80

Variance From Benchmark (%)

1.82

\* Cannot be calculated with 100% accuracy

The weighted average return for the total portfolio year to date was 5.62% compared to the benchmark of the UBS Bank Bill Index of 3.80%.



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Prior to Council's investment policy, adopted 20 April 2010, a wider range of investments had been made involving diversification of the portfolio into different investment types, longer maturities and different markets. Council's investments include several growth investments, where returns are principally derived from growth in the value of capital invested, rather than income payments.

These investments can be expected to show higher volatility in price movement on a month to month basis. With the exception of the NSW Treasury Corporation investment, Council had only purchased growth investments which have a capital protection provided by a bank of at least AA ratings. As these investments are long term and not intended to be traded monthly, volatility is of less concern.

**Comments on Individual Investment Performance**

**Term Deposit:** During May 2010, the following term deposit was purchased.

- Bank of Queensland Term Deposit BBB+ \$1,000,000 at 7.00% pa for 3 years

The decision to continue to invest in a number of longer dated deposits has been successful in the short term against benchmark and looks likely to deliver continued outperformance to Council as rate rises look increasingly benign in the current environment.

Council's average yield of 6.63% provides for a high performing deposit portfolio and is due primarily to duration management. Council has maintained a very high credit quality in its deposit base. The decision to purchase long dated deposits at the top of the market contributed to strong performance, as the market turns its attention to whether the Reserve Bank of Australia's tightening cycle is now concluded.

**Longreach Series 26 Global Property:** This investment was made in June 2007 in a basket of property spread globally across seven geographical areas. Due to the volatility and poor performance of the property market during the current global economic crisis the allocation in the property basket is now zero with 100% of the funds in the discount debt security, and Deutsche Bank has informed Longreach that Series 26 Global Property has completely de-levered. The funds are now notionally invested in a fixed income bond until maturity.

All other aspects of the note are unchanged:

- Capital protection at maturity
- Buy back facility through Deutsche Bank

The current estimated unit price of Series 26 is \$80.67 up from \$78.96 in April. The principal guarantee mechanism means that the note will be matured to \$100.00 in June 2014. As the capital loss on the note has been brought to account through the income statement in accordance with the relevant accounting standards, the note will now provide for a return of approximately 5.49% over the next 4.09 years. In the current market 5.49% is considered a reasonable return. It is recommended at present, to hold on to this investment in the short term, however if opportunities arise to trade out of the note into higher yielding investments they will be considered.



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General information on the fund is included in the monthly Noteholder Performance Report **attached**.

**Longreach Series 23 STIRM:** This investment is a capital protected note with exposure to a short term interest rate yield enhancement strategy. The redeemable NAV of the notes is estimated at \$111.30 whereas at the end of last month it was \$114.01. An annualised year to date return on the investment is 15.05% and 3.41% since inception. General information on the fund is included in the monthly Noteholder Performance Report **attached**.

**NSW Treasury Corporation:** The investment was made in October 2006. This is a fund managed by the NSW Treasury Corporation which invests in a range of Australian shares 31%, international shares 31%, bonds, listed property and cash 38%. The fund's annualised return is 19.49% and is -1.20% since purchase.

**Blackrock Diversified Credit Fund:** In August 2008, Blackrock Investment Management informed Council of its decision to close the Blackrock Diversified Credit Fund. This action was taken due to the Cole Report recommending removal of the option for local councils to invest in managed funds. The fund was specifically created for and targeted towards NSW local councils' requirements. At that time Council had approximately \$9.5M invested in the fund.

Since then, the fund has been slowly winding down by selling its assets; however the illiquidity of markets over the past year has resulted in the wind down taking considerably longer than first anticipated.

In closing down the fund, BlackRock is required to conduct the sell down process in an orderly fashion to achieve the best possible outcome. Whilst liquidity has not improved dramatically, BlackRock has managed to sell down more of the portfolio.

BlackRock is still attempting to sell down the remaining portfolio which is comprised of largely domestic assets. The domestic credit markets are still highly illiquid and BlackRock will liquidate this portfolio at the earliest opportunity being cognisant of getting "reasonable" value for the securities sold. All the securities held within the portfolio will continue to pay coupons and BlackRock sees no further credit impairment of the portfolio.

There was no distribution during May 2010 and the balance of funds in Blackrock at the end of the month was \$946,791.

**ABN AMRO CPDOs PP:** This is an investment whose returns are based on trading credit default swap (CDS) contracts. Only contracts on investment grade organisations in the CDX (US) and ITraxx (Europe) indices are permissible. The risk to Council is that if enough of the companies default on their loan payment obligations, Council's regular payments of interest would be reduced or cease. In the event of this occurring (cash-out event), the note reverts to a risk free bond investment to guarantee principal on maturity.

**CDOs:**

The risk of losing principal in a CDO is based on the number of defaults in the portfolio of debt obligations combined with weighting of the entity in the portfolio and the recovery rate of the entities that default. The following information is provided for Council's three CDOs:



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Maple Hill 11

As a result of the global financial market crisis, in particular the collapse of Lehman Brothers, and the release of S&P CDO Evaluator 5.0 (a set of analytical tools that evaluates an entire CDO transaction), Maple Hill II was downgraded to CCC - from AA by S&P.

- Losses absorbed: 2.37%
- Losses remaining: 3.37%
- Recovery: Floating
- Portfolio: 139 (unequal weight)
- Credit events to date: 5 (Lehman Brothers, Fannie Mae, Freddie Mac, Idearc & CIT Group)
- Credit events supported: 11.5 average sized, assuming average 33% recovery
- Credit events remaining: 7 average sized, assuming average 33% recovery. The note can withstand 5% of the portfolio defaulting, resulting in 3.3% loss after recovery.
- Maturity: 20 December 2014

Oasis Portfolio Note

As a result of the global financial market crisis and in particular the collapse of Lehman Brothers, Oasis has been downgraded to CCC - from AAA by S&P.

- Losses absorbed: 3.17%
- Losses remaining: For the AAA tranche 1.13%
- Recovery: Fixed Rate at 40%
- Portfolio: 118 reference entities (unequal weight and started with 120)
- Credit events to date: Lehman Brothers, Fannie Mae, Washington Mutual, Kaupthing Bank & CIT Group
- Credit events supported: Variable = 14 minimum sized; 8.5 average weightings; 4 maximum sized
- Credit events remaining: Depends on the weighting of the credit event, 1 maximum size (1.5% exposure) or 2 more minimum size (0.5% exposure). The note can withstand 1.9% of the portfolio defaulting, 2% before recoveries
- Maturity: 04 September 2014

As this note has a 40% fixed recovery the default of Fannie Mae had a much larger impact on the note's subordination. Fannie Mae and Kaupthing Bank each represented 1.50% of the references and Lehman Brothers was 1.25%, both Washington Mutual & CIT Group were 0.50%.

Titanium

Following the release of S&P CDO Evaluator 5.0 (a set of analytical tools that evaluates an entire CDO transaction), Titanium was downgraded to A+ from AAA by S&P on 24 November 2009.

- Losses absorbed: 0.28%
- Remaining losses supported: 6.99%
- Recovery: Floating
- Portfolio: 125 names (unequal weight)
- Credit Events Supported: 13.6 average sized, assuming 33% recovery
- Credit Events Remaining: 13.0 average sized, assuming 33% recovery



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- Credit Events Supported: 18.6 average sized, assuming the higher 51% recovery historically achieved by Deutsche Bank
- Credit Events Remaining: 17.8 average sized, assuming 51% recovery
- Credit events to date: Lear Corp, CIT Group and FGIC Corp
- Maturity: 14 December 2010

There were no credit events in Council's CDOs during the month.

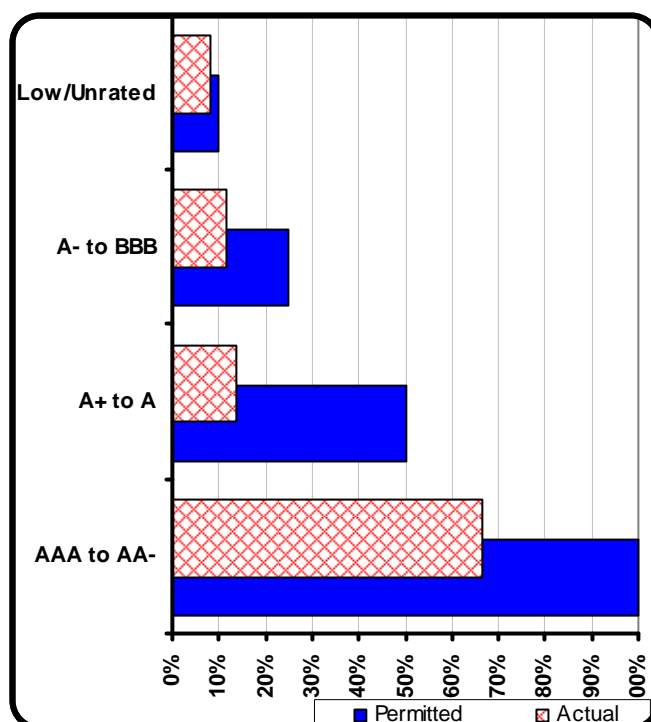
As mentioned in last month's report, OASIS can withstand 2 further credit events (of average weighting) without capital loss. A third would result in substantial loss. While the portfolio is so distressed that default appears near certain, CDOs with 2 or more events credit support are still being marked at values that imply a material option value. Effectively, CDOs like OASIS represent a "call option" over a mass restructure of the mortgage insurers, probably with banks ending up as the shareholders in a debt-for-equity swap.

Maple Hill II is priced weaker following the credit market sell-off. HSBC has lowered its bid to 36c. Council is currently seeking bids on this CDO, as a prudent measure given the ongoing uncertainty about the global economy.

### Allocation of funds

The following charts show the allocations of Council's investment funds by various categories:

- 1) **Credit Rating:** Actual level of investment compared to proportion permitted by policy.





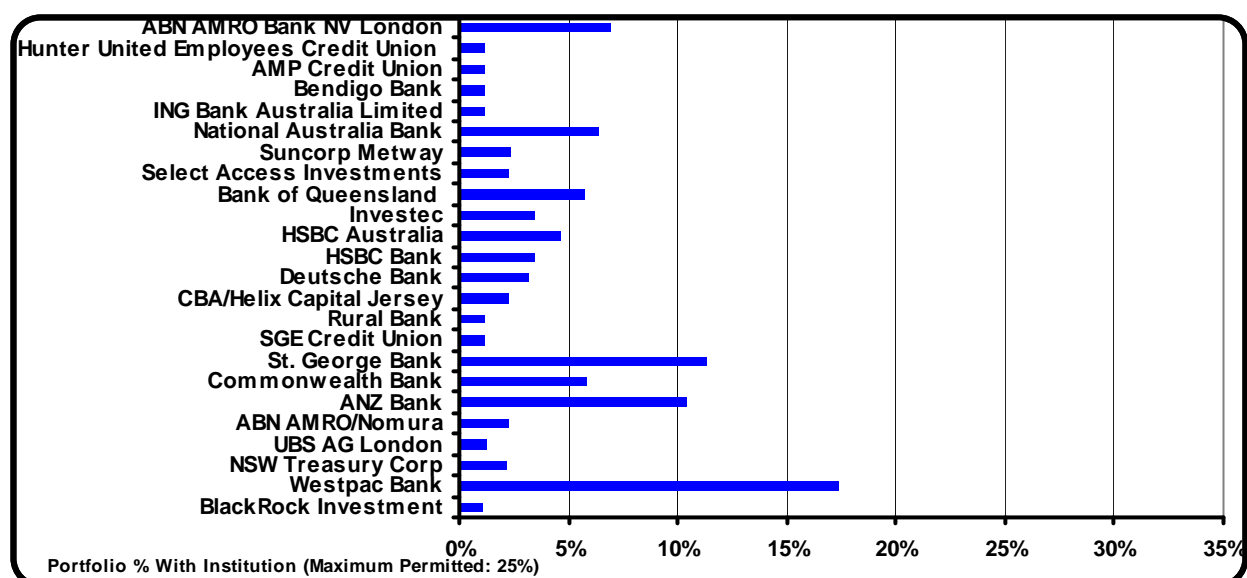
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Investment Rating	Proportion
AAA to AA-	66.54%
A+ to A	13.79%
A- to BBB	11.62%
Less than BBB	8.05%

**2) Proportional Split of Investments by Investment Institution:** Actual portion of investments by investment institutions.

Council's Investment Policy requires that the maximum proportion of its portfolio invested with any individual financial institution is 25%.

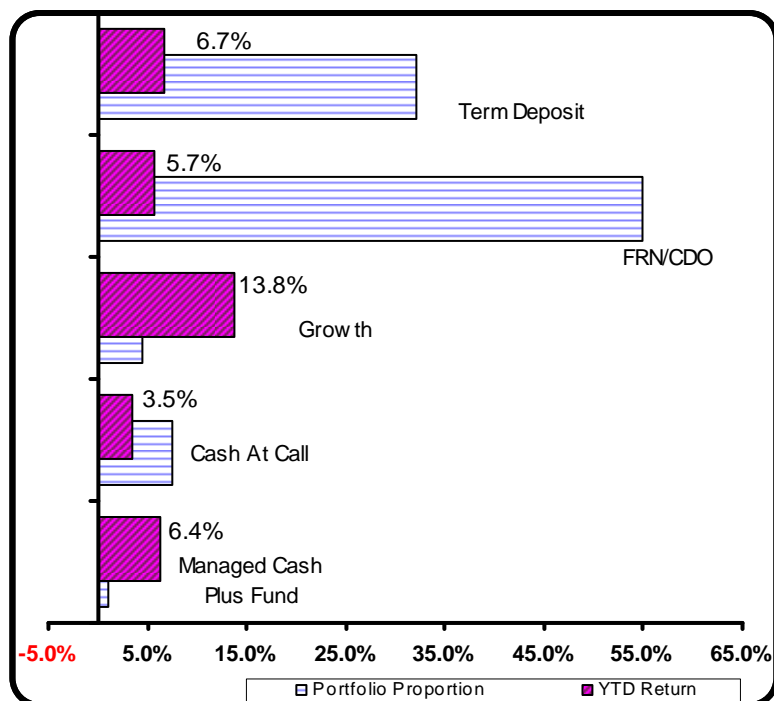




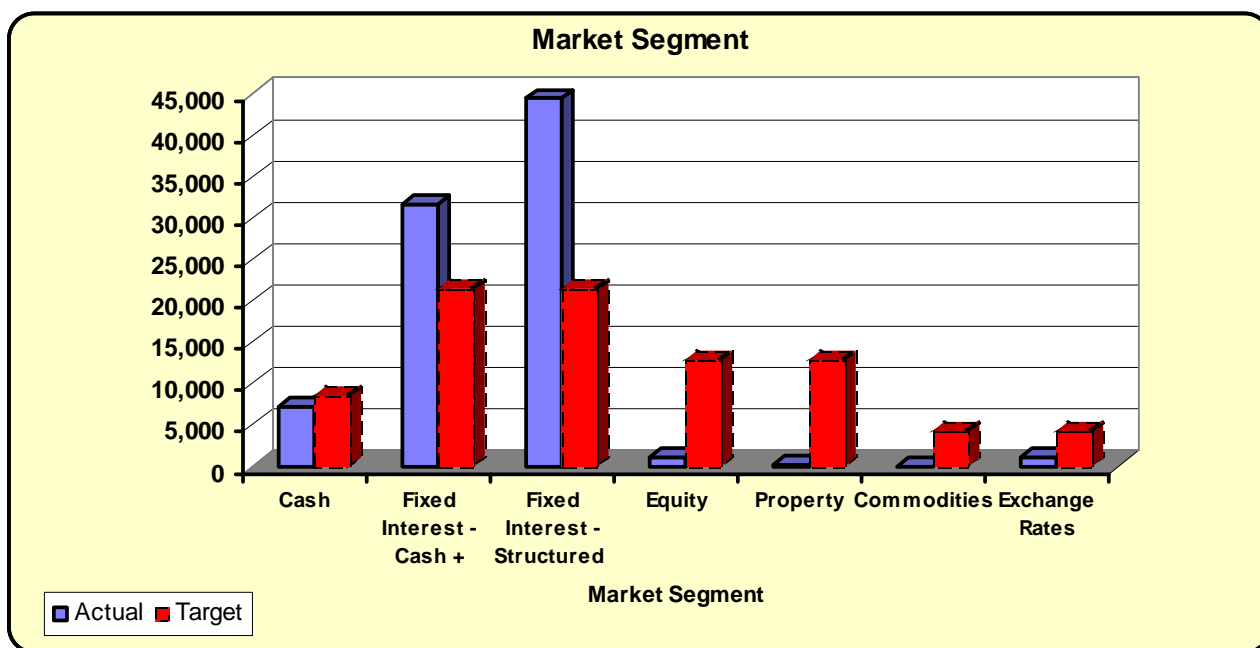
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- 3) **Investment type and YTD return:** Actual proportion of investments by type and year to date return.

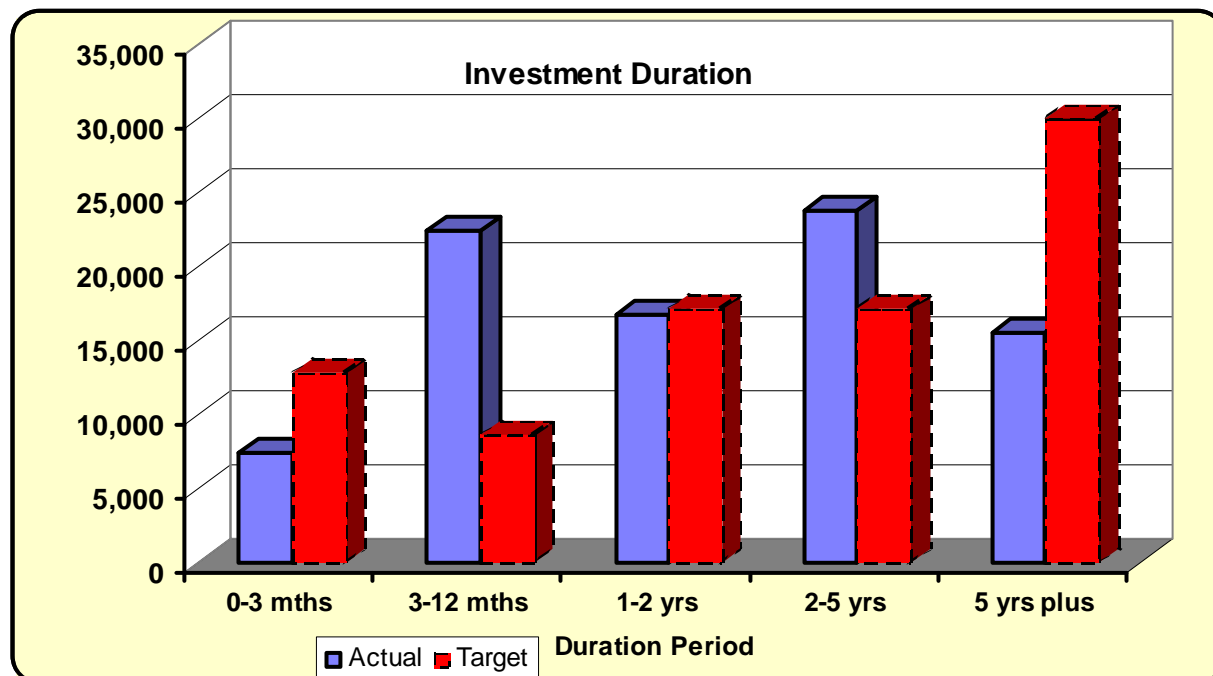


- 4) **Market Segment:** Strategic allocation of investments by market segment compared to current level.





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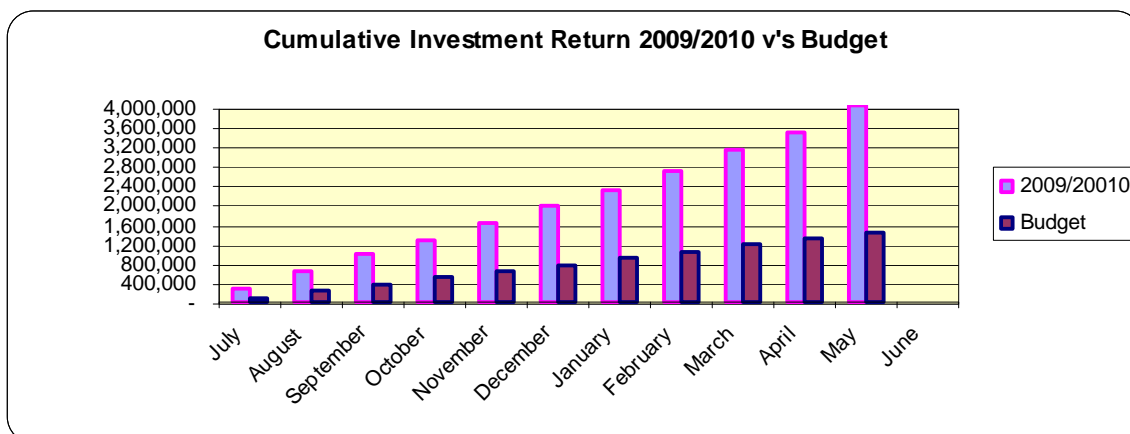
The following table shows Council's total return on investments for May and financial year to date, split into capital and interest components and compared to budget:

\$000's	Month	Financial YTD
Interest	565	5,914
Cap Gain	32	821
Cap Loss	-73	-2,668
Net Return	524	4,067
Budget	135	1,483
<b>Variance</b>	<b>389</b>	<b>2,584</b>

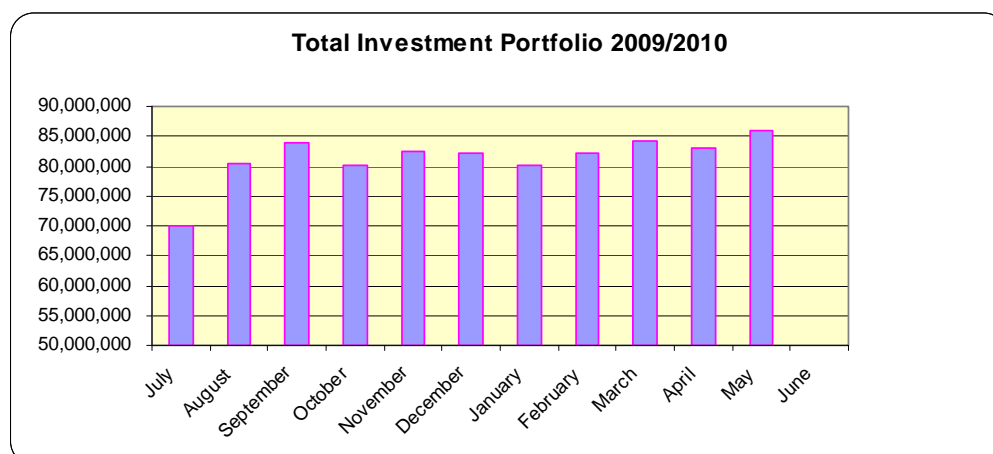
At the end of May 2010, the net return on investments totalled \$4,067,000 against a year to date budget of \$1,483,000 giving a positive variance of \$2,584,000. At the end of May, year to date returns on investments were 5.62% compared to 5.47% in April, an increase of 0.15%.



## Item 4

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9 June 2010**Total Investment Portfolio**

The following chart compares the year to date investment portfolio balances for 2009/2010.



During May 2010 Council's investment portfolio increased by \$2,871,576.

**Some key points in relation to investments and associated markets during May are:****International Market**

- The developing crisis in Europe saw share markets and interest rate expectations plunge during the month, despite an immense support package from the EU for the more distressed countries and for the currency. Investors' attention turned from "Will Greece be bailed out or default?" to "Now what?" While the EU can provide debt to Greece, getting the money back from them is likely to prove much more difficult down the track.
- A hung parliament in the UK saw an unlikely Coalition with their emergency mini-Budget reminding markets that the inevitable theme in the future is "destimulus" as stimulus programmes reach a natural end, spending is cut and taxes are raised.
- May was a poor month for assets perceived as risky. Investors were spooked by European sovereign concerns, US bank regulatory changes and investigations into their activities, and Korea chimed in to add to geo-political risk.



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- Equity markets were particularly hit hard but credit markets were not spared with prices of Government bonds rising on investor demand looking for safe havens. The fear of another recession, aggravated by the austerity measures needed to avert sovereign defaults, have seen the market push back expectations of a rising interest rate cycle.

#### Domestic Market

- Official interest rates rose again by 25bp to 4.50%, apparently reaching a plateau as the Reserve Bank of Australia said borrowing rates were at average levels over a decade and described this as “appropriate for the near term”.
- Australian markets were spooked by the vehemence of the industry’s response to the proposed new mining tax, while some “projects on hold” announcements would be expected as a scare tactic, there was evidence of banks withdrawing project financing. All of these shocks came at an unwelcome time when the economy is already under pressure from 6 rate increases and very patchy economic data.
- Retail sales grew at a recessionary 0.10% per month (in trend terms) in April, at the peak of the Global Financial Crisis they were growing at 0.80% per month and have been slowing ever since. The collapse of the Clive Peeters chain in May furthers concerns about the sector. Private sector house approvals collapsed -13.50% in April, from what had been a post-Global Financial Crisis high.
- Employment (a lagging indicator) was strong in April, with 33,700 new jobs taking the total employed over 11M for the first time. It was not enough to have an impact on the unemployment rate though, which may struggle to push lower.

## CONSULTATION

Not applicable.

## FINANCIAL CONSIDERATIONS

The budget for interest on investments for 2009/2010 is \$1,617,800. Of this amount approximately \$1,149,180 is restricted for the benefit of future expenditure relating to developers’ contributions, \$468,620 transferred to the internally restricted Infrastructure & Facility Reserve, and the remainder is available for operations.

At the end of May 2010, the net return on investments totalled \$4,067,000 against a year to date budget of \$1,483,000 giving a positive variance of \$2,584,000. However, it should be noted that the Oasis CDO, valued at \$2million is close to default.

## CONSULTATION WITH OTHER COUNCIL DEPARTMENTS

None undertaken or required.



## SUMMARY

As at 31 May 2010:

- Council's total investment portfolio is \$85,843,099. This compares to an opening balance of \$75,066,501 as at 1 July 2009, an increase of \$10,776,598.
- Council's year to date net return on investments (interest and capital) totals \$4,067,000. This compares to the year to date budget of \$1,483,000, giving a positive variance of \$2,584,000

## RECOMMENDATION

- A. That the summary of investments and performance for May 2010 be received and noted.
- B. That the Certificate of the Responsible Accounting Officer be noted and the report adopted.

Tony Ly  
**Financial Accounting Officer**

Tino Caltabiano  
**Manager Finance &  
Responsible Accounting  
Officer**

John Clark  
**Director Corporate**

**Attachments:**      **Investments arranged by Longreach Capital Markets and held by Ku-ring-gai Council - Valuation 31 May 2010 - 2010/102889**



Longreach Global Capital Pty Limited  
 ABN: 27 080 373 762  
 AFSL: 247 015  
 Phone: (02) 9241-1313  
 Email: info@longreachcp.com.au

Investments arranged by Longreach Capital Markets and held by  
 Ku-ring-gai Council  
 Valuation Date 31-May-10



Email to: tly@kmc.nsw.gov.au

Capital Protection Status Issue Description	Maturity Date	Issuer Calculation Agent	S+P Rating	Principal Outstanding:	NAV:	Issue Status	Allocation to active asset Class	Comment
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### Capital Protection at Maturity

Series 23 5 year Capital Protected Short Term Interest Rate Model (STIRM)	10-Feb-12	UBS AG, London Branch UBS AG, London Branch	A+/Stable	\$1,000,000	111.3000 Hold to Maturity	Exposed to Active asset class	100	Hold to Maturity NAV. Exit price available upon request
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Series 26 7 year Capital Protected Global Property Basket Linked Note	07-Jun-14	Deutsche Bank AG, London Branch Deutsche Bank AG, London Branch	A+/Stable	\$1,000,000	80.6700 Hold to Maturity	Fully Delevered	n/a	Hold to Maturity NAV. Exit price available upon request
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### Important Information

Unless otherwise indicated, the valuations in this report represent the mid point valuations provided by the Calculation Agent and do not take into account any unpaid fees due on the issue or any other costs that the issuer may charge by way of a bid/offer spread to buy back the stock. Redemption prices can be obtained from Longreach Global Capital Pty Limited.

All issues can be redeemed early. Issues identified as Capital Protected At Maturity will be subject to market prices at that time and redemption prices may be below par.

Issues that have been fully delevered will not pay any further interest. Other issues still may pay interest, subject to the issue's terms and conditions. Please refer to issue documentation for more information.

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## MAPPING AND ASSESSMENT OF KEY VEGETATION COMMUNITIES ACROSS THE KU-RING-GAI LOCAL GOVERNMENT AREA

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### EXECUTIVE SUMMARY

**PURPOSE OF REPORT:**

To provide Council with the final report on the mapping and assessment of key vegetation communities across Ku-ring-gai.

**BACKGROUND:**

In December 2007, Council resolved to undertake mapping of its Blue Gum High Forest and other endangered ecological communities. Funding for this project was made available from bus shelter revenue and from section 94 contributions.

**COMMENTS:**

The vegetation mapping project has been the most detailed ecological study undertaken by Council. It has been a two (2) year project that during its course of development has informed the preparation of the Town Centres Local Environment Plan, assisted in the assessment of numerous development proposals and raised the awareness of endangered ecological communities across staff, Council and the community. Now completed, it will also assist in the strategic planning and management of native vegetation across public and private land.

**RECOMMENDATION:**

That Council receive and adopt the report and continue to work with the NSW Department of Environment Climate Change and Water in regard to the ongoing refinement, updating and use of the information gathered as part of the mapping project.



## PURPOSE OF REPORT

To provide Council with the final report on the mapping and assessment of key vegetation communities across Ku-ring-gai.

## BACKGROUND

Council's vegetation mapping project was initiated in 2007 to inform the planning process involved with the preparation of the Town Centres Local Environment Plan and other major sites across the local government area. At its meeting of 11 December 2007 Council adopted a draft methodology for the mapping of Blue Gum High Forest (BGHF), a Critically Endangered Ecological Community (CEEC). Formal updates on this project have been provided to Councillors, various advisory committees and other groups since the initiation of the project.

Throughout the project the methodology has been continually refined by specialist technical staff with further consultation with government agencies, other councils, independent experts, community representatives and through experience in the field. In particular extensive consultation has been conducted with the Department of Environment, Climate Change and Water (DECCW). This process both assisted in aligning Council's mapping as closely as possible to the mapping for the Sydney Metropolitan Catchment Management Authority, while also informing DECCW's regional mapping.

While the methods of mapping have evolved the objectives of the project have remained as follows:

- To assist in identifying and assessing vegetation communities listed under the *NSW Threatened Species Conservation Act 1995*, or the *Environment Protection and Biodiversity Conservation Act 1999*, across the local government area (LGA).
- To map key vegetation communities at a scale of 1:2000, including field validation on public and private lands, with the exception of:
  - lands owned by the Department of Environment, Climate Change and Water (DECCW); and
  - lands within alluvial and estuarine areas.
- To provide a compressive mapping product that captures remnant trees within the urban landscape.
- To provide a framework for an initial identification of threatened ecological communities as a trigger for more detailed investigations required for specific development applications, planning proposals or preparation of an operational plan for a specific site.
- To develop a transparent, legally and technically sound methodology for assessing threatened vegetation communities.
- To foster a collaborative approach between relevant State and local Government agencies, independent experts and other stakeholders in assessing threatened vegetation communities.
- To create a mapping product that can accommodate past and future studies and enable a temporal analysis to assess the effectiveness of recovery strategies.
- To create a mapping product that would facilitate the classification of a threatened ecological community according to conservation significance and inform a land capability assessment as



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required for the preparation a comprehensive Local Environment Plan and Development Control Plan.

At its meeting of 29 July 2008 (GB.11), Council received an update on the vegetation mapping project as part of a report on the progress of the Local Environment Study for the Principal LEP. As result of this report Council extended the mapping project to include additional threatened ecological communities including Sydney Turpentine Ironbark Forest and Duffy's Forest as listed by relevant State and Federal legislation.

On 27 May 2009, a report was provided to the Ku-ring-gai Planning Panel (GB.1) that included the *draft Study of Land of High and Special Ecological Value*. This provided an overview of the methodology and identified areas of significant vegetation within the boundaries of the *draft Ku-ring-gai LEP (Town Centres) 2008*. In turn this information has supported many controls that now exist in this gazetted plan and the subordinate development control plan.

Work on this project has now been completed and this report seeks to provide a brief overview of the results. Forming attachments to this report is the detailed technical report, including methods and findings (**Attachment A**), vegetation community profiles (**Attachment B**) and maps (**Attachment C**) of this study.

## COMMENTS

A total of 2,287 hectares of the local government area were mapped excluding Department of Environment and Climate Change and Water (DECCW) estate, including 25,886 mapped remnant and exotic areas, as part of this project. This incorporated field validation of 29,823 cadastral parcels containing exotic, threatened ecological communities and other remnant vegetation communities.

From this mapping 692 hectares of threatened ecological communities were identified, that included single remnant trees as incorporated within the definition of some of the communities. Mapping included 271 hectares of Blue Gum High Forest of which approximately 7.5 per cent is in good condition (mapping did not including Dalrymple Hay Nature Reserve); 353 hectares of Sydney Turpentine Ironbark Forest of which 7.5 per cent was in good condition; 41 hectares of Duffys Forest of which 54 percent was in good condition; and 91 hectares of Coastal Shale Sandstone Forest was also mapped with 26 per cent in good condition.

A critical part of the mapping was to ensure that the data collected was consistent and would integrate within similar projects being undertaken by Department of Environment Climate Change and Water (DECCW) and Sydney Metropolitan Catchment Management Authority (SMCMA), though these projects were not undertaken at the scale and accuracy of Council's project. From this collaboration, the mapping was able to identify the presence of Coastal Shale Sandstone Forest that was previously not identified in this local government area as well as the inclusion of other mapping data from previous estuarine mapping projects.



## Application of mapping

The mapping has already provided a number of benefits to Council and the community. To date it has been used to:

- Develop the Greenweb map which informed zoning, and provided the basis for the biodiversity map and associated clause in the *Ku-ring-gai LEP (Town Centres) 2010*, and the Greenweb map in the *draft Ku-ring-gai Development Control Plan (Town Centres) 2010*;
- Support Council's position on Part 3A proposals being assessed by the Department of Planning for the Wahroonga Estate redevelopment and the Water Street proposal;
- Inform consideration of Blue Gum High Forest with a Species Impact Statement for 35 Billyard Avenue, Wahroonga (as required by the Director General DECCW);
- Inform vegetation mapping methods of other councils such as Baulkham Hills Shire and Lane Cove;
- Inform Reviews of Environmental Factors (REFs) and master plans for various council projects;
- Provide a framework for an initial identification of threatened ecological communities as a trigger for more detailed investigations required for specific development applications (DAs);
- Support Council's position in various NSW Land and Environment Court cases;
- Supplement the threatened flora species data base with an additional sighting s across 44 locations;
- Identify an ecological community that is consistent with a threatened ecological community listed under the *NSW Threatened Species Conservation Act 1995* that was not previously identified within Ku-ring-gai, Coastal Shale Sandstone Forest;
- Identify locations of important weed outbreaks and encroachments; and
- Inform residents regarding their on-site management of vegetation.

Further the mapping will also:

- Extend the Greenweb map across the local government area to inform zoning and provide the basis for biodiversity considerations in the Principal LEP and Comprehensive DCP, Biodiversity Offset Policy and Biodiversity Strategy;
- Identify locations for potential 'No Mow' areas on council land;
- Inform the selection of species for planting in environmentally sensitive areas, both on public and private land (e.g. DAs and Tree removal applications, council tree replenishment);
- Serve as an educational tool to assist in raising community and developer awareness and appreciation of native vegetation and threatened ecological communities in Ku-ring-gai;
- Improve a landholder's ability to manage their land, through knowledge regarding existence and appropriate management of threatened ecological communities.
- Inform recovery planning and Priority Action Statement for State and Federal threatened ecological communities.
- Provide baseline reference material, including photo library for selected remnants in key communities. This information enables cross referencing with historic and future photos, that may be used for numerous proposes including enforcement, supportive evidence of extant vegetation and regeneration (highlighting the importance and reliance of seed banks).



## CONSULTATION

Consultation for this project began in August 2007. This included representatives from the Department of Environment and Climate Change and Water (DECCW) (as it was then), the Botanic Gardens Trust and independent ecologists. In addition, briefings and workshops were also held with Council's Bushlands, Catchments and Natural Areas Reference group on 25 February 2008 and 16 June 2008. These project briefings determined the objectives of the project as well as the methods to undertake the mapping.

On 28 May 2008, the Ku-ring-gai Planning Panel was briefed on the project and the use of the data. This was subsequently used in the community information sessions as part of the exhibition of the Town Centre plans in August 2008.

During the exhibition of the draft *Ku-ring-gai LEP (Town Centres) 2008*, residents had the opportunity to review the biodiversity map (which was based on the vegetation mapping). This resulted in some minor refinements to the mapping within the Town Centre boundaries. Councillors were further briefed on the mapping at the workshop of 27 February 2009.

## FINANCIAL CONSIDERATIONS

There are no immediate financial considerations related to the receiving of this report. It will however be necessary to continue to update the mapping information if the data is to remain relevant and useful. It would be envisaged that this could be funded as a project in a future Environmental Levy that will be the subject of a future report to Council.

The dissemination of information from the project is being undertaken through Council's internal environmental awareness training that form part of the operational budget.

As is recommended in this report the data is proposed to be incorporated on Council's website as a resource for the community that would have minor cost and would be accommodated within approved budgets.

## CONSULTATION WITH OTHER COUNCIL DEPARTMENTS

The objectives, methodology and report have been developed in consultation with staff from a number of departments including Strategy and Environment, Operations, Development and Regulation and Corporate (Land Information and Information Technology).

## SUMMARY

The project initiated by Council in 2007 to map the endangered ecological communities across the local government area is now complete. There has been 2,287 hectares mapped, incorporating 25,886 mapped remnant and exotic areas relate to 29,823 cadastral parcels. Within this area, 692 hectares of threatened ecological communities were identified (dependant upon condition). Mapping included 271 hectares of Blue Gum High Forest, 353 hectares of Sydney Turpentine



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Ironbark Forest, 41 hectares of Duffys Forest and 91 hectares of Coastal Shale Sandstone Forest, a newly identified community for this local government area.

While the data and mapping has already been used to inform the development of the town centres local environment plan its benefits have and will be much broader including: better management of public and private land through improved documentation of the location, biodiversity and variability within the communities; enabling a more accurate assessment of conservation significance and priorities within the LGA; guide on ground management; and as an educational tool to assist in raising community awareness and appreciation of native vegetation and threatened ecological communities.

## RECOMMENDATION

- A. That Council receive and adopt the report and maps associated with the Mapping and Assessment of Key Vegetation Communities across the Ku-ring-gai Local Government Area.
- B. That the report and associated mapping be made available to the public through Council's website.
- C. That Council consider the funding for the update of this mapping as part of a future capital works project in 2015.

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**Manager Corporate Planning & Sustainability**

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**Attachments:**

- A. Mapping and Assessment of Key Vegetation Communities across the Ku-ring-gai Local Government Area, Volume 1: Technical Report - 2010/106838**
- B. Mapping and Assessment of Key Vegetation Communities Across the Ku-ring-gai Local Government Area, Volume 2: Vegetation Communities, July 2010 - 2010/108457**
- C. Vegetation communities maps - circulated separately**





# Mapping and Assessment of Key Vegetation Communities Across the Ku-ring-gai Local Government Area

## Volume 1 Technical Report

July 2010





Revision	Details	Date	Amended By

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Ku-ring-gai Council (KC) (2009). *Mapping and assessment of key vegetation communities across the Ku-ring-gai local government area, Volume 2 – Vegetation communities*. Ku-ring-gai Council Report.

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# 1 Background

The Ku-ring-gai Local Government Area (LGA) is located within the northern suburbs of Sydney on the Hornsby plateau, straddled by two Catchment Management Authorities (Figure 1). The area is bounded to the north by Ku-ring-gai National Park to the east by Garigal National Park and to the south west and west by Lane Cove National Park.

With an estimated population of 108,135 (ABS 2007/08), the LGA contains vegetation, of local, regional and national importance, within private and public ownership, including Council managed bushland (1,160 hectares), national parks (1,675 hectares), nature reserves (10.6 hectares), urban parks (60 hectares) and remnant vegetation within privately and publicly owned gardens, riparian / foreshore corridors and road reserves. These urban remnants play an important role in the continuation of biodiversity within the Sydney Metropolitan Area, providing core flora and fauna habitat as well as stepping stones and corridors within the urban environment.

Due to past disturbance and current land use remnant vegetation outside national parks and council bushland often consists of scattered trees over a disturbed understorey. Whilst this urban remnant vegetation sometimes supports a native understorey or midstorey, it is usually within a matrix dominated by planted or weed species, fragmented by impervious surfaces and buildings. Whilst lacking native vegetation structure, these areas act as a genetic reservoir assisting in pollination, providing food and shelter to more mobile fauna and provide examples of remnant vegetation across the landscape (including ridgelines, slopes, gullies, at varying altitudes aspects and slopes).

Since European settlement, Ku-ring-gai has been extensively cleared for logging, agricultural and residential purposes. As within the broader Sydney Basin, the greatest human modification occurs within areas of higher accessibility and fertility. Within Ku-ring-gai this includes ridge lines and upper slopes supported by shale and shale sandstone transition soils. This is reflected in the listing of Ku-ring-gai's shale communities as threatened under the *NSW Threatened Species Conservation (TSC) Act 1995* and the *Commonwealth Environment Protection and Biodiversity Conservation (EPBC) Act 1999*.

A considerable body of literature exists on vegetation assemblages (hereafter termed vegetation communities) within the Ku-ring-gai LGA. This includes mapping products undertaken by varying agencies over numerous years. There is wide variability within the methods and approaches of these mapping products (Appendix A), each with its own limitations. These limitations effect accuracy, rigour and efficiency and whilst the mapping has been very beneficial, it has also lead to some uncertainty at a local scale for Ku-ring-gai Council, residents and other stakeholders. This is especially relevant when considering composition and location of key vegetation communities (communities currently or considered likely to be listed under the *TSC Act 1995*, *NSW Fisheries Management (FM) Act 1994* and the *EPBC Act 1999*) and clarification between remnant and introduced vegetation.

This project sought to address these limitations by completing a fine scale (1:2000) field based rapid survey method for key vegetation communities, incorporating aerial photographic interpretation (API) and systematic field control plots (undertaken within this project and previous surveys). Broad mapping, including opportunistic field validation and adoption of existing vegetation mapping products was undertaken for areas containing non key vegetation communities, key vegetation communities within alluvial and estuarine areas, and lands owed by the Department of Environment Climate Change and Water (DECCW).

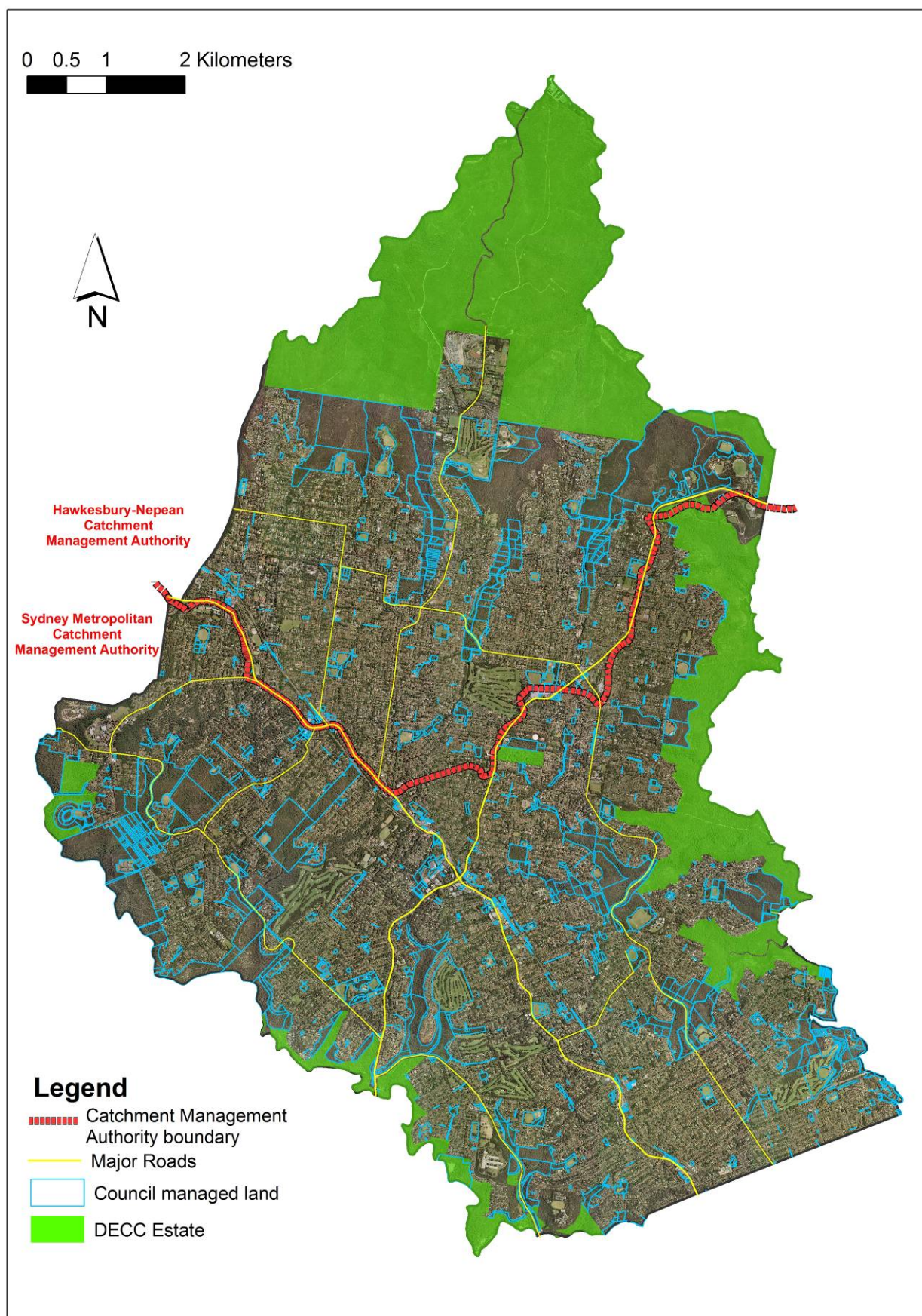
The methodology employed was developed in consultation with a number of government agencies (including the DECCW – Bioregional Data Group and the Botanic Gardens Trust), ecological experts, practitioners and the community. This product will provide a basis for on



ground and strategic planning decisions and will be made available to Council staff, government, commercial, scientific communities and the general public, in order to facilitate appropriate management of Ku-ring-gai's vegetation resources.



**Figure 1: Ku-ring-gai Local Government Area location**





## 2 Approach

The aims of the project were to:

- Identify and assess vegetation communities listed under the *NSW Threatened Species Conservation Act 1995*, or the *Environment Protection and Biodiversity Conservation Act 1999*, across the LGA
- Map key vegetation communities at a scale of 1:2000, including field validation on public and private lands, with the exception of:
  - lands owned by the Department of Environment, Climate Change and Water (DECCW); and
  - lands within alluvial and estuarine areas (Allen et al. 2007, West and Williams 2008, Kelleway et al 2007)
- Provide a comprehensive mapping product that captures remnant trees within the urban landscape
- Provide a framework for an initial identification of threatened ecological communities as a trigger for more detailed investigations required for specific development applications, planning proposals or preparation of an operational plan for a specific site
- Develop a transparent, legally and technically sound methodology for assessing threatened vegetation communities
- Foster a collaborative approach between relevant State Government agencies and Local government, independent experts and other stakeholders in assessing threatened vegetation communities
- Create a mapping product that can accommodate past and future studies and enable a temporal analysis to assess the effectiveness of recovery strategies
- Create a mapping product that will:
  - facilitate the classification of an threatened ecological community according to conservation significance
  - inform a land capability assessment as required for the preparation of Local Environment Plans and Development Control Plans.

## 3 Ku-ring-gai: A landscape perspective

### 3.1 Topography, soils

Ku-ring-gai sits within the Hornsby Plateau and consists of a primary ridgeline (plateau) running north - west to south - east, along the Pacific Highway and the North Shore Rail Line. This ridgeline rises from approximately 100 meters (m) above sea level at Roseville in the south, to 210m above sea level at Wahroonga in the north.

Branching from this primary ridgeline are secondary ridgelines, extending out at similar altitudes to inclines within the adjacent primary ridgeline. These secondary ridgelines extend into Turramurra, St Ives, Pymble, Killara and Roseville.

Shale soils from the Wianamatta Group occur within the primary ridgeline and the upper slopes and crests of secondary ridgelines. These areas although dominated by the Glenorie soil landscape, also contain the West Pennant Hills soil landscape (Table 1 and Figure 2).

Further down slope the shale-covered ridges are extensively dissected by creeks cutting into the underlying sandstone. This dissection forms transitional soils with both clay and sandy components (derived from shale and sandstone respectively). These transitional soils occur widely within the Ku-ring-gai LGA and are derived predominantly from Mittagong Formation geology, comprising a thin unit between the Ashfield Shales (Wianamatta Group) and Hawkesbury Sandstone. The Mittagong Formation is embedded with the top part of the Hawkesbury Sandstone and is scientifically associated with the sandstone rather than the Ashfield Shale (Herbert 1980). Soils that have developed from Mittagong Formation geology are



predominantly of the Lucas Heights soil landscape and support distinctive transitional vegetation communities. Such communities also commonly occur on the Gymea soil landscape which although associated with Hawkesbury Sandstone is typically of gentle relief with minimal rock outcrop and shale lenses.

Transitional areas intergrade to Hawkesbury Sandstone dominated landscapes, beyond the extent of the Ashfield Shale and Mittagong Formations, as weathering cuts down to Hawkesbury Sandstone geology within creek lines, gullies. These areas commonly contain sandstone benches and rock outcrops, within undulating to rolling hills (Gymea soil landscape) or rugged rolling to very steep slopes (Hawkesbury soil landscape), which extend into the Lane Cove River and estuarine waters of Cowan Creek and Middle Harbour at sea level.

A single diatreme (volcanic intrusion of basaltic rock) exists at Browns Field (adjoining Campbell Drive in Wahroonga).

Table 1 outlines the relationship between geology and soil landscapes within Ku-ring-gai. Additional information is available on this subject in KMC 1998a, KMC 1998b, DECCW 2009a.

**Table 1: Relationship between geology and soil landscape (KMC 1998b)**

Geologic Period	Geological Group	Soil Material	Soil Landscape	
Quaternary (present day - 2 million years ago)		artificial fill	Xx	Disturbed Terrain
		estuarine alluvium	Lc	Lane Cove
		river sediments	mc	Mangrove Creek
Triassic (2 - 64 million years ago)	Wianamatta Group (Ashfield Shale)	shales, claystones and sandstone	gn	Glenorie
			wp	West Pennant Hills
	Mittagong Formation	shale, sandstone	lh	Lucas Heights
	Hawkesbury Sandstone	medium-coarse sandstone, minor shale	la	Lambert
			gy	Gymea
			ha	Hawkesbury

## 3.2 Climate

Ku-ring-gai has a moderate climate with an average maximum temperature in the hottest month of 25.8° C and an average minimum in the coldest month of 7.7° C. The average rainfall is 1,118 millimetres per annum with the highest rainfall 1,194 millimetres at Wahroonga on the southern rim of the Hornsby Plateau (Ku-ring-gai Council).

## 3.3 Vegetation community influences

Vegetation communities are influenced by a number of complex and interrelated environmental and disturbance factors.

Regional and local environmental influences include:

- Soil type, effecting available nutrients and water. In general, shales produce deep fertile clayey loams, which retain nutrients, water and structure, whilst sandstone, produces shallow, poor soils which are easily eroded and do not retain water or nutrients
- Available moisture, influenced by:
  - local variations of rainfall, surface and subsurface water flows and soaks



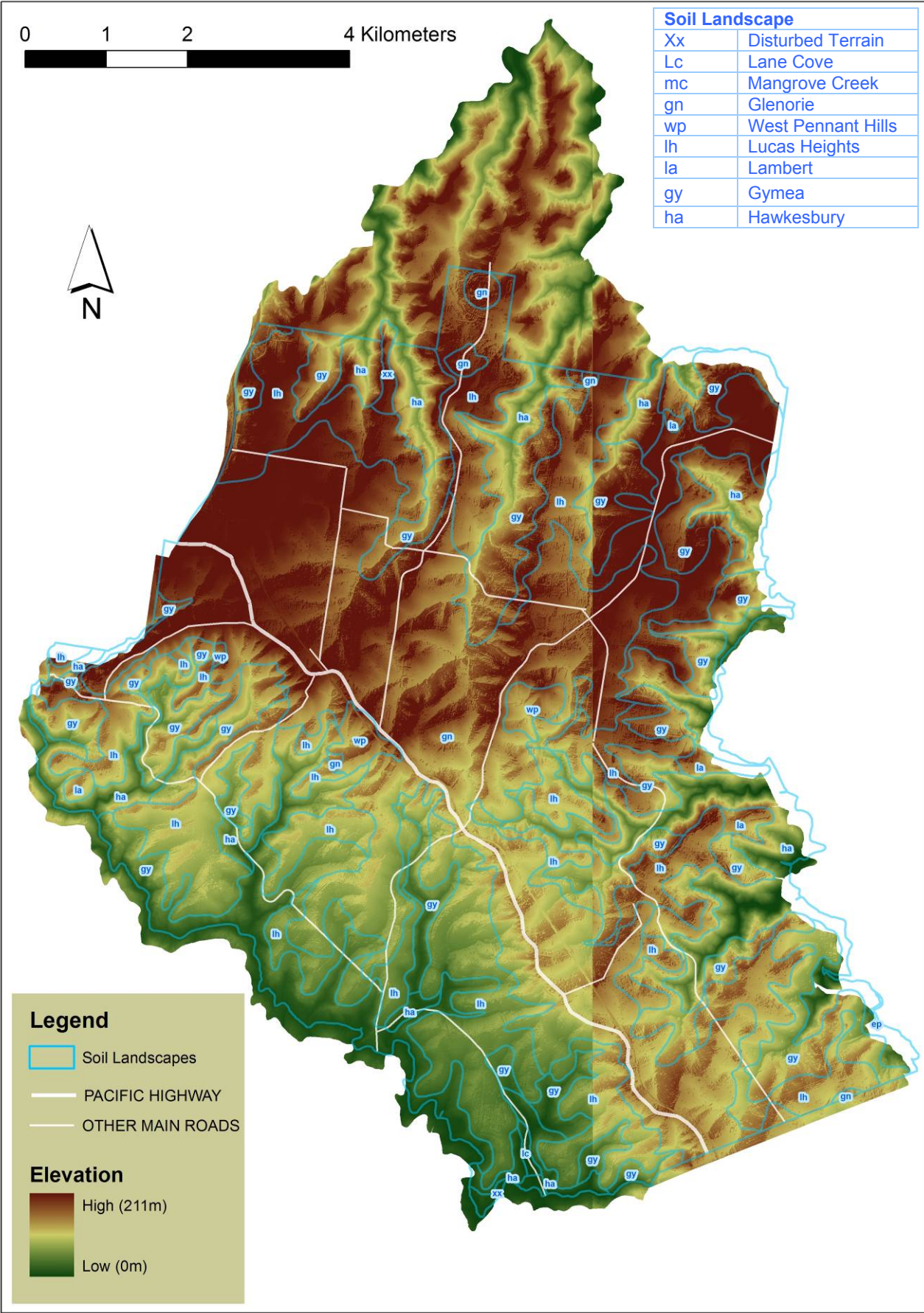
- shelter (such as buildings, trees, other communities of plants) effecting moisture, temperature and light
- varying water retention capacities of soils
- landscape position, with concave slopes providing increased protection from drying elements (sun, wind), than more exposed convex ridgelines / slopes. This is particularly relevant to upper slopes and crest edges
- aspect and orientation of the site to sun and wind. Generally, slopes with west, northwest or north aspects are exposed to longer periods of sun during the day and are warmer than flat areas or those facing other directions.

Disturbance influences include:

- wildfire and hazard reduction burns
- clearing
- weed invasion
- alterations to hydrological and nutrient patters (stormwater run off etc).
- human land use patterns (including infrastructure and residential development) and
- wildlife interactions, including seed dispersals.



Figure 2: Elevation and Soil Landscapes





## 4 Methodology

Mapping consisted of seven stages, including:

1. Data audit and preliminary classification of vegetation communities
2. Mapping extant vegetation cover
3. Refining mapped extant vegetation cover
4. Rapid field validation survey
5. Floristic survey
6. Analysis of vegetation mapping and floristic survey
7. Integration of SMCMA mapping (DECCW 2009a) within sandstone, estuarine and alluvial environments.

### 4.1 Data audit and preliminary vegetation classification

A data audit of existing soil, geology and vegetation was undertaken to inform the mapping process. Vegetation communities were identified and classified based upon legal status and existing vegetation mapping products (Table 2 and Table 3).

Further information regarding the vegetation surveys within the LGA, previously undertaken by other agencies or individuals, is also contained within Appendix A.

**Table 2: Field Validated Vegetation Communities**

Vegetation Community	Legal status <sup>▲</sup>		Key & non-key vegetation
	TSC Act	EPBC Act	
Blue Gum High Forest (BGHF)	CEEC	CEEC	Key vegetation community
Sydney Turpentine-Ironbark Forest (STIF)	EEC	CEEC	
Duffys Forest (DF)	EEC	-	
Coastal Shale Sandstone Forest (CSSF)	Legal status to be determined through consultation with DECCW, upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)		Key vegetation community identified and added during the course of this project in response to increased knowledge gained.  Recognised through field work and consultation with DECCW (2009a).
Sydney Sandstone Gully Forest (SSGF)	-	-	These non-key (i.e. not targeted) communities were defined using broad community descriptions, reflecting Benson and Howell (1994) and KMC (2001a).  These communities (including variations) were mapped on an opportunistic basis. Variations included:
Sydney Sandstone Ridgetop Woodland (SSRW)	-	-	<ul style="list-style-type: none"> <li>• forest, heath or shrub dominated vegetation</li> <li>• higher clay influence (mapped in order to assist future identification of potential threatened flora species locations).</li> </ul>
Gully Rainforest (GF)	-	-	This non-key (i.e. not targeted) community was defined using broad community descriptions, reflecting KMC (2001a).

<sup>▲</sup> TSC Act 1995 and EPBC Act 1999: CEEC - Critically Endangered Ecological Community  
EEC - Endangered Ecological Community



**Table 3: Vegetation communities adopted from vegetation surveys listed in Appendix A.**

Vegetation Community	Legal status <sup>▲</sup>		Key & non-key vegetation
	TSC Act FM Act	EPBC Act	
Estuarine Fringe Forest - Swamp Oak Floodplain Forest	EEC	-	Key communities.  No field assessment was undertaken for these communities within this project.
Estuarine Saltmarsh	EEC	-	These communities are located entirely within fine scale mapping undertaken by Allen <i>et al</i> (2007) and incorporated within DECCW (2009a).
Seagrass	EEC	-	Non-key communities.
Estuarine Mangrove	-	-	No field assessment was undertaken for these communities within this project.  These communities are located entirely within fine scale mapping undertaken by Allen <i>et al</i> (2007) and West and Williams (2008) and incorporated within DECCW (2009a).
Coastal Flats Swamp Mahogany Forest	EEC  Swamp Sclerophyll Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions	-	Key community  These communities were beyond the sandstone boundaries of council's field validation process and are incorporated within DECCW (2009a) [Equivalent to Coastal Flats Swamp Mahogany Forest (S_FoW02)]  No field assessment was undertaken for these communities within this project.

▲ FM Act 1994: P - Protected

TSC Act 1995 and EPBC Act 1999: CEEC - Critically Endangered Ecological Community

EEC - Endangered Ecological Community

One additional vegetation community (Coastal Shale Sandstone Forest) was identified as a key community during the course of field work and is considered to be equivalent to the listed endangered Shale Sandstone Transition Forest community and likely to warrant clarification in the determination. The current determination for Shale Sandstone Transition Forest does not list this community as occurring within the Ku-ring-gai LGA.

Field validation was undertaken for key vegetation communities with the exception of lands within alluvial and estuarine areas, and lands owed by the Department of Environment Climate Change and Water (DECCW).

As the focus of the project was the mapping and assessment of key communities, detailed attributes were not collected for all non-key communities. When the opportunity arose during the field mapping, however, attributes for non-key communities were included. These non key communities included Sandstone, estuarine and alluvial communities and other vegetation.

Existing frameworks for community classification were used to prepare a table summarizing relationships between vegetation communities known to occur within the LGA and environmental parameters including geology, soil landscape and topography. Floristic attributes identified in the table included dominant canopy species, vegetation structure and characteristic species. The table was used as the basis for field identification of vegetation communities to provide consistency in identification between surveyors and to stimulate an appreciation of vegetation changes along environmental gradients.



Ongoing revision of the table occurred as field surveying progressed and following analysis of Sydney Metropolitan Catchment Management Authority (CMA) Area vegetation communities within sandstone, estuarine and alluvial environments (see Section 4.7). The final version of this table is available in Section 3, *Volume 2: Mapping and assessment of key vegetation communities across the Ku-ring-gai Local Government Area: Vegetation communities (KC 2009)*.

## 4.2 Mapping extant vegetation cover

An LGA wide digital coverage of woody vegetation cover was derived using Definiens Developer 7, by DECCW. This software identifies homogenous patterns in the texture, colour and shape of image objects using multiple user-defined parameters and scales. Use of this application removed the requirement for manual aerial photographic interpretation to delineate woody vegetation cover within bushland and highly fragmented urban areas.

This process utilized 10cm resolution digital RGB orthographic aerial photography flown in 2005 by Sinclair Knight Mertz. Imagery was mosaiced into areas of greater uniformity in colour balance. Tiles were resampled to 30cm resolution and divided into manageable portions for processing by the image analysis software (Definiens Developer 7).

Using the image analysis software, a multiresolution segmentation was performed using weights of 0.5 for shape and colour. Scale parameters of 25, 50 and 100 were used to segment the image into areas of similar spatial and spectral properties. Separation using the above scale parameters enabled the identification of various sizes objects. In order to overcome the unreliability of transfer between different image scenes using fully automated classification procedures, a sequence of automated and manual processes was employed in the classification of objects delineated for each image.

An initial mask of large area vegetation cover was developed by creating an initial classification which integrated any spatially accurate existing vegetation mapping (+/-20 metres). This was integrated at the 100 scale classification hierarchy and then transferred to the 50 scale objects. Objects representing cleared zones, hard surfaces and infrastructures such as buildings, roads and bare earth, were identified through applying an automated rule set combining a suite of spectral thresholds to image features such as brightness and colour indices. This rule set included:

- Low brightness thresholds to exclude shadows as far as practicable
- Thresholds to identify green coloured features that supported a low internal variation in spectral signature. These areas commonly included areas of lawns, golf courses.

A preliminary classification of non vegetation features (areas of no further interest) and vegetation cover features was produced. Vegetation cover features were further filtered using an array of object shape indices to remove hard surface objects misclassified as vegetation. Typically this included linear objects such as fencelines, shadows between houses, median strips or square objects such as darker rooftops or uncleaned backyard pools.

## 4.3 Refining mapped extant woody vegetation cover

The digital coverage of woody vegetation (described above), was refined to:

- Remove hardstand (eg. concrete) or shadow areas captured during the image recognition process and to reduce mapped woody vegetation to target vegetation structures. Maximize field validation efficiency, through early identification and exclusion of exotic vegetation. Following a general review of key vegetation community structures for BGHF, STIF and DF (NSW SC 1998, NSW SC 1998a, NSW SC 2007) a height of 10m was used to flag potential remnant key vegetation communities. This height was considered to reflect the structural formations of these communities, following consultation with State Government agencies, ecological experts, practitioners and the community.



Field trials were undertaken to confirm and validate this approach.

Light Detection and Ranging data (LiDAR) (aerial laser survey, flown in March 2007) was used to refine the woody vegetation coverage. LiDAR data was converted to a 1m grid, classified into height groups of <10m, ≥ 10m to <20m and ≥ 20m. Polygons within the digital woody vegetation coverage were attributed with the highest vegetation classification. Mapping was simplified by dissolving adjacent polygons on classification height. Polygons with heights <10m were removed from the mapping product, with the exclusion of vegetation within consolidated vegetation (e.g. low heath areas within bushland).

Remaining polygons were then cleaned and edited manually using 10cm resolution aerial photography flown January 2005, at a minimum viewing scale of 1:2000.

#### **4.4 Rapid field validation surveys**

Field validation was undertaken in four stages including;

1. preliminary identification of field validation area,
2. field trial,
3. rapid field validation and
4. quality control.

##### **PRELIMINARY IDENTIFICATION OF FIELD VALIDATION AREA**

Field validation was undertaken for areas of refined mapped extant woody vegetation cover containing or considered likely to contain key veg communities. This area was determined using broad mapping extents for Blue Gum High Forest (BGHF), Sydney Turpentine-Ironbark Forest (STIF) and Duffys Forest (DF) (KMC 2001a, NSW NPWS 2000).

A mapping index grid (1:2000 scale) was laid over the LGA, with each grid tile containing a unique tile number. Tiles containing broad mapping extents (as described above) were selected for field validation, during which time the field survey extent was varied (reduced or extended), based upon the presence of key communities or their likely occurrence, as assessed by landscape factors (eg. topography, soils) and occurrence of non key communities.

##### **FIELD TRIAL AND RAPID FIELD VALIDATION**

A field trial was conducted to assist in refinement of survey methodology, printed maps and other supportive material. Following this, rapid field validation was undertaken within the field validation area (outlined above). The survey began within deeper shale areas (BGHF and STIF) and then extended to cover transitional / sandstone areas (DF).

Field validation was undertaken using an intuitive site assessment, supported by:

- A vegetation community field identification sheet (*Volume 2, Section 3*)
- Reference maps, showing the mapping index grid, soil landscape mapping, bushfire prone vegetation, selected vegetation mapping (Tozer 2003, Allen *et al* 2007, Smith and Smith 2000)
- Vegetation maps (1:2000 scale), showing refined extant woody vegetation cover, the preliminary field validation area, aerial photography (2005), 10m contours, cadastre, council managed lands and DECCW estate.

The site assessment included on ground changes to refined mapped woody vegetation cover, to reflect observed vegetation communities, conditions (See Appendix B for condition assessment) and extents. Additional areas outside refined woody vegetation coverage were mapped on an opportunistic basis. Mapped vegetation was grouped into survey groups (Table 4) with a rapid survey proforma (Appendix B) undertaken for each group.



**Table 4: Creation of survey groups**

Key vegetation communities		Non Key vegetation communities	
Survey groups are required to have:		Survey groups are required to have:	
<b>SAME:</b>	<p>Survey groups should consist of:</p> <ul style="list-style-type: none"> <li>• Similar topographical areas (eg. similar position on slope) and transition status with adjacent vegetation communities (ie. ecotone areas should not be merged with non ecotone areas).</li> <li>• A variety of different aspects (unless significantly different).</li> <li>• Other vegetation should try to group native local and native non-local or exotic plantings separately where possible.</li> </ul>	<b>SIMILAR:</b>	<ul style="list-style-type: none"> <li>• Condition and community (including variations in communities e.g. clay influence)</li> </ul>
<b>SIMILAR:</b>	<p>Survey groups should seek to separate areas:</p> <ul style="list-style-type: none"> <li>• containing flora that indicates a trend (including within the same community).</li> </ul> <p>E.g. area dominated by <i>Eucalyptus saligna</i> and <i>Eucalyptus pilularis</i> and one remnant stand containing <i>Angophora floribunda</i>.</p> <ul style="list-style-type: none"> <li>• Containing “unmodified, predominantly natural” “soils within areas containing imported material: Heavily modified /improved / cultivated”.</li> </ul>	<p><b>EXCEPTION</b> where key communities are considered not to occur:</p> <ul style="list-style-type: none"> <li>• Mapping of non key vegetation communities and Other Vegetation communities may be grouped.</li> <li>• Record condition where possible and not to time consuming, otherwise leave blank.</li> </ul>	<p>E.g.</p> <p><i>Community:</i> Sandstone Gully Forest / Other Vegetation</p> <p><i>Condition:</i> TXU / G</p> <p>OR</p> <p><i>Community:</i> Sandstone Gully Forest / Sandstone Ridge Top Woodland / Other Vegetation</p> <p><i>Condition:</i> not recorded</p>

Each rapid survey proforma recorded the survey date, assessors name, vegetation community, condition, native canopy midstorey and groundcover species (8-14 dominant or indicative species recorded). Opportunistic sightings of threatened flora were also recorded.

Voucher specimens of significant or unknown specimens were collected for later identification or lodged at the National Herbarium of New South Wales for identification.

For key vegetation communities a representative lot was selected for each survey group, with additional information being collected:

- On the identified vegetation community, including:
  - a digital photograph
  - tree diversity
  - species composition
  - tree maturity
  - potential hollows
  - vegetation layers and dominance
  - understorey connectivity
  - recruitment
  - soil condition / disturbance



- On the representative lot, including:
  - address
  - soil disturbance (over lot)
  - surface development (over lot)

**Note:** Remnants totally contained in road reserve were excluded from lot assessments, designated by comment “*in road reserve*”.

With the exception of areas containing adequate local native understorey, areas of known plantings were mapped as Other Vegetation (planting, gardens), as evidenced through:

- Growing stakes and identification cards
- Local natives within the wrong location (eg. a sandstone specie with an area of deep shale)
- Plant locations within straight lines
- Knowledge of local site history.

Historic influences from disturbance on floristic composition were considered at a site level during field work. For example logging may have resulted in removal of all Sydney Blue Gum (*Eucalyptus saligna*) from an area, or regeneration post logging may favour Turpentine (*Syncarpia Glomulifera*) increasing local abundance. A detailed analysis of historic influence was not undertaken.

Due to their potential invasive nature, individual Sweet Pittosporum (*Pittosporum undulatum*) and Illawarra flame tree (*Brachychiton acerifolius*) were mapped as other vegetation, unless other structural components of native vegetation were present or they were considered remnants.

## QUALITY CONTROL

Following inclusion of field validation data into the digital mapping product, quality control was undertaken. Including desktop review, to ensure a consistent approach between surveyors and to allow for a broader landscape review of vegetation communities identified (addressing survey limitation of disturbed urban vegetation, see Section 7). Field checks targeted both random locations and selected area identified during desktop review.



## 4.5 Floristic surveys

Limited plot sampling was undertaken at representative sites within all mapping units on shale or shale transition soils to substantiate community identification. The methodology was consistent with plot sampling undertaken by DECCW (2009a) (with the exception of non randomly selected plots locations) within 20m x 20m plots (0.04 hectares) using 1-6 or 7 braun-blanquet abundance scores (Poore 1955, as shown in Table 5) for each vascular plant species found within the sampled site.

**Table 5: Cover abundance score method using modified Braun-Blanquet scale**

1-6 Braun-Blanquet scale		1-7 Braun-Blanquet scale	
Cover Score	Percent Cover	Cover Score	Percent Cover
1	Rare, few individuals (three or less) present cover <5%	1	Rare, few individuals (three or less) present cover <5%
2	Common (consistent throughout plot) and <5%	2	Common (consistent throughout plot) and <5%
3	Cover >5% and <25%	3	Cover $\geq 5\%$ and $\leq 25\%$
4	Cover >25% and <50%	4	Cover >25% and $\leq 50\%$
5	Cover >50% and <75%	5	Cover >50% and $\leq 75\%$
6	Cover >75%	6	Cover >75%
		7	Cover >75%

Plot location was recorded using a Global Positioning System (GPS). Digital photographs were taken of all sites, structural information and dominant species of primary vegetation strata were also recorded, along with biophysical information including aspect, horizontal azimuths, slope and soil type. Unknown species were identified to family or genus, with voucher specimens collected for identification (by Council or sent for confirmation by the Royal Botanical Gardens).

## 4.6 Analysis

An ongoing review of the original community classification (outlined within Section 4.1) occurred during the field survey period, following recognition of vegetation, topography and soil patterns within the landscape. These changes were reflected through revision of the community table (*Section 3, Volume 2*).

Vegetation units adopted (Table 7) were verified by more detailed collection of floristic data including plot sampling (Section 4.5) and further survey based on predictive occurrence.

Plot data was entered into the DECCW Vegetation Survey Database (YETI) and provided to DECCW for inclusion in the broader scale Sydney Metropolitan CMA vegetation mapping project (DECCW 2009a). Subsequent hierarchical cluster analysis of this plot data using the PATN program (Belbin 1994), was undertaken by DECCW to assist in community classification (refer to DECCW 2009a for further methodology). This process provided confirmation of community identification and consistency with the latest regional mapping for the Sydney Metropolitan Catchment Management Area. This was particularly important in the recognition of Coastal Shale Sandstone Forest (a new mapping community)

In addition to hierarchical cluster analysis, simple floristic analysis was undertaken by Council to assist in classification of communities and delimitation of community boundaries within key vegetation communities within shale, transition and sandstone areas. This was particularly useful to distinguish forms within communities and between communities occurring in transitional shale to sandstone zones. The percent of indicative native shale species present in sampled 20m x 20m plots was calculated to determine the extent of shale influence on the vegetation, this being one of the primary determinants of community types within the LGA. The process is outlined below.



A listing of indicative shale species native to the LGA was prepared and included characteristic shale species known to occur in local shale communities and species preferring more sandy soils but typically associated with clay influence within sandstone areas (Appendix C). Information relating to shale preference was largely sourced from Ecology of Sydney Plants (*Cunninghamia* – various volumes) and field knowledge. The percent of total native indicative shale species within 20 x 20m plots was calculated (plot data compiled and provided by DECCW (DECCW 2009a) and by this project were used). The results of this analysis are summarized in Appendix D. The degree of connectivity, as measured by the width of connecting lands (e.g. width of ridge-lines) and distance from the shale boundary (as determined by soil landscape and vegetation), was also considered.

#### **4.7 Integration of Sydney Metropolitan CMA mapping (DECCW 2009a) within sandstone, estuarine and alluvial environments**

Within Sydney Metropolitan Catchment Management Authority (SMCMA) Area, Sydney Metropolitan CMA vegetation mapping (DECCW 2009a) was adopted for vegetation communities as identified within Table 2 and Table 3. **Error! Reference source not found.**, including sandstone, alluvial and estuarine environments (See Table 8 for results).

### **5 Results**

This mapping has field validated 1608 ha of remnant vegetation intersecting with approximately 29870 cadastral parcels (excluding roads and DECCW estate). It is estimated that approximately 20% of the mapping has been field validated through the opportunistic feedback resulting from map use and on-ground site work (eg. Development applications, Review of Environmental Effects, other on ground management works). Minimum mapping size 146m<sup>2</sup> as derived from smallest mapped tree.

Further information on vegetation community conservation status, as well as community and condition area (ha) mapped is provided with *Volume 2*.

#### **5.1 Distribution of floristic surveys**

Distribution of floristic survey effort within Ku-ring-gai is shown in Figure 3. Detailed floristic analysis was undertaken by DECCW (DECCW 2009a) on 20 plots undertaken by Ku-ring-gai and 98 plots undertaken by DECCW.

This figure also shows 54 plots excluded from DECCW analysis. Within this project simplistic floristic analysis was undertaken on these plots by Ku-ring-gai as outlined within Table 6 and Appendix D.

Analysis by Ku-ring-gai is outlined within Table 6 and may be seen in Figure 3 and Appendix D. Selection of plot sampling was influenced by vegetation distribution and condition, with all plots of BGHF (*dry form*) containing some degree of disturbance, and with one STIF (*typical form*) plot (no.3 Gillott Way) including plantings.



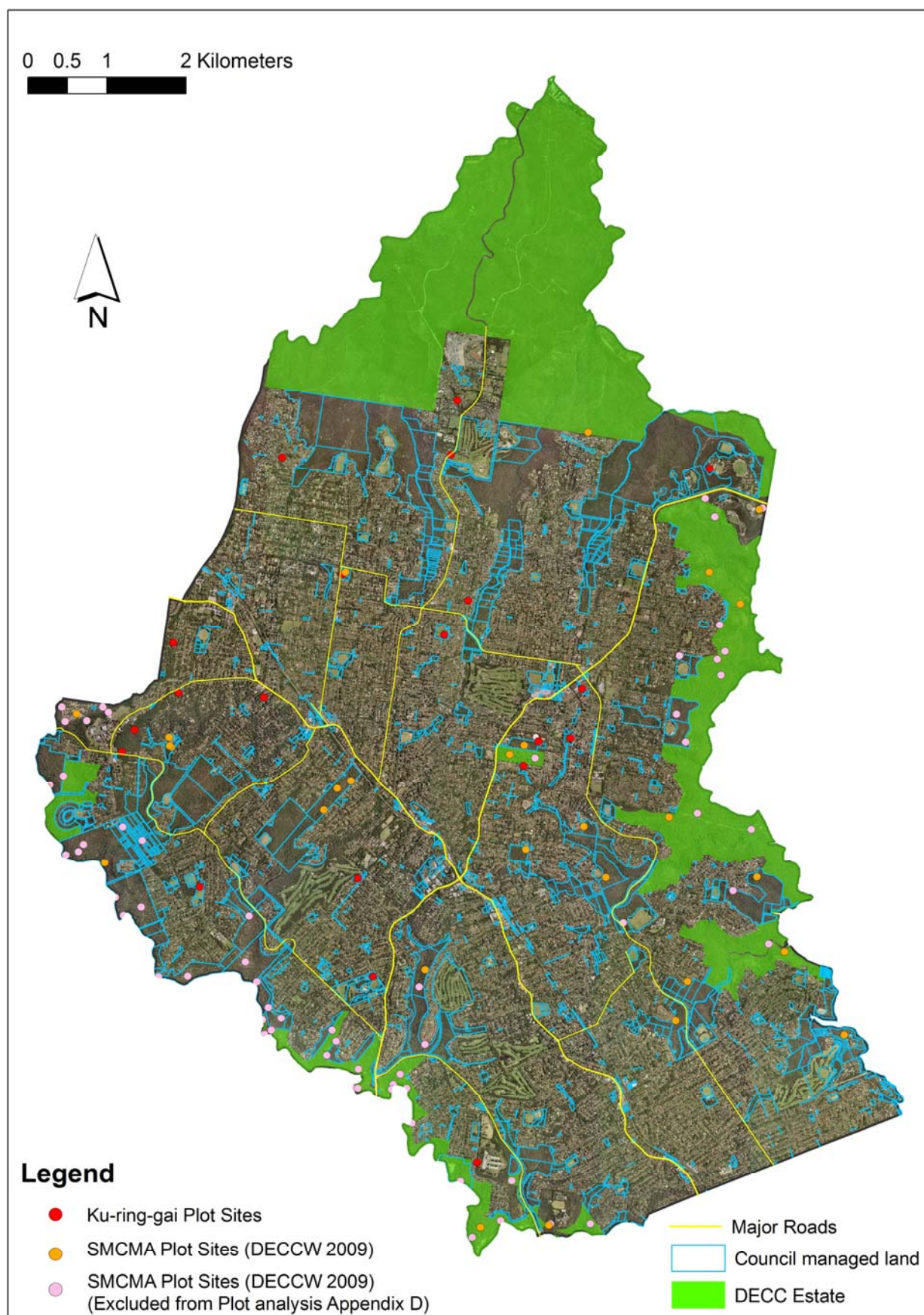
**Table 6: Total no of plots per vegetation community analysed by Ku-ring-gai (KC)**

Vegetation Community	Origin of data		Total
	KC	DECCW (2009a)*	
Blue Gum High Forest ( <i>complex</i> )	1	2	3
BGHF ( <i>dry form</i> )	3		3
BGHF ( <i>sandstone gully form</i> )	1	1	2
BGHF ( <i>typical form</i> )	1	1	2
STIF ( <i>dry transition form</i> )	1		1
STIF ( <i>typical form</i> )	3	1	4
STIF ( <i>wet transition form</i> )	3	1	4
CSSF ( <i>low forest/woodland form</i> )	3	1	4
CSSF ( <i>taller forest form</i> )	3	4	7
Duffys Forest	1	3	4
Gully Rainforest <i>Note: Aligns to Coastal Warm Temperate-Dry Rainforest (DECCW 2009a).</i>		3	3
SSGF <i>Note: aligns to Coastal Sandstone Sheltered Peppermint-Apple Forest (DECCW 2009)</i>		4	4
SSGF <i>Note: Aligns to Coastal Enriched Sandstone Sheltered Forest (DECCW 2009)</i>		3	3
SSGF <i>Note: Clay influence. aligns to Coastal Enriched Sandstone Moist Forest (DECCW 2009)</i>		4	4
SSRW <i>Note: Aligns to Hornsby Sandstone Heath-Woodland.</i>		2	2
SSRW <i>Note: Aligns to Hornsby Enriched Sandstone Exposed Woodland.</i>		4	4
<b>Total</b>	<b>20</b>	<b>34</b>	<b>54</b>

\*Plot information from numerous surveys compiled within the DECCW Vegetation Survey Database (YETI) database (DECCW 2009a).



**Figure 3: Distribution of KC floristic survey and DECCW plots analysed**





## 5.2 Vegetation classification

Mapped vegetation communities have been broadly defined as **vegetation community complexes**. These complexes have been further broken down into **vegetation community forms**, in order to reflect the detailed level of survey undertaken and field variations observed.

For example:

Three forms of Blue Gum High Forest are identified within the LGA, together comprising Blue Gum High Forest (*complex*):

- a *typical form* occurring on sheltered slopes
- a *dry form* in more exposed sites associated with ridges
- a *sandstone gully form* where some sandstone influence is evident.

In order to reflect floristic and environmental variations observed, vegetation forms have been grouped into three associations:

- **Shale Forest Association**
- **Transition Association**  
(Low - medium sandstone influence / Medium - high sandstone influence)
- **Sandstone Associations**
- **Forested and Saline Wetland Association.**

Information including association, complex, form and legal status for vegetation communities identified through field validation is summarised within Table 7, Sydney Metropolitan CMA (DECCW 2009a) vegetation communities have been applied for sandstone, estuarine and alluvial communities. The relationships between vegetation classifications identified within this study, the South Coast-Illawarra Vegetation Inventory (SCIVI). and the Sydney Metropolitan mapping, is provided within Table 8.

Condition is a key factor determining the inclusion of remnant vegetation within threatened ecological communities. In order to account for future variations in scientific committee determinations and their interpretation, the assessment of whether a vegetation community due to its condition is equivalent to a listed threatened ecological community is not addressed within this report.

This project has been designed to capture both fully functional and urban remnant vegetation. The condition classes created (see Appendix B) provide a means of differentiating between areas containing native diversity and structure and more degraded areas (for example single remnant trees over exotic understorey).

A full identification guide to vegetation communities (*complex and form*); including profiles and an identification key is contained in *Volume 2* of this report.



**Table 7: Mapped Vegetation Associations as Identified Through Field Validation**

Association		Complex	Mapping code	Form	Mapping code	Legal status <sup>^</sup>			
						TSC Act	EPBC Act		
Shale Forest Association		Blue Gum High Forest (complex)	BGHFC	BGHF (typical form)	BGHFT	CEEC	CEEC		
				BGHF (dry form)	BGHFD	CEEC	CEEC		
				BGHF (sandstone gully form)	BGHFS	CEEC	CEEC		
		Sydney Turpentine-Ironbark Forest (complex)	STIFC	STIF (typical form)	STIFT	EEC	CEEC		
Transition Association	Low - medium sandstone influence			Coastal Shale Sandstone Forest (complex)	CSSFC	STIF (dry transition form)	STIFD	EEC	CEEC
						STIF (wet transition form)	STIFW	EEC	CEEC
Transition Association	Medium - high sandstone influence	Coastal Shale Sandstone Forest (complex)	CSSFC	CSSF (taller forest form)	CSSFT	Legal status to be determined through consultation with DECCW, upon completion of the Sydney Metro CMA mapping (DECCW, 2009a)			
				CSSF (low forest/woodland form)	CSSFF				
Sandstone Associations		Duffys Forest (complex)	DFC	DF (typical form)	DFTY	EEC	-		



Association	Complex	Mapping code	Form	Mapping code	Legal status <sup>▲</sup>	
					TSC Act	EPBC Act
			DF ( <i>transition form</i> )	DFT	EEC	-
	Sydney Sandstone Ridgetop Woodland	SSRW	Sydney Sandstone Ridgetop Woodland	SSRW	-	-
			Sydney Sandstone Ridgetop Woodland ( <i>clay influence</i> )	SSRWCI	-	-
			Sydney Sandstone Ridgetop Woodland ( <i>wet heath</i> )	SSRWH	-	-
	Sydney Sandstone Gully Forest	SSGF	Sydney Sandstone Gully Forest	SSGF	-	-
			Sydney Sandstone Gully Forest ( <i>clay influence</i> )	SSGFCL	-	-
	Gully Rainforest	GRF	Gully Rainforest	GRF	-	-

▲ CEEC - Critically Endangered Ecological Community, EEC - Endangered Ecological Community for *TSC Act 1995* and *EPBC Act 1999* (dependant upon remnant condition).



**Table 8: Relationship to SCIVI and Sydney Metropolitan Vegetation Classifications**

Vegetation Communities	SCIVI (Tozer <i>et al</i> 2006)	Sydney Metropolitan Vegetation Communities (DECCW 2009a)	Legal status <sup>^</sup>	
			TSC Act FM Act	EPBC Act
Blue Gum High Forest ( <i>complex</i> )	<ul style="list-style-type: none"> <li>Blue Gum High Forest (WSF p153)</li> </ul>	<ul style="list-style-type: none"> <li>Blue Gum High Forest (S_WSF01)</li> </ul>	CEEC	CEEC
Sydney Turpentine-Ironbark Forest ( <i>complex</i> )	<ul style="list-style-type: none"> <li>Sydney Turpentine Ironbark Forest (WSF p87)</li> </ul>	<ul style="list-style-type: none"> <li>Sydney Turpentine-Ironbark Forest (S_WSF09)</li> </ul>	EEC	CEEC
Coastal Shale Sandstone Forest ( <i>complex</i> )  <i>Floristically this community aligns with SCIVI &amp; Sydney Metro. All communities align with TSC Act final determination for SSTF.</i>	<ul style="list-style-type: none"> <li>Sydney Shale-Ironstone Cap Forest (DSF p143)</li> </ul>	<ul style="list-style-type: none"> <li>Coastal Shale-Sandstone Forest (S_WSF06)</li> </ul>	Legal status to be determined through consultation with DECCW, upon completion of the Sydney Metro CMA mapping (DECCW, 2009a)	
Duffys Forest ( <i>complex</i> )	<ul style="list-style-type: none"> <li>Sydney Shale-Ironstone Cap Forest (DSF p143)</li> </ul>	<ul style="list-style-type: none"> <li>Sydney Ironstone Bloodwood-Silvertop Ash Forest (S_DSF14)</li> </ul>	EEC	-
Sydney Sandstone Ridgetop Woodland	-	<ul style="list-style-type: none"> <li>Hornsby Enriched Sandstone Exposed Woodland (S_DSF10)</li> </ul>	-	-
		<ul style="list-style-type: none"> <li>Hornsby Sandstone Exposed Bloodwood Woodland (S_DSF11)</li> </ul>	-	-
		<ul style="list-style-type: none"> <li>Hornsby Sandstone Heath-Woodland (S_DSF12)</li> </ul>	-	-
	<ul style="list-style-type: none"> <li>Coastal Rock Plate Heath (HL p126)</li> </ul>	<ul style="list-style-type: none"> <li>Coastal Sandstone Plateau Rock Plate Heath (S_HL09)</li> </ul>		
	<ul style="list-style-type: none"> <li>Coastal Upland Swamp (FRW p129)</li> </ul>	<ul style="list-style-type: none"> <li>Coastal Upland Damp Heath Swamp (S_FrW01)</li> </ul>	-	-



Vegetation Communities	SCIVI (Tozer <i>et al</i> 2006)	Sydney Metropolitan Vegetation Communities (DECCW 2009a)	Legal status <sup>^</sup>	
			TSC Act FM Act	EPBC Act
Sydney Sandstone Gully Forest	-	• Coastal Enriched Sandstone Sheltered Forest (S_DSF04)	-	-
		• Coastal Sandstone Riparian Forest S_DSF08)	-	-
	• Coastal Sandstone Gully Forest (DSF p140)	• Coastal Sandstone Sheltered Peppermint-Apple Forest (S_DSF09)	-	-
	-	• Coastal Enriched Sandstone Moist Forest (S_WSF02)	-	-
Gully Rainforest	-	• Coastal Sandstone Gallery Rainforest (S_RF02)	-	-
		• Coastal Warm Temperate - Dry Rainforest (S_RF04)	-	-
Estuarine Mangrove	• Estuarine Mangrove Forest (SL p109)	• Estuarine Mangrove Forest (S_SW01)	-	-
Seagrass	<ul style="list-style-type: none"> <li>• Seagrass Meadow (Halophila) (SL e67)</li> <li>• Seagrass Meadow (Posidonia) (SL e68)</li> <li>• Seagrass Meadow (Zostera) (SL e69)</li> </ul>	• Seagrass Meadows (S_SW03)	P	-
Estuarine Saltmarsh	• Estuarine Saltmarsh (SL p509)	• Estuarine Saltmarsh (S_SW02)	EEC [Coastal Saltmarsh in the NSW, North Coast, Sydney Basin and South East Corner bioregions]	-



Vegetation Communities	SCIVI (Tozer <i>et al</i> 2006)	Sydney Metropolitan Vegetation Communities (DECCW 2009a)	Legal status <sup>▲</sup>	
			TSC Act FM Act	EPBC Act
Estuarine Fringe Forest - Swamp Oak Floodplain Forest	<ul style="list-style-type: none"> <li>Estuarine Fringe Forest (FOW p106)</li> </ul>	<ul style="list-style-type: none"> <li>Estuarine Swamp Oak Forest (S_FoW08)</li> </ul>	EEC [Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin, and South East Corner bioregions]	-
Coastal Flats Swamp Mahogany Forest	<ul style="list-style-type: none"> <li>Sydney Swamp Forest (FOW p44)</li> </ul>	<ul style="list-style-type: none"> <li>Coastal Flats Swamp Mahogany Forest (S_FoW02)</li> </ul>	EEC [Swamp Sclerophyll Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions]	-

<sup>▲</sup> FM Act 1994: P - Protected  
 TSC Act 1995 and EPBC Act 1999: CEEC - Critically Endangered Ecological Community  
 EEC - Endangered Ecological Community



## 5.3 Shale Forest Association

### Blue Gum High Forest (*complex*)

- BGHF (*typical form*)
- BGHF (*dry form*)
- BGHF (*sandstone gully form*)

### Sydney Turpentine-Ironbark Forest (*complex*)

- STIF (*typical form*)

## GENERAL

Deeper clay soils of the Wianamatta Group shales, associated with the main ridgeline and secondary ridges of the Ku-ring-gai LGA, support a taller forest vegetation comprising Blue Gum High Forest (*complex*) and STIF (*typical form*) both listed as critically endangered or endangered at state and national levels.

The terrain is typically undulating with Blue Gum High Forest (*complex*) in higher parts of the landscape identified by a canopy dominated by tall trees of Sydney Blue Gum (*Eucalyptus saligna*) and Blackbutt (*Eucalyptus pilularis*). In contrast, STIF (*typical form*) typically occurs at slightly lower altitudes closer to the shale/sandstone boundary with a canopy dominated by Turpentine (*Syncarpia glomulifera*) and a range of eucalypt species, particularly Blackbutt (*Eucalyptus pilularis*).

The highly fragmented, small and disturbed nature of remnants provides a degree of difficulty in understanding the original vegetation patterns. Nevertheless, fine spatial scale survey has identified primary environmental gradients associated with topography, rainfall, geology and soils that provide an ecological framework for community classification.

This fine scale (property level) survey of key vegetation communities across the Ku-ring-gai LGA, has identified Blue Gum High Forest and STIF vegetation communities that are generally consistent with documentation by Benson and Howell for the Sydney region (1994) and by Smith and Smith (2007) for the adjoining Hornsby Shire, and with current listings of BGHF and STIF under the *TSC Act* and *EPBC Act*. There is less consistency, however, with the classification of Tozer (2003) in which the boundaries of BGHF and STIF are confused by including wetter remnants dominated by Sydney Blue Gum (*Eucalyptus saligna*) and Blackbutt (*Eucalyptus pilularis*) into STIF.

Key findings of the project include the following:

- Blue Gum High Forest (*complex*) occurs on undulating higher ridges and slopes with deeper clay soils of the Glenorie and West Pennant Hills soil landscapes.
- Variability within Blue Gum High Forest (*complex*) primarily reflects aspect / exposure and relative clay content in the soil.
- Three forms within the Blue Gum High Forest (*complex*), are recognised:
  - *typical form* occurring on sheltered slopes
  - *dry form* associated with higher ridges and more exposed aspects, and the presence of fine sandstone laminae within the shale and/or lateritic gravels.



- *sandstone gully form* where some sandstone influence is evident. Clay soils are generally relatively deep on the slopes with a strong sandstone influence evident only close to the creek-line.
- Within the Sydney Turpentine-Ironbark Forest (*complex*) three forms are identified (*typical, dry transition and wet transition forms*). Only the *typical form* is associated with higher, undulating topography and high clay content soils of the Glenorie and West Pennant Hills soil landscapes, and is included in the Shale Forest Association.
- A significant overlap of canopy and understorey species occurs between Blue Gum High Forest (*complex*) and Sydney Turpentine-Ironbark Forest (*complex*) due to similar habitat conditions and geographical area. In particular, BGHF (*dry form*) shares many similar species with Sydney Turpentine-Ironbark Forest (*complex*), however Sydney Blue Gum (*Eucalyptus saligna*) is locally dominant or common and sites are some distance from the main shale/sandstone boundary.
- STIF is generally restricted to secondary ridges and slopes at lower altitudes on less deep clay soils, closer to the main shale/sandstone boundary. Where STIF occurs at higher levels (e.g. Warrawee) it is restricted to slopes with higher sandstone influence. Key factors are rainfall, soil depth and relative proportions of clay and sand in the soil.
- The Shale Forest Association typically contain a high to moderate proportion of indicative clay species (>55% of total native species, as listed in Appendix D), within samples 20m x 20m plots (Section 4.6).

## OVERVIEW OF COMMUNITIES

This study differs from previous mapping projects in respect of the following:

- Identification of a Shale Forest Association reflecting the close affinity of Blue Gum High Forest (*complex*) and STIF (*typical form*) in higher parts of the shale dominated landscape.
- Three forms of BGHF are identified (*typical, dry and sandstone gully*), no forms previously identified within the LGA.
- Three forms of STIF are identified (*typical, wet transition, dry transition*); previously two forms identified: Sydney Turpentine-Ironbark Forest and Turpentine-Ironbark Margin Forest of Tozer (2003).
- Some areas previously identified as STIF are mapped as BGHF (*dry form*).

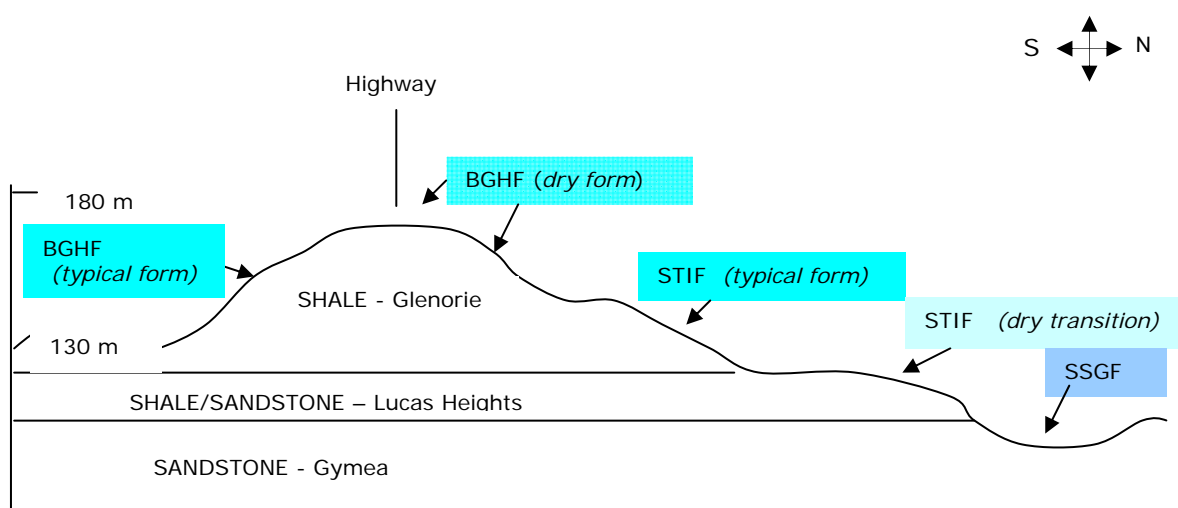
These differences are the result of fine spatial scale survey and mapping allowing the sampling of vegetation along environmental gradients, in contrast to previous mapping that has relied on relatively few sampling sites (e.g. only eight sites of BGHF were included in the Tozer (2003) analysis), limited quality control and extensive extrapolation of data (see Section 6 for further discussion).

The primary environmental gradients relate to water availability (rainfall, soil drainage, transpiration) and soil depth relative clay to sand content. The canopy species in particular respond to relatively small levels of variability as described below.



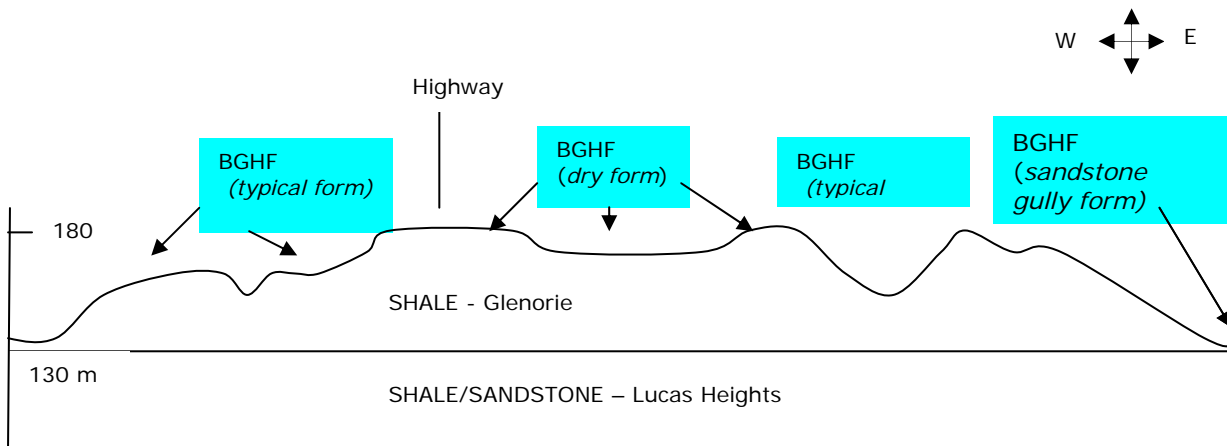
Wetter conditions - associated with	
Deep clay soils	
Species - <i>Eucalyptus saligna</i> , <i>Eucalyptus pilularis</i>	
Community - <b>BGHF (typical form)</b>	
Less deep clay soils with some sand component	
Species - <i>Eucalyptus saligna</i> , <i>Eucalyptus pilularis</i> , <i>Angophora costata</i>	
Community - <b>BGHF (sandstone gully form)</b>	
Less deep clay soils with higher sand content	
Species - <i>Eucalyptus pilularis</i> , <i>Syncarpia glomulifera</i> , <i>Angophora costata</i>	
Community - <b>STIF (typical form)</b>	
Drier conditions - associated with	
Deeper clay soils with some sand content and/or lateritic gravels present (very localized)	
Ridge-tops and upper slopes	
Species - <i>Eucalyptus saligna</i> , <i>Eucalyptus pilularis</i> , <i>Eucalyptus paniculate</i> , <i>Eucalyptus resinifera</i> , <i>Eucalyptus globoidea</i> , <i>Angophora costata</i> , <i>Angophora floribunda</i>	
Community - <b>BGHF (dry form)</b>	
Deep to moderate deep soils with higher sand content and/or lateritic gravels (more extensive occurrence)	
Secondary ridgetops and slopes closer to the shale/sandstone boundary,	
Species - <i>Eucalyptus pilularis</i> , <i>Syncarpia glomulifera</i> , <i>Eucalyptus paniculata</i> , <i>Eucalyptus resinifera</i> , <i>Eucalyptus globoidea</i> , <i>Angophora costata</i> , <i>Angophora floribunda</i>	
Community - <b>Sydney Turpentine-Ironbark Forest (complex)</b>	

The typical pattern of such gradients across the landscape and resulting vegetation can be seen in Figure 4 – Figure 6.

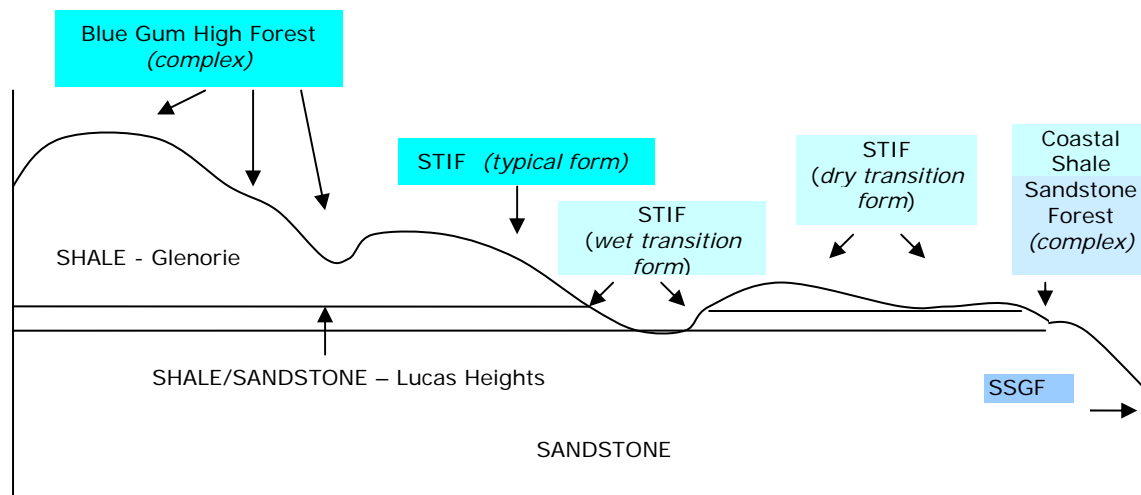


**Figure 4: Shale Forest Association - example in vicinity of Gordon**





**Figure 5: Blue Gum High Forest Complex – example in vicinity of Turramurra**



**Figure 6: Sydney Turpentine-Ironbark Forest Complex**

Less response to such gradients is evident in the understorey with a significant recorded overlap of shrub and groundcover species between Blue Gum High Forest (*complex*) and Sydney Turpentine-Ironbark Forest (*complex*). The primary factor determining species composition within the Shale Forest Association appears to be water availability, with most species able to be classified as preferring “moist” or “drier” conditions.

A transitional shale/sandstone species component is seen primarily down slope of the Glenorie and Lucas Heights soil landscape boundary (Table 9).

Species composition of the understorey, therefore, does not provide a reliable basis for distinguishing between Blue Gum High Forest (*complex*) and Sydney Turpentine-Ironbark Forest (*complex*), and supports recognition of a Shale Forest Association. Commonly adopted identification methods such as Tozer (2003) rely heavily on species composition. Consideration of a range of key environmental characteristics together with information on species composition provides a more comprehensive understanding of the forces that determine extant vegetation patterns and allows a more reliable classification to be developed.



**Table 9: Typical understorey species associated with main habitat types**

MESIC/WET HABITAT	DRIER HABITAT	TRANSITIONAL ELEMENT
<i>Breynia oblongifolia</i> ,	<i>Ozothamnus diosmifolius</i>	<i>Leucopogon juniperinus</i>
<i>Polyscias sambucifolius</i>	<i>Indigofera australis</i>	<i>Kunzea ambigua</i>
<i>Maytenus silvestris</i>	<i>Platylobium formosum</i>	<i>Hibbertia aspera</i>
<i>Pittosporum revolutum</i>	<i>Brunoniella australis</i>	<i>Pultenaea flexilis</i>
<i>Pseuderanthemum variabile</i>	<i>Lomandra filiformis</i>	<i>Panicum simile</i>
<i>Oplismenus species</i>	<i>Themeda australis</i>	<i>Austrostipa rudis</i>
<i>Entolasia marginata</i>	<i>Austrodanthonia species</i>	<i>Eragrostis brownii</i>
<i>Rumex brownii</i>	<i>Bothriochloa species</i>	<i>Lepidosperma laterale</i>
<i>Pratia purpurascens</i>	<i>Veronica plebeia</i>	<i>Goodenia hederacea</i>
<i>Cyperus gracilis</i>	<i>Desmodium varians</i>	<i>Poa affinis</i>

## BOUNDARIES BETWEEN COMMUNITIES

### Blue Gum High Forest (complex) and Sydney Turpentine-Ironbark Forest (complex)

Blue Gum High Forest (complex) is generally the dominant community on higher undulating areas and deeper soils with STIF (complex) increasing in dominance as soils become progressively more shallow and sandy towards the shale/sandstone boundary (and generally decreasing altitude).

Transition from Blue Gum High Forest (complex) to Sydney Turpentine-Ironbark Forest (complex) may occur between approximately 90m to 180m above sea level. Distance on the ground to the shale/sandstone boundary may be up to 1 km, however, the transition is generally close to a change in soil landscape, most commonly from Glenorie to Lucas Heights, reflecting a stronger in-situ sandstone influence.

Transition from Blue Gum High Forest (complex) and Sydney Turpentine-Ironbark Forest (complex) to sandstone may occur over a relatively short distance (0.5 – 1km) where slopes are steep (e.g. south of the Pacific Highway compared to north of the highway/west of Mona Vale Road where the transition occurs over a distance of 1.5 – 2km or more) (Figure 7a – c)

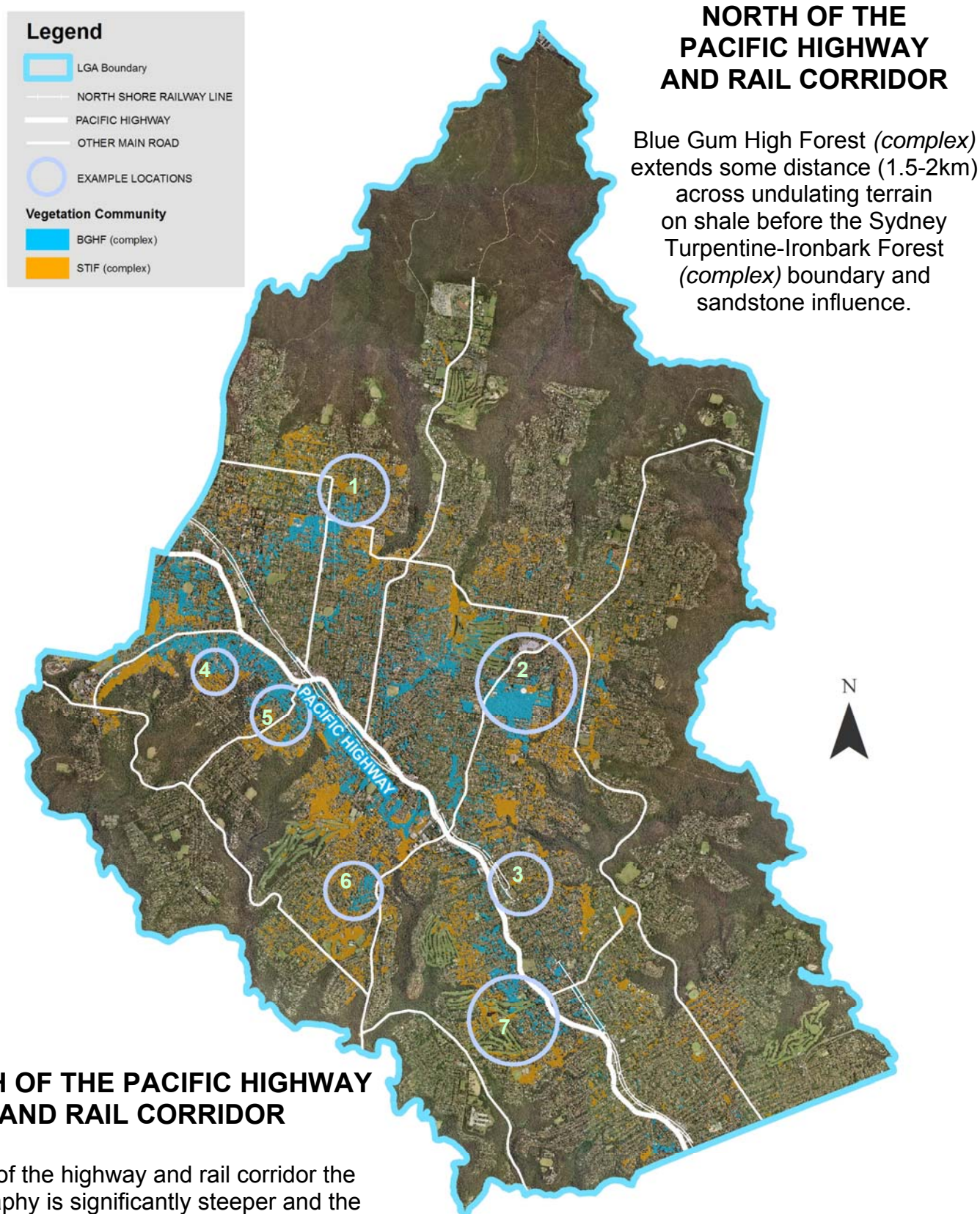
The key floristic indicator of a change from Blue Gum High Forest (complex) to Sydney Turpentine-Ironbark Forest (complex) is replacement of Sydney Blue Gum (*Eucalyptus saligna*) as a dominant or common canopy tree by Turpentine (*Syncarpia glomulifera*) and/or Blackbutt (*Eucalyptus pilularis*).

### Sydney Turpentine-Ironbark Forest (typical form) and transitional forms

The boundary between STIF (typical) and transitional forms of STIF (dry transition and wet transition) marks the boundary of the Shale Forest Association. This change occurs at lower positions in the landscape where soils contain a distinct sandstone influence and the canopy is more diverse and may include a range of eucalypts, Turpentine and Smooth-barked Apple. The soils are generally associated with the Mittagong Formation geology that comprises a thin unit between the Ashfield Shales and Hawkesbury Sandstone.



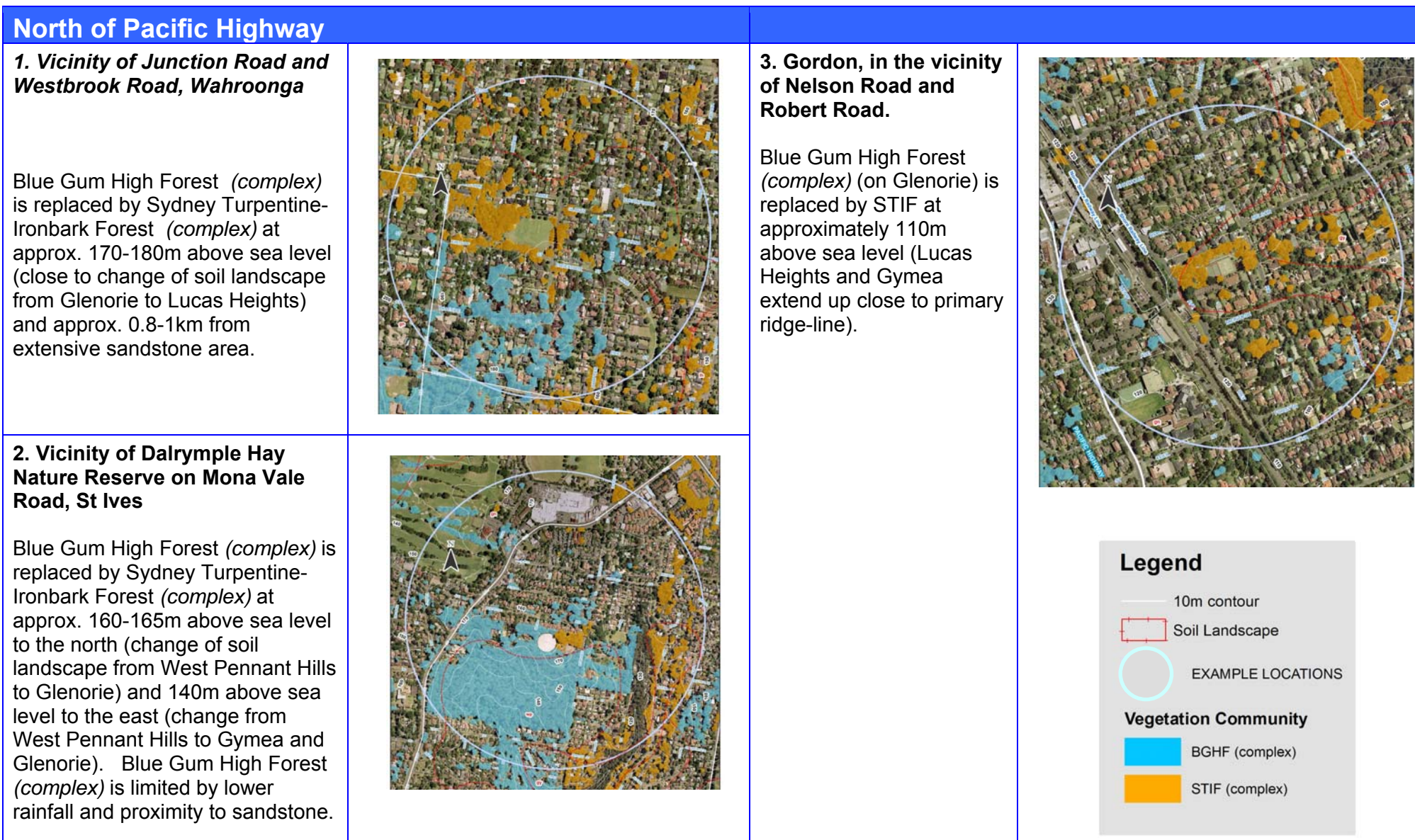
**Figure 7a: A summary of geographical variability in respect of boundaries between Blue Gum High Forest (*complex*) and Sydney Turpentine-Ironbark Forest (*complex*)**



South of the highway and rail corridor the topography is significantly steeper and the sandstone environment extends along deeper gullies up close to the ridge-line. The extent of Blue Gum High Forest (*complex*) is consequently limited and the transition from shale to sandstone communities occurs over

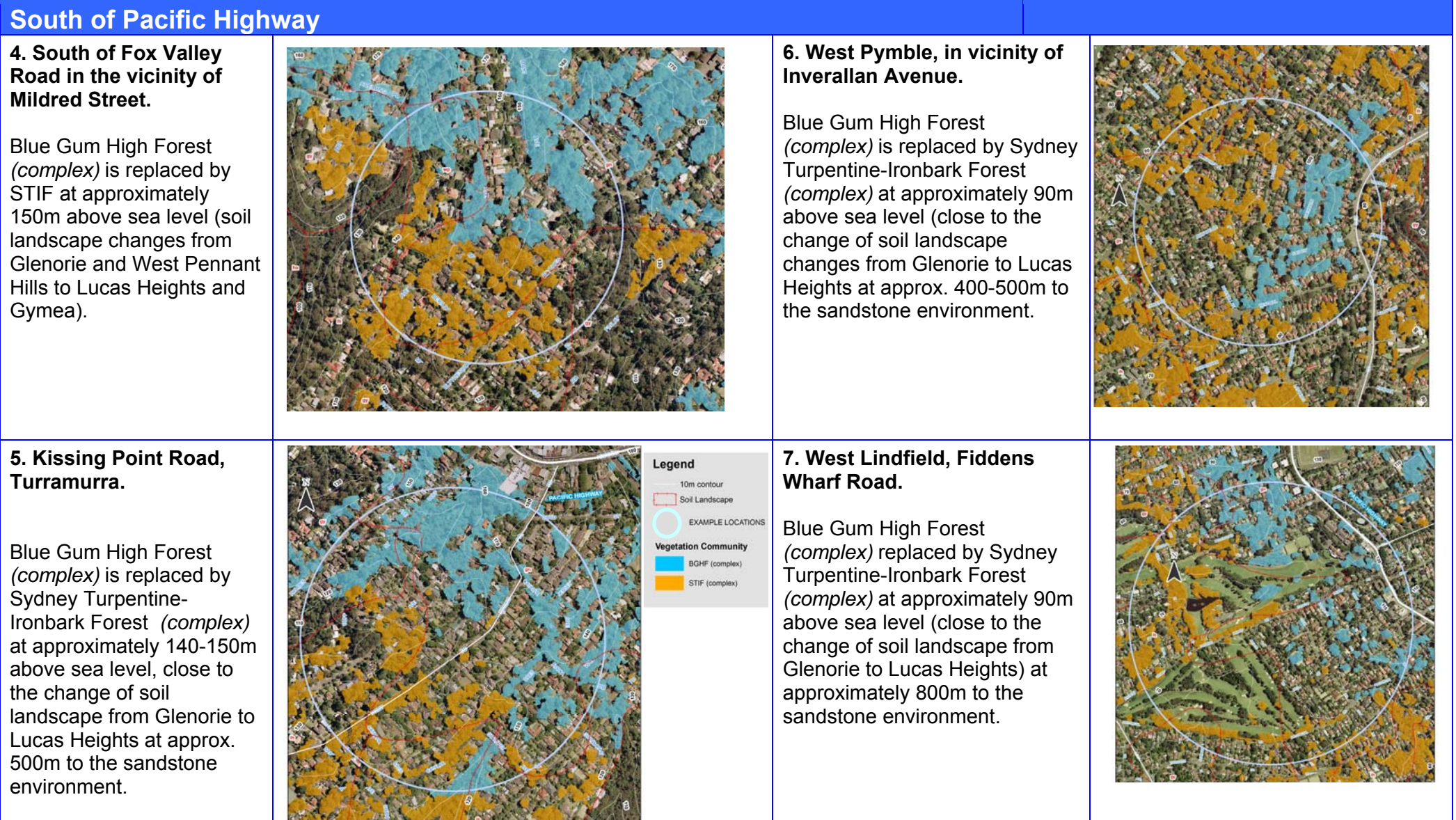


**Figure 7b: North of Pacific Highway - geographical variability in respect of boundaries between Blue Gum High Forest (*complex*) and Sydney Turpentine-Ironbark Forest (*complex*)**





**Figure 7c: South of Pacific Highway - geographical variability in respect of boundaries between Blue Gum High Forest (*complex*) and Sydney Turpentine-Ironbark Forest (*complex*)**





## 5.4 Transition Association

### Low-medium sandstone influence

Sydney Turpentine-Ironbark Forest (complex)

STIF (*dry transition form*)

STIF (*wet transition form*)

Coastal Shale Sandstone Forest (complex)

CSSF (*taller forest form*)

### Medium to high sandstone influence

Coastal Shale Sandstone Forest (complex)

CSSF (*low forest/woodland form*)

## GENERAL

The transitional communities are associated with residual shale caps on ridge-tops or plateaus and transitional soils on slopes close to the shale/sandstone boundary. The dominant soil landscapes are Lucas Heights and Gynea. These soils with both clay and sandy components (derived from shale and sandstone respectively) occur widely within the Ku-ring-gai LGA due to extensive dissection of the shale-covered ridges that transect the LGA with creeks cutting down into the underlying sandstone (Section 3.1).

The transitional communities identified within the LGA have evolved on similar soils with differences primarily driven by topography and relative proximity or connectivity to shale and sandstone environments.

These communities have been broadly classified into two groups, low-medium and medium-high sandstone influence (Table 7), based upon field observation and plot analysis (Section 4.6). Plots of 20m x 20m sampled within the low-medium sandstone influence group typically contained a medium level of indicative clay species (i.e. >40% of total native species, refer Appendix C and D), whilst 20m x 20m plots sampled within the medium-high sandstone influence group typically contained a lower level of indicative clay species (i.e. 25-40% of total native species, refer Appendix C and D).

There was some cross over between these two groups with the medium-high sandstone influence group consisting predominantly of Coastal Shale Sandstone Forest (*low forest/woodland form*) but also including some *taller forest form*.

In previous mapping most of the transitional communities of the Ku-ring-gai LGA were included within Duffys Forest, Sydney Sandstone Ridge-top Woodland and Sydney Turpentine-Ironbark Forest, however, finer scale of mapping in this project has identified several units that warrant separate recognition.

Within the Sydney region one transition community had previously been listed in its own right as an endangered ecological community under the *TSC Act* and the *EPBC Act*, Shale Sandstone Transition Forest (SSTF) (NSW SC 1998, TSSC 2001). However, this community had not been mapped or identified previously within this LGA.



The shale/sandstone forest community, Coastal Shale Sandstone Forest (*complex*), identified within this mapping, represents a coastal variant of the Shale Sandstone Transition Forest of western parts of Sydney (described above).

The Coastal Shale Sandstone Forest community (*complex*) has two forms within Ku-ring-gai:

- a *taller forest form* with low to medium sandstone influence found on deeper soils
- a *low forest/woodland form* often with higher sandstone influence close to the sandstone environment.

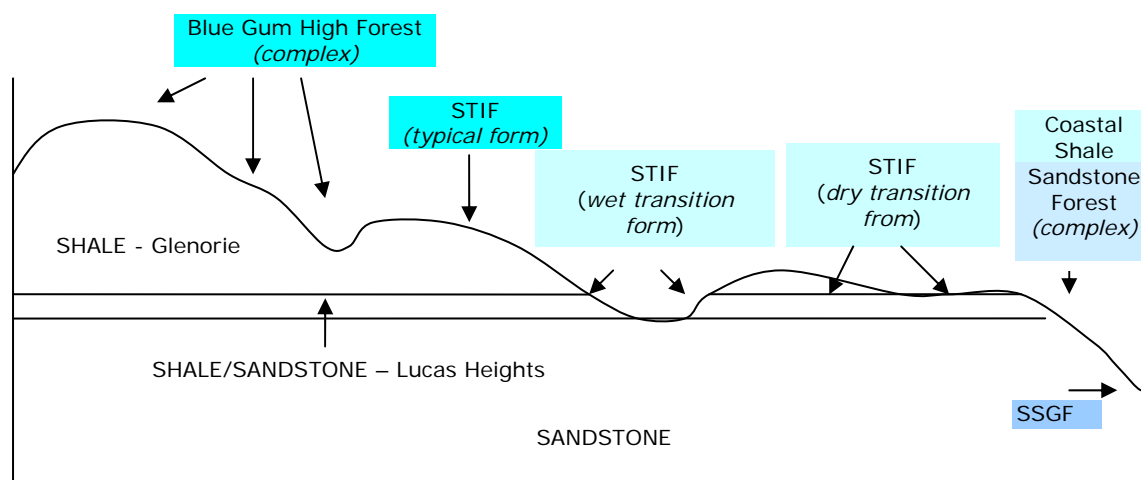
Two transitional forms of STIF (*dry transition*, *wet transition*) have been identified, where a sandstone influence is clearly evident on mid to lower slopes. Such areas are identified as STIF rather than CSSF based on species composition and relatively deeper soils with minimal or localised sandstone outcrop. These areas are generally limited in extent, not ecologically distinct and more appropriately considered as transitional elements within STIF.

## OVERVIEW OF COMMUNITIES

### Sydney Turpentine-Ironbark Forest (transition forms)

Two transitional forms of STIF (*dry transition*, *wet transition*) are identified on mid to lower slopes where characteristic STIF canopy species persist but some sandstone influence is clearly evident. Transition STIF forms are generally found where relatively deep soils persist close to the shale/sandstone boundary with little potential for the development of a distinct CSSF community. Sometimes transitional forms of STIF may inter-grade, however, into CSSF (*complex*). The boundary and relative extent of the two communities will depend on degree of slope and relative proportions of shale and sandstone in the soil.

On secondary ridges or spurs and exposed slopes a drier form (*dry transition*) of STIF occurs with Smooth-barked Apple and Red Mahogany common canopy species with Turpentine and Blackbutt. In contrast, on sheltered slopes often associated with creek-lines, a wetter form (*wet transition*) of STIF occurs dominated by Turpentine, Blackbutt and Smooth-barked Apple. The understorey of the wet transition form is considerably more mesic (moisture-loving) than in the drier form. STIF (*wet transition form*) is the most extensive of the three forms. The typical location of transitional forms of STIF is shown in Figure 8.



**Figure 8: Typical location of transitional forms of STIF within the landscape**

Examples of the *dry transition form* of STIF are essentially limited to small, fragmented and modified remnants along road reserves and in private yards. In contrast, larger remnants of the



*wet transition form* are commonly found on steeper slopes associated with gullies. Examples of the latter include at Richmond Park and Gordon Glen (Gordon), and Golfers Glen (Pymble).

In some areas the two transitional forms and the typical form can inter-grade over short distances and have been mapped as Sydney Turpentine-Ironbark Forest (*complex*). This can occur, for example, across undulating terrain providing both sheltered and exposed aspects within a small area. More rarely conditions may be intermediate with no one form dominant.

**Example sites: Sydney Turpentine-Ironbark Forest (*complex*)**

Site	Landform details	Geology/soil landscapes
South of Fox Valley Road, Wahroonga	Upper slope (South East facing) with alternating gullies and spurs above steeper sandstone slopes; 150 -170m	Lucas Heights (Mittagong Formation) and Shale (Glenorie) just above Sandstone (Gymea)
Oval between Springdale Road and Rosebery Avenue, East Killara	South-facing spur and upper slope at 110m above sea level	Shale (Glenorie) just above boundary with Lucas Heights (Mittagong Formation)
West Gordon, east of Gordon Golf Course	West facing spur and gully line at 80m above sea level	Lucas Heights (Mittagong Formation)

**Example sites: STIF (*wet transition form*)**

Site	Landform details	Geology/soil landscapes
Richmond Park, Pymble (Council reserve)	Head of gully at 100m above sea level with convergence of small tributaries; relatively gentle slopes	Mittagong Formation (Lucas Heights) with sandstone (Gymea) below
Above Seven Little Australians Park, East Lindfield (Council reserve)	Head of gully at 90-95m above sea level; relatively gentle slopes	Hawkesbury sandstone (Gymea) with Mittagong Formation above
Golfers Glen, Pymble (Council reserve)	Sheltered south-facing slope at 100m above sea level	Mittagong Formation (Lucas Heights)

**Example sites: STIF (*dry transition form*)**

Site	Landform details	Geology/soil landscapes
Lucinda Avenue (lower), South Wahroonga	South East facing spur at 140 – 150m above sea level; sandstone gullies below	Mittagong Formation (Lucas Heights) just below boundary with Shale and above sandstone
Murrumbidgee Road, North Turramurra	North West facing spur at 160- 170m above sea level	Shale (Glenorie) and Lucas Heights (Mittagong Formation)
Berilda Av – Mildred Av, Wahroonga	South West facing spur at 140 - 150m above sea level	Shale (West Pennant Hills) close to boundary with Lucas Heights (Mittagong Formation)

## **Coastal Shale Sandstone Forest**

Coastal Shale Sandstone Forest (*complex*) occurs further down slope from the Sydney Turpentine-Ironbark Forest (*complex*) where increased sandstone influence within the soil results in a higher proportion of sandstone species (see Figure 8 above)

The shale/sandstone forest community has two forms within Ku-ring-gai, a *taller forest form* with low to medium sandstone influence found on deeper soils and a *low forest/woodland form* often with higher sandstone influence close to the sandstone environment.

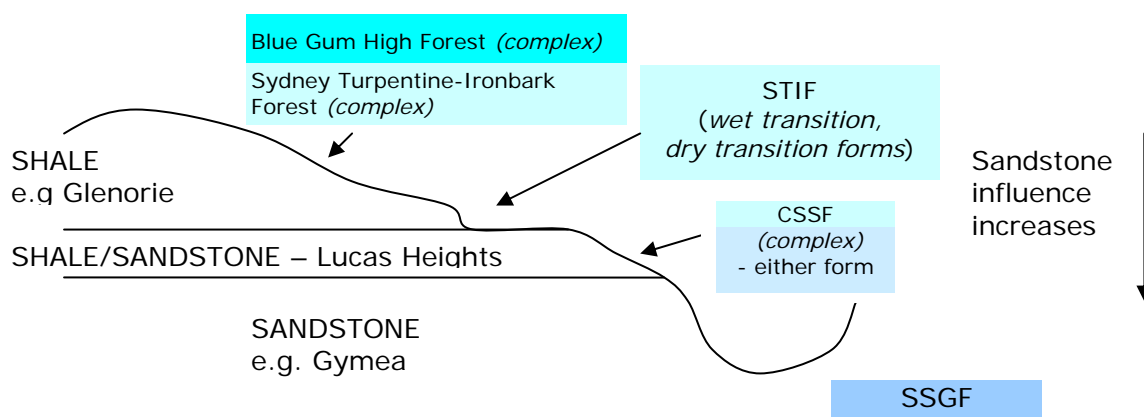
The CSSF (*taller forest form*) is associated with shale caps over sandstone or on hill-slopes. The degree of sandstone influence is variable depending on particular site conditions (i.e. extent



and depth of clay soil), steepness of slope and proximity to sandstone boundary. Larger shale caps are rare within Ku-ring-gai with the primary example being in the vicinity of Kissing Point Oval, South Turramurra (see details and figure below).

**Example sites: CSSF (*taller forest form*) associated with shale caps**

Site	Landform details	Geology/soils
Vicinity of Kissing Point Road Sports Field, South Turramurra	Irregular spur off ridge-line near end of shale/sandstone transition, approx. 500m wide; level to gentle upper slopes; sandstone vegetation in close proximity	Mittagong Formation (Lucas Heights)



**Figure 9: Typical locations of CSSF within the landscape**

CSSF (*taller forest form*) on hill-slopes (see Figure 9 above) is associated with the shale/sandstone transition zone along gentle to moderate slopes. Upslope shale typically supports STIF, BGHF and down-slope SSGF. The degree of sandstone influence depends on particular site conditions, particularly the steepness of slope.

**Examples sites: CSSF (*taller forest form*) on hill-slopes**

Site	Landform details	Geology/soil landscapes
North Turramurra - Milkmaids Reserve, Ellalong Rd	East facing mid-slope at 130m; minor drainage line; 100m to sandstone, shale to west - transitional	Mittagong Formation (Lucas Heights); Sandstone (Gynea) below
Council Reserve north of Burns Rd	West facing gentle mid-slope at 130m, close to sandstone boundary, shale to east	Sandstone (Gynea)
Vicinity of Clissold Road, Wahroonga	Mid-slopes at 130-160m, transition zone between shale and sandstone	Mittagong Formation (Lucas Heights); Hawkesbury Sandstone below

The *low forest/woodland form* of CSSF is associated with narrow ridgelines and crests in close proximity to sandstone (i.e. close to the sandstone end of the shale/sandstone transition). Soils are typically of the Lucas Heights landscape, relatively shallow with ironstone gravels often present.

**Example sites: CSSF (*low forest / woodland form*)**

Site	Landform details	Geology/soils
CSIRO and adjoining areas, West Lindfield	Crest and upper slopes of spurs or end ridges at 50 - 60m above sea level, sandstone below	Mittagong Formation (Lucas Heights), lateritic gravels



Site	Landform details	Geology/soils
Off Kissing Point Road (i.e. Waratah Rd, Boronia Av)	Ridge-line approx. 500m wide at 110-130m along a primary transition down-slope from shale to sandstone with sandstone vegetation on both sides	Mittagong Formation (Lucas Heights); sandy clay soil with minor sandstone outcrop
Bobbin Head Rd, North Turramurra	Ridgeline approx. 200-300m wide at 160-180m close to sandstone environment	Mittagong Formation (Lucas Heights); sandy loam soil, some sandstone fragments
Junction and Carrington Roads, Wahroonga	West-facing upper to mid-slope just below N to S ridgeline, 160-180m; gentle slope to east and shale environment, sandstone to the west	Transition zone between Mittagong Formation (Lucas Heights) and Sandstone (Gymea); sandy clay soil with minor sandstone outcrop
Torokina Reserve South of Melaleuca Drive, St Ives	Spur of plateau/higher land, 140m, on west to east shale/ sandstone transition; sandstone environment on 3 sides	Mittagong Formation (Lucas Heights)
Open Space, corner of Holt and Barton Avenue, Wahroonga	Upper east-facing slope of ridge-line (approx. 400m wide), 190m; close to sandstone environment to east and west	Mittagong Formation (Lucas Heights) close to Sandstone (Gymea) boundary. Clay to 1m deep in places, sandstone exposed in others. This site is considered to be within the high sandstone end of the transition.

CSSF (*low forest/woodland form*) can be very similar to the Duffys Forest (DF) community including a significant overlap of plant species. The main differences are identified in the key (Section 2, Volume 2) and summarized below:

- In a landscape context CSSF is found close to the sandstone end of the shale to sandstone transition in which there is reasonable connectivity with shale soils upslope supporting STIF or BGHF. DF occurs predominantly within a sandstone environment.
- Within CSSF, clay soil is typically shallow with evidence of sandstone fragments or outcrops. Sandstone outcropping is rare in DF.
- Generally less than 50-60% of DF characteristic species (as per Final Determination, NSW SC 2002) present at a site and a correspondingly higher shale component present (>25% of total native species within 20m x 20m plot are indicative shale species (refer Section 4.6 and Appendix C and D).
- In CSSF there is a higher frequency of Scribbly Gum (*Eucalyptus haemastoma*) than in DF and often in association with Red Mahogany (*Eucalyptus resinifera*). More typically stringybarks within CSSF include *Eucalyptus globoidea* or *Eucalyptus oblonga* and rarely *Eucalyptus capitellata*.
- Typical shale species often present in CSSF and less commonly in DF include: *Acacia parramattenis*, *Kunzea ambigua*, *Leucopogon juniperinus*, *Bursaria spinosa*, *Dichondra repens*, *Glycine microphylla*, *Pratia purpurascens*, *Wahlenbergia gracilis*, *Themeda australis* and *Echinopogon* species.

Despite these differences some sites identified as CSSF (*low forest/woodland form*) may be consistent with the present DF endangered ecological community listing under the TSC Act (NSW SC 2002). The most intact example of this form of CSSF is found on the CSIRO property and adjoining road reserve at West Lindfield.



## BOUNDARIES BETWEEN COMMUNITIES

### Transition and Sandstone Associations

The transition between shale and sandstone communities is gradual and determination of a boundary is often difficult. In some situations the boundary may be clearly defined by a sudden increase in steepness of slope and/or extensive rock outcrop. In some less steep sites, however, a clay influence may be evident within a predominant sandstone environment.

The limit of transitional communities was found to be determined by the extent of sandstone influence in the soil, combined with the proportion of sandstone to shale species present in the canopy and understorey. Vegetation is generally classified as a sandstone community in this project where there is a high sandstone influence and shale species comprise <25% of total species recorded in a 20m x 20m quadrat (Section 4.6). However, individual circumstances also need to be considered.

Typical species indicative of sandstone rather than transition communities in ridgetop sites include Scribbly Gums when not in association with *Eucalyptus resinifera* or *Eucalyptus globoidea*, *Eucalyptus oblonga*, *Eucalyptus sparsifolia*, *Corymbia gummifera*, *Banksia serrata*, *Hakea teretifolia*, *Acacia suaveolens* and *Acacia longifolia*. In gully situations the canopy species on sandstone are generally similar (Turpentine, Blackbutt, Smooth-barked Apple) along with Sydney Peppermint (*Eucalyptus piperita*) and Red Bloodwood (*Corymbia gummifera*), however, the understorey is likely to be dominated by sandstone species such as *Ceratopetalum gummiferum*, *Leptospermum trinervium*, *Persoonia levis*, *Banksia spinulosa*, *Astrotricha floccosa*, *Pultenaea daphnoides*, *Xanthorrhoea arborea*, *Entolasia stricta*, *Hypolepis muelleri* and *Actinotus* species.

### COMPARISON WITH TRANSITIONAL COMMUNITIES IN ADJOINING LOCAL GOVERNMENT AREAS (LGAS)

Previous mapping of the Ku-ring-gai LGA included most of the transitional communities within DF, SSRW, SSGF and STIF (ie. no separate transition community such as Coastal Shale Sandstone Transition Forest, have been identified). This may still be the situation in adjoining local government areas.

It is noted, however, that mapping within Hornsby Shire (Smith and Smith 2007) identifies a Shale Sandstone Transition Forest (addressed below).

Those areas covered by DECCW 2009a Sydney are now likely to be consistent with the Ku-ring-gai mapping. This mapping includes separate transitional communities within the sandstone, associations and a new unit to incorporate the Coastal Shale Sandstone Transition Forest.

The following comparisons between communities identified in this survey and similar communities in adjoining areas are based on existing written reports only, with no field verification undertaken. It is noted that vegetation mapping is currently being undertaken or recently completed within the Lane Cove and Ryde LGAs.



## Ryde LGA

Only broad scale vegetation mapping is currently available for Ryde LGA with minimal ground survey included.

Survey Id	Community Id	Comparable community in Ku-ring-gai	Location	Notes
Oculus 2001	Shale Sandstone Transition Forest (EEC)	Coastal Shale Sandstone Forest and or Sydney Turpentine-Ironbark Forest ( <i>dry transition form</i> )	Epping Road and Macquarie University	Narrow zones between Sydney Turpentine-Ironbark Forest and Sydney Sandstone Gully Forest.

## Lane Cove LGA (Lane Cove National Park)

Only broad scale vegetation mapping is currently available for the Lane Cove National Park, including minimal ground survey. Extensive areas of Lucas Heights soil landscape occur on higher land above the Lane Cove River and are likely to support some transitional communities.

Survey Id	Community Id	Comparable community in Ku-ring-gai	Location	Notes
UBMC 2001	Scribbly Gum Open Forest (6)	Coastal Shale Sandstone Forest ( <i>low forest-woodland form</i> )	Tunks Hill	Associated with Lucas Heights, some shale species present. <i>Eucalyptus resinifera</i> recorded.
	Scribbly Gum Woodland (7)	Sydney Sandstone Ridge-top Woodland with clay influence; possibly Coastal Shale Sandstone Forest ( <i>low forest-woodland form</i> )	Common on higher land	Associated with shale on ridge-tops (probably Lucas Heights).
	<i>Eucalyptus sieberi</i> Woodland (13)	Sydney Sandstone Ridge-top Woodland with clay influence	Fox Valley	Associated with shale over sandstone on ridgetops (Lucas Heights). This was checked in field – very localized and degraded patches.



## Hornsby LGA

Hornsby Shire has been relatively well surveyed with the latest report prepared by Smith and Smith in 2007. Compared with Ku-ring-gai the Hornsby Shire appears to have considerably less transitional soils. The Shale Sandstone Transition Forest (SSTF) community has been identified strictly as defined in the Final Determination (listed as an EEC, NSW SC 1998). The community Blackbutt Gully Forest (community L), may include what we have identified as CSSF (*taller forest form*), recognizing that Blackbutt is a dominant species in the more coastal form of this community. Their Duffys Forest may include our CSSF (*low forest-woodland form*), however, not enough detail is provided to assess this further.

Survey Id	Community Id	Similar communities in Ku-ring-gai	Location	Notes
Smith and Smith 2007	Duffys Forest (DF)	Duffys Forest (both forms); CSSF ( <i>low forest-woodland form</i> )	North Epping Dural Cowan	Occurs on ridges and plateaus where shale influence
	Shale Sandstone Transition Forest (SS)	CCSF ( <i>taller forest form</i> )	Maroota – 2 sites	Based on EEC definition of Shale Sandstone Transition Forest
	Blackbutt Gully Forest (L)	CCSF ( <i>taller forest form</i> )	Common but poorly protected	In gullies with a shale influence

## Sydney Metropolitan Catchment Management Authority (SMCMA) Area

\* To be included upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)



## 5.5 Sandstone Association

### Duffys Forest (complex)

- DF (*typical form*)
- DF (*transition form*)

### Sydney Sandstone Ridgetop Woodland

- Hornsby Sandstone Exposed Bloodwood Woodland
- Hornsby Sandstone Heath-Woodland

### Sydney Sandstone Ridgetop Woodland (clay influence)

- Hornsby Enriched Sandstone Exposed Woodland

### Sydney Sandstone Ridgetop Woodland (wet heath)

- Coastal Upland Damp Heath Swamp

### Sydney Sandstone Gully Forest

- Coastal Sandstone Riparian Forest
- Coastal Sandstone Sheltered Peppermint Apple Forest
- Coastal Enriched Sandstone Sheltered Forest

### Sydney Sandstone Gully Forest (clay influence)

- Coastal Enriched Sandstone Moist Forest

### Gully Rainforest

- Coastal Sandstone Gallery Rainforest
- Coastal Warm Temperate-Dry Rainforest

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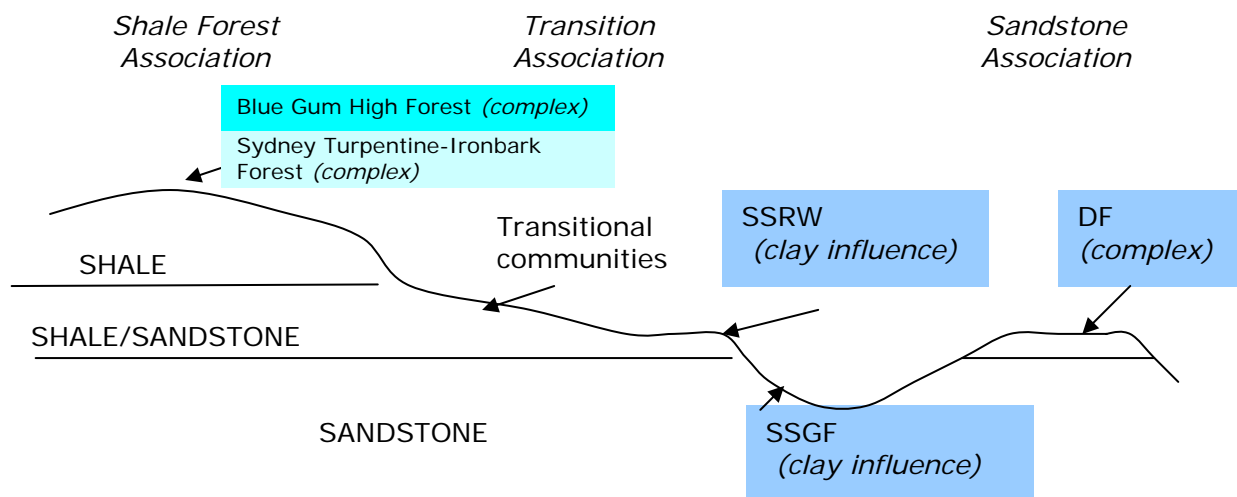
## GENERAL

The focus of the Ku-ring-gai LGA mapping project is key vegetation communities, namely threatened ecological communities occurring predominantly on shale and transitional geologies. The key vegetation community, Duffys Forest (listed under the TSC Act), however, is included within the Sandstone Association due to a stronger affinity with the sandstone environment. The other communities included within the Sandstone Association are as per the headings listed above.

Many of the above communities exhibit some clay influence due to the extent of shale-sandstone transitional areas within the Ku-ring-gai LGA. The limit of transitional communities in this project is determined by the extent of sandstone influence in the soil combined with the proportion of sandstone to shale species present in the canopy and understorey. Vegetation is classified generally as a sandstone community where there is a high sandstone influence and shale species comprise <25% of total species recorded in a 20m x 20m quadrat (Section 4.6).

Refer to 'Boundaries between communities' (Section 5.4) for further clarification on transition and sandstone boundaries and Figure 10 for typical locations.





**Figure 10: Typical location of sandstone communities with clay influence within Ku-ring-gai**

## OVERVIEW OF COMMUNITIES

### Duffys Forest

Duffys Forest (DF) occurs in similar ridgetop habitat to Coastal Sandstone Shale Forest (CSSF) (*low forest/woodland form*) and Sandstone Ridge-Top Woodland communities. Within the Ku-ring-gai LGA, however, DF is highly localized and restricted to the northern suburbs of St Ives and St Ives Chase.

This identification of the community is more conservative than that described in Smith and Smith (2000) but is consistent with *TSC Act* listing (NSW SC 2002). Two of the four forms of Duffys Forest recognised by Smith and Smith (2000), were mapped as occurring within Ku-ring-gai; *Silvertop Ash-Brown Stringybark Forest* and *Blackbutt –Turpentine Forest*.

Broadly this mapping has included the *Silvertop Ash-Brown Stringybark Forest* within DF (*typical*) with the *Blackbutt -Turpentine Forest* included within Coastal Sandstone Shale Forest (*complex*).

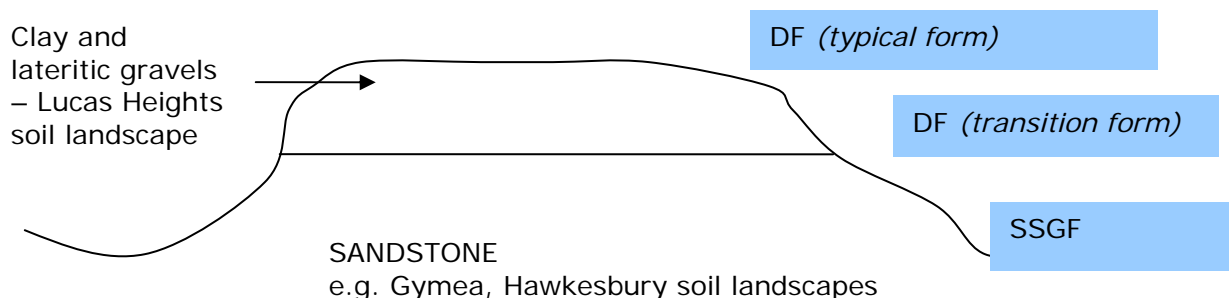
Duffys Forest (*complex*) is separated from CSSF (*complex*) by the following:

- Soil typically deeper with often thick clay cap and conspicuous ironstone gravels
- Flat to gently sloping terrain e.g. plateaus and benches with limited sandstone outcrops (increasing in the transition form)
- Connectivity and exposure to shale geology is limited (i.e. DF is more closely associated with a sandstone environment with shale/sandstone transition not a strong feature)
- Generally more than 70% of species recorded from a site are DF characteristic species (as per Final Determination) with a low shale component present (generally <20% of total native species within 20m x 20m plot) (Refer Section 4.6, Appendix C and D). Disturbed or modified sites will record a lower percent of DF species and more shale species where nutrient enrichment of soil has occurred.

A transition form occurs between DF (*typical form*) and sandstone ridge-top or gully communities. The transitional zone can be identified by the increasing dominance of Scribbly Gum (*Eucalyptus haemastoma*) (ridge-top situations), the increasing presence of sandstone



outcrops and a denser shrub layer. The DF (*transition form*) is included within the EEC (NSW SC 2002).



**Figure 11: Typical location of Duffys Forest within the landscape**

**Example sites: Duffys Forest (*typical form*)**

Site	Landform details	Geology/soils
St Ives Showground	Plateau 160-170m above sea level to approx. 600m wide; surrounding steep slopes of sandstone gullies.	Lucas Heights with Gymea and Hawkesbury soil landscapes below; clay and lateritic gravels.
Acron Oval, St Ives (close to oval only)	Lower bench at eastern end of W to E spur at 150m above sea level, close to sandstone environment	Mittagong Formation (Lucas Heights)
Warrimoo Av, St Ives Chase	End of North to South ridge-line approx. 500-800m wide at 150-160m; sandstone environment on 3 sides	Lucas Heights with small patch of mapped Glenorie at northern end; clay and lateritic gravels.

**Examples sites: Duffys Forest (*transition form*)**

Site	Landform details	Geology/soils
St Ives Showground (e.g. below bike track)	Plateau 150-155m above sea level; to approx. 600m wide; surrounding steep slopes of sandstone gullies.	Transition from Lucas Heights to Gymea and Ha below; some sandstone outcrops.
Surgeon White Reserve, St Ives.	Upper slope of narrow spur at 150m; surrounded by sandstone environment except narrow link to shale to west.	Lucas Heights with Gymea below; clay with lateritic gravels and some minor sandstone outcrops.

### **Sandstone Ridge-top Woodland (SSRW)**

At the sandstone end of the shale to sandstone transition, woodland to low open forest vegetation, often with a local clay influence, is found on ridge-tops and exposed slopes associated with the Lucas Heights soil landscape or on clay lenses within sandstone (Gymea or Hawkesbury soil landscapes). This community is floristically similar to both DF and CSSF (higher sandstone influence). It is distinguished on the basis of a very high sandstone influence (including rock outcrops) and a high proportion of typical or diagnostic SSRW species and low proportion of indicative shale species (<25% of total native species within a 20m x 20m plot, Refer Section 4.6, Appendix C and D).

The typical understorey sandstone species include *Acacia longifolia*, *Acacia linifolia*, *Allocasuarina littoralis*, *Angophora hispida*, *Banksia ericifolia*, *Leptospermum trinervium*, *Dillwynia retorta*, *Grevillea buxifolia*, *Lambertia formosa*, *Crowea saligna*, and *Schoenus ericetorum*. Shale species may include *Kunzea ambigua*, *Dodonaea triquetra*, *Eragrostis brownii* and *Acacia parramattensis*.



In the southern and western parts of the LGA such vegetation is consistent with **Hornsby Enriched Sandstone Exposed Woodland** as described by DECCW (2009a). The dominant canopy species are Scribbly Gum (*Eucalyptus haemastoma*) and Red Bloodwood (*Corymbia gummifera*) on ridge-tops and Sydney Peppermint (*Eucalyptus piperita*) on exposed slopes. Typically there is a taller woody shrub understorey of Black She-oak (*Allocasuarina littoralis*) and Dwarf Apple (*Angophora hispida*). The ground layer can be well developed, particularly where drainage is impeded, with grasses, sedges and small herbs. With increasing distance into the sandstone environment, particularly away from the ridge-tops, the clay influence will decrease. In more extensive rock areas low heath land vegetation may develop.

**Example sites: Hornsby Enriched Sandstone Exposed Woodland**

Site	Landform details	Geology/soils
Mimosa Road Reserve, South Turrumurra	Localised bench below crest and CSSF, south-eastern aspect in close proximity to sandstone vegetation	Transition zone between Mittagong Formation (Lucas Heights) and Sandstone (Hawkesbury and Gynea)
Canoon Road, South Turrumurra	Localised bench (100-110m) on western edge of ridge in close proximity to sandstone vegetation on all sides; also along ridgeline to east	Mittagong Formation (Lucas Heights), close to Gynea and Hawkesbury
CSIRO West Lindfield	Gentle east-facing upper-slope of sandstone gully below CSSF at 50-60m above sea level	Mittagong Formation (Lucas Heights), close to Hawkesbury

**Hornsby Sandstone Exposed Bloodwood Woodland**

Along the eastern side of the LGA associated with Garigal National Park, SSRW present is consistent with **Hornsby Sandstone Exposed Bloodwood Woodland** as described in DECCW (2009a).

Scribbly Gum is less common than in the south with Smooth-barked Apple (*Angophora costata*) and Red Bloodwood (*Corymbia gummifera*) co-dominants, Old-man Banksia (*Banksia serrata*) is commonly present.

**Example sites: Hornsby Sandstone Exposed Bloodwood Woodland**

Site	Landform details	Geology/soils
* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)		



## Sandstone Heath-Woodland

In more extensive rocky areas associated with plateau tops and ridgelines, low heathland vegetation may develop. In the northern and eastern parts of the LGA, this vegetation is consistent with the *Hornsby Sandstone Heath-Woodland* community, as described by DECCW (2009a).

Dominant tree species include Scribbly Gum (*Eucalyptus haemastoma*), Red Bloodwood (*Corymbia gummifera*) and Stringybark (*Eucalyptus oblonga*). Characteristic shrub species include She-oak (*Allocasuarina distyla*), *Allocasuarina littoralis*, *Acacia ulicifolia*, *Acacia echinula*, *Darwinia fascicularis*, *Bossiaea scolopendria*, *Woolsia pungens*, *Platysace linearifolia*, *Grevillea speciosa*, *Hakea teretifolia*, *Banksia paludosa*, *Banksia ericifolia* and *Actinotus minor*.

### **Example sites: *Hornsby Sandstone Heath-Woodland***

Site	Landform details	Geology/soils
South West of Hart Drive Centre, Garigal Park west St Ives  (Plot GARW025, 2009a).	Small elevated plateau at 160m	Transition zone between Mittagong Formation (Lucas Heights) and Sandstone (Hawkesbury)
East of Cambourne Ave, Garigal Park west, St Ives  (Plot GARW007, DECCW 2009a).	East-facing spur at 100 – 110m	On Hawkesbury Sandstone close to boundary with Mittagong Formation (Lucas Heights)

### **Coastal Upland Damp Heath Swamp**

\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)



## Sydney Sandstone Gully Forest

Ku-ring-gai is dissected by many sandstone gullies to the north and south of the primary ridge-line. SSGF is the dominant vegetation occurring within these gullies. Recent mapping by DECCW (2009a) identifies several communities within this vegetation type.

The most widespread and common community described by DECCW (2009a) is *Coastal Enriched Sandstone Sheltered Forest* occurring on the Hornsby Plateau in areas that receive greater than 1000mm of mean annual rainfall.

### **Example sites of Coastal Enriched Sandstone Sheltered Forest**

Site	Landform details	Geology/soils
East of Bryce Oval, East Killara (Garigal National Park)	Upper north west facing slope at 60m above deep sandstone gully	Sandstone (Hawkesbury)
East of Acron Oval, St Ives (Garigal National Park)	Upper slope of gully at approx. 130m	Sandstone (Gymea, Hawkesbury, Lucas Heights)
East of Geoffrey St, South Turramurra	North east facing slope of gully at approx. 50m	Sandstone (Hawkesbury)

It is a tall eucalypt forest with a sparse smaller tree layer above an understorey of dry sclerophyll shrubs with ferns and herbs in the ground layer. This is a drier forest typically with extensive rock outcrops. Within Ku-ring-gai it is found along the larger, deeper sandstone gullies mostly below 100m above sea level, associated with the Lane Cove River to the south and Middle Harbour catchment to the east. Examples include gullies in the vicinity of Acron Oval, East Killara, West Pymble and South Turramurra.

### **Coastal Sandstone Riparian Forest**

*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)*

### **Coastal Sandstone Sheltered Peppermint-Apple Forest**

*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)*

## Sydney Sandstone Gully Forest (Clay influence)

Sandstone gullies down-slope of shale or transition communities can become shale enriched with accumulations of deeper, fertile soil (see Figure 10). Dominant canopy species are similar to other SSGF communities and STIF (*wet transition form*) including Smooth-barked Apple (*Angophora costata*), Turpentine (*Syncarpia glomulifera*) and Blackbutt (*Eucalyptus pilularis*). Occasional trees of Sydney Blue Gum (*Eucalyptus saligna*) may occur along the drainage line. The mesic understorey may have rainforest elements (e.g. *Glochidion ferdinandi*, *Ceratopetalum apetalum*, *Livistona australis*, *Synoum glandulosum*) above a fern-dominated ground layer.

The boundary between STIF (*wet transition*) or CSSF (*complex*) and SSGF with a clay influence can be difficult to determine with an inter-grade zone generally present. SSGF is distinguished on the basis of steeper slopes with a high sandstone influence (including rock outcrops), shallow to medium depth of soil, a high proportion of typical sandstone species to indicative shale species (<25% of total native species within a 20m x 20m plot, Refer Section 4.6, Appendix C and D) and often a more dominant fern layer.

Vegetation within Ku-ring-gai consistent with this clay-influenced gully forest has been identified by DECCW (2009a) as *Coastal Enriched Sandstone Moist Forest*. This is a widespread community most common on the north shore between Lane Cove and Baulkham Hills but also extending to the fringes of the Cumberland Plain. Within Ku-ring-gai this community is likely to occur on higher slopes below Blue Gum High Forest (*complex*) and Sydney Turpentine-Ironbark Forest (*complex*) in deeper gullies at around 100 – 140m above sea level on Gymea soil landscape.



**Example sites of Coastal Enriched Sandstone Moist Forest**

Site	Landform details	Geology/soils
Sheldon Forest, Pymble	Deeper gullies at approx. 110m; shale influence from slopes above with BGHF, STIF and CCSF	Sandstone (GyMEA)
South of Denman Street, Turramurra	Gullies on mid-slope at approx. 110-130m; BGHF on slopes above	Sandstone (GyMEA)
Wahroonga district e.g. below Ada Avenue South, north and south of Sydney Adventist Hospital	Gullies higher in landscape at approx. 120 – 140m; BGHF and STIF above	Sandstone (GyMEA and Hawkesbury)

**Gully Rainforest**

In shale-enriched sandstone gullies of Ku-ring-gai, small patches of rainforest plants may occur within the *Coastal Enriched Sandstone Moist Forest* described above. At one known site, Browns Field (Campbell Drive, Wahroonga), these rainforest species are more diverse and form a more intact rainforest structure. This patch has been identified by DECCW (2009a) as an example of *Coastal Warm Temperate-Dry Rainforest* (a rare community within the region, with the only other recorded location within the Sydney Metropolitan CMA area being Brush Farm Park, Ryde).

The gully at Browns Field is relatively high within the landscape, being close to the upper and mid-slopes with Blue Gum High Forest (*complex*) and Sydney Turpentine-Ironbark Forest (*complex*). Within this community there may be scattered taller trees of Blackbutt or Sydney Blue Gum and a dense smaller tree canopy with typical sandstone gully rainforest species (e.g. Sassafras - *Doryphora sassafras*, Lilly pilly - *Acmena smithii*) and some stronger shale-loving species including *Livistona australis*, *Synoum glandulosum*. A range of ferns, grasses and herbs indicative of more fertile soils are present.

In deeper sandstone gullies without a strong shale influence a second rainforest community is identified, Coastal Sandstone Gallery Rainforest. Within Ku-ring-gai this rainforest type has been recorded from sandstone gullies associated with the Lane Cove River. The dominant tree species within Gallery Rainforest is Coachwood (*Ceratopetalum apetalum*) in association with Cedar Wattle (*Acacia elata*), Water Gum (*Tristanopsis laurina*), Turpentine (*Syncarpia Glomulifera*), *Acacia irrorata* and Christmas Bush (*Ceratopetalum gummiferum*). Ferns are common in the understorey and include *Adiantum aethiopicum*, *Calochlaena dubia* and *Doodia caudata*.

**Example sites: Rainforest**

Coastal Warm Temperate-Dry Rainforest		
Site	Landform details	Geology/soils
Browns Field, approx. 20m W. of oval	Broader gullies at approx. 70 - 120m; some shale influence from slopes above	Sandstone (Mostly GyMEA)
Coastal Sandstone Gallery Rainforest		
West of Commenara Parkway, S. Turramurra (Plot LC07, DECCW 2009a)	Deeper gully at 70m	Sandstone (Hawkesbury-GyMEA transition zone)
West of St Johns Av, Gordon (Plot LC36, DECCW 2009a )	Deeper gully at approx. 20-40m	Sandstone (GyMEA)



## 5.6 Forest and Saline Wetland Association

### Saline Wetlands

- Estuarine Mangrove Forest (S\_SW01)
- Estuarine Saltmarsh (S\_SW02)
- Seagrass Meadows (S\_SW03)

### Forested Wetlands

- Coastal Alluvial Bangalay Forest (S\_FoW01)
- Coastal Flats Swamp Mahogany Forest (S\_FoW02)
- Estuarine Swamp Oak Forest (S\_FoW08)

## GENERAL

These key and non key alluvial and estuarine communities were considered beyond the sandstone boundaries of council's field validation process. No field assessment was undertaken for these communities within this project, with community being based on recent DECCW mapping (2009a).

Communities included within the Forest and Saline Wetland Associations are as per the headings listed above.

### Saline Wetlands

*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a). This will include the following communities:*

:

**Estuarine Mangrove Forest (S\_SW01)**  
**Estuarine Saltmarsh (S\_SW02)**  
**Seagrass Meadows (S\_SW03)**

### Forested Wetlands

*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a). This will include the following communities:*

**Coastal Flats Swamp Mahogany Forest (S\_FoW02)**  
**Estuarine Swamp Oak Forest (S\_FoW08)**



## 6 Discussion and recommendations

The patterns and composition of native vegetation observable today reflects the ecological history of Ku-ring-gai. These patterns are influenced by a range of factors including topography, rainfall, geology, soils and past disturbance

The mapping approach adopted is effectively a fine scale interpretive vegetation mapping process supported by systematic and simplified floristic analysis. Use of systematic field control plots from both this and previous surveys, builds upon research and enables quantitative classification techniques to provide robust supporting data to classify vegetation communities and enables comparison of broader regional vegetation mapping.

Consideration of fine scale variability is particularly important when mapping urban remnant vegetation due to the high levels of human alteration (including planting and a reduction in floristic composition and cover). The fine scale methodology adopted within this project (including use of rapid field survey techniques), has provided an ecological framework for community classification, based upon the interpretation of floristic and fine scale patterns of variability (environmental gradients). This has led to the identification of localised micro environment influences between and within vegetation communities, providing high confidence mapping of urban remnant vegetation including reliable differentiation between planted and remnant canopy.

Limitations of the project methodology include late inclusion of quantitative data and reliance on subjective judgement in field identification of communities. This particularly effected mapping undertaken early in the project before a good understanding of the patterns and boundaries was acquired. A high level of quality control and consideration of systematic and simplified floristic analysis, was however, undertaken in the final stages of the project. Ongoing consultation and exchange of data has taken place with the Department of Environment, Climate Change and Water (DECCW) who have also been mapping vegetation within the larger Sydney Metropolitan CMA Area, including a large part of Ku-ring-gai (DECCW 2009a). The broader scale and stronger quantitative basis of the DECCW mapping is complementary to the finer scale and extensive field survey of the Ku-ring-gai project.

Field survey of alluvial, estuarine and sandstone communities in this project has been limited, outside of Duffys Forest (*complex*). The information provided for these vegetation communities, therefore, is not considered to be comprehensive, with classification of these communities within the Sydney Metropolitan CMA area, largely based on recent DECCW mapping (DECCW 2009a).

Whilst alluvial, estuarine communities exist entirely within the Sydney Metropolitan CMA area, detailed mapping information is lacking for sandstone communities occurring within the Hawkesbury-Nepean Catchment Management area. It is expected that this will be addressed in the future as further surveys within Hawkesbury-Nepean Catchment Management Authority area sandstone communities are undertaken.

Positive outcomes from this project include:

- Greater reliability for Council in identifying the presence of threatened ecological communities across the LGA
- Improved documentation of biodiversity and variability within the communities
- More accurate assessment of conservation significance and priorities within the LGA.
- Guidance for on ground management and development and local planning (including Council's Local Environment Plans and Development Control Plans)
- Provision of an ecological framework for improved understanding of the development and function of ecological communities across the landscape.



- Educational tool to assist in raising community awareness and appreciation of native vegetation and threatened ecological communities.
- Creation of a methodology that allows for the identification of localised micro environment influences providing a more reliable basis for community identification.
- Reliable mapping of urban remnant vegetation (of localised micro environment influences and differentiating between planted and remnant canopy).
- Creation of a photo library for selected remnants in key communities, providing baseline reference material. This information enables cross referencing with historic and future photos, that may be used for numerous purposes including enforcement, supportive evidence of extant vegetation and regeneration (highlighting the importance and reliance of seed banks).

It is recommended that future mapping work, include:

- Refinement of broadly mapped sandstone communities within the Hawkesbury-Nepean area (Council supports the creation of a 1:2000 scale Hawkesbury-Nepean CMA wide mapping product).
- Ongoing refinements to non field validated vegetation mapping with the Sydney Metropolitan CMA (including sandstone, alluvial and estuarine communities beyond those mapped by Allen *et al* 2007, West and Williams 2008)
- Vegetation monitoring and mapping refinement to ensure currency (including interpretation of up to date aerial / satellite imagery and terrain data)
- Ongoing refinement to break down community complexes into forms. This may be particularly relevant for the recognition of Blue Gum High Forest (*dry form*)
- Ongoing refinement to differentiate transitional communities from sandstone environments is recommended due to the limited survey effort within the sandstone environment.
- Appraisal of historic photos and capturing of future photos to provide an overview of change

Future refinement of this mapping may be undertaken through two main processes:

1. Opportunistic feedback resulting from map use and on-ground site work (eg. Development applications, Review of Environmental Effects, other on ground management works). To facilitate this an internal process that will provide site based updates on vegetation occurrence and condition.
2. Undertake a review of the vegetation mapping in five (5) years. While this review will not need to be as comprehensive as this study it nevertheless must focus on areas that have changed across the urban landscape to ensure the data remains relevant and accurate.



## 7 Limitations and map use

### Considerations when using this product:

- This product refers to Draft Sydney Metropolitan CMA vegetation mapping (DECCW, 2009a). The final product may include alterations to vegetation classification.
- Due to the limitations listed below, some areas of Threatened Ecological Communities may not have been identified within the mapped product. These areas are still covered under relevant legislation, including the *NSW Threatened Species Conservation (TSC) Act 1995*, *NSW Fisheries Management (FM) Act 1994* and the *Environment Protection and Biodiversity Conservation (EPBC) Act 1999*.
- Reference to these maps does not remove the requirement to undertake site assessment.
- Ku-ring-gai accepts no responsibility for any misprints, errors, omissions or inaccuracies in these maps or damages resulting from use of this information.
- A detailed assessment of historic influences on identified vegetation remnants was not undertaken (including alterations caused by large scale clearing and or planting). These influences were considered at a site level during field work, where identified.
- Mapped vegetation may represent a serial stage rather than a climax vegetation community (as an example of this process, long term increases in vegetation cover favour the colonisation of different species as a result of increase moisture, nutrients and shade).
- Limitations listed below should be considered.

### Limitations of the mapping process:

Limitations noted within the process of creating mapping and assigning vegetation community groupings include:

#### Limitations of digital mapping

- Aerial photography accuracy. This relates to the use of 10cm resolution aerial photography flown in January of 2005. Issues of regrowth and or clearing since 2005 also exist. This has partly been resolved through the process of field validation.
- Accounting for topographic variation which underestimates the area of a polygon. This has been minimised by geo-rectifying the aerial photography interpretation (API). This corrects the distortions in the photographs and terrain.
- Polygons created through image recognition (using *Definiens Developer 7.0*) has resulted in some areas of shadow and hardstand being included. Whilst the data has been quality checked using manual aerial photographic interpretation at 1:2000 scale, it is likely a degree of inaccuracy remains.
- In order to target Threatened Ecological Communities, mapping targeted vegetation greater or equal to 10m in height. Vegetation height was determined through the use of 2007 LiDAR (Light Detection and Ranging) data (aerial laser survey) with polygons refined through manual aerial photographic interpretation at 1:2000 scale.



### **Limitations of field validation**

- Due to the highly urbanised nature of Ku-ring-gai and the requirement for rapid assessment, a quadrat analysis approach has not been adopted. As such the mapping does not represent a complete list of species within any given location.
- Lack of structure and diversity of native /remnant vegetation within some locations have reduced the confidence of community determination. This is further exaggerated by the widespread occurrence of canopy species across a range of topographical units and communities (e.g. Blackbutt and Turpentine give rise to a lack of useful indicator species). Consideration of other environmental variables such as soil, slope, disturbance, elevation, topography and aspect, reduced this issue.
- Mapping focussed on areas containing canopy with heights of 10m or above. Outside these areas vegetation communities were mapped on an opportunistic basis.
- Areas of native understorey which lacked canopy, or lacked adequate diversity or density were considered to align to other vegetation rather than with an identified native vegetation community.

These limitations have been recognised and every effort was made to minimise them.



## 8 Glossary and abbreviations

<b>Abbreviations</b>	
<b>BGHF</b>	Blue Gum High Forest
<b>CEEC</b>	Critically Endangered Ecological Community
<b>CMA</b>	Catchment Management Authority
<b>CSSF</b>	Coastal Shale Sandstone Forest
<b>DECCW</b>	Department of Environment, Climate Change and Water
<b>DF</b>	Duffys Forest
<b>EEC</b>	Endangered Ecological Community
<b>EPBC Act</b>	<i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i>
<b>FM Act</b>	<i>NSW Fisheries Management Act 1994</i>
<b>KC</b>	Ku-ring-gai Council
<b>LiDAR</b>	Light Detection and Ranging data (aerial laser survey)
<b>LGA</b>	Local Government Area
<b>NSW NPWS</b>	New South Wales National Parks and Wildlife Service
<b>NSW SC</b>	New South Wales Scientific Committee
<b>PVP</b>	Property vegetation plan
<b>SCIVI</b>	South Coast-Illawarra Vegetation Inventory
<b>SMCMA</b>	Sydney Metropolitan Catchment Authority Management Authority
<b>STIF</b>	Sydney Turpentine - Ironbark Forest
<b>SSGF</b>	Sydney Sandstone Gully Forest
<b>SSRW</b>	Sydney Sandstone Ridgeline Woodland
<b>TSC Act</b>	<i>NSW Threatened Species Conservation Act 1995</i>
<b>YETI</b>	Yet Another Vegetation Survey Database (Database held by DECCW)



Glossary	
<b>Bioregion</b>	Bioregions are relatively large land areas characterised by broad, landscape-scale natural features and environmental processes that influence the functions of entire ecosystems. They capture the large-scale geophysical patterns across Australia. These patterns in the landscape are linked to fauna and flora assemblages and processes at the ecosystem scale, thus providing a useful means for simplifying and reporting on more complex patterns of biodiversity (DECCW 2008a).
<b>Native vegetation</b> has the same meaning as in the <i>Native Vegetation Act 2003</i> .	<p>Note. The term is defined in the <i>Native Vegetation Act 2003</i> as follows:  Meaning of “native vegetation”  (1) <i>Native vegetation</i> means any of the following types of indigenous vegetation:</p> <ul style="list-style-type: none"> <li>(a) trees (including any sapling or shrub, or any scrub),</li> <li>(b) understorey plants,</li> <li>(c) groundcover (being any type of herbaceous vegetation),</li> <li>(d) plants occurring in a wetland.</li> </ul> <p>(2) Vegetation is <i>indigenous</i> if it is of a species of vegetation, or if it comprises species of vegetation, that existed in the State before European settlement.</p> <p>(3) <i>Native vegetation</i> does not include any mangroves, seagrasses or any other type of marine vegetation to which section 205 of the <i>Fisheries Management Act 1994</i> applies.</p>
<b>Key vegetation communities</b>	Key vegetation communities within the Ku-ring-gai Local Government Area, including communities currently or considered likely to be listed under the <i>NSW Threatened Species Conservation (TSC) Act 1995</i> , <i>NSW Fisheries Management (FM) Act 1994</i> and the <i>EPBC Act 1999</i> (as outlined within <b>Table 2</b> and <b>Error! Reference source not found.</b> )
<b>Remnant</b>	Remnant vegetation describes native vegetation occurring within fragmented landscapes. Remnants are generally small to medium sized patches of vegetation surrounded by highly modified land used for urban residential and associated infrastructure
<b>Threatened Ecological Community</b>	A threatened ecological community is a group of species that occur together in a particular area of the landscape and is listed under the <i>NSW Threatened Species Conservation Act 1995</i> , or the <i>Environment Protection and Biodiversity Conservation Act 1999</i> .
<b>Understorey</b>	includes shrub and ground layers



## 9 References

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## **Appendix A**

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Vegetation surveys  
undertaken with the LGA



## Appendix A     Vegetation surveys undertaken with the LGA

Lists the various vegetation surveys undertaken and considered with the LGA.

**Table B.1 Vegetation mapping products within Ku-ring-gai**

Vegetation Mapping	Coverage	Effective scale	Source
Native Vegetation of the Cumberland Plain, Western Sydney	Cumberland Plain - Sydney Basin Bioregion	1:16,0000	NPWS (2002)
The Natural Vegetation of the Sydney 1:100 000 map sheet	Sydney 1:100 000 map sheet	Prepared at 1:25 000 and reduced to 1:100000 scale with little loss of detail.	Benson and Howell (1994)
Ku-ring-gai Environmentally Sensitive Areas baseline studies	Ku-ring-gai LGA - selected areas within	20m x 20m quadrat	KMC (2001)
Natural Area and Non-natural Area vegetation mapping in Ku-ring-gai LGA	Ku-ring-gai LGA	1:8000	KMC (2001a)
Vegetation map of the Sydney Harbour Foreshore	Sydney Harbour Foreshore	1:2,000	Allen <i>et al</i> (2007)
A preliminary assessment of the historical, current and future cover of seagrass in the estuary of the Parramatta River	Tidal waters below the eastern-most weir at Parramatta, the weir on the Lane Cove River and the natural tidal limit in Middle Harbour at the suburbs of St. Ives and Davidson.	1:1 500	West and Williams (2008)
An assessment of the saltmarsh of the Parramatta River and Sydney Harbour	Tidal waters below the eastern-most weir at Parramatta, the weir on the Lane Cove River and the natural tidal limit in Middle Harbour at the suburbs of St. Ives and Davidson.	1:700 (API)	<i>Kelleway et al</i> (2007)
Survey of the Duffys Forest Vegetation Community	Warringah, Pittwater and Ku-ring-gai LGAs	1:16,000	Smith and Smith (2000)
South Coast-Illawarra Vegetation Inventory (SCIVI).	Southeast NSW (including the South Coast and parts of the eastern tablelands)	1:100 000	Tozer <i>et al</i> (2006)
The Native Vegetation of the Sydney Metropolitan Catchment Management Authority Area.	Sydney Metropolitan Catchment Management Authority Area.		DECCW (2009a)



## **Appendix B**

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### **Rapid field assessment sheet**



## Appendix B Rapid field assessment sheet

### Entire Polygon

Map\_index: \_\_\_\_\_

ID no: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Assessor/s: \_\_\_\_\_

Polygon no/s: \_\_\_\_\_

Community: \_\_\_\_\_ Condition: \_\_\_\_\_

**Check – elevation, aspect, soils, spp, how mesic / sclerophyllous, disturbance**

#### 1. Native Trees Species

**Note:** Within native vegetation communities occurring within KC and surrounds

Record Dominants with (D)

(All species) :

#### 2. Native midstorey and groundcover species

**Note:** Within native vegetation communities occurring within KC and surrounds

(Recorded up to 8 dominant or indicative species) :

#### 3. Threatened Flora

**Note:** If suspected plantings – add comments

Species name, GPS, photo:

#### 4. Comments

**Eg:**

- Is vegetation remnant transitional
- Significant unique remnants (considering topographic position, soil, spp)
- Presence of significant trees or potential no mow area

Also record the variables used to determine community type.

### Polygon in LOT

Location Description: \_\_\_\_\_

GPS: \_\_\_\_\_ Photo no: \_\_\_\_\_ Suspected canopy planting: Yes ☐ No ☐

<b>5.Tree Diversity</b>	<input type="checkbox"/>	Absent
<b>Note:</b> Within native vegetation communities occurring within KC and surrounds	<input type="checkbox"/>	Single species present
	<input type="checkbox"/>	Multiple species present



<p><b>6. Species Composition All Strata</b>  <b>Note:</b> Within native vegetation communities occurring within KC and surrounds</p> <p><b>7. Vegetation Layers</b>  <b>Note:</b> Record the structure of existing native layers  Including spp from vegetation communities occurring within KC and surrounds</p> <p><b>8. Vegetation Dominance</b></p> <p><b>9. Tree Maturity</b></p> <p><b>10. Potential Hollows Observed</b></p> <p><b>11. Understorey Connectivity</b></p> <p><b>12. Recruitment</b>  <b>Note:</b> May select –  'Recruitment midstorey and / OR canopy'  AND  'Recruitment Groundcover'</p> <p><b>13. Soil Condition / Disturbance</b>  <b>Note:</b> More than one variable may be selected.</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  Canopy Midstorey Groundcover  Native Dominated Non-native Dominated  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>Absent  1-3 species  4-8 species  &gt;8 species</p> <table border="1"> <thead> <tr> <th>Individual/s</th><th>Scattered / Clumped</th><th>Dense</th></tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr> <td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </tbody> </table> <p>Canopy <input type="checkbox"/> Midstorey <input type="checkbox"/> Groundcover <input type="checkbox"/>  Canopy <input type="checkbox"/> Midstorey <input type="checkbox"/> Groundcover <input type="checkbox"/></p> <p>Not applicable  Juvenile  Mature  Senescing</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Understorey connectivity  No physical understorey connection/isolated</p> <p>No recruitment observed  Recruitment groundcover  Recruitment midstorey and / OR canopy  Successional/layer recruitment</p> <p>Unmodified, predominantly natural  Mowing  Imported material: Heavily modified /improved / cultivated</p>	Individual/s	Scattered / Clumped	Dense	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Individual/s	Scattered / Clumped	Dense												
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
<p><b>In LOT</b></p>														
<p><b>14. Surface Development (over lot)</b></p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>&gt; 50% of site contains impermeable surfaces</p> <p>25% - 50% of site contains impermeable surfaces</p> <p>&lt; 25% of site contains impermeable surfaces</p>												
<p><b>15. Soil Disturbance (over lot)</b>  <b>Note:</b> Exclude impermeable surfaces (built areas)</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>&gt; 50% of site contains disturbed soil</p> <p>25% - 50% of site contains disturbed soil</p> <p>&lt; 25% of site contains disturbed soil</p>												
<p><b>16. Comments</b></p>														



## Explanation of Field Values:

- 1. Native Tree Species** – Records the presence of existing native canopy trees, as found within native vegetation communities occurring within and around Ku-ring-gai.
- 2. Native Midstorey and Groundcover Species** – Lists existing native species within the midstorey and understorey, as found within native vegetation communities occurring within and around Ku-ring-gai. Recorded up to 8 dominant or indicative species.
- 3. Threatened Flora** – Opportunistic observations of threatened species will be recorded, including species name, GPS location and photograph.

**Table 1A.1: Examples for threatened flora within the LGA**

Scientific name	Legal Status	
	(TSC Act 1995)	(EPBC Act 1999)
<i>Acacia bynoeana</i>	E1	V
<i>Acacia gordonii</i>	E1	E
<i>Acacia pubescens</i>	V	V
<i>Callistemon linearifolius</i>	V	-
<i>Darwinia biflora</i>	V	V
<i>Deyeuxia appressa</i>	E1	E
<i>Dillwynia tenuifolia</i>	V	V
<i>Epacris purpurascens</i> var. <i>purpurascens</i>	V	-
<i>Eucalyptus camfieldii</i>	V	V
<i>Eucalyptus scoparia</i> *	E1	V
<i>Grammitis stenophylla</i>	E1	-
<i>Grevillea caleyi</i>	E1	E
<i>Grevillea juniperina</i> subsp. <i>juniperina</i>	V	-
<i>Haloragodendron lucasii</i>	E1	E
<i>Leptospermum deanei</i>	V	V
<i>Melaleuca deanei</i>	V	V
<i>Persoonia mollis</i> subsp. <i>maxima</i>	E1	E
<i>Syzygium paniculatum</i> *	V	V
<i>Tetradlea glandulosa</i>	V	V

\* Name only - no requirement to photograph or GPS

- 4. Comments** - Recording of any additional information including comments on whether the remnant is a transitional community (and if so what is it transitioning to).

Record the factors used to determine community type, within ecotone areas, areas where vegetation communities are deviating from predictive mapping or where vegetation community determination is difficult.

- 5. Tree Diversity** - Records the diversity of native canopy species within the site, as found within native vegetation communities occurring within and around Ku-ring-gai.
- 6. Species Composition All Strata** - Estimates the diversity of native species (from all strata) within the site, or from vegetation communities occurring within and around Ku-ring-gai.
- 7. Vegetation layers** – This records the presence and relative densities of layers within the vegetation community. The value records presence of existing structure, it does not record species of varying strata that have not yet matured.

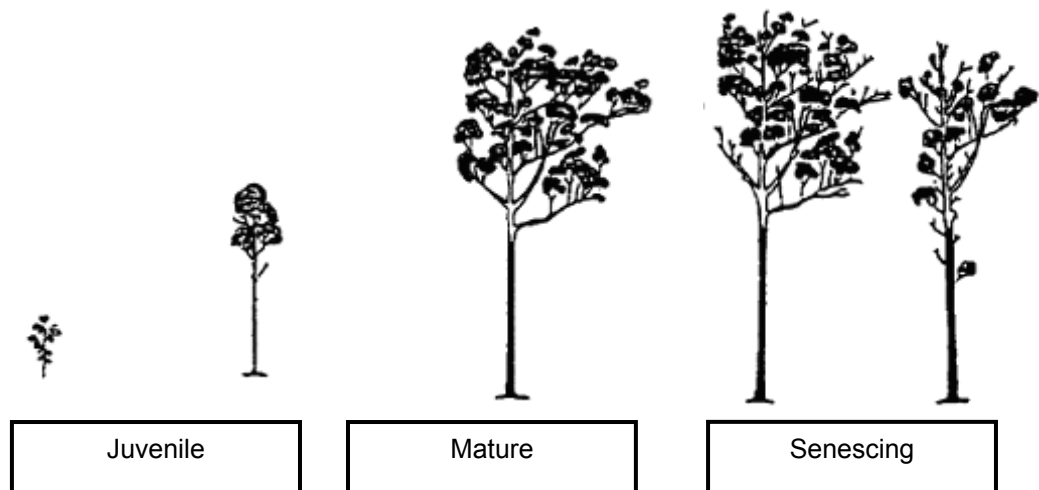


8. **Vegetation Dominance** - This attribute records whether the vegetation strata are dominated by native or non-native vegetation. Non-native vegetation may include environmental and noxious weeds, exotic species and non local native species.

9. **Tree maturity** – An estimate is made against the oldest tree observable on the site.

Tree maturity may be identified by considering tree shape, including canopy structure, tree height and girth (see image below). It should be noted:

- tree height and girth are variables that change dependant upon tree species;
- canopy condition may be affected by damage from storms, disease etc.



*Adapted from: Keenan and Ryan (2004)*

10. **Potential hollows observed** - This attribute provides an indication of fauna habitat.

11. **Understorey Connectivity** – This attribute assesses understorey (shrub / ground layer) connectivity to other vegetation.

Areas will be considered to be unconnected when separated by physical barriers, including:

- Built structures (E.g. a house, or fence - brick, wooden paling fence considered a barrier; a picket or pool fence is not); and
- Impermeable surfaces areas >5m (E.g. roads).

12. **Recruitment** – This attribute records the existence of native regeneration.

Categories applied are listed below in order of regeneration value (from most intact to least intact):

*Successional/ layer recruitment* - evidence of recruitment at all levels of vegetation assemblage and with varying stages of maturity is observed.

*Recruitment midstorey and / OR canopy* - evidence of recruitment any stage of maturity observed.

*Recruitment Groundcover* – groundcover recruitment evident:

- Over a scattered area; and / OR
- Contain a diverse species assemblage.

*No recruitment observed.*



This field allows you to select - 'Recruitment midstorey and / OR canopy' and 'Recruitment Groundcover'.

**13. Soil condition / Disturbance** – the type of disturbance observed within the field validation site. Variables include:

- a. Unmodified, predominantly natural;
- b. Mowing; and
- c. Imported material: Heavily modified /improved / cultivated.

To determine the presence of soil disturbance the following criteria may apply but are not conclusive in their extent:

- Stepped terraced garden beds;
- Cut and fill profile of a site, which would indicate exposed subsoils, inverted soil profiles and imported soils;
- Levelled sites;
- Areas within a site under cultivation, such as maintained garden beds and lawn areas, mulched garden beds using mulches of pebbles or pine bark mulch;
- Sites where development/construction is being carried out which may cause soil compaction, changes to soil nutrient and soil pH.

**14. Surface development (over entire lot)** – this variable records the amount of impervious surface across a site.

**Soil disturbance (over entire lot)** – the area of disturbed soil across the site excluding impermeable surfaces (built areas).

To determine the presence of soil disturbance the following criteria may apply but are not conclusive in their extent:

- Stepped terraced garden beds;
- Cut and fill profile of a site, which would indicate exposed subsoils, inverted soil profiles and imported soils;
- Levelled sites;
- Areas within a site under cultivation, such as maintained garden beds and lawn areas, mulched garden beds using mulches of pebbles or pine bark mulch;
- Sites where development/construction is being carried out which may cause soil compaction, changes to soil nutrient and soil pH.

**16. Comments** - Recording of any additional information.



## Vegetation Condition Categories

(Derived from: NPWS 2002)

Condition Name	Condition ID ▶	Canopy Density ▲	Description
Dense bushland	A	>10%	<ul style="list-style-type: none"> <li>• Canopy, midstorey and understorey in good condition.</li> <li>• Regeneration occurring within all layers.</li> <li>• Native dominated within all layers.</li> </ul>
Scattered bushland	B	<10%	<ul style="list-style-type: none"> <li>• Canopy, midstorey and understorey in good condition.</li> <li>• Regeneration occurring within all layers.</li> <li>• Native dominated within all layers.</li> </ul>
Non native canopy potential regeneration	Cmi	Any	<ul style="list-style-type: none"> <li>• Non native canopy cover.</li> <li>• May contain natives within shrub and /or understorey layers.</li> <li>• Area connected to other remnant vegetation, soil seed bank may contain natives.</li> </ul> <p>Eg. Privet patch within reserve, or drainage line with scattered native ground cover but weed dominated canopy.</p>
Scattered native	TXN	<10%	<ul style="list-style-type: none"> <li>• Native scattered tree overstorey, with native shrub and ground layers, <b>and</b></li> <li>• Native dominated within 2 layers.</li> </ul>
Dense native	TXND	>10%	<ul style="list-style-type: none"> <li>• Native medium to dense tree overstorey, with native shrub and ground layers, <b>and</b></li> <li>• Native dominated within 2 layers.</li> </ul>
Scattered urban vegetation	TXU	<10%	<ul style="list-style-type: none"> <li>• Native scattered tree overstorey, with no or limited native shrub and ground layers, <b>and / or</b></li> <li>• &lt; 2 layers native dominated.</li> </ul>
Dense urban vegetation	TXUD	>10%	<ul style="list-style-type: none"> <li>• Native medium to dense tree overstorey, with no or limited native shrub and ground layers, <b>and / or</b></li> <li>• &lt; 2 layers native dominated.</li> </ul>
Planting	P	Any	<ul style="list-style-type: none"> <li>• Planting native (local and non local) or exotics, associated with parklands, street verges and other public owned lands.</li> </ul>
Garden	G	Any	<ul style="list-style-type: none"> <li>• Garden / landscaping associated with commercial and residential buildings etc. Consisting of planted vegetation including exotic, non-local native species or native local plantings.</li> </ul>
Regeneration	R	Any	<ul style="list-style-type: none"> <li>• Regeneration occurring but canopy not evident.</li> </ul>

▶ **Condition ID**, clarification of division between P and G. Vegetation totally within road reserve or council land = P. Where vegetation extends from garden into road reserve, a new polygon is not required ( in order to attribute street plantings as P), it is assumed that G contains a proportion of street plantings.

▲ **Assessment of Canopy Density.** Assess density over a 20x20m area.

- < 3 trees = TXU
- ≥ 3 trees: ≥ 10% canopy = TXUD
- ≥ 3 trees: < 10% canopy = TXU



## Appendix C

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Listing of indicative shale  
species used in plot analysis



## Appendix C Listing of indicative shale species used in plot analysis

A listing of indicative shale species native to the LGA was prepared and included characteristic shale species known to occur in local shale communities and species preferring more sandy soils but typically associated with clay influence within sandstone areas. Information relating to shale preference was largely sourced from Ecology of Sydney Plants (*Cunninghamia* – various volumes) and field knowledge.

**Table C.1: Listing of indicative shale species**

Scientific Name	Scientific Name	Scientific Name
<i>Acacia decurrens</i>	<i>Eucalyptus pilularis</i>	<i>Poa labillardieri</i>
<i>Acacia implexa</i>	<i>Eucalyptus punctata</i>	<i>Polyscias sambucifolius</i>
<i>Acacia longissima</i>	<i>Eucalyptus resinifera</i>	<i>Poranthera microphylla</i>
<i>Acacia myrtifolia</i> *	<i>Eucalyptus saligna</i>	<i>Pratia purpurascens</i> *
<i>Acacia parramattensis</i>	<i>Euchiton sphaericus</i> *	<i>Pseuderanthemum variabile</i>
<i>Acacia pubescens</i>	<i>Exocarpos cupressiformis</i>	<i>Rumex brownii</i>
<i>Acacia stricta</i>	<i>Galium gaudichaudii</i>	<i>Solanum prinophyllum</i>
<i>Angophora floribunda</i>	<i>Geranium species</i>	<i>Senecio linearifolius</i>
<i>Arthropodium species</i>	<i>Guioa semiglauca</i>	<i>Syncarpia glomulifera</i>
<i>Aristida species</i>	<i>Lomandra multiflora</i> *	<i>Themeda australis</i>
<i>Austrodanthonia species</i>	<i>Hibbertia aspera</i>	<i>Vernonia cinerea</i>
<i>Austrostipa rudis</i>	<i>Hydrocotyle peduncularis</i>	<i>Veronica plebeia</i>
<i>Breynia oblongifolia</i> *	<i>Imperata cylindrica</i> *	<i>Wahlenbergia gracilis</i> *
<i>Bothriochloa species</i>	<i>Indigofera australis</i>	
<i>Brachychiton populneus</i>	<i>Lagenifera stipitata</i>	
<i>Brunoniella species</i>	<i>Leucopogon juniperinus</i>	
<i>Bursaria spinosa</i>	<i>Lomandra filiformis</i>	
<i>Caesia parviflora</i> *	<i>Glycine clandestina</i> *	
<i>Carex inversa</i>	<i>Glycine microphylla</i>	
<i>Centella asiatica</i>	<i>Glycine tabacina</i>	
<i>Cryptocarya glaucescens</i>	<i>Goodenia hederacea</i> *	
<i>Cyperus gracilis</i>	<i>Hardenbergia violacea</i> *	
<i>Cyperus imbecillus</i> *	<i>Helichrysum scorpioides</i>	
<i>Desmodium species</i>	<i>Maytenus silvestris</i>	
<i>Dianella longifolia</i>	<i>Microlaena stipoides</i>	
<i>Dichelachne species</i>	<i>Omalthus populifolius</i> *	
<i>Dichondra repens</i>	<i>Opercularia species</i> *	
<i>Digitaria parviflora</i>	<i>Oplismenus species</i> *	
<i>Dodonaea triquetra</i> *	<i>Oxalis exilis</i>	
<i>Echinopogon species</i>	<i>Oxalis perennans</i>	
<i>Einadia trigonos</i>	<i>Ozothamnus diosmifolius</i> *	
<i>Entolasia marginata</i>	<i>Panicum species</i> *	
<i>Eragrostis brownii</i>	<i>Phyllanthus gunnii</i>	
<i>Eragrostis leptostachya</i>	<i>Pimelea curviflora</i>	
<i>Eucalyptus globoidea</i>	<i>Pittosporum revolutum</i>	
<i>Eucalyptus paniculata</i>	<i>Plantago debilis</i>	

\* These species also occur in sandstone communities where the topography allows moisture to accumulate, therefore these species could be limited by water rather than soil type.



## Appendix D

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### Indicative native shale species



## Appendix D     Indicative native shale species

The percentage of indicative native shale species present in sampled 20m x 20m plots (during this project and DECC 2009a) was calculated to determine the extent of shale influence on the vegetation, this being one of the primary determinants of community types within the LGA. The results of this analysis are summarized below.

***Due to the project focus upon key vegetation communities, an analysis was undertaken for shale, shale transition and sandstone communities (with the exception of wet heath) and therefore did not consider estuarine or rainforest communities.***



**Table D.1 Grouping of vegetation communities based on shale/sandstone influence within Ku-ring-gai LGA**

Shale/sandstone influence in 20 m x 20 m plot	SHALE >50% shale spp	TRANSITIONAL SHALE/SANDSTONE >40% shale spp (medium shale influence)		
Dominant soil landscape	Glenorie, West Pennant Hills	Glenorie, West Pennant Hills, Lucas Heights, Gymea		
Topography	RIDGES/CRESTS, UPPER SLOPES	GULLIES	RIDGES/CRESTS	SLOPES
KC Communities	Blue Gum High Forest ( <i>complex</i> )	BGHF ( <i>sandstone gully form</i> )	CSSF ( <i>taller forest form</i> )	CSSF ( <i>taller forest form</i> )
	Sydney Turpentine-Ironbark Forest ( <i>complex</i> )	STIF ( <i>wet transition form</i> )	STIF ( <i>dry transition form</i> )	STIF ( <i>wet transition form</i> )
				STIF ( <i>dry transition form</i> )
EEC Status	Blue Gum High Forest, Sydney Turpentine-Ironbark Forest	Blue Gum High Forest, Sydney Turpentine-Ironbark Forest	Sydney Turpentine-Ironbark Forest Aligns with Shale Sandstone Transition Forest in the Sydney Basin Bioregion	Sydney Turpentine-Ironbark Forest, Aligns with Shale Sandstone Transition Forest in the Sydney Basin Bioregion
DECCW communities				Coastal Shale Sandstone Forest

Shale/sandstone influence in 20 m x 20 m plot	SHALE/SANDSTONE 25-40% shale spp (high sandstone influence)	SANDSTONE Clay influence 5-25% shale species		SANDSTONE < 5% shale species	
Dominant soil landscape	Lucas Heights, Gymea	Lucas Heights, Gymea, Hawkesbury		Gymea, Hawkesbury	
Topography	RIDGES/CRESTS, BENCHES, SLOPES	GULLIES	CRESTS/RIDGES	GULLIES	CRESTS/RIDGES
KC Communities	CSSF ( <i>taller forest form</i> )	Sandstone gully forest ( <i>clay influence</i> )	Duffys Forest ( <i>complex</i> )	Sandstone Gully Forest	Sandstone Ridgetop Woodland
	CSSF ( <i>low forest/woodland form</i> )		Sandstone Ridgetop Woodland ( <i>clay influence</i> )		
EEC Status	Aligns with Shale Sandstone Transition Forest in the Sydney Basin Bioregion		Duffys Forest Ecological Community in the Sydney Basin Bioregion		
DECCW communities		Coastal Enriched Sandstone Moist Forest	Sydney Ironstone Bloodwood-Silvertop Ash Woodland	Coastal Sandstone Sheltered Peppermint-Apple Forest	Hornsby Sandstone Transitional Scribbly Gum Woodland
		Hornsby Sandstone Sheltered Apple-Peppermint	Hornsby Sandstone Transitional Scribbly Gum Woodland		Hornsby Plateau Sandstone Heath - Woodland
			Hornsby Enriched Sandstone Exposed Woodland		



**Table D.2 Percentage of indicative native shale species present in sampled 20m x 20m plots analysed by KC**

Site Id	Location	Origin of data	Total native spp	Indicative shale spp	% shale spp	DECCW (2009a) community	Ku-ring-gai community
BGHF1	Clive Evatt Reserve, Wahroonga	KC	38	16	42%	Blue Gum High Forest	BGHF ( <i>typical form</i> ) Note: some gully influence
HOR04GNM	Clive Evatt Reserve, Wahroonga	DECCW	44	20	45%	Blue Gum High Forest	BGHF ( <i>typical form</i> ) Note: some sandstone gully form influence
BGHFDY01	Sir William Lewis Park, Wahroonga	KC	36	24	66%	Blue Gum High Forest	BGHF ( <i>dry form</i> )
BGHFDY02	RTA corridor, Seaton & Exeter Road, Wahroonga	KC	38	29	73%	Blue Gum High Forest	BGHF ( <i>dry form</i> )
BGHFGF1	Dalrymple Hay Reserve, St. Ives	KC	49	21	43%	Blue Gum High Forest	BGHF ( <i>sandstone gully form</i> )
BGHFDY03	Water Board Land Rosedale Rd, St. Ives	KC	60	33	55%	Sydney Turpentine-Ironbark Forest	BGHF ( <i>dry form</i> )
STIFTYP1	1486 Warrawee Public School, Bushland below school playground adjacent to Blytheswood Avenue, Warrawee	KC	41	22	54%	Blue Gum High Forest	BGHF ( <i>complex</i> )
HRN68W4U	Sheldon Forest, Pymble	DECCW	53	31	58%	Blue Gum High Forest	BGHF ( <i>complex</i> )
HRN72W2M	Browns Forest, centre of reserve	DECCW	51	27	53%	Blue Gum High Forest	BGHF ( <i>sandstone gully form</i> )
HRN73W1L	Dalrymple-Hay, St. Ives	DECCW	45	21	47%	Blue Gum High Forest	BGHF ( <i>complex</i> )
<b>Average</b>					<b>54.50%</b>	<b>BGHF</b>	<b>BGHF</b>
TIMFDY1	N. of Sandford Road, Turramurra	KC	42	33	78%	Blue Gum High Forest	STIF ( <i>typical form</i> ) Note: Blue Gum High Forest influence
SANSTIFG	Sydney Adventist Hospital, Fox Valley Rd, Wahroonga.	KC	*	*	*	Sydney Turpentine-Ironbark Forest	STIF ( <i>wet transition form</i> )
TIFM1	Golfers Glen, Pymble	KC	42	21	50%	Sydney Turpentine-Ironbark Forest	STIF ( <i>wet transition form</i> )
STIFTYP2	Bicentennial Park, West	KC	41	23	56%	Sydney Turpentine-	STIF ( <i>typical form</i> )



Site Id	Location	Origin of data	Total native spp	Indicative shale spp	% shale spp	DECCW (2009a) community	Ku-ring-gai community
	Pymble					Ironbark Forest	
STIFTYP3	Gillots Way Reserve, St. Ives	KC	33	14	42%	Sydney Turpentine-Ironbark Forest	STIF ( <i>typical form</i> ) Note: modified by plantings
SSTF03	Murrua Road, N. Turramurra	KC	41	28	68%	Sydney Turpentine-Ironbark Forest	STIF ( <i>dry transition form</i> )
STIFSSG1	Huntleys Field, St. Ives	KC	42	16	38%	Sydney Turpentine-Ironbark Forest	STIF ( <i>wet transition form</i> )
HRN74H5M	Richmond Park, Gordon	DECCW	*	*	*	Sydney Turpentine-Ironbark Forest	STIF ( <i>wet transition form</i> )
HRN67W4U	Sheldon Forest	DECCW	67	33	49%	Sydney Turpentine-Ironbark Forest	STIF ( <i>typical form</i> ) Note: <i>dry transition form</i> influence
<b>Average</b>					<b>54.43%</b>	<b>STIF</b>	<b>STIF</b>
HRN69W4F	Browns Field about 20m west of oval	DECCW	35	15	43%	Coastal Warm Temperate-Dry Rainforest	Gully Rainforest Note: aligns to Coastal Warm Temperate-Dry Rainforest
HRN78B4V	Brown's Field, Hornsby, in area of rainforest on west side of oval	DECCW	*	*	*	Coastal Warm Temperate-Dry Rainforest	Gully Rainforest Note: aligns to Coastal Warm Temperate-Dry Rainforest
HRN79B4V	Brown's Field, Hornsby, in area of rainforest on south east side of oval	DECCW	*	*	*	Coastal Warm Temperate-Dry Rainforest	Gully Rainforest Note: aligns to Coastal Warm Temperate-Dry Rainforest
<b>Average</b>					<b>43.00%</b>	<b>STIF</b>	<b>STIF</b>
SSTF1	Milkmaids Reserve, N. Turramurra	KC	38	19	50%	Coastal Shale-Sandstone Forest	CSSF ( <i>taller forest form</i> )
DFBLACK1	Near Auluba Reserve, S. Turramurra	KC	48	17	35%	Coastal Shale-Sandstone Forest	CSSF ( <i>taller forest form</i> )
*LC47	Unknown	DECCW	40	11	27%	Coastal Shale-Sandstone Forest	CSSF ( <i>taller forest form</i> )
LC35	Unknown	DECCW	47	12	26%	Coastal Shale-Sandstone Forest	CSSF ( <i>taller forest form</i> )
SANCSSTF	Sydney Adventist Hospital, Commenara Parkway.	KC	*	*	*	Coastal Shale-Sandstone Forest	CSSF ( <i>taller forest form</i> )
HRN52H1M	Degotardi Park, St. Ives	DECCW	53	13	25%	Coastal Shale-	CSSF ( <i>taller forest form</i> )



Site Id	Location	Origin of data	Total native spp	Indicative shale spp	% shale spp	DECCW (2009a) community	Ku-ring-gai community
						Sandstone Forest	
*PRR19H8C	Lane Cove NP, South Turramurra - south of Lane Cove River at end of Downing St (~45m east of road)	DECCW	64	22	34%	Coastal Shale-Sandstone Forest	CSSF ( <i>taller forest form</i> )
<b>Average</b>					<b>33%</b>	<b>CSSF</b>	<b>CSSF (<i>taller forest form</i>)</b>
SSTFHSS2	Open Space, corner of Holt and Barton Avenue, Wahroonga	KC	49	15	31%	Hornsby Enriched Sandstone Exposed Woodland	CSSF ( <i>low forest/woodland form</i> )
SSTFHSS3	Bobin Head Road, N. Turramurra	KC	55	21	38%	Hornsby Enriched Sandstone Exposed Woodland	CSSF ( <i>low forest/woodland form</i> )
CSSTF04	CSIRO, West Lindfield	KC	49	20	41%	*	CSSF ( <i>low forest/woodland form</i> )
HOR07HAM	Mt. Pleasant Av	DECCW	55	6	11%	Coastal Shale-Sandstone Forest	CSSF ( <i>low forest/woodland form</i> ) Note: plot atypical - high sandstone
<b>Average</b>					<b>30%</b>	<b>Various</b>	<b>CSSF (<i>low forest/woodland form</i>)</b>
DFTRANS1	St. Ives Showground, below bike track	KC	53	9	17%	Hornsby Enriched Sandstone Exposed Woodland	DF
DUFFYS21	Eastern end of HART site, St. Ives (c. 30 m)	DECCW	58	6	10%	Sydney Ironstone Bloodwood-Silvertop Ash Forest	DF
DUFFYS32	Southern end of Warrimoo Track, Ku-ring-gai NP	DECCW	56	5	9%	na	DF
*HRN43H2U	Eastern end of HART site, St. Ives (c. 200 m)	DECCW	54	6	11%	Sydney Ironstone Bloodwood-Silvertop Ash Forest	DF
<b>Average</b>					<b>12%</b>		<b>DF</b>
LC56	Lane Cove - S. end of LGA	DECCW	50	3	6%	Hornsby Enriched Sandstone Exposed Woodland	SSRW Note: aligns to Hornsby Enriched Sandstone Exposed Woodland



Site Id	Location	Origin of data	Total native spp	Indicative shale spp	% shale spp	DECCW (2009a) community	Ku-ring-gai community
LC49	Lane Cove - S. end of LGA	DECCW	44	4	10%	Hornsby Enriched Sandstone Exposed Woodland	SSRW Note: aligns to Hornsby Enriched Sandstone Exposed Woodland
GARW_029	Garigal Park West - E. edge of LGA	DECCW	40	1	2.50%	Hornsby Enriched Sandstone Exposed Woodland	SSRW Note: aligns to Hornsby Enriched Sandstone Exposed Woodland
HRN49H1M	SE of oval, East Gordon Park, Gordon	DECCW	51	0	0%	Hornsby Enriched Sandstone Exposed Woodland	SSRW Note: aligns to Hornsby Enriched Sandstone Exposed Woodland
GARW_003	Garigal Park West - E. edge of LGA	DECCW	53	2	4%	Hornsby Sandstone Heath-Woodland	SSRW Note: aligns to Hornsby Sandstone Heath-Woodland
GARW_007	Garigal Park West - E. edge of LGA	DECCW	56	1	2%	Hornsby Sandstone Heath-Woodland	SSRW Note: aligns to Hornsby Sandstone Heath-Woodland
<b>Average</b>					<b>4%</b>		<b>SSRW</b> <b>Note: clay influence</b>
LC08	Lane Cove River	DECCW	44	10	23%	Coastal Enriched Sandstone Moist Forest	SSGF Note: clay influence. aligns to Coastal Enriched Sandstone Moist Forest (DECCW 2009a)
*LC02	Lane Cove River	DECCW	38	10	26%	Coastal Enriched Sandstone Moist Forest	SSGF Note: clay influence. aligns to Coastal Enriched Sandstone Moist Forest (DECCW 2009a)
*SMI_PH07	Pennant Hills Park	DECCW	51	10	20%	Coastal Enriched Sandstone Moist Forest	SSGF Note: clay influence. aligns to Coastal Enriched Sandstone



Site Id	Location	Origin of data	Total native spp	Indicative shale spp	% shale spp	DECCW (2009a) community	Ku-ring-gai community
							Moist Forest (DECCW 2009a)
HRN66H5M	Sheldon Forest, Pymble	DECCW	48	7	15%	Coastal Shale-Sandstone Forest	SSGF Note: clay influence. aligns to Coastal Enriched Sandstone Moist Forest (DECCW 2009a)
<b>Average</b>					<b>21%</b>	<b>Various</b>	<b>SSGF</b> <b>Note: clay influence</b>
GARW_004	Garigal Park West - E. edge of LGA	DECCW	34	2	6%	Coastal Sandstone Sheltered Peppermint-Apple Forest	SSGF Note: dry influence. aligns to Coastal Sandstone Sheltered Peppermint-Apple Forest (DECCW 2009a)
PAR21H2M	Soldiers Memorial Park, East Killara	DECCW	44	1	2%	Coastal Sandstone Sheltered Peppermint-Apple Forest	SSGF Note: aligns to Coastal Sandstone Sheltered Peppermint-Apple Forest (DECCW 2009a)
PAR22H1U	S of Ourdes Avenue, Seven Little Australians Park, Lindfield	DECCW	47	5	11%	Coastal Sandstone Sheltered Peppermint-Apple Forest	SSGF Note: aligns to Coastal Sandstone Sheltered Peppermint-Apple Forest (DECCW 2009a)
PAR24H3M	S off E end Koola Ave, East Killara	DECCW	54	0	0%	Coastal Sandstone Sheltered Peppermint-Apple Forest	SSGF Note: aligns to Coastal Sandstone Sheltered Peppermint-Apple Forest (DECCW 2009a)
PAR25H8M	N off Chase Avenue, Roseville Chase	DECCW	37	3	8%	Coastal Enriched Sandstone Sheltered Forest	SSGF Note: aligns to Coastal Enriched Sandstone Sheltered Forest (DECCW 2009a)
*LC48	Lane Cove - unknown location	DECCW	44	10	23%	Coastal Enriched Sandstone Sheltered	SSGF Note: aligns to Coastal



Site Id	Location	Origin of data	Total native spp	Indicative shale spp	% shale spp	DECCW (2009a) community	Ku-ring-gai community
						Forest	Enriched Sandstone Sheltered Forest (DECCW 2009a)
*LC40	Lane Cove - unknown location	DECCW	56	11	20%	Coastal Enriched Sandstone Sheltered Forest	SSGF Note: aligns to Coastal Enriched Sandstone Sheltered Forest (DECCW 2009a)
<b>Average</b>					<b>10%</b>	<b>Various</b>	<b>SSGF</b>

*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)*





# Mapping and Assessment of Key Vegetation Communities Across the Ku-ring-gai Local Government Area

Volume 2:  
Vegetation  
Communities

July 2010





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# 1 Vegetation Community Profiles

Vegetation profiles are based on both field survey data and Sydney Metropolitan Vegetation mapping (DECCW 2009a). Profiles describe all vegetation communities within the Ku-ring-gai Local Government Area for:

- Key vegetation communities mapped within this project
- Key and Non key vegetation communities broadly mapped within this project and informed by regional DECCW 2009 mapping.

Profiles are specific to the Ku-ring-gai LGA and include a description of key identifying features (e.g. geology, altitude and soil landscape), LGA examples, significance and indicative species lists. This list does not represent all species identified within any given location or community. For key communities this list has been drawn from field survey data (rapid survey proformas and plot information from this project and DECCW 2009a).

Methods used to derive these vegetation communities and references cited within this document, are outlined within *Volume 1: Technical Report of Mapping and assessment of key vegetation communities across the Ku-ring-gai Local Government Area (KMC 2009)*.

## EXPLAINATION OF PROFILES:

### VEGETATION COMMUNITY

#### Vegetation community names

#### MAPPING CODE

Image of sampled site

mapped distribution of vegetation community

### Description

The description provides an overview of community characteristics and explains community vegetation community complexes and forms (as outlined within Volume 1, Section 5.2).

**Table 1: Area (ha) of sample vegetation community with various condition classes within Ku-ring-gai LGA**

Community	A	B	TXND / TXN	TXUD / TXU	CMI / R
Community name	20 ha	2 ha	3 ha	1 ha	

**Table 2: Mapped areas (ha) of sample vegetation community (complex) and forms within Ku-ring-gai with reference to condition**

Condition Class	A / B	TXND / TXN	TXUD / TXU	CMI / R
Community name (complex)	3 ha	-	-	-
Community name (form)	19 ha	3 ha	1 ha	-

### Threats

Key threats identified as impact upon the community are outlined, as recorded within the Ku-ring-gai Local Government Area.

### Conservation Status

This section describes the vegetation communities:

- Protection status under is threatened under the *Threatened Species Conservation Act 1995*, the *Environment Protection and Biodiversity Conservation Act 1999*, or
- Regional significance



**Table 3: Conservation status of sample vegetation community (*complex*) and forms within Ku-ring-gai**

	Vegetation community	Area within Ku-ring-gai (ha) (excluding DECCW lands)				
		A / B	TXND / TXN	TXUD / TXU	CMI / R	TOTAL
Council natural area	Community name ( <i>complex</i> )	26 ha				
	Community name ( <i>form</i> )					
	<b>TOTAL</b>					
Other council managed lands	Community name ( <i>complex</i> )	5 ha				
	Community name ( <i>form</i> )					
	<b>TOTAL</b>					
Other lands (excluding DECCW estate)	Community name ( <i>complex</i> )					
	Community name ( <i>form</i> )					
	<b>TOTAL</b>					
<b>Total extant area</b>						

Conservation status (Table 3) for draft vegetation mapping (KMC 2009) has been derived from:

- Intersecting KMC vegetation mapping with a reservation layer consisting of all Council's managed lands (2009) and DECCW estate (DECCW 2008), with results separated into the area of vegetation within council natural areas, area within other council managed lands and the area of other lands (excluding DECCW estate).
- The figure in grey indicates the area mapped as highly and very highly disturbed areas, including: dense urban vegetation (TXUD), scattered urban vegetation (TXU), non native canopy potential regeneration (Cmi) and regeneration (R). This category incorporates areas where disturbances have severely reduced the ecological integrity of the patch and its potential to recover, without significant assistance.
- The figure in black indicates all remaining combinations of condition, including those areas 'not assessed' for these attributes.
- The percent of extant area in formal conservation reserves has been calculated using the area in formal conservation reserves and the total extant area for all condition classes **except** those which are very highly disturbed as described above.

## Relationship to Other Communities

This section outlines relationships between the vegetation community and other vegetation communities identified within the Ku-ring-gai LGA.

## Relationship to Other Mapping

The vegetation communities' relationship to state-wide, regional and other existing mapping products are outlined.

## Species Richness

Results from plot analysis undertaken (Volume 1, Section 4.6), are provided as well as the most frequently recorded species for the community within Ku-ring-gai.



## BLUE GUM HIGH FOREST

Blue Gum High Forest ( <i>complex</i> )	BGHFC
BGHF ( <i>typical form</i> )	BGHFT
BGHF ( <i>dry form</i> )	BGHFD
BGHF ( <i>sandstone gully form</i> )	BGHFS



### Description

Blue Gum High Forest (BGHF) is a tall wet sclerophyll forest found on deeper, fertile shale soils in the high rainfall districts of northern Sydney (900 mm to 1300 mm mean annual rainfall) at altitudes mostly of 80 to 200 m above sea level but recorded as low as 30 m. The main occurrence of this community is across the ridgelines between Castle Hill and St Ives with small areas found in Ryde, Lane Cove and Willoughby where it is found at lower elevations. The largest area of remaining Blue Gum High Forest is found within the Ku-ring-gai LGA, predominantly along the Pacific Highway between Pymble and Wahroonga. To the north of the highway within this area undulating topography supports BGHF for a distance of approximately 2 km compared to approximately 1 km to the south due to steeper slopes and the close proximity of sandstone gullies.

Relative proportions of the various condition classes are shown in Table 4.

**Table 4: Area (ha) of Blue Gum High Forest (all forms) with various condition classes within Ku-ring-gai LGA**

Community	A	B	TXND / TXN	TXUD / TXU	CMI / R
Blue Gum High Forest	19.24	1.18	17.06	231.36	2.48

Blue Gum High Forest within Ku-ring-gai is dominated by tall trees of Sydney Blue Gum (*Eucalyptus saligna*) and Blackbutt (*Eucalyptus pilularis*). Smaller trees and shrubs, comprising both sclerophyllous and mesophyllous species, form a sparse to open cover above a ground layer of mesic grasses, herbs and often ferns and vines. Blue Gum High Forest is typically associated with ridgelines, slopes and small gully heads where deep shale soils may accumulate as a result of down-slope movement.



Three forms of Blue Gum High Forest are identified within the LGA:

- **typical form** occurring on sheltered slopes
- **dry form** in more exposed sites associated with ridges
- **sandstone gully form** where some sandstone influence is evident.

Together they form a Blue Gum High Forest (**Complex**). The three forms are described in detail below and have been mapped separately although in some areas prior to the identification of Blue Gum High Forest forms and within locations where the forms inter-grade over short distances the forest is mapped as Blue Gum High Forest (*complex*). Relative proportions of the three forms are shown in Table 5.

**Table 5: Mapped areas (ha) of Blue Gum High Forest (*complex*) and forms within Ku-ring-gai with reference to condition**

Condition Class	A / B	TXND / TXN	TXUD / TXU	CMI / R
Blue Gum High Forest ( <i>complex</i> )	13.80	4.66	102.21	1.77
BGHF (typical form)	0.79	5.94	50.80	0.36
BGHF ( <i>dry form</i> )	3.65	2.52	39.65	0.16
BGHF ( <i>sandstone gully form</i> )	2.18	3.95	38.71	0.19

## Threats

The primary threats to this community occur along the ridgelines, through clearing for residential, and commercial redevelopment with the key centres and along main transport routes. Down-slope the main threats are small-scale residential clearing, nutrient enrichment, garden escapes and weed invasion.

## Conservation Status

Blue Gum High Forest is listed as a Critically Endangered Ecological Community under Schedule 1 of the NSW *Threatened Species Conservation Act 1995*. Blue Gum High Forest in the Sydney Basin Bioregion is also listed as Critically Endangered Ecological Community under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

**Table 6: Conservation status of Blue Gum High Forest (*complex*) and forms within Ku-ring-gai**

	Vegetation community	Area within Ku-ring-gai (ha) (excluding DECCW lands)				
		A / B	TXND / TXN	TXUD / TXU	CMI / R	TOTAL
Council natural area	Blue Gum High Forest ( <i>complex</i> )	10.64	0.08	2.74	0.02	13.48
	BGHF (typical form)	0.03	1.62	0.57	-	2.22
	BGHF ( <i>dry form</i> )	1.52	0.11	0.73	-	2.36
	BGHF ( <i>sandstone gully form</i> )	1.21	1.56	4.76	-	7.52
TOTAL		13.39	3.37	8.80	0.02	25.57
Other council managed lands	Blue Gum High Forest ( <i>complex</i> )	0.06	0.42	3.12	0.05	3.64
	BGHF (typical form)	0.47	1.35	0.89	-	2.70



	BGHF ( <i>dry form</i> )	0.04	0.44	1.63	0.01	2.11
	BGHF ( <i>sandstone gully form</i> )	0.54	-	2.10	0.03	2.67
<b>TOTAL</b>		<b>1.10</b>	<b>2.21</b>	<b>7.74</b>	<b>0.08</b>	<b>11.13</b>
<b>Other lands (excluding DECCW estate)</b>	Blue Gum High Forest ( <i>complex</i> )	3.10	4.16	96.35	1.70	105.31
	BGHF ( <i>typical form</i> )	0.30	2.97	49.34	0.36	52.97
	BGHF ( <i>dry form</i> )	2.09	1.96	37.30	0.16	41.51
	BGHF ( <i>sandstone gully form</i> )	0.44	2.39	31.84	0.16	34.83
<b>TOTAL</b>		<b>5.93</b>	<b>11.48</b>	<b>214.83</b>	<b>2.38</b>	<b>234.62</b>
<b>Total extant area</b>		<b>20.42</b>	<b>17.06</b>	<b>231.36</b>	<b>2.48</b>	<b>271.33</b>

The drier and typical forms are most at risk from clearing, located primarily outside of conservation area these forms are the most in need of protection. The sandstone gully form of BGHF although better reserved requires extensive bush regeneration and weed control or rehabilitation.

## Relationship to Other Communities

Blue Gum High Forest is closely related to Sydney Turpentine-Ironbark Forest (STIF) and together these communities represent a unique tall eucalypt forest assemblage on shale soils in the Bioregion. Within Ku-ring-gai LGA, BGHF grades into STIF where the depth of shale decreases near or at the sandstone boundary and to a lesser extent with decreasing rainfall.

## Relationship to Other Mapping

Blue Gum High Forest fits within the:

- statewide class *North Coast Wet Sclerophyll Forests* (Keith 2004)
- Property Vegetation Plan (PVP) biometric vegetation type is *Sydney Blue Gum – Blackbutt – Smooth-barked Apple moist shrubby open forest on shale ridges of the Hornsby Plateau, Sydney Basin* (DECCW 2009)
- Sydney Metropolitan Catchment Management Authority (SMCMA) Area mapping unit Blue Gum High Forest (S\_WSF01 p46) (DECCW 2009)
- Blue Gum High Forest (WSF p153) regional map unit (Tozer *et al* 2006).

Blue Gums occurring in deeper soils along larger creek-lines within a sandstone environment i.e. with sandstone gully forest on either side, are part of Coastal Enriched Sandstone Moist Forest (S\_WSF02) of DECCW (2009a) and are not included in the BGHF CEEC.

## Species Richness

Plots (20 m x 20 m) generally contain between 40 and 50 native species with the % of indicator shale species up to 65-70% for BGHF (*dry form*) and between 40 and 50% where there is a gully influence (BGHF **sandstone gully form**).

The most frequently recorded species in Ku-ring-gai remnants of Blue Gum High Forest generally (all forms):

*Eucalyptus saligna*, *E. pilularis*, *Pittosporum undulatum*, *Cyperus gracilis*, *Dichondra repens*, *Lomandra longifolia*, *Microlaena stipoides*, *Oplismenus aemulus*



**Geology:** Ashfield Shale of the Wianamatta Group (predominantly siltstone), up to 60 metres deep in northern part of LGA e.g. Wahroonga.

**Altitude:** Mostly 90 m to 190 m above sea level. Below 90 m patches rare & confined to very sheltered sites associated with drainage lines.

**Soil landscape & characteristics:** Predominantly Glenorie (Gn), smaller areas of West Pennant Hills and occasionally Lucas Heights at lower altitudes (close to boundary with shale). Soil a deep, dark brown to brown, clay to clay loam.

**Habitat:** Steeper side slopes of the central plateau and lateral ridgelines, particularly south and east-facing; shallow depressions/concave slopes associated with drainage lines on upper to mid slopes (away from direct sandstone influence in deeper gullies). Typically found down-slope of drier form of BGHF or STIF.

**Distribution:** Across the LGA but main occurrence between Mona Vale Road and Wahroonga. Examples of most intact areas - south of Fox Valley Road & Pacific Highway (Warrawee); south of Pacific Highway in Pymble-Turramurra district; both sides of the Pacific Highway in the Lindfield-Killara district (lower altitudes). Areas are typically small due to frequent intergrading with gully form in the vicinity of gully heads.

**Vegetation structure:** Tall open forest with mesic understorey, typically with few or scattered shrubs due to disturbance and mowing regimes.

Species recorded in Ku-ring-gai are listed below. \*Species underlined are characteristic species as listed in the Final Determination and those in bold are diagnostic species of DECCW (2009a).

**Canopy trees:** *Eucalyptus pilulari*, *Eucalyptus saligna*

**Smaller trees:** *Pittosporum undulatum*, *Allocasuarina torulosa*, *Acmena smithii* *Brachychiton acerifolius* (but often naturalized), *Acacia parramattensis*, *Exocarpos cupressiformis*.

**Shrubs:** *Breynia oblongifolia*, *Polyscias sambucifolia*, *Notelaea longifolia*, *Pittosporum revolutum*, *Clerodendrum tomentosum*, *Platylobium formosum*, *Homalanthus populifolius*, *Maytenus silvestris*, *Acacia longissima*.

**Ground layer-graminoids:** *Entolasia marginata*, *Poa affinis*, *Microlaena stipoides*, *Oplismenus aemulus*, *Oplismenus imbecillus*, *Lomandra longifolia*, *Cyperus gracilis*, *Carex inversa*, *Dichelachne micrantha*, *Austrodanthonia racemosa*.

**Ground layer-ferns & herbs:** *Adiantum aethiopicum*, *Calochlaena dubia*, *Blechnum cartilagineum*, *Pseuderanthemum variable*, *Dichondra repens*, *Centella asiatica*, *Siegesbeckia orientalis*, *Dianella caerulea*, *Oxalis perennans*, *Oxalis exilis*, *Geranium homeanum*, *Rumex brownii*, *Veronica plebeia*, *Pratia purpurascens*, *Wahlenbergia gracilis*, *Einadia trigonos*.

**Climbers:** *Commelina cyanea*, *Eustrephus latifolius*, *Pandorea pandorana*, *Cayratia clematidea*, *Smilax glyciophylla*, *Clematis glycinoides*, *Glycine microphylla*, *Cissus antarctica*.

**Most frequent species recorded in Ku-ring-gai mapping project:**

*Eucalyptus saligna*, *E. pilularis*, *Pittosporum undulatum*, *Austrodanthonia racemosa*, *Carex inversa*, *Cyperus gracilis*, *Dichondra repens*, *Glycine microphylla*, *Lomandra longifolia*, *Microlaena stipoides*, *Oplismenus aemulus*.

**Threat level:** Critically endangered. Habitat preferred for development - upper slopes below ridgelines along the Pacific Highway e.g. Gordon, Turramurra, Lindfield. Often occurs in narrow strips in backyards or drainage easements at back of houses (close to ridge-line). The most rare and endangered of the BGHF forms.

**Examples:** Upper part of Clive Evatt Reserve (Figure 1a) (intergrades into gully form), reserve adjacent to Turramurra Plaza, Glade Reserve at Wahroonga (upper parts), North Pymble Park (Figure 1b).

**Notes:** Consistent with DECCW (2009a) classification of BGHF and Final Determination. Common species within Ku-ring-gai not listed in Final Determination occur predominantly in the ground layer: *Microlaena stipoides*, *Cyperus gracilis*, *Centella asiatica*, *Dichondra repens*, *Geranium homeanum*, *Rumex brownii* &



*Glycine microphylla*. These are the species most frequently persisting within fragmented remnants in private yards and along road reserves and are important indicators of the community.

**Mapping:** Some areas may be mapped within the broader classification of Blue Gum High Forest (*complex*).



Figure 1a **Blue Gum High Forest (*typical form*)**  
Clive Evatt Reserve



Figure 1b **Blue Gum High Forest (*typical form*)**  
North Pymble Park



**Geology:** Ashfield Shale. Typically includes more coarse soil with fine sandstone laminae and ironstone nodules resulting from deep lateritic weathering.

**Altitude:** Mostly 130 m to 200 m above sea level but down to 90 m - 120 m in central and southern parts of the LGA e.g. suburbs of Gordon, Lindfield, Killara and West Pymble.

**Soil landscape & characteristics:** Mostly Glenorie (Gn), occasionally Lucas Heights at lower altitudes (close to shale boundary). Soil medium to shallow depth, brown to orange-brown, silty to sandy clay-loam with a medium to high clay content. Occasionally some sandstone fragments (from sandstone laminae within shale) or more frequently lateritic gravels exposed.

**Habitat:** Higher ridgelines, crests and benches/spurs often with a northerly or western aspect.

**Distribution:** Core area in higher parts of northern LGA both north & south of the Pacific Highway & Fox Valley Road (e.g. Turramurra, Warrawee, Wahroonga). Smaller occurrences are found along Pacific Highway further south (e.g. Gordon, Killara, Lindfield), west of Ryde Road at West Pymble and along Mona Vale road south of St. Ives.

**Vegetation structure & composition:** Tall to medium open forest. Sydney Blue Gum is a common canopy species in association with a range of other eucalypt species; understorey drier than *typical form* generally with few or scattered shrubs due to disturbance and mowing regimes.

Species recorded in Ku-ring-gai are listed below. \*Species underlined are characteristic as listed in Final Determination and those in bold are diagnostic species of DECCW (2009a).

**Canopy trees:** *Eucalyptus saligna*, *Eucalyptus pilularis*, *Eucalyptus paniculata*, *Angophora floribunda*, *Angophora costata*, *Eucalyptus resinifera*, *Eucalyptus acmenoides* (rare), *Syncarpia glomulifera* (rare).

**Smaller trees:** *Pittosporum undulatum*, *Acacia implexa*, *A. floribunda*, *Allocasuarina torulosa*, *Elaeocarpus reticulatus*, *Exocarpos cupressiformis*, *Brachychiton acerifolius*.

**Shrubs:** *Breynia oblongifolia*, *Polyscias sambucifolia*, *Notelaea longifolia*, *Pittosporum revolutum*, *Platylobium formosum*, *Indigofera australis*, *Zieria smithii*, *Acacia falcata*, *Bursaria spinosa*, *Dodonaea triquetra*, *Leucopogon juniperinus*, *Ozothamnus diosmifolius*, *Acacia binervata*.

**Ground layer-graminoids:** *Entolasia marginata*, *E. stricta*, *Microlaena stipoides*, *Oplismenus aemulus*, *O. imbecillus*, *Austroanthonia racemosa*, *A. tenuior*, *Austrostipa rudis*, *Dichelachne micrantha*, *Echinopogon ovatus*, *E. caespitosus*, *Themeda australis*, *Cymbopogon refractus*, *Lomandra longifolia*, *L. filiformis*, *Cyperus gracilis*, *Carex inversa*

**Ground layer-ferns & herbs:** *Calochlaena dubia*, *Pteridium esculentum*, *Pseuderanthemum variabile*, *Dichondra repens*, *Centella asiatica*, *Caesia parviflora*, *Brunoniella australis*, *Arthropodium milleflorum*, *Dianella caerulea*, *Oxalis perennans*, *Geranium homeanum*, *Desmodium varians*, *Poranthera microphylla*, *Veronica plebeia*, *Rumex brownii*, *Einadia trigonos*, *Wahlenbergia gracilis*, *Plantago debilis*, *Pratia purpurascens*.

**Climbers:** *Hardenbergia violacea*, *Glycine microphylla*, *G. tabacina*, *G. clandestina*, *Eustrephus latifolius*, *Commelina cyanea*, *Cayratia clematidea*, *Clematis glycinoides*.

**Most frequent species recorded in Ku-ring-gai mapping project:**

*Eucalyptus saligna*, *E. pilularis*, *Angophora floribunda*, *Angophora costata*, *Eucalyptus paniculata*, *Pittosporum undulatum*, *Austroanthonia racemosa*, *Carex inversa*, *Centella asiatica*, *Cyperus gracilis*, *Dichondra repens*, *Eustrephus latifolius*, *Geranium homeanum*, *Glycine microphylla*, *Hardenbergia violacea*, *Lomandra longifolia*, *Microlaena stipoides*, *Oplismenus aemulus*, *Pratia purpurascens*, *Pteridium esculentum*, *Rumex brownii*, *Veronica plebeia*.

**Threat level:** This is the rarest form of BGHF, occurring within higher exposed sites, preferred for development.

**Examples:** Sir William Lewis Park, Exeter Road (Plot BGHFDY02), Eastbourne Avenue, Wahroonga (Figure 2a), Warrawee Park (Borambil Street), Road reserve 1-3 Marshall Avenue, Warrawee (TJ157), upper parts of



Dalrymple Hay Nature Reserve (Figure 2b), Killara railway station car park.

**Notes:** Floristically similar to STIF but occurs as localized patches within BGHF areas, groundcover species typical of BGHF also present, distant from shale/sandstone boundary and generally at higher altitudes. Consistent with the DECCW (2009a) BGHF classification; similar vegetation documented outside the LGA at Darvall Park, Ryde and West Pennant Hills. \*Lower consistency with Final Determination for BGHF in relation to undertorey species.

**Mapping:** This form of BGHF has been extensively inspected in the field; however, a couple of smaller patches may still be mapped as BGHF (*complex* or *typical form*) or STIF (*complex* or *forms*).



**Figure 2a Blue Gum High Forest (*dry form*)**  
Eastbourne Avenue, Wahroonga



**Figure 2b Blue Gum High Forest (*dry form*)**  
Dalrymple-Hay Nature Reserve  
(upper section)



**Geology:** Ashfield Shale with Hawkesbury sandstone influence.

**Altitude:** Mostly 80 m to 190 m above sea level.

**Soil landscape & characteristics:** Mostly Glenorie (Gn), also Gynea and Lucas Heights. Soil of variable depth, dark brown to brown, sandy clay loam – some sandstone fragments or minor outcrops may be present. Shale soils moved down-slope may lie above sandstone bedrock along drainage lines.

**Habitat:** Lower to mid-slopes of shallow depressions or elevated gullies in higher parts of landscape.

**Vegetation structure & composition:** Tall open forest with mesic understorey, often dense close to creek-lines. Species recorded in Ku-ring-gai are listed below. Species underlined are characteristic as listed in Final Determination and those in bold are diagnostic species of DECCW (2009a).

**Canopy trees:** *Eucalyptus saligna*, *Eucalyptus pilularis*, *Syncarpia glomulifera*, *Angophora costata*, *A. floribunda*, *Ficus rubiginosa*.

**Smaller trees:** *Pittosporum undulatum*, *Allocasuarina torulosa*, *Acacia elata*, *A. parramattenis*, *A. irrorata*, *A. decurrens*, *Tristanopsis laurina*, *Acmena smithii*, *Elaeocarpus reticulatus*, *Rapanea variabilis*, *Ceratopetalum gummiferum*, *Callicoma serratifolia*, *Ficus coronata*.

**Shrubs:** *Breynia oblongifolia*, *Pittosporum undulatum*, *Polyscias sambucifolia*, *Notelaea longifolia*, *Pittosporum revolutum*, *Clerodendrum tomentosum*, *Dodonaea triquetra*, *Omalanthus populifolius*, *Platylobium formosum*, *Leucopogon juniperinus*, *Maytenus silvestris*, *Acacia floribunda*, *A. longifolia*, *Ozothamnus diosmifolius*, *Acrotriche divaricata*, *Zieria smithii*, *Solanum aviculare*.

**Ground layer-graminoids:** *Entolasia marginata*, *Poa affinis*, *Microlaena stipoides*, *Oplismenus aemulus*, *Oplismenus imbecillus*, *Dichelachne micrantha*, *Echinopogon ovatus*, *Austroanthonia racemosa*, *Lomandra longifolia*, *Carex inversa*, *Cyperus gracilis*, *Lepidosperma laterale*, *Juncus usitatus*.

**Ground layer-ferns & herbs:** *Adiantum aethiopicum*, *Calochlaena dubia*, *Blechnum cartilagineum*, *Cyathea australis*, *Doodia aspera*, *Pteridium esculentum*, *Pseuderanthemum variabile*, *Centella asiatica*, *Siegesbeckia orientalis*, *Dianella caerulea*, *Geranium homeanum*, *Viola hederacea*, *Hydrocotyle tripartita*, *Pratia purpurascens*, *Oxalis exilis*.

**Climbers:** *Commelina cyanea*, *Eustrephus latifolius*, *Pandorea pandorana*, *Cayratia clematidea*, *Smilax glycyphylla*, *Clematis glycinoides*, *Glycine microphylla*, *Glycine clandestina*, *Tylophora barbata*, *Hibbertia scandens*, *Kennedia rubicunda*, *Cissus antarctica*, *Morinda jasminoides*.

**Threat level:** This is the more common and reserved form of BGHF within LGA, however, often highly modified and weedy. Residential gardens often include smaller creek-lines.

**Example locations:** Mid to lower slopes of Dalrymple-Hay Nature Reserve and adjoining Council land (Plot BGHFGF1), Sheldon Forest (Figures 3a and 3b), Glade Reserve (Koora Avenue, Wahroonga). (Figure 3c)

**Notes:** Good consistency with Final Determination. Representative of a transitional zone between shale and sandstone; often narrow on upper to mid-slopes due to accumulation of deep shale-derived soils as a result of downward movement or slumping with sandstone exposed or close to surface only in channel.

**Mapping:** Some areas may be mapped within the broader classification of Blue Gum High Forest (*complex*).





**Figure 3a**  
**Blue Gum High Forest (*sandstone gully form*), A condition** Sheldon Forest



**Figure 3b**



**Figure 3c Blue Gum High Forest (*sandstone gully form*),**  
**TXUD condition** North Pymble - weed dominated ground layer



## SYDNEY TURPENTINE - IRONBARK FOREST

<b>Sydney Turpentine - Ironbark Forest (<i>complex</i>)</b>	<b>STIFC</b>
<b>STIF (<i>typical form</i>)</b>	<b>STIFT</b>
<b>STIF (<i>dry transition form</i>)</b>	<b>STIFD</b>
<b>STIF (<i>wet transition form</i>)</b>	<b>STIFW</b>



### Description

Sydney Turpentine-Ironbark Forest (STIF) is a tall to medium open forest found on shale and shale-enriched sandstone associated with ridgelines and slopes in moderate rainfall zones on the coast and hinterland of Sydney. Although now extensively cleared the community was once widely distributed between Sutherland and the Hornsby Plateau with scattered outlier occurrences at Campbelltown, Menai, Kurrajong and Heathcote. The main occurrence of STIF is at elevations between 10 and 180 metres above sea level in areas receiving between 900 and 1250 mm of mean annual rainfall (DEEC 2009a). Within the Ku-ring-gai LGA, STIF typically occurs down slope of BGHF at higher altitudes and becomes the dominant community at lower altitudes close to the edge of the shale plateau e.g. along Mona Vale Road at St. Ives, southern end of Fox Valley Road and West Pymble. Soils are generally shallower with lower clay content than those supporting BGHF.. Relative proportions of the various condition classes are shown in Table 7.

**Table 7: Area (ha) of Sydney Turpentine-Ironbark Forest (all forms) with various condition classes within Ku-ring-gai LGA**

Community	A	B	TXND/TXN	TXUD/TXU	CMI / R
Sydney Turpentine-Ironbark Forest	25.40	1.27	21.79	304.75	0.30

STIF within Ku-ring-gai is dominated by Turpentine *Syncarpia glomulifera*, Blackbutt *Eucalyptus pilularis* and Smooth-barked Apple *Angophora costata*. The floristics are highly variable and determined largely by topography, aspect and proximity to the sandstone boundary.



Three forms of STIF are identified within the LGA:

- *typical form* occurring along ridgelines and upper slopes (part of the Shale Forest Association)
- two shale/sandstone transitional forms (dry transition and wet transition) on exposed and sheltered slopes respectively.

The drier form has been extensively cleared. STIF (wet transition form) is the most common form protected by its association with sandstone gullies. As the gullies become larger down-slope and the sandstone influence increases, STIF is replaced by sandstone forest communities with a shale influence. The exact boundary between STIF and these sandstone gully forest communities for any particular location may require further field survey and assessment. The three forms are described in detail below. Relative proportions of the three forms are shown in Table 8.

**Table 8: Mapped areas (ha) of STIF (*complex*) and forms within Ku-ring-gai with reference to condition**

Condition Class	A / B	TXND / TXN	TXUD / TXU	CMI / R
Sydney Turpentine - Ironbark Forest ( <i>complex</i> )	6.85	8.00	155.73	
STIF ( <i>typical form</i> )	3.46	2.77	24.11	
STIF( <i>dry transition form</i> )	0.58	3.27	66.94	
STIF ( <i>wet transition form</i> )	15.77	7.75	57.97	0.30

## Threats

Threats are very high particularly clearing along the ridgelines where there is a high demand for land for urban consolidation and transport services. Remnants are small and scattered. Down-slope the main threats are small-scale residential clearing (particularly in flatter sites away from gullies), nutrient enrichment, garden escapes and weed invasion. The NSW Scientific Committee (1997) also identifies physical damage from recreational activities, rubbish dumping, grazing and mowing.

## Conservation Status

Sydney Turpentine Ironbark Forest is listed as an Endangered Ecological Community under the NSW *Threatened Species Conservation Act 1995* (TSC Act). Sydney Turpentine Ironbark Forest in the Sydney Basin Bioregion is also listed as Critically Endangered Ecological Community under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The endangered status of STIF is likely to be confirmed for all three forms. The typical form is the rarest and of highest conservation significance.



**Table 9: Conservation status of Sydney Turpentine Ironbark Forest (*complex*) and forms within Ku-ring-gai**

	Vegetation community	Area within Ku-ring-gai (ha) (excluding DECCW lands)				
		A / B	TXND / TXN	TXUD / TXU	CMI / R	TOTAL
Council natural area	Sydney Turpentine - Ironbark Forest ( <i>complex</i> )	4.86	0.81	2.64		8.31
	STIF ( <i>typical form</i> )	1.88	1.04	0.06		2.98
	STIF( <i>dry transition form</i> )		0.56	0.17		0.73
	STIF ( <i>wet transition form</i> )	8.96	2.75	5.85	0.21	17.76
TOTAL		15.70	5.16	8.73	0.21	29.80
Other council managed lands	Sydney Turpentine - Ironbark Forest ( <i>complex</i> )	0.01	1.05	9.90		10.96
	STIF ( <i>typical form</i> )			2.20		2.20
	STIF( <i>dry transition form</i> )	0.55	0.73	0.69		1.97
	STIF ( <i>wet transition form</i> )	0.63	0.82	1.34		2.80
TOTAL		1.20	2.60	14.12	0.00	17.92
Other lands (excluding DECCW estate)	Sydney Turpentine - Ironbark Forest ( <i>complex</i> )	1.98	6.14	143.21		151.33
	STIF ( <i>typical form</i> )	1.03	1.00	23.36		25.39
	STIF( <i>dry transition form</i> )	0.58	2.71	64.57		67.86
	STIF ( <i>wet transition form</i> )	6.18	4.19	50.77	0.09	61.22
TOTAL		9.77	14.03	281.91	0.09	305.80
Total extant area		26.67	21.79	304.76	0.30	353.52

In some areas the forms are not distinct or change frequently over short distances due to intermediate or variable environmental conditions (e.g. as found in gently undulating topography) and are mapped as STIF (*complex*).

Many remnants previously mapped as STIF by Council and DECCW, associated with ridgelines & upper slopes, are now included within BGHF (*dry form*). The extent of STIF (*typical form*) is likely, therefore, to be less than previously calculated.



## Relationship to Other Communities

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Sydney Turpentine-Ironbark Forest is closely related to Blue Gum High Forest with many shared species. Together these communities represent a unique Shale Forest Association in higher rainfall areas of the Sydney region. The transitional forms are closely related to Coastal Shale Sandstone Forest (CSSF) but are representative of the shale end of the transition.

## Relationship to Other Mapping

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Sydney Turpentine-Ironbark Forest fits within the:

- statewide class *Northern Hinterland Wet Sclerophyll Forest* (Keith 2004)
- PVP biometric vegetation type *Turpentine – Grey Ironbark open forest on shale in the lower Blue Mountains and Sydney Basin* (DECCW 2009)
- Sydney Metropolitan Catchment Management Authority Area mapping unit Sydney Turpentine-Ironbark Forest (S\_WSF09) (DECCW 2009a)
- Sydney Turpentine-Ironbark (WSF p87) regional map unit (Tozer *et al* 2006).

The Sydney Turpentine - Ironbark Forest (*dry transition form*) is equivalent to Turpentine-Ironbark Margin Forest (TIMF) of Tozer (2003).

## Species Richness

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Total number of species recorded:

Plots (20 m x 20 m) generally contain over 40 native species with the % of indicator shale species >55% in the typical form away from sandstone influence and 40-50% in more transitional areas.



**Geology:** Ashfield Shale of the Wianamatta Group, rarely Hawkesbury Sandstone.

**Altitude:** Mostly 70-150 m above sea level but occasionally recorded to 180 m where adjacent to steeper sandstone gullies at higher elevations.

**Soil landscape & characteristics:** Predominantly Glenorie (Gn), also Lucas Heights & Gynea. Medium depth brown to orange-brown sandy clay loam – medium to high clay content; ironstone gravels and sandstone fragments may be present but very localised.

**Habitat:** Mostly secondary ridges, lower plateaus & moderate to gentle slopes. Exposed or sheltered conditions. In the vicinity of creek lines with increasing sandstone influence the typical form is replaced by transitional forms.

**Vegetation structure & composition:** Tall to medium open forest with shrubby or grassy understorey depending on level of disturbance and time since fire. Within Ku-ring-gai the typical form of STIF is often dominated by Blackbutt *Eucalyptus pilularis* rather than Turpentine. Species recorded in Ku-ring-gai are listed below. Species underlined are characteristic as listed in Final Determination and those in bold are diagnostic species of DECCW (2009a).

**Canopy trees:** *Eucalyptus pilularis*, *Syncarpia glomulifera*, *Angophora costata*, *Eucalyptus resinifera*, *Eucalyptus paniculata*, *Angophora floribunda*, *Eucalyptus acmenoides*, *Eucalyptus saligna*.

**Smaller trees:** *Pittosporum undulatum*, *Acacia implexa*, *A. parramattensis*, *Elaeocarpus reticulatus*, *Allocasuarina littoralis*, *A. torulosa*, *Exocarpos cupressiformis*.

**Shrubs:** *Breynia oblongifolia*, *Ozothamnus diosmifolius*, *Omalanthus populifolius*, *Polyscias sambucifolia*, *Pittosporum revolutum*, *Platylobium formosum*, *Indigofera australis*, *Bursaria spinosa*, *Leucopogon juniperinus*, *Zieria smithii*, *Acacia longifolia*, *Dodonaea triquetra*, *Hibbertia aspera*, *Kunzea ambigua*.

**Ground layer-graminoids:** *Entolasia marginata*, *Entolasia stricta*, *Microlaena stipoides*, *Oplismenus aemulus*, *O. imbecillus*, *Aristida vagans*, *Austrodanthonia racemosa*, *A. tenuior*, *Echinopogon ovatus*, *Echinopogon caespitosus*, *Dichelachne species*, *Poa affinis*, *Lepidosperma laterale*, *Panicum simile*, *Themeda australis*, *Lomandra longifolia*, *Lomandra filiformis*, *Lomandra multiflora*, *Cyperus gracilis*, *Imperata cylindrica* var. *major*.

**Ground layer-ferns & herbs:** *Pteridium esculentum*, *Calochlaena dubia*, *Dichondra repens*, *Centella asiatica*, *Dianella caerulea*, *Oxalis perennans*, *Geranium homeanum*, *Desmodium varians*, *Veronica plebeia*, *Wahlenbergia gracilis*, *Brunoniella australis*, *Pratia purpurascens*, *Pterostylis nutans*, *Desmodium rhytidophyllum*, *Dianella longifolia*, *Opercularia diphylla*, *Goodenia hederacea*, *Galium gaudichaudii*.

**Climbers:** *Hardenbergia violacea*, *Glycine microphylla*, *Glycine clandestina*, *G. tabacina*, *Kennedia rubicunda*, *Clematis species*, *Commelina cyanea*, *Pandorea pandorana*, *Geitonoplesium cymosum*, *Eustrephus latifolius*, *Smilax glycyphylla*, *Tylophora barbata*, *Billardiera scandens*, *Cassytha species*.

**Threat level:** This form is considerably rarer than the transitional forms. Most examples are very small and show some evidence of intergrading with other communities e.g. BGHF or are highly modified through clearing or plantings. Several remnants previously identified as STIF are now mapped as BHGF (dry form).

**Examples:** Bicentennial Park (West Pymble) (Figure 4a), Water Board land adjacent to Dalrymple-Hay Nature Reserve, St. Ives district e.g. Memorial Park, Gillots Way and Lindfield district., Catalpa Avenue, Turramurra (Figure 4b).

**Notes:** Similar to BGHF (*dry form*) but lower altitude with more shallow soils closer to sandstone boundary.

**Mapping:** Some areas may be mapped within the broader classification of Sydney Turpentine - Ironbark Forest (*complex*)





**Figure 4a STIF (*typical form*), A condition**  
Bicentennial Park



**Figure 4b STIF (*typical form*), TXUD condition**  
Catalpa Avenue, Turramurra



## Sydney Turpentine-Ironbark Forest (*dry transition form*) **STIFD**

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**Geology:** Mostly Mittagong Formation, also Ashfield Shale and Hawkesbury Sandstone.

**Altitude:** Mostly 60-130 m above sea level but up to 190 m in higher areas e.g. Wahroonga, Warrawee & Turramurra districts where shale is close to deeper sandstone gullies.

**Soil landscape & characteristics:** Lucas Heights, GyMEA, transitional areas between Glenorie & Lucas Heights. Medium deep soils, yellow to orange or brown silty or sandy clay loam with loose sandstone fragments & ironstone gravels typically present.

**Habitat:** Secondary crests, benches, spurs & gentle mid-slopes; relatively exposed conditions. Often short distance upslope of shale/sandstone boundary.

**Vegetation structure & composition:** Medium to low open forest with typically drier understorey of scattered sclerophyllous shrubs and grassy ground cover. Species recorded in Ku-ring-gai are listed below. Species underlined are characteristic as listed in Final Determination and those in bold are diagnostic species of DECCW (2009a).

**Canopy trees:** *Angophora costata*, *Eucalyptus resinifera*, *Eucalyptus globoidea*, *Syncarpia glomulifera*, *Eucalyptus pilularis*, *Angophora floribunda*, *Corymbia gummifera*.

**Smaller trees:** *Pittosporum undulatum*, *Acacia implexa*, *A. parramattenis*, *Allocasuarina littoralis*.

**Shrubs:** *Ozothamnus diosmifolius*, *Leucopogon juniperinus*, *Bursaria spinosa*, *Breynia oblongifolia*, *Zieria smithii*, *Kunzea ambigua*, *Acacia floribunda*, *Acacia terminalis*, *Acacia ulicifolia*, *Acacia longifolia*, *Pultenaea flexilis*.

**Ground layer-graminoids:** *Entolasia stricta*, *Entolasia marginata*, *Microlaena stipoides*, *Oplismenus aemulus*, *Austrodanthonia racemosa*, *Austrodanthonia tenuior*, *Aristida vagans*, *Echinopogon ovatus*, *Echinopogon caespitosus*, *Themeda australis*, *Lomandra longifolia*. ***Lomandra filiformis***, *Lomandra multiflora*, *Cyperus gracilis*, *Carex inversa*, *Austrostipa rudis*, *Dichelachne micrantha*, *Eragrostis brownii*, *Bothriochloa decipiens*

**Ground layer-ferns & herbs:** *Pteridium esculentum*, *Dichondra repens*, *Dianella caerulea*, *Oxalis perennans*, *Desmodium varians*, *Veronica plebeia*, *Wahlenbergia gracilis*, *Poranthera microphylla*, *Euchiton sphaericus*, *Plantago debilis*, *Wahlenbergia gracilis*, *Goodenia hederacea*, ***Pratia purpurascens***

**Climbers:** *Hardenbergia violacea*, ***Glycine microphylla***, *Glycine tabacina*, *Glycine clandestina*, *Kennedia rubicunda*.

**Threat level:** High development pressure with habitat typically level or gently sloping.

**Examples:** Mostly small highly modified remnants along road reserves and in private yards e.g. Lawley Crescent (Pymble) (Figure 5a), Catalpa Crescent & Warragal Road (Turramurra) (Figures 5b and 5c), Murdoch Street (Turramurra), Murrua Road (North Turramurra).

**Mapping:** Some areas may be mapped within the broader classification of Sydney Turpentine - Ironbark Forest (*complex*).





Figure 5a **STIF (Dry Transition)**,  
**TXUD condition** Lawley Crescent, Pymble



Figure 5b **STIF (Dry Transition)**,  
**TXUD condition** Catalpa Crescent, Turramurra



Figure 5c **STIF (Dry Transition)**,  
**TXU condition** Carlotta Avenue, Pymble



## Sydney Turpentine-Ironbark Forest (*wet transition form*) STIFW

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**Geology:** Mostly Mittagong Formation, also Ashfield Shale & Hawkesbury Sandstone.

**Altitude:** Mostly 80-150 m above sea level.

**Soil landscape & characteristics:** Most commonly Lucas Heights (lh) & Gynea (gy), also Glenorie (gn). Medium to shallow brown to orange-brown sandy clay loam – sandstone fragments or minor outcrops may be present close to creeks.

**Habitat:** Mid to lower, sheltered slopes approaching the shale/sandstone boundary, often associated with sandstone gullies.

**Vegetation structure & composition:** Medium to tall open forest with well developed mesic understorey. Turpentine *Syncarpia glomulifera* and Blackbutt *Eucalyptus pilularis* are typically dominant canopy trees. Species recorded in Ku-ring-gai are listed below. Species underlined are characteristic as listed in Final Determination and those in bold are diagnostic species of DECCW (2009a).

**Canopy trees:** *Syncarpia glomulifera* (D), *Angophora costata*(D), ***Eucalyptus pilularis***(D), *Angophora floribunda*, *E. paniculata*, *E. globoidea*.

**Smaller trees:** *Pittosporum undulatum*, *Allocasuarina torulosa*, *Acacia implexa*, *Acacia parramattenis*, *Acacia elata*, *Elaeocarpus reticulatus*, *Ceratopetalum gummiferum*, *Tristanopsis laurina*, *Omalanthus populifolius*.

**Shrubs:** *Breynia oblongifolia*, *Polyscias sambucifolia*, *Pittosporum revolutum*, *Platylobium formosum*, *Dodonaea triquetra*, *Leucopogon juniperinus*, *Maytenus silvestris*, *Notelaea longifolia*, *Acacia floribunda*, *A. longifolia*, *Zieria smithii*, *Hibbertia aspera*, *Xanthosia pilosa*.

**Ground layer-graminoids:** *Entolasia marginata*, *Entolasia stricta*, *Poa affinis*, *Microlaena stipoides*, *Oplismenus aemulus*, *O. imbecillus*, *Imperata cylindrica* var. **major**, *Echinopogon ovatus*, *E. caespitosus*, *Lomandra longifolia*, *Cyperus gracilis*, *Lepidosperma laterale*, *Panicum simile*.

**Ground layer-ferns & herbs:** *Dichondra repens*, *Centella asiatica*, *Pseuderanthemum variabile*, *Pratia purpurascens*, *Dianella caerulea*, *Oxalis perennans*, *Geranium homeanum*, *Desmodium varians*, *Veronica plebeia*, *Cryptostylis erecta*, *Calochlaena dubia*, *Cyathea australis*, *Pteridium esculentum*, *Blechnum cartilagineum*, *Lindsaea linearis*.

**Climbers:** *Hardenbergia violacea*, *Glycine microphylla*, *Kennedia rubicunda*, *Eustrephus latifolius*, *Pandorea pandorana*, *Clematis glycinoides*, *Geitonoplesium cymosum*, *Hibbertia dentata*, *Morinda jasminoides*, *Cayratia clematidea*, *Stephania japonica* var. *discolor*.

**Threat level:** This form is more common than the typical form of STIF due to the high frequency of smaller creek-lines and less suitability of land for development.

**Examples:** Represented within the following reserves; Richmond Park & Gordon Glen (Figure 6a) (Gordon); Huntleys Forest (St. Ives), Golfers Glen (Figure 6b) (Pymble).

**Notes:** Areas mapped as wet transition along creek-lines will generally inter-grade into a more sandstone environment supporting Coastal Shale Sandstone Forest (CSSF) or Sydney Sandstone Gully Forest (SSGF), largely dependant on the degree of slope and extent of shale influence. The sandstone gully forest will often have a distinct shale influence and may be consistent with the community Coastal Enriched Sandstone Moist Forest (S\_WSF02) of DECCW (2009a). Along smaller creek-lines at higher altitudes, however, the wet transition form of STIF may extend right to the creek. The mapped boundary of the wet transition form of STIF with SSGF should be used as a guide only due to the intergrading nature of the boundary, local variability and limited survey. Specific site survey is required for more detailed assessment.

**Mapping:** Some areas may be mapped within the broader classification of Sydney Turpentine - Ironbark Forest (*complex*). The area mapped as STIF (*wet transition form*) may be overestimated, due to the:

- transitional nature of this community,
- similarity of canopy species to those found in adjoining sandstone communities, and
- limited field survey of sandstone environments.





**Figure 6a STIF (*wet transition form*)**  
Gordon Glen Reserve - close to creek



**Figure 6b STIF (*wet transition form*)**  
Golfers Glen - away from creek



## COASTAL SHALE SANDSTONE FOREST

***Coastal Shale Sandstone Forest* (complex) CSSFC**

***Coastal Shale Sandstone Forest* (taller forest form) CSSFT**

***Coastal Shale Sandstone Forest* (low forest/woodland form) CSSFF**



### Description

Coastal Shale Sandstone Forest (CSSF) is a variable tall, open eucalypt forest found in higher rainfall, shale-sandstone transitional areas of the Hornsby and Woronora Plateaus, north and south of Sydney. In Ku-ring-gai, at least, a low forest or woodland form also occurs. In drier areas mostly to the west of Sydney (edge of Blue Mountains plateau) CSSF is replaced by Shale Sandstone Transition Forest, an endangered ecological community listed under the *TSC Act* and *EPBC Act*.

CSSF is found on clay influenced soils associated with residual shale or lateritic capping, shale beds in sandstone or transitional soils on slopes at the shale/sandstone boundary. Tree species are variable depending on location but within Ku-ring-gai the most common canopy species are Blackbutt *Eucalyptus pilularis*, Smooth-barked Apple *Angophora costata*, Red Mahogany *Eucalyptus resinifera*, Turpentine *Syncarpia glomulifera* and Red Bloodwood *Corymbia gummifera*. In drier habitats close to the sandstone boundary a low forest or woodland form contains additional sandstone species including Scribbly Gums *Eucalyptus haemastoma* and *E. racemosa*, Silvertop Ash *Eucalyptus sieberi* and Sydney Peppermint *Eucalyptus piperita*.

Relative proportions of the various condition classes are shown in Table 10.

**Table 10: Area (ha) of Coastal Shale Sandstone Forest (all forms) with various condition classes within Ku-ring-gai LGA**

Community	A	B	TXND/ TXN	TXUD / TXUD	CMI / R
Coastal Shale Sandstone Forest	23.63	0.25	6.88	60.11	-

Coastal Shale Sandstone Forest is a newly described community (DECCW 2009a) and belongs to the statewide class *Northern Hinterland Wet Sclerophyll Forests*. The PVP biometric vegetation type is tentatively identified as *Sydney Shale – Ironstone Forest*. The floristics is highly variable and determined largely by location, topography, aspect and proximity to the sandstone boundary. She-oaks *Allocasuarina littoralis* and *A. torulosa* are often common smaller trees above scattered



sclerophyllous shrubs and a grassy ground layer. A range of groundcovers typical of clay soils generally persist including *Dichondra repens*, *Centella asiatica*, *Pratia purpurascens*, *Veronica plebeia*, *Aristida vagans*, *Themeda australis*, and *Microlaena stipoides*.

Two forms of CSSTF are recognized. A taller forest with medium sandstone influence is found on deeper shale or lateritic caps and hill-slopes, CSSTF (*taller forest form*) and a low forest or woodland form with higher sandstone influence, CSSTF (*low forest/woodland form*). In larger areas of transitional geology the two forms may inter-grade. Taller forest occurring on a shale cap at South Turramurra (Auluba Reserve & adjoining areas) was previously identified as Duffys Forest (Blackbutt Form) in Smith & Smith (2000). The low forest/woodland form is more extensive than the taller form and is largely found on ridges, plateaus, benches or gentle slopes but has been extensively cleared and highly modified.

Relative proportions of the forms are shown in Table 11.

**Table 11: Mapped areas (ha) of Coastal Shale Sandstone Forest (*complex*) and forms within Ku-ring-gai LGA with reference to condition classes**

Condition class	A / B	TXND / TXN	TXUD / TXU	CMI / R
Coastal Shale Sandstone Forest ( <i>complex</i> )	4.16	2.85	20.30	—
CSSTF ( <i>taller forest form</i> )	13.26	1.27	21.14	—
CSSTF ( <i>low forest/woodland</i> )	6.47	2.76	18.67	—

## Threats

Threats are high particularly in flatter ridgetop or plateau areas where clearing for urban development has been extensive. Hill-slope remnants are generally narrow in extent and vulnerable to nutrient enrichment, garden escapes and weed invasion.

## Conservation Status

Coastal Shale Sandstone Forest is equivalent to the listed endangered Shale Sandstone Transition Forest community and likely to warrant clarification in the determination. All forms appear to be naturally restricted and vulnerable to development and on-going degradation.

Legal status to be determined through consultation with DECCW, upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)

Within the Ku-ring-gai LGA there are remnants of CSSF on shale caps e.g. Auluba Reserve at Turramurra that are still consistent with the Blackbutt form of Duffys Forest as described in the Final Determination for this community.

**Table 12: Conservation status of Coastal Shale Sandstone Forest (*complex*) and forms within Ku-ring-gai**

	Vegetation community	Area within Ku-ring-gai (ha) (excluding DECCW lands)				
		A / B	TXND / TXN	TXUD / TXU	CMI / R	TOTAL
Council natural area	Coastal Shale Sandstone Forest ( <i>complex</i> )	1.45	0.42	1.13	-	3.00
	CSSTF ( <i>taller forest form</i> )	4.59	0.07	3.57	-	8.22



	CSSTF ( <i>low forest/woodland</i> )	2.82	0.27	0.62	-	3.70
<b>TOTAL</b>		<b>8.85</b>	<b>0.76</b>	<b>5.32</b>	<b>-</b>	<b>14.93</b>
<b>Other council managed lands</b>	Coastal Shale Sandstone Forest ( <i>complex</i> )	0.25	0.02	0.70	-	0.96
	CSSTF ( <i>taller forest form</i> )	0.89	0.52	0.51	-	1.92
	CSSTF ( <i>low forest/woodland</i> )	1.35	0.96	1.35	-	3.65
<b>TOTAL</b>		<b>2.48</b>	<b>1.50</b>	<b>2.56</b>	<b>-</b>	<b>6.54</b>
<b>Other lands (excluding DECCW estate)</b>	Coastal Shale Sandstone Forest ( <i>complex</i> )	2.47	2.41	18.47	-	23.34
	CSSTF ( <i>taller forest form</i> )	2.30	1.53	16.70	-	20.53
	CSSTF ( <i>low forest/woodland</i> )	7.78	0.69	17.06	-	25.53
<b>TOTAL</b>		<b>12.55</b>	<b>4.62</b>	<b>52.24</b>	<b>-</b>	<b>69.41</b>
<b>Total extant area</b>		<b>23.88</b>	<b>6.88</b>	<b>60.11</b>	<b>-</b>	<b>90.87</b>

## Relationship to Other Communities

CSSF is a coastal form of the closely related endangered Shale Sandstone Transition Forest of western Sydney. Within Ku-ring-gai CSSF shares similar habitat and floristics to the transitional forms of Sydney Turpentine-Ironbark Forest but can be identified by the higher sandstone influence. A low forest/woodland form is similar to Duffys Forest (DF) but differs primarily in relation to landscape position and sandstone influence. CSSF has a stronger geographical link to the shale environment as reflected in a higher representation of shale species. Ironstone gravels can be found in both DF and CSSF. It should be noted that remnants of CSSF located on shale caps e.g. Auluba Reserve at Turramurra are still consistent with the Blackbutt form of Duffys Forest as described in the Final Determination for this community.

## Relationship to Other Mapping

Coastal Shale Sandstone Forest fits within the:

- statewide class *Northern Hinterland Wet Sclerophyll Forest* (Keith 2004)
- PVP biometric vegetation type is a component of *Red Bloodwood - Smooth-barked Apple shrubby forest on shale or ironstone of coastal plateaux, Sydney Basin* (DECCW 2009)
- Sydney Metropolitan Catchment Management Authority Area mapping unit Coastal Shale-Sandstone Forest (S\_WSF06 p65) (DECCW 2009)
- Sydney Shale-ironstone Cap Forest (DSF p143) regional map unit (Tozer *et al* 2006).

## Species Richness

Total number of species recorded:

Plots (20 m x 20 m) generally contain between 40 and 50 native species with the % of indicator shale species between 25 and 50% for both forms.



**Geology:** Shale with sandstone influence (includes Mittagong Formation).

**Altitude:** Mostly 60-100 m above sea level in southern parts of the LGA but up to 170 m in North Turrumurra where deeply incised creeks.

**Soil landscape & characteristics:** Lucas Heights (lh), Gynea (gy). Shallow, sandy clay-loam with sandstone fragments & minor to moderate rock outcrops.

**Habitat:** Broader plateaus with shale cap and gentle to moderate slopes close to or at shale/ sandstone boundary.

**Vegetation structure composition:** Open forest (mostly 15 – 35 m high) with smaller tree layer, scattered shrubs and grassy understorey. Species recorded in Ku-ring-gai are listed below. Species underlined are characteristic as listed in Final Determination for the similar Shale Sandstone Transition Forest (SSTF) EEC and those in bold are diagnostic species of CSSF of DECCW (2009a).

**Canopy trees:** *Eucalyptus pilularis*, *Angophora costata*, *Eucalyptus resinifera*, *Eucalyptus globoidea*, *Eucalyptus punctata*, *Syncarpia glomulifera*, *Corymbia gummifera*, *Eucalyptus haemastoma*.

**Smaller trees:** *Pittosporum undulatum*, *Acacia implexa*, *Acacia parramattenis*, *Allocasuarina littoralis*, *Acacia binervia*, *Acacia elata*, *Elaeocarpus reticulatus*, *Glochidion ferdinandi*, *Persoonia levis*.

**Shrubs:** *Ozothamnus diosmifolius*, *Leucopogon juniperinus*, *Bursaria spinosa*, ***Polyscias sambucifolia***, *Kunzea ambigua*, *Acacia myrtifolia*, *Acacia linifolia*, *Persoonia linearis*, *Persoonia pinifolia*, *Hakea sericea*, *Dodonaea triquetra*, *Grevillea linearifolia*, *Bossiaea obcordata*, *Lomatia silaifolia*, *Acacia longifolia*, *Acacia suaveolens*, *Pultenaea flexilis*, *Epacris pulchella*, *Hibbertia aspera*, *H. empetrifolia*, *Micrantheum ericoides*.

**Ground layer-graminoids:** *Entolasia stricta*, *E. marginata*, *Microlaena stipoides*, *Oplismenus aemulus*, *Austrodanthonia racemosa*, *Austrodanthonia tenuior*, *Echinopogon ovatus*, *Echinopogon caespitosus*, *Themeda australis*, *Dichelachne micrantha*, *Digitaria ramularis*, *Aristida vagans*, ***Austrostipa pubescens***, *Austrostipa rudis*, *Eragrostis leptostachya*, *Eragrostis brownii*, ***Imperata cylindrica* var. *major***, *Lepidosperma laterale*, *Cyperus gracilis*, *Lomandra longifolia*, *Lomandra filiformis*, ***Lomandra multiflora***, ***Lomandra obliqua***, *Xanthorrhoea media*.

**Ground layer-ferns & herbs:** ***Pteridium esculentum***, *Brunoniella australis*, *Dichondra repens*, *Dianella caerulea*, *Cryptostylis erecta*, *Oxalis perennans*, *Pomax umbellata*, *Desmodium varians*, *Veronica plebeia*, *Wahlenbergia gracilis*, *Poranthera microphylla*, *Goodenia heterophylla*, ***Goodenia hederacea***, ***Pratia purpurascens***, *Commelina cyanea*, *Euchiton sphaericus*.

**Climbers:** *Hardenbergia violacea*, *Glycine microphylla*, *Glycine tabacina*, *Kennedia rubicunda*, ***Cassytha pubescens***, *Pandorea pandorana*, ***Smilax glycyphylla***, ***Billardiera scandens***.

**Threat level:** This community occurs with a restricted natural occurrence. Core distribution of CSSF is likely within the Ku-ring-gai LGA. CSSF is known to provide habitat for two threatened species within Ku-ring-gai – *Epacris purpurascens* var. *purpurascens* and *Acacia pubescens*.

**Examples:** Council reserves on either side of gully north of Burns Road (Turrumurra) , e.g. Milkmaids Reserve (Figure 7a) Grevillea Walk (Figure 7b) and in the vicinity of Clissold Road, Wahroonga.. Kissing Park Oval (Auluba Reserve), South Turrumurra is a remnant on a shale cap (Figures 7c and 7d)

**Notes:** Typically a narrow zone of gentle gradient with steeper slopes below. Not as distinct floristically as the listed endangered SSTF of western Sydney. Plot data for example sites indicates presence of 30 – 45% of characteristic SSTF species as listed in Final Determination. Generally a higher consistency with STIF is found and most commonly occurs below this community. At wetter sites on steeper gully slopes this community may inter-grade down slope into Coastal Enriched Sandstone Sheltered Forest (S\_DSFO4) or Coastal Enriched Sandstone Moist Forest (S\_WSF02) (DECCW 2009a).



**Mapping:** Some areas may be mapped within the broader classification of Coastal Shale Sandstone Forest (*complex*). Although extensively checked there may still be some CSSTF (*taller forest form*) areas mapped as other communities, due to the small size of remnants and similarities with other transitional communities.



**Figure 7a CSSF (*taller forest form*),  
A condition** Milkmaids Reserve



**Figure 7b CSSF (*taller forest form*),  
A condition** Grevillea Walk – some plantings



**Figure 7c CSSF (*taller forest form*),  
Condition A** South Turramurra, on  
shale cap



**Figure 7d CSSF (*taller forest form*),  
Condition TXUD** South Turramurra, on  
shale cap



## Coastal Shale Sandstone Forest (*low forest/woodland form*) **CSSFF**

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**Geology:** Transitional areas between shale and sandstone with medium to high sandstone influence (mostly Mittagong Formation).

**Altitude:** Variable - 160-190 m above sea level at Wahroonga (Junction & Carrington Roads, Barton Av), 100-110 m at South Turrumurra; 110-130 m (Kissing Point Road).

**Soil landscape & characteristics:** Predominantly Lucas Heights, also Gynea. Shallow, sandy loam or sandy, clay-loam, typically with sandstone fragments and/or ironstone gravels, occasional rock outcrops.

**Habitat:** Ridges, crests, benches and upper to mid slopes close to sandstone environment, includes exposed and more sheltered aspects.

**Vegetation structure:** Low forest to woodland in more exposed sites. Species recorded in Ku-ring-gai are listed below. Species underlined are characteristic as listed in Final Determination for the similar Shale Sandstone Transition Forest (SSTF) EEC and those in bold are diagnostic species of CSSF of DECCW (2009a).

**Canopy trees:** *Eucalyptus haemastoma* (D), *Eucalyptus racemosa* (C), *Corymbia gummifera* (D), ***Eucalyptus resinifera*** (C), ***Angophora costata***, *Eucalyptus sieberi*, *Eucalyptus globoidea*, *Eucalyptus oblonga*, *Eucalyptus sparsifolia*, *Eucalyptus capitellata*; (*Eucalyptus piperita*, ***Eucalyptus pilularis*** – on more sheltered slopes).

**Smaller trees:** *Acacia parramattensis*, *Acacia decurrens*, *Banksia serrata*, ***Pittosporum undulatum***, *Elaeocarpus reticulatus*, ***Allocasuarina littoralis***, *Persoonia levis*, *Leptospermum trinervium*.

**Shrubs:** *Kunzea ambigua*, ***Dodonaea triquetra***, ***Lomatia silaifolia***, *Acacia terminalis*, ***Acacia linifolia***, ***Acacia myrtifolia***, *Acacia ulicifolia*, ***Banksia spinulosa* var. *spinulosa***, ***Bossiaea obcordata***, *Lambertia formosa*, *Acacia longifolia*, *Hibbertia empetrifolia*, *Hibbertia aspera*, *Ozothamnus diosmifolius*, ***Polyscias sambucifolia***, ***Leucopogon juniperinus***, *Persoonia pinifolia*, ***Hakea sericea***, ***Micrantheum ericoides***, *Grevillea sericea*, ***Phyllanthus hirtellus***, *Grevillea buxifolia*, *Pultenaea tuberculata*, *Bursaria spinosa*, ***Leptospermum trinervium***, *Epacris pulchella*, *Gonocarpus tetragynus*.

**Ground layer-graminoids:** *Echinopogon ovatus*, *Echinopogon caespitosus*, *Cyperus gracilis*, *Microlaena stipoides*, *Oplismenus aemulus*, *Eragrostis brownii*, *Aristida vagans*, *Aristida ramosa*, *Bothriochloa species*, ***Themeda australis***, *Panicum simile*, *Lomandra longifolia*, ***Lomandra obliqua***, *Lomandra glauca*, ***Austrostipa pubescens***, *Austrostipa rudis*, ***Cyathochaeta diandra***, ***Imperata cylindrica* var. *major***, *Lepidosperma laterale*, *Entolasia stricta*, *Xanthorrhoea media*.

**Ground layer-ferns & herbs:** *Dichondra repens*, *Centella asiatica*, ***Pratia purpurascens***, *Wahlenbergia gracilis*, *Veronica plebeia*, ***Xanthosia tridentata***, *Actinotus minor*, *Dianella caerulea*, *Rumex brownii*, *Lindsaea microphylla*, *Lindsaea linearis*.

**Climbers:** *Glycine clandestina*, *Glycine microphylla*, *Kennedia rubicunda*, ***Cassytha pubescens***, *Hardenbergia violacea*.

**Threat level:** Naturally restricted; highly cleared & developed for roads & houses. Mostly is represented by remnant trees in residential yards and along road reserves, also at edge of national parks and reserves.

**Examples:** Council open space on the corner of Holt and Barton Avenue, Wahroonga (Figure 8a), CSIRO, West Lindfield (Figure 8b), Wahroonga (in vicinity of Junction & Carrington Roads), Bobbin Head Road at North Turrumurra, lower section of Kissing Point Road at Turrumurra, Athena Road, St. Ives (Figure 8c), West Lindfield (Figure 8d).

**Notes:** Highly modified due to clearing and development and often difficult to distinguish from SSRW, particularly SSRW with clay influence. It is also very similar floristically to DF. This form is most commonly identified by scattered remnant Scribbly Gums (with occasional trees of *Angophora costata*, *Corymbia gummifera* or *Eucalyptus resinifera*) in gardens and along road reserves on flatter transitional landscapes. A distinct clay influence is evident in the soil with some persistent shale groundcover species including *Dichondra repens*, *Pratia purpurascens*, *Microlaena stipoides*, *Dichelachne micrantha* and *Glycine microphylla*.



**Mapping:** Some areas may be mapped within the broader classification of Coastal Shale Sandstone Forest (*complex*). Although extensively checked there may still be some areas mapped as SSRW that may be CSSTF (*low forest/woodland*) on transitional landscapes (e.g. Lucas Heights soil landscape).



**Figure 8a CSSF (*low forest/woodland form*),  
A condition** Open Space, corner of Holt  
and Barton Avenue, Wahroonga



**Figure 8b CSSF (*low forest/woodland form*),  
A condition** Road reserve and adjoining CSIRO



**Figure 8c CSSF (*low forest/woodland form*),  
condition TXUD** Athena Road, St. Ives



**Figure 8d CSSF (*low forest/woodland form*),  
condition TXUD** West Lindfield



*Duffys Forest (complex)* DFC

*Duffys Forest (typical form)* DFTY

*Duffys Forest (transition form)* DFT



## Description

Duffys Forest (DF) is a shrubby forest or woodland community of coastal Sydney sandstone. The key features that separate DF from similar sandstone communities is the combination of high rainfall (>1100 mm) and the presence of red ironstone mantles above sandstone. Recent mapping of the Sydney Metropolitan Region (DECCW 2009a) has extended the known occurrence of this community to include areas of lateritic ironstone between Bulli and Sutherland; however, the extent within Ku-ring-gai has been reduced with taller forest previously identified as a Blackbutt form now included within the Coastal Shale-Sandstone Forest community. DF is now restricted within Ku-ring-gai to the northern part of St. Ives and extends to the north beyond the LGA to Duffys Forest, Belrose and Terry Hills. Relative proportions of the various condition classes are shown in Table 13.

**Table 13: Area (ha) of Duffys Forest (all forms) with various condition classes within Ku-ring-gai LGA**

Community	A	B	TXND / TXND	TXUD / TXU	CMI / R
Duffys Forest	21.57	0.92	9.13	9.54	0.19

DF is dominated by Red Bloodwood (*Corymbia gummifera*), Silver-top Ash (*Eucalyptus seeberi*) and Stringybark (*Eucalyptus capitellata*) or *Eucalyptus oblonga* with Scribbly Gum (*Eucalyptus haemastoma*) less common. The shrub layer is diverse with high representation of members of the Proteaceae family including *Hakea*, *Banksia* and *Persoonia*, above a relatively grassy ground layer.

Two forms of DF are identified within the LGA. Currently Duffys Forest (complex) (DFC) has not been mapped, however, further surveys may include this form.

The typical form of DF is dominated by Red Bloodwood (*Corymbia gummifera*), Red Stringybark (*Eucalyptus capitellata*) and Smooth-barked Apple (*Angophora costata*) and is found on ridgetops, plateaus and upper slopes with some clay influence and distinctive ironstone gravels. A transitional



form between typical DF and adjoining sandstone communities (most commonly Sandstone Ridgetop Woodland) is also recognised and unlike the typical form may have some sandstone outcrops.

A Blackbutt form of DF recorded previously from South Turrumurra by Smith & Smith (2000) is identified in this survey and by DECCW (2009a) as CSSTF. The two forms are described in detail below; relative proportions of each are shown in Table 14.

**Table 14: Mapped areas (ha) of Duffys Forest (*complex*) and forms within Ku-ring-gai with reference to condition**

Condition class	A / B	TXND / TXND	TXUD / TXU	CMI / R
DF ( <i>typical form</i> )	14.62	8.61	6.53	0.19
DF ( <i>transition form</i> )	7.86	0.52	3.01	-

## Threats

Threats are high due to past and ongoing clearing for urban subdivisions (e.g. St. Ives Chase), roads and agriculture. Local impacts have arisen from the digging of gravel pits exploiting the laterite for road building (DECCW 2009a).

## Conservation Status

Duffys Forest Ecological Community in the Sydney Basin Bioregion is listed as an Endangered Ecological Community under the NSW *Threatened Species Conservation Act* 1995 (TSC Act). Areas are protected in Garigal, Heathcote, Dharawal and the Royal national parks and reserves.

**Table 15: Conservation status of Duffys Forest (*complex*) and forms within Ku-ring-gai**

	Vegetation community	Area within Ku-ring-gai (ha) (excluding DECCW lands)				
		A / B	TXND / TXN	TXUD / TXU	CMI / R	TOTAL
Council natural area	Duffys Forest ( <i>complex</i> )					
	DF ( <i>typical form</i> )	6.46	0.41	0.10	-	6.98
	DF ( <i>transition form</i> )	3.85	0.05	-	-	3.90
TOTAL		10.32	0.46	0.10	-	10.88
Other council managed lands	Duffys Forest ( <i>complex</i> )					
	DF ( <i>typical form</i> )	3.24	6.71	2.66	-	12.61
	DF ( <i>transition form</i> )	1.45	0.15	0.53	-	2.12
TOTAL		4.68	6.86	3.19	-	14.73
Other lands (excluding DECCW estate)	Duffys Forest ( <i>complex</i> )					
	DF ( <i>typical form</i> )	4.92	1.48	3.77	0.19	10.35
	DF ( <i>transition form</i> )	2.57	0.33	2.48	-	5.37
TOTAL		7.48	1.81	6.25	0.19	15.73
Total extant area		22.49	9.13	9.54	0.19	41.34



## Relationship to Other Communities

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Duffys Forest is closely related to CSSF, particularly the low forest-woodland form, and sandstone ridgetop communities with a clay influence.

## Relationship to Other Mapping

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Duffys Forest fits within the:

- statewide class *Sydney Coastal Dry Sclerophyll Forests* (Keith 2004)
- PVP biometric vegetation type is a component of *Red Bloodwood - Smooth-barked Apple shrubby forest on shale or ironstone of coastal plateaux, Sydney Basin* (DECCW 2009)
- Sydney Metropolitan Catchment Management Authority Area mapping unit Sydney Ironstone Bloodwood-Silvertop Ash Forest (S\_DSF14) (DECCW 2009a)
- Sydney Shale-Ironstone Cap Forest (DSF p143) regional map unit (Tozer *et al* 2006).

## Species Richness

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Total number of species recorded:

Plots (20 m x 20 m) generally contain >50 native species with the % of indicator shale species <20% and the % of characteristic Duffys Forest species generally >70%.



**Geology:** Typically Mittagong Formation within Hawkesbury Sandstone environment; associated with clay lenses or clay capping.

**Altitude:** Between 140 - 170 m.

**Soil landscape & characteristics:** Predominantly Lucas Heights, Gynea and Hawkesbury soil landscapes; small patches of Glenorie may occur locally e.g. St. Ives Chase. Clay loam with distinctive ironstone gravels, typically no sandstone outcrop.

**Habitat:** Ridgetops, spurs, plateaus or upper slopes, usually upslope of steep slopes on sandstone but can occur on a mid-slope or bench down slope of SSRW.

**Vegetation structure & composition:** Low open forest with scattered shrubs and grassy groundcover. Species recorded in Ku-ring-gai are listed below. Species underlined are characteristic as listed in Final Determination for Duffys Forest (DF) and those in bold are diagnostic species of DF of DECCW (2009a).

**Canopy trees:** Corymbia gummifera (D), Angophora costata (D), Eucalyptus capitellata (C), Eucalyptus sieberi (C), Eucalyptus globoidea, Eucalyptus oblonga **Eucalyptus haemastoma**, Eucalyptus umbra.

Smaller trees: Allocasuarina littoralis, Pittosporum undulatum, **Banksia serrata**, **Banksia ericifolia**, Elaeocarpus reticulatus, Ceratopetalum gummiferum, **Persoonia levis**, Exocarpos cupressiformis.

**Shrubs:** **Lambertia formosa**, **Banksia spinulosa**, **Hakea sericea**, **Bossiaea obcordata**, **Lomatia silaifolia**, **Micrantheum ericoides**, **Phyllanthus hirtellus**, **Acacia myrtifolia**, Acacia linifolia, Acacia longifolia, Dodonaea triquetra, **Petrophile pulchella**, Ozothamnus diosmifolius, **Epacris pulchella**, Leptospermum polygalifolium, **Hakea dactyloides**, Hibbertia aspera, **Pultenaea tuberculata**.

**Ground layer-graminoids:** Entolasia stricta, **Austrostipa pubescens**, Aristida vagans, Austrodanthonia tenuior, Austrodanthonia racemosa, Microlaena stipoides, Themeda australis, **Cyathochaeta diandra**, Lomandra longifolia, **Lomandra obliqua**, Lomandra multiflora, **Xanthorrhoea media**.

**Ground layer-ferns & herbs:** Pteridium esculentum, **Lindsaea linearis**, Lindsaea microphylla, Dichondra repens, Dianella caerulea, **Dampiera stricta**, **Actinotus minor**, Centella asiatica.

**Climbers:** Hardenbergia violacea, Glycine clandestina, Kennedia rubicunda.

**Threat level:** This community has a highly restricted distribution at St. Ives. Larger areas cleared or modified for recreation (St. Ives Showground) or within HART driving centre.

**Examples:** Restricted occurrence in St. Ives district e.g. St. Ives Showground (Figures 9a and 9b) & HART driving site, Acron Oval.

**Notes:** Typical form is consistent with DF as described by Smith & Smith (2000), the TSC Act listing and DECCW (2009a). Similar to SSRW with clay influence but latter with higher proportion of sandstone species and greater sandstone outcrops.

**Mapping:** Some areas may be mapped within the broader classification of Duffys Forest (*complex*). Present mapping likely to be reliable although further checking of DF and CSSF warranted in the St. Ives and St. Ives Chase districts.





**Figure 9a Duffys Forest (*typical form*), condition A**  
St. Ives Showground



**Figure 9b Duffys Forest (*typical form*), condition TXND**  
St. Ives Showground



**Geology:** Transition zone between Hawkesbury Sandstone and associated clay lenses or shale cap.

**Altitude:** Mostly 145-155-m above sea level.

**Soil landscape & characteristics:** Predominantly Lucas Heights, also Gynea and Hawkesbury soil landscapes. Sandy, clay soil with some ironstone gravels and minor to moderate sandstone outcrop.

**Habitat:** Mid-slopes or edge of bench, sometimes below extensive sandstone outcrops at shale/sandstone boundary.

**Vegetation structure & composition:** Low forest or woodland with drier more dense shrub understorey if transition to SSRW or more mesic component if transition to SSGF. Scribbly Gum *E. haemastoma* often becomes more common within transition form in more exposed sites. Species recorded in Ku-ring-gai are listed below. Species underlined are characteristic as listed in Final Determination for Duffys Forest (DF) and those in bold are diagnostic species of DF of DECCW (2009a).

**Canopy trees:** *Corymbia gummifera* (D), ***Angophora costata*** (C), ***Eucalyptus sieberi*** (C), ***Eucalyptus haemastoma*** (C), *Eucalyptus oblonga*, *E. sparsifolia*.

**Smaller trees:** *Allocasuarina littoralis*, ***Banksia serrata***, ***Banksia ericifolia***, *Leptospermum trinervium*.

**Shrubs:** *Lambertia formosa*, *Acacia longifolia*, *A. suaveolens*, ***Hakea sericea***, ***Bossiaea obcordata***, *Lomatia silaifolia*, ***Micrantheum ericoides***, ***Phyllanthus hirtellus***, *Grevillea linearifolia*, ***Persoonia levis***, ***Persoonia pinifolia***, *Dodonaea triquetra*, ***Petrophile pulchella***, *Ozothamnus diosmifolius*, *Kunzea ambigua*.

**Ground layer-graminoids:** *Entolasia stricta*, ***Austrostipa pubescens***, *Chionochloa pallida*, *Caustis flexuosa*, ***Cyathochaeta diandra***, *Lomandra longifolia*, ***Lomandra obliqua***, ***Lomandra glauca***, ***Xanthorrhoea media***.

**Ground layer-ferns & herbs:** *Pteridium esculentum*, *Dianella caerulea*, ***Dampiera stricta***, ***Actinotus minor***, *Tetratheca ericifolia*, *Dipodium variegatum*, *Centella asiatica*.

**Climbers:** *Hardenbergia violacea*, ***Cassytha*** species, ***Billardiera scandens***, *Smilax glycyphylla*.

**Threat level:** Part of the Duffys Forest community.

**Examples:** Main occurrence in St. Ives district e.g. below bike track at St. Ives Showground (Figures 10a and 10b), HART site, Surgeon White Reserve.

**Notes:** Analysis of plot data using the Smith DF Index indicates that transitional zone at the showground, at least, has a greater affinity to DF than SSRW. Floristically it is very similar to CSSF (low forest-woodland form). Transition to gully forest can also occur (mesic form of transition) on sheltered slopes with gully influence e.g. at St. Ives Showground. Typical species include: *Eucalyptus sieberi*, *Angophora costata*, *Eucalyptus globoidea*, *Ceratopetalum gummiferum*, *Pittosporum undulatum*, *Leptospermum polygalifolium*, *Callistemon citrinus*, *Epacris pulchella*, *Cyathea australis*.

The DF transitional form could be included in CSSF, however, due to the very narrow zone, low representation of shale species (<20% within 20 m x 20 m plot), and a similar number of DF diagnostic species to the typical form, it is considered more appropriate to retain as DF Transition.

**Mapping:** Some areas may be mapped within the broader classification of Duffys Forest (*complex*). DF (*transition form*) may occur below mapped DF (*complex* and *forms*) and further site-specific field investigation of boundaries is recommended.





**Figure 10a Duffys Forest (*transition form*), condition A**  
St. Ives Showground



**Figure 10b Duffys Forest (*transition form*), condition TXUD**  
St. Ives Showground



## **SYDNEY SANDSTONE RIDGETOP WOODLAND (INCLUDING HEATH OR SHRUB DOMINATED VEGETATION)**

### ***Sydney Sandstone Ridgetop Woodland*      SSRW**

Hornsby Sandstone Exposed Bloodwood Woodland (S\_DSF11)  
Hornsby Sandstone Heath-Woodland (S\_DSF12)

### ***Sydney Sandstone Ridgetop Woodland (clay influence)*      SRWCL**

Hornsby Enriched Sandstone Exposed Woodland (S\_DSF10)

### ***Sydney Sandstone Ridgetop Woodland (wet heath)*      SSRWH**

Coastal Upland Damp Heath Swamp (S\_FRW01)



#### **Description**

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Sydney Sandstone Ridgetop Woodland (SSRW) is a variable low forest or woodland vegetation type occurring extensively on ridgetops and exposed slopes on Sydney sandstone. SSRW is floristically similar to both Duffys Forest and Coastal Shale Sandstone Forest (*low forest – woodland form*). It is distinguished from these similar communities on the basis of a very high sandstone influence (including rock outcrops) and a high proportion of typical or diagnostic SSRW species and low proportion of indicative shale species.

Detailed survey within this community across Ku-ring-gai has been limited to-date and mapping is largely based on DECCW (2009a).

DECCW (2009a) identifies three woodland and two heath communities within the Ku-ring-gai LGA (outlined above). More intensive survey within the Hawkesbury-Nepean Catchment Management Area, may identify additional communities within this vegetation type.



SSRW within Ku-ring-gai is dominated by Red Bloodwood *Corymbia gummifera*, Smooth-barked Apple *Angophora costata*, Scribbly Gums (*Eucalyptus haemastoma*, *E. racemosa*), Sydney Peppermint *E. piperita*, Silvertop Ash *Eucalyptus sieberi* and Stringybarks (*Eucalyptus capitellata*, *E. oblonga*, *E. sparsifolia*). The understorey is shrubby, diverse and species-rich.

SSRW vegetation has been split into numerous communities within the Sydney Metropolitan CMA Area. New communities within this sandstone vegetation may also be identified within the Hawkesbury Nepean CMA of the LGA

## Threats

Threats are considerably lower than on shale geologies, however, the usefulness of flatter ridgelines for residential development and access (road, tracks) provides for a moderate threat level, particularly at the edge of existing urban areas. Communities occurring in such habitats often contain a high number of threatened flora species including *Darwinia biflora*, *Melaleuca deanei*, *Tetratheca glandulosa*, *Persoonia hirsuta* and *Eucalyptus camfieldii*.

## Conservation Status

Regionally significant due to habitat for threatened species and moderate threat levels. Probably adequately reserved.

**Table 16: Conservation status of SSRW within Ku-ring-gai**

	Vegetation community	Area within Ku-ring-gai (ha) (excluding DECCW lands)				
		A / B	TXND / TXN	TXUD / TXU	CMI / R	TOTAL
Council natural area	* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)					
TOTAL						
Other council managed lands						
TOTAL						
Other lands (excluding DECCW estate)						
TOTAL						
Total extant area						

## Relationship to Other Communities

\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)

## Relationship to Other Mapping

Sydney Sandstone Ridgetop Woodland fits within the:

- statewide class *Sydney Coastal Dry Sclerophyll Forests*, unique to the Greater Sydney region (Keith 2004)
- Relationship to PVP biometric vegetation (DECCW 2009), Sydney Metropolitan Catchment Management Authority Area mapping (DECCW 2009a) and regional SCIVI mapping (Tozer *et al* 2006).
- \* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)

## Species Richness

\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)



## **Hornsby Sandstone Exposed Bloodwood Woodland (S\_DSF11)**

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*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)*

## **Hornsby Sandstone Heath-Woodland (S\_DSF12)**

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*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)*

## **Hornsby Enriched Sandstone Exposed Woodland (S\_DSF10)**

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*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)*

## **Coastal Upland Damp Heath Swamp (S\_FrW01)**

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*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)*



## SYDNEY SANDSTONE GULLY FOREST

### **Sydney Sandstone Gully Forest      SSGF**

Coastal Enriched Sandstone Sheltered Forest (S\_DSF04)

Coastal Sandstone Riparian Forest (S\_DSF08)

Coastal Sandstone Sheltered Peppermint Apple Forest (S\_DSF09)

### **Sydney Sandstone Gully Forest (*clay influence*)      SSGFCL**

Coastal Enriched Sandstone Moist Forest (S\_WSF02)



### **Description**

Sydney Sandstone Gully Forest (SSGF) is a variable forest vegetation type occurring extensively along gullies on Sydney sandstone. SSGF can be floristically similar to Coast Shale Sandstone Forest and transitional forms of Sydney Turpentine-Ironbark Forest. It is distinguished from these similar communities on the basis of a higher sandstone influence (including more extensive rock outcrops) and a high proportion of typical sandstone species relative to indicative shale species.

Detailed survey within this community across Ku-ring-gai has been limited to-date and mapping is largely based on DECCW (2009a).

DECCW (2009a) identifies four SSGF communities within the Ku-ring-gai LGA (as outlined above).

The most widespread and common community is *Coastal Enriched Sandstone Sheltered Forest*, a tall eucalypt forest with a sparse smaller tree layer above an understorey of dry sclerophyll shrubs, ferns & herbs. This is a drier forest typically with extensive rock outcrops. Within Ku-ring-gai it is found along the larger, deeper sandstone gullies associated with the Lane Cove River to the south and Middle Harbour catchment to the east.

The second community, *Coastal Enriched Sandstone Moist Forest*, has a more restricted distribution within Ku-ring-gai associated with deeper gullies of the higher slopes although regionally it is found between Lane Cove and Baulkham Hills, and extending to the fringes of the Cumberland Plain. This community has a distinct shale influence. It is a tall forest with a mesic understorey including a fern dominated ground layer and often a rainforest element.



SSGF vegetation has been split into numerous communities within the Sydney Metropolitan CMA Area. New communities within this gully forest vegetation may also be identified within the Hawkesbury Nepean CMA of the LGA

## Threats

Direct threats are considerably lower than on shale geologies. The *Coastal Enriched Sandstone Moist Forest* and associated rainforest communities are the most threatened due to their location closer to urban areas and their more fertile soils. The intensive development that has occurred (and continues) along the ridgelines and upper slopes, however, has serious indirect impacts on gully forest down-slope with nutrient enrichment and weed invasion major threats to long-term diversity and integrity of these communities.

## Conservation Status

Regionally significant particularly those forests with shale influence in transitional areas which are unlikely to be adequately reserved.

**Table 17: Conservation status of SSGF within Ku-ring-gai**

	Vegetation community	Area within Ku-ring-gai (ha) (excluding DECCW lands)				
		A / B	TXND / TXN	TXUD / TXU	CMI / R	TOTAL
Council natural area		* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)				
TOTAL						
Other council managed lands						
TOTAL						
Other lands (excluding DECCW estate)						
TOTAL						
Total extant area						

## Relationship to Other Communities

\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)

## Relationship to Other Mapping

Sydney Sandstone Gully Forest fits within the:

- The drier communities within SSGF e.g. Coastal Enriched Sandstone Sheltered Forest belongs to the statewide class *Sydney Coastal Dry Sclerophyll Forests* but the Coastal Enriched Sandstone Moist Forest belongs to the North Coast Wet Sclerophyll Forests class. (Keith 2004).
- Relationship to PVP biometric vegetation (DECCW 2009), Sydney Metropolitan Catchment Management Authority Area mapping (DECCW 2009a) and regional SCIVI mapping (Tozer *et al* 2006).
- \* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)

## Species Richness

\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)



## Coastal Enriched Sandstone Sheltered Forest (S\_DSF04)

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**Geology:** Sandstone environment (Hawkesbury, Gymea).

**Altitude:** Widespread on Hornsby Plateau at elevations less than 200 m and where rainfall is >1000 mm.

**Soil landscape & characteristics:** Hawkesbury & Gymea soil landscapes. Sandy soils with extensive sandstone outcrop.

**Habitat:** Predominantly sheltered slopes but also ridgetops or other gentle gradients where soil is deep enough.

**Vegetation structure & composition:** Tall open forest with understorey of dry sclerophyll shrubs with ferns and herbs amongst groundcover. Species recorded in Ku-ring-gai are listed below (based on limited survey).

**Canopy trees:** *Corymbia gummifera* (D), *Angophora costata* (D), *Eucalyptus piperita* (D), *Eucalyptus pilularis*.

**Smaller trees:** *Allocasuarina littoralis*, *Banksia serrata*, *Elaeocarpus reticulatus*, *Pittosporum undulatum*, *Ceratopetalum gummiferum*, *Leptospermum trinervium*, *Persoonia levis*.

**Shrubs:** *Acacia suaveolens*, *Acacia ulicifolia*, *Acacia terminalis*, *Dodonaea triquetra*, *Lomatia silaifolia*, *Banksia spinulosa*, *Grevillea linearifolia*, *Pimelea linifolia*, *Platysace linearifolia*.

**Ground layer:** *Entolasia stricta*, *Pteridium esculentum*, *Lomandra obliqua*, *Lomandra longifolia*, *Xanthorrhoea arborea*, *Dianella caerulea*, *Phyllanthus hirtellus*, *Gonocarpus teucroides*, *Xanthosia pilosa*, *Lepidosperma laterale*.

**Examples:** Examples include sandstone gullies in the vicinity of Acron Oval, East Killara, West Pymble and South Turramurra. Known to extend beyond the SMCMA into the hinterland of the Central Coast and west to the footslopes of the northern Blue Mountains.

**Notes:** Probably adequately protected in Lane Cove and Garigal National Parks.



## Coastal Enriched Sandstone Moist Forest (S\_WSF02)

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**Geology:** Sandstone environment (GyMEA, Hawkesbury); some clay influence from residual shale capping on ridgelines above.

**Altitude:** At elevations mostly 110 - 140 m within Ku-ring-gai.

**Soil landscape & characteristics:** GyMEA & Hawkesbury soil landscapes. Sandy soils with extensive sandstone outcrop but some shale enrichment.

**Habitat:** Deep protected sandstone gorges.

**Vegetation structure & composition:** Tall open forest with understorey of moist open shrub layer and dominant cover of ferns and climbers on the forest floor. Species recorded in Ku-ring-gai are listed below (based on limited survey).

**Canopy trees:** *Eucalyptus pilularis*, *Angophora costata*, *Syncarpia glomulifera*, *Eucalyptus saligna*, *Angophora floribunda*.

**Smaller trees:** *Allocasuarina torulosa*, *Pittosporum undulatum*, *Ceratopetalum apetalum*, *Glochidion ferdinandi*.

**Shrubs:** *Notelaea longifolia*, *Astrotricha floccosa*, *Synoum glandulosum*, *Elaeocarpus reticulatus*.

**Ground layer:** *Entolasia stricta*, *Calochlaena dubia*, *Blechnum cartilagineum*, *Hypolepis muelleri*, *Sticherus flabellatus*, *Lomandra longifolia*, *Poa affinis*, *Oplismenus imbecillus*, *Smilax glycyphylla*.

**Examples:** Examples include deep sandstone gullies at Sheldon Forest (Pymble), South of Denman Street (Turramurra) and in the Wahroonga district e.g. in the vicinity of the Sydney Adventist Hospital. Known to occur beyond the SMCMA on the fringes of the Cumberland Plain.

**Notes:** Poorly documented within Ku-ring-gai, field investigation required. Probably inadequately protected in national parks.

## Coastal Sandstone Sheltered Peppermint Apple Forest (S\_DSF09)

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\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)

## Coastal Sandstone Riparian Forest (S\_DSF08)

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\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)



### ***Gully Rainforest***

### **GRF**

Coastal Warm Temperate-Dry Rainforest ( S\_RF04)

Coastal Sandstone Gallery Rainforest (S\_RF02)



### **Description**

Additional description to be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)

At one known site, Browns Field (Campbell Drive, Wahroonga), rainforest species are more diverse and form a more intact rainforest structure. This patch has been identified by DECCW (2009a) as an example of *Coastal Warm Temperate-Dry Rainforest*.

### **Threats**

\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)



## Conservation Status

Coastal Warm Temperate-Dry Rainforest is rare in the region and two locations have been mapped within the SMCMA.

**Table 18: Conservation status of Gully Rainforest (*Coastal Warm Temperate-Dry Rainforest*) within Ku-ring-gai**

	Vegetation community	Area within Ku-ring-gai (ha) (excluding DECCW lands)				
		A / B	TXND / TXN	TXUD / TXU	CMI / R	TOTAL
Council natural area	Gully Rainforest	1.64	-	-	-	1.64
TOTAL		1.64	-	-	-	1.64
Other council managed lands	Gully Rainforest	0.35		-	-	0.35
TOTAL		0.35		-	-	0.35
Other lands (excluding DECCW estate)	Gully Rainforest	0.18	1.89	-	-	2.08
TOTAL		0.18	1.89	-	-	2.08
Total extant area		2.17	1.89	-	-	4.07

## Coastal Warm Temperate-Dry Rainforest ( S\_RF04)

*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)*

## Coastal Sandstone Gallery Rainforest (S\_RF02)

*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)*



## SALINE WETLANDS

### Saline Wetlands

Estuarine Mangrove Forest (S\_SW01)

Estuarine Saltmarsh (S\_SW02)

Seagrass Meadows (S\_SW03)



### Description

*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)*

### Threats

*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)*

### Conservation Status

Coastal Saltmarsh in the NSW North Coast, Sydney Basin and South East Corner Bioregions is listed as an Endangered Ecological Community under the NSW *Threatened Species Conservation Act 1995* (TSC Act).

Seagrass Meadows are protected under the NSW Fisheries Act, 1994.

**Table 19: Conservation status of Saline Wetlands within Ku-ring-gai**

	Vegetation community	Area within Ku-ring-gai (ha) (excluding DECCW lands)				
		A / B	TXND / TXN	TXUD / TXU	CMI / R	TOTAL
Council natural area	<i>* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)</i>					
TOTAL						
Other council managed lands						
TOTAL						
Other lands (excluding DECCW estate)						
TOTAL						
Total extant area						



## **Seagrass Meadows (S\_SW03)**

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*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)*

## **Estuarine Mangrove Forest (S\_SW01)**

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*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)*

## **Estuarine Saltmarsh (S\_SW02)**

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*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)*



### ***Forested Wetlands***

Coastal Flats Swamp Mahogany Forest (S\_FoW02)  
Estuarine Swamp Oak Forest (S\_FoW08)



### **Description**

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*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)*

### **Threats**

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*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)*

### **Conservation Status**

Coastal Flats Swamp Mahogany Forest is a component of Swamp Sclerophyll Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions and is listed as an Endangered Ecological Community under Schedule 1 of under the NSW *Threatened Species Conservation Act 1995* (TSC Act).

Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin and South East Corner bioregions, is listed as an Endangered Ecological Community under Schedule 1 of under the NSW *Threatened Species Conservation Act 1995* (TSC Act)..



**Table 20: Conservation status of Forested Wetlands within Ku-ring-gai**

	Vegetation community	Area within Ku-ring-gai (ha) (excluding DECCW lands)				
		A / B	TXND / TXN	TXUD / TXU	CMI / R	TOTAL
Council natural area						
TOTAL						
Other council managed lands						
TOTAL						
Other lands (excluding DECCW estate)						
TOTAL						
Total extant area						

*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)*

## Coastal Flats Swamp Mahogany Forest (S\_FoW02)

*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)*

## Estuarine Swamp Oak Forest (S\_FoW08)

*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)*



## 2 Key to the identification of ecological communities in Ku-ring-gai LGA

1. Undulating topography at higher elevations with predominantly clay soils (any sandstone influence minor and related to sandstone laminae within shale or close to a creek-line); gullies absent or head gullies associated with higher ridges; dominant canopy species Blue Gum and Blackbutt, occasionally Turpentine.

**Key 1 - Shale Forest Association** (dominant soil landscapes: Glenorie, West Pennant Hills)

- 1\* Slopes, secondary ridges/crests and gullies at lower elevations; soils with a higher sandstone influence; range of eucalypts or Turpentine dominant in canopy, and higher frequency of Smooth-barked Apple.
2. Transitional soils with distinct clay and sandy components, approaching the shale-sandstone boundary or close to gullies, rock outcrop minor to moderate and localised; indicative shale species present.

**Key 2 – Transition Association** (dominant soil landscapes: Lucas Heights, Gymea)

- 2\* Predominant sandy soils located within a sandstone environment, often with extensive rock outcrop or conspicuous ironstone gravels; few shale species present although a localized clay influence may be evident.

**Key 3 – Sandstone Association** (dominant soil landscapes: Gymea, Hawkesbury)

**Key 4 – Forest and Saline Wetland Association** (Hawkesbury, Mangrove Creek)

The following communities are to be added to the Forest and Saline Wetland Association key upon completion of the Sydney Metropolitan Catchment Management Authority mapping (DECCW, 2009a):

Estuarine Mangrove Forest  
Estuarine Saltmarsh  
Seagrass Meadows

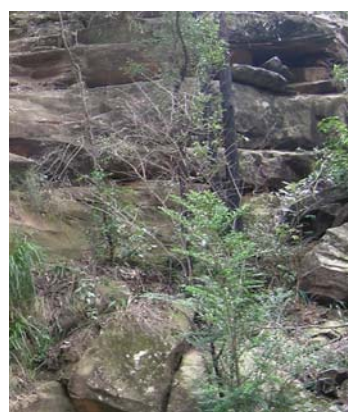
Coastal Flats Swamp Mahogany Forest  
Estuarine Swamp Oak Forest



Shale soil profile



Transitional soil profile



Sandstone



## Key 1 - Shale Forest Association

1. Undulating topography at higher elevations with predominantly clay soils (presence of sand from localized sandstone laminae within shale rather than sandstone bedrock), generally away from incised creek- lines and sandstone species absent or rare.
2. Sheltered slopes, wetter local conditions; canopy dominated by Sydney Blue Gum & Blackbutt .....1a. *BGHF (typical form)*
- 2\* More exposed sites with drier local conditions; higher diversity of canopy trees including Grey Ironbark, White Stringybark, Sydney Blue Gum , Blackbutt, and/or Turpentine.
3. Sydney Blue Gum locally common with Blackbutt; primary or secondary ridgelines, spurs or upper slopes ..... 1b. *BGHF (dry form)*
- 3\* Blackbutt or Turpentine locally common, Sydney Blue Gum occasional to rare; upper to mid-slope or secondary ridges closer to shale/sandstone boundary..... 2a. *STIF (typical form)*
- 1\* Slopes associated with head gullies below higher ridgelines; soils with some sandstone influence close to creek; canopy dominated by Sydney Blue Gum & Blackbutt; some sandstone species usually present e.g. Christmas Bush, Cedar Wattle, Lillypilly, Blueberry Ash .....1c. *BGHF (sandstone gully form)*

### Key to vegetation communities

BGHF = Blue Gum High Forest

STIF = Sydney Turpentine-Ironbark Forest

### Key to tree species

Sydney Blue Gum = *Eucalyptus saligna*

Blackbutt = *Eucalyptus pilularis*

Turpentine = *Syncarpia glomulifera*

Red Mahogany = *Eucalyptus resinifera*

Grey Ironbark = *Eucalyptus paniculata*

White Stringybark = *Eucalyptus globoidea*

Christmas Bush = *Ceratopetalum gummiferum*

Cedar Wattle = *Acacia elata*

Lillypilly = *Acmena smithii*

Blueberry Ash = *Elaeocarpus reticulatus*



## Key 2 – Transition Association

1. Slopes or flatter areas in higher parts of the landscape (i.e. away from main sandstone environment) with low sandstone influence (generally just below typical STIF or BGHF); relatively deep sandy clay loams with no or localised sandstone outcrop but sandstone fragments and ironstone gravels may be present; shale species well represented.
2. Wetter sites (e.g. sheltered slopes); taller canopy trees include Sydney Blue Gum, Blackbutt, Turpentine & Smooth-barked Apple as more frequent species; understorey with a distinct mesic influence i.e. good representation of broader, soft-leaved species.
3. Deeper soils along poorly defined creeks at higher elevations; Sydney Blue Gum a dominant canopy species .....1c. *BGHF (sandstone gully form)*
- 3\* Medium to shallow soils on lower slopes or above creeks in close proximity to the shale/sandstone boundary; Blackbutt and Turpentine are dominant canopy species.....2b. *STIF (wet transition form)*
- 2\* Drier sites e.g. exposed gentle slopes, benches or crests; shorter canopy trees include Smooth-barked Apple, Red Mahogany & White Stringybark as more frequent species; understorey drier with higher representation of drier species.....2c. *STIF (dry transition form)*
- 1\* Slopes or plateaus/ridges/crests with higher sandstone influence, rock often outcropping; location close to or within the sandstone environment, sandstone species common but shale species still present.
4. Taller forest with Blackbutt and Smooth-barked Apple locally common; lateritic gravels not conspicuous.
5. Mid gentle to moderate slopes with occasional outcrops above steeper gully; drier understorey with scattered shrubs and a grassy ground cover; both sandstone and shale species present .....3a. *CSSF (taller forest form)*
- 5\* Lower slopes close to creek-line, often rocky; mesic understorey typically with dense shrub layer and dominant fern cover; sandstone species dominant ..... 4. *Sydney Sandstone Gully Forest* (see Sandstone Association)
- 4\* Low forest or woodland with range of canopy species; conspicuous ironstone gravels often present.
6. Soils relatively shallow, clay evident often with ironstone gravels but sandstone outcrops and/or fragments often present; Scribbly Gum typically a dominant canopy tree; both shale and sandstone species typically present in understorey.
7. Site close to the sandstone end of distinct shale to sandstone transition (i.e. good connectivity with shale soils supporting STIF or BGHF).
8. Understorey with moderate to dense shrub layer and higher proportion of SSRW species e.g. *Acacia suaveolens*, *Acacia longifolia*, *Banksia serrata*, *Hakea teretifolia*;



Stringybarks present typically *Eucalyptus oblonga* & *Eucalyptus sparsifolia*; sandstone end of transition  
....5. SSRW (clay influence) (see Sandstone Association)

8\* Understorey with a more grassy ground cover & greater shale species component e.g. *Dichondra repens*, *Microlaena stipoides*, *Glycine microphylla*, *Eragrostis brownii*; Stringybarks present likely to include *Eucalyptus resinifera* or *Eucalyptus globoidea*; medium to high sandstone influence  
...3b. CSSF (low forest/woodland form)

7\* Site generally below DF (typical form) & within or close to a more extensive sandstone environment; limited connectivity with shale soils (can include small patches of Glenorie)  
.... 6b. DF (transition form)

6\* Soils typically deeper with conspicuous red ironstone gravels, sandstone outcrops rare; Brown Stringybark often present with Scribbly Gum less common; sandstone species dominant .....6a. DF (typical form)

### Key to communities

BGHF – Blue Gum High Forest  
STIF – Sydney Turpentine-Ironbark Forest  
TIMF – Turpentine-Ironbark Margin Forest  
DF – Duffys Forest

### Key to tree species

Blackbutt - *Eucalyptus pilularis*  
Red Bloodwood - *Corymbia gummifera*  
Scribbly Gum – *Eucalyptus haemastoma*  
Sydney Blue Gum *Eucalyptus saligna*  
White Stringybark – *Eucalyptus globoidea*

Brown Stringybark – *Eucalyptus capitellata*  
Red Mahogany – *Eucalyptus resinifera*  
Smooth-barked Apple – *Angophora costata*  
Turpentine *Syncarpia glomulifera*



## Key 3 – Sandstone Association

1. Tall forest vegetation of sandstone gullies and slopes, occasionally on sheltered ridgetops.
2. Open eucalypt tree canopy with open to dense understorey of moisture-loving and/or dry sclerophyllous species.
3. Moist sandstone gullies in higher rainfall areas on richer soils (shale influence); understorey typically with rainforest species and ferns; dominant canopy trees of Smooth-barked Apple, Blackbutt and Turpentine; mostly known from southern edge of LGA along Lane Cove River but probably more common.....1. *Coastal Enriched Sandstone Moist Forest*
- 3\* Sandstone gullies with drier aspects and more extensive outcropping of sandstone (lower rainfall areas, poorer soils); understorey typically drier but mesic elements also present; dominant canopy trees of Smooth-barked Apple and Sydney Peppermint but range of eucalypt species commonly found; extensive in sandstone gullies in the LGA and adjoining LGAs .....2. *Coastal Sandstone Sheltered Peppermint-Apple Forest*
- 2\* Low, dense tree canopy of rainforest species (taller emergents may be present).
4. Gullies higher in landscape with stronger shale influence; rainforest species include *Cryptocarya*, *Guioa*, *Synoum* & *Livistona* as well as more typical sandstone species ..... 3. *Coastal Warm Temperate-Dry Rainforest*
- 4\* Deeper gullies within stronger sandstone environment; rainforest species more typical of sandstone e.g. *Coachwood*, *Cedar Wattle*, *Black Wattle*, *Water Gum*.....4. *Coastal Sandstone Gallery Rainforest*
- 1\* Woodland, low forest or heath-land on sandstone ridgetops and more exposed upper slopes with or without clay influence
5. Scattered trees with extensive open areas of low heath vegetation ..... 5...includes *Hornsby Sandstone Heath-Woodland* – Garigal Park
- 5\* Denser tree cover as dominant vegetation cover
6. Soils relatively deep with conspicuous red ironstone gravels and red clay soils, sandstone outcrops rare; understorey with scattered shrubs and grassy component; Brown Stringybark and Silver-top Ash often common tree species.....7. *Duffys Forest*
- 6\* Soils typically shallow, red clay and ironstone gravels may be present but rarely conspicuous, sandstone outcrops or fragments common; understorey often with dense shrub layer; Scribbly Gum and Sydney Peppermint often common tree species.
7. Dominant canopy species of Scribbly Gum and Sydney Peppermint; taller woody shrub layer of Black She-oak and Dwarf Apple; lower rainfall areas within headwaters of the Lane Cove Valley and Pennant Hills Park .....8. *Hornsby Enriched Sandstone Exposed Woodland*



**Key to tree & shrub species**

Brown Stringybark – *Eucalyptus capitellata*  
Black She-oak – *Allocasuarina littoralis*  
Red Bloodwood - *Corymbia gummifera*  
Dwarf Apple – *Angophora hispida*  
Scribbly Gum – *Eucalyptus haemastoma*  
Smooth-barked Apple – *Angophora costata*  
Flaky-barked Tea-tree – *Leptospermum trinervium*  
Heath Banksia – *Banksia ericifolia*

The following communities are to be added to the sandstone associations' key upon completion of the Sydney Metropolitan Catchment Management Authority mapping (DECCW, 2009a):

Coastal Enriched Sandstone Sheltered Forest  
Coastal Sandstone Riparian Forest  
Coastal Upland Damp Heath Swamp  
Hornsby Sandstone Exposed Bloodwood Woodland  
Coastal Sandstone Plateau Rock Plate Heath



## Key 4 – Forest and Saline Wetland Association

*\* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)*



### 3 Ku-ring-gai LGA – vegetation communities and relationships with geology, soils and landscape features

Primary references use in the creation of table below: DEC (2003), NSW Final Determinations (NSW SC 1998, NSW SC 1998a, NSW SC 2007), Benson & Howell (1994), Smith & Smith (2007), DECCW (2009a).

#### Key to communities

BGHF= Blue Gum High Forest

DF= Duffys Forest

SSRW= Sydney Sandstone Ridgetop Woodland

STIF= Sydney Turpentine-Ironbark Forest

CSSF= Coastal Shale Sandstone Forest

SSGF= Sydney Sandstone Gully Forest

#### Key to species frequency

D = dominant

C = common

O = occasional

R = rare

E = emergent

#### Notes - difficulties in identification of communities

1. Close to the shale/sandstone boundary there is a high diversity of geologies, soil types & topographical elements within a relatively small area. As a consequence:
  - Communities may be highly localised and restricted in area e.g. BGHF in depressions, CSSF in narrow zones depending on steepness of slope & exposure of sandstone
  - Transitional elements are likely to be common (may be the norm rather than the exception)
  - Main drivers of vegetation within local area – degree of slope, degree of sandstone influence & depth of soil, altitude, topography & aspect, disturbance history).
2. The absence of intact native understorey in many remnants and widespread occurrence of canopy species across a range of topographical units and communities e.g. Blackbutt and Turpentine give rise to a lack of useful indicator species.

It is similar for groundcover species. Suite of species common to most communities on shale – *Dichondra repens*, *Oplismenus aemulus*, *Cyperus gracilis*, *Veronica plebeia*, *Carex inversa*, *Rumex brownii*, *Microlaena stipoides*, *Dianella caerulea*.

3. It is important to look holistically at the general landscape units, localized topographical variability, soils and proximity to drainage lines or creeks. Suggestions:
  - familiarize yourself with topography, soil landscapes & drainage patterns prior to field inspection
  - begin with a transect e.g. from ridge to drainage line to establish vegetation patterns
  - check soil depth and sand/clay content – roadside cuttings useful.



Vegetation Community		Geology	Landscape & altitude (asl)	Soil landscape	Soil characteristics	Typical tree & shrub species	Vegetation structure & typical groundcover species
<b>Blue Gum High Forest (complex)</b>	<b>BGHF</b> ( <i>typical form</i> )	Shale	Higher broad ridges & steep side slopes >20% –particularly south and east-facing; in shallow depressions or elevated drainage lines on upper-mid slopes; mostly 90 - 190 m.	<u>West Pennant Hills</u> <u>Glenorie</u> Lucas Hts	Deep dark brown to brown clay to clay loam.	<i>Eucalyptus saligna</i> D <i>Eucalyptus pilularis</i> D <i>Allocasuarina torulosa</i> <i>Pittosporum undulatum</i> <i>Breynia oblongifolia</i> <i>Polyscias sambucifolia</i> <i>Pittosporum revolutum</i> <i>Acmena smithii</i>	Tall open-forest with mesic understorey. <i>Calochlaena dubia</i> , <i>Adiantum aethiopicum</i> , <i>Geranium homeanum</i> , <i>Cyperus gracilis</i> , <i>Oplismenus aemulus</i> , <i>Entolasia marginata</i> , <i>Centella asiatica</i> , <i>Dichondra repens</i> , <i>Microlaena stipoides</i> , <i>Commelina cyanea</i> , <i>Eustrephus latifolius</i> , <i>Pseuderanthemum variabile</i>
	<b>BGHF</b> ( <i>dry form</i> )  *similar to STIF but <i>E. saligna</i> dominant locally	Shale (minor sandstone influence may be present).	Higher ridgelines, crests & benches or spurs, more exposed aspects.  Mostly 130 - 200 m	<u>Glenorie</u> Lucas Hts	Medium depth brown to orange brown, silty to sandy clay loam, some ironstone gravels may be present.	<i>Eucalyptus saligna</i> C <i>Eucalyptus paniculata</i> C <i>Angophora floribunda</i> C <i>Eucalyptus pilularis</i> C <i>Angophora costata</i> C <i>Syncarpia glomulifera</i> O <i>Acacia implexa</i> <i>Pittosporum undulatum</i> <i>Leucopogon juniperinus</i> <i>Bursaria spinosa</i> <i>Dodonaea triquetra</i> <i>Indigofera australis</i>	Tall to medium open-forest with drier understorey. <i>Oplismenus aemulus</i> , <i>Cyperus gracilis</i> , <i>Echinopogon</i> species, <i>Dichondra repens</i> , <i>Veronica plebeia</i> , <i>Rumex brownii</i> , <i>Centella asiatica</i> , <i>Glycine microphylla</i> , <i>Austroanthonia racemosa</i> , <i>Hardenbergia violacea</i> , <i>Lomandra longifolia</i> , <i>Pratia purpurascens</i> , <i>Microlaena stipoides</i>
	<b>BGHF</b> ( <i>sandstone gully form</i> )	Shale with sandstone influence.	Lower to mid -slopes of shallow depressions or elevated gullies in higher parts of landscape.  Mostly 80 -190 m	<u>Glenorie</u> , <u>Gymea</u> Lucas Hts	Sandy or silty clay loam, may contain sandstone fragments or minor outcropping.	<i>Eucalyptus saligna</i> D <i>Eucalyptus .pilularis</i> D <i>Angophora costata</i> C <i>Syncarpia glomulifera</i> C <i>Angophora floribunda</i> <i>Acacia elata</i> <i>Allocasuarina torulosa</i> <i>Tristaniopsis laurina</i> <i>Acmena smithii</i> <i>Ceratopetalum</i>	Tall open-forest with mesic understorey. Typical species: <i>Calochlaena dubia</i> , <i>Cyathea australis</i> , <i>Blechnum cartilagineum</i> , <i>Adiantum aethiopicum</i> , <i>Pteridium esculentum</i> , <i>Geranium homeanum</i> , <i>Entolasia marginata</i> , <i>Dianella caerulea</i> , <i>Microlaena stipoides</i> ,



Vegetation Community		Geology	Landscape & altitude (asl)	Soil landscape	Soil characteristics	Typical tree & shrub species	Vegetation structure & typical groundcover species
						<i>gummiiferum</i> <i>Breynia oblongifolia</i> <i>Polyscias sambucifolia</i> <i>Notelaea longifolia</i>	<i>Cyperus gracilis</i> , <i>Dichondra repens</i> , <i>Lomandra longifolia</i> , <i>Oplismenus aemulus</i> , <i>Eustrephus latifolius</i> , <i>Pseuderanthemum variabile</i> , <i>Viola hederacea</i> , <i>Siegesbeckia orientalis</i> , <i>Pandorea pandorana</i> , <i>Clematis glycinoides</i> , <i>Morinda jasminoides</i> .
<b>Sydney Turpentine-Ironbark Forest (complex)</b>	<b>STIF (typical form)</b>	Shale (minor sandstone influence may be present).	Secondary ridges, lower plateaus & moderate to gentle slopes. Exposed or sheltered conditions. Mostly 70-180 m.	<u>Glenorie</u> Lucas Heights Gymea	Medium depth brown to orange-brown loam to clay loam – medium to high clay content; ironstone gravels & sandstone fragments may be present but local.	<i>Syncarpia glomulifera</i> , D <i>Eucalyptus pilularis</i> D <i>Eucalyptus paniculata</i> C <i>Angophora floribunda</i> C <i>Eucalyptus resinifera</i> <i>Angophora costata</i> <i>Eucalyptus saligna</i> <i>Elaeocarpus reticulatus</i> <i>Acacia implexa</i> <i>Acacia parramattensis</i> <i>Pittosporum undulatum</i> <i>Breynia oblongifolia</i> <i>Polyscias sambucifolia</i> <i>Leucopogon juniperinus</i> <i>Indigofera australis</i> <i>Ozothamnus diosmifolius</i>	Medium to tall open-forest with both mesic & drier, shrubby understorey. <i>Microlaena stipoides</i> , <i>Oplismenus aemulus</i> , <i>Veronica plebeia</i> , <i>Kennedia rubicunda</i> , <i>Glycine microphylla</i> , <i>Dichondra repens</i> . <i>Echinopogon</i> species, <i>Austrodanthonia racemosa</i> , <i>Themeda australis</i> , <i>Entolasia</i> species, <i>Cyperus gracilis</i> , <i>Desmodium varians</i> , <i>Geranium homeanum</i> , <i>Imperata cylindrica</i> var. <i>major</i> , <i>Pteridium esculentum</i> , <i>Dianella caerulea</i> , <i>Hardenbergia violacea</i>
	<b>STIF (wet transition form)</b>	Shale & transitional soils (Mittagong Formation).	Mid to lower sheltered slopes close to shale – sandstone boundary; often associated with sandstone gullies.	<u>Lucas Heights</u> Gymea Glenorie	Medium to shallow brown to orange – brown sandy clay loam, often with sandstone fragments or	<i>Syncarpia glomulifera</i> , D <i>Eucalyptus pilularis</i> D <i>Angophora costata</i> C <i>E. resinifera</i> C <i>Angophora floribunda</i> <i>Acacia elata</i> <i>Allocasuarina torulosa</i>	Medium to tall open-forest with mesic understorey. <i>Microlaena stipoides</i> , <i>Oplismenus aemulus</i> , <i>Dichondra repens</i> . <i>Echinopogon</i> species, <i>Entolasia</i> species, <i>Cyperus</i>



Vegetation Community		Geology	Landscape & altitude (asl)	Soil landscape	Soil characteristics	Typical tree & shrub species	Vegetation structure & typical groundcover species
					minor outcrops	<i>Elaeocarpus reticulatus</i> <i>Pittosporum undulatum</i> <i>Breynia oblongifolia</i> <i>Polyscias sambucifolia</i> <i>Notelaea longifolia</i>	<i>gracilis</i> , <i>Geranium homeanum</i> , <i>Imperata cylindrica</i> var. <i>major</i> , <i>Pratia purpurascens</i> , <i>Pteridium esculentum</i> , <i>Calochlaena dubia</i> , <i>Cyathea australis</i> , <i>Blechnum cartilagineum</i> , <i>Dianella caerulea</i> , <i>Pseuderanthemum variabile</i> , <i>Eustrephus latifolius</i>
	STIF ( <i>dry transition form</i> )	Shale & transitional soils (Mittagong Formation).	Secondary crests, benches, spurs & gentle mid-slopes; relatively exposed conditions. Often short distance upslope of shale/sandstone boundary. Mostly 60-130 m but to 190 m in highest areas.	Lucas Heights Gymea Glenorie	Medium to shallow soils, yellow to orange or brown sandy clay loam; loose sandstone fragments & ironstone gravels typically present.	<i>Syncarpia glomulifera</i> D <i>Angophora costata</i> D <i>Eucalyptus resinifera</i> C <i>Eucalyptus pilularis</i> <i>Eucalyptus globoidea</i> <i>Angophora floribunda</i> <i>Corymbia gummifera</i> <i>Acacia implexa</i> <i>Acacia parramatensis</i> <i>Ozothamnus diosmifolius</i> <i>Leucopogon juniperinus</i> <i>Acacia longifolia</i>	Medium to low open-forest with drier, more shrubby understorey; <i>Microlaena stipoides</i> , <i>Oplismenus aemulus</i> , <i>Veronica plebeia</i> , <i>Glycine microphylla</i> , <i>Dichondra repens</i> . <i>Echinopogon</i> species, <i>Aristida vagans</i> , <i>Austrodanthonia racemosa</i> , <i>Themeda australis</i> , <i>Entolasia</i> species, <i>Cyperus gracilis</i> , <i>Desmodium varians</i> , <i>Imperata cylindrica</i> , <i>Pteridium esculentum</i> , <i>Hardenbergia violacea</i>
Coastal Shale Sandstone Forest ( <i>complex</i> )	CSSF ( <i>taller forest form</i> )	Shale with sandstone influence (sandstone fragments or minor to moderate rock outcrop).	Broader plateaus with shale cap & moderate mid to lower-slopes close to or at shale/sandstone boundary. Mostly down-slope of BGHF & STIF.  Mostly 60 – 100 m in	Lucas Heights Gymea	Shallow sandy loam or sandy clay loam, sometimes with ironstone gravels.	<i>Angophora costata</i> D <i>Eucalyptus. pilularis</i> D <i>Eucalyptus resinifera</i> C <i>Eucalyptus globoidea</i> C <i>Syncarpia glomulifera</i> C <i>Eucalyptus punctata</i> R <i>Corymbia gummifera</i> C <i>Eucalyptus piperita</i> C <i>Allocasuarina littoralis</i> <i>Acacia parramattensis</i>	Open-forest with scattered shrubs & grassy groundcover. <i>Themeda australis</i> , <i>Aristida vagans</i> , <i>Hardenbergia violacea</i> <i>Poa affinis</i> , <i>Calochlaena dubia</i> , <i>Entolasia</i> species, <i>Microlaena stipoides</i> , <i>Austrodanthonia</i> species,



Vegetation Community		Geology	Landscape & altitude (asl)	Soil landscape	Soil characteristics	Typical tree & shrub species	Vegetation structure & typical groundcover species
			southern LGA, up to 170 m in north			<i>Pittosporum undulatum</i> <i>Elaeocarpus reticulatus</i> <i>Persoonia linearis</i> , <i>Hakea sericea</i> , <i>Leucopogon juniperinus</i> , <i>Kunzea ambigua</i> , <i>Dodonaea triquetra</i> , <i>Pultenaea flexilis</i> , <i>Hibbertia aspera</i> , <i>Persoonia species</i> , <i>Bursaria spinosa</i> .	<i>Echinopogon species</i> , <i>Imperata cylindrica</i> var. <i>major</i> , <i>Austrostipa pubescens</i> , <i>A. rudis</i> , <i>Cyperus gracilis</i> , <i>Lomandra species</i> , <i>Lepidosperma laterale</i> , <i>Brunoniella australis</i> , <i>Dichondra repens</i> , <i>Desmodium varians</i> , <i>Goodenia hederacea</i> , <i>Pratia purpurascens</i> , <i>Euchiton sphaericus</i> , <i>Hardenbergia violacea</i> , <i>Veronica plebeia</i> , <i>Glycine species</i>
	<b>CSSF</b> ( <i>low forest/woodland form</i> )	Shale with sandstone influence (sandstone fragments or minor to moderate rock outcrop).	Ridges, crests, benches, upper to mid slopes close to sandstone, exposed & sheltered aspects.  Variable – 160-190 m in Wahroonga district; 100-130 m at S. Turramurra.	<u>Lucas Heights</u> Gymea	Shallow sandy loam or sandy clay loam, often with ironstone gravels.	<i>Eucalyptus haemastoma</i> D <i>Eucalyptus racemosa</i> C <i>Eucalyptus resinifera</i> C <i>Eucalyptus globoidea</i> C <i>Angophora costata</i> C <i>Corymbia gummifera</i> C <i>Eucalyptus sieberi</i> O <i>Eucalyptus piperita</i> O <i>Allocasuarina littoralis</i> <i>Acacia parramattensis</i> <i>Pittosporum undulatum</i> <i>Leptospermum trinervium</i> <i>Hakea sericea</i> , <i>Leucopogon juniperinus</i> , <i>Kunzea ambigua</i> , <i>Dodonaea triquetra</i> , <i>Acacia myrtifolia</i> , <i>Phyllanthus hirtellus</i> , <i>Bursaria spinosa</i> , <i>Banksia spinulosa</i> , <i>Micrantheum ericoides</i> ,	Open-forest with scattered shrubs & grassy groundcover. <i>Themeda australis.</i> , <i>Aristida vagans</i> , <i>Hardenbergia violacea</i> <i>Poa affinis</i> , <i>Entolasia species</i> , <i>Microlaena stipoides</i> , <i>Austrodanthonia species</i> , <i>Echinopogon species</i> , <i>Imperata cylindrica</i> var. <i>major</i> , <i>Austrostipa pubescens</i> , <i>A. rudis</i> , <i>Cyperus gracilis</i> , <i>Lomandra species</i> , <i>Lepidosperma laterale</i> , <i>Brunoniella australis</i> , <i>Dichondra repens</i> , <i>Desmodium varians</i> , <i>Goodenia hederacea</i> , <i>Hardenbergia violacea</i> , <i>Veronica plebeia</i> , <i>Glycine species</i> , <i>Pratia purpurascens</i> , <i>Actinotus</i>



Vegetation Community		Geology	Landscape & altitude (asl)	Soil landscape	Soil characteristics	Typical tree & shrub species	Vegetation structure & typical groundcover species
						<i>Bossiaea obcordata</i>	<i>minor, Pomax umbellata</i>
<b>Duffys Forest (complex)</b>	<b>DF (typical form)</b>	Clay mantle (Mittagong Formation) within predominantly Hawkesbury Sandstone environment; rock outcrop rare.	Ridgetops, plateaus & upper slopes, usually upslope of sandstone vegetation but can occur on a mid-slope or bench down-slope of SSRW.	<u>Lucas Heights</u> Gymea Hawkesbury	Clay loams mostly with distinctive ironstone gravels.	<i>Corymbia gummifera</i> D <i>Angophora costata</i> D <i>Eucalyptus capitellata</i> C <i>Eucalyptus sieberi</i> C <i>Eucalyptus haemastoma</i> <i>Eucalyptus globoidea</i> <i>Allocasuarina littoralis</i> <i>Banksia serrata</i> , <i>Banksia ericifolia</i> , <i>Banksia spinulosa</i> , <i>Persoonia levis</i> , <i>Acacia myrtifolia</i> , <i>Bossiaea obcordata</i> , <i>Hakea sericea</i> , <i>Lomatia silaifolia</i> ,	Low open-forest with scattered shrubs and grassy groundcover. <i>Pteridium esculentum</i> , <i>Lindsaea linearis</i> , <i>Lindsaea microphylla</i> , <i>Micranthemum ericoides</i> , <i>Phyllanthus hirtellus</i> , <i>Aristida vagans</i> , <i>Entolasia stricta</i> , <i>Austrostipa pubescens</i> , <i>Lomandra longifolia</i> , <i>Lomandra obliqua</i> , <i>Xanthorrhoea media</i> , <i>Cyathochaeta diandra</i> , <i>Austrodanthonia tenuior</i> , <i>Dianella caerulea</i> , <i>Dampiera stricta</i>
	<b>DF (transition Form)</b>	Clay mantle (Mittagong Formation) within predominantly Hawkesbury Sandstone environment; clay cap or lens; rock outcrop rare.	Mostly mid-slopes or edge of bench.	Somersby <u>Lucas Heights</u> Lambert Gymea Hawkesbury	Sandy to sandy clay loam, ironstone gravels may be present.	<i>Corymbia gummifera</i> D <i>Eucalyptus haemastoma</i> D <i>Angophora costata</i> D <i>Eucalyptus sieberi</i> <i>Eucalyptus oblonga</i> <i>Eucalyptus sparsifolia</i> <i>Eucalyptus capitellata</i> <i>Allocasuarina littoralis</i> <i>Acacia longifolia</i> , <i>B. serrata</i> , <i>B. ericifolia</i> <i>Leptospermum trinervium</i> , <i>Bossiaea obcordata</i> , <i>Hakea sericea</i> , <i>Lomatia silaifolia</i> , <i>Persoonia spp</i>	Low open-forest to woodland with denser shrub understorey. <i>Pteridium esculentum</i> , <i>Lindsaea linearis</i> , <i>Phyllanthus hirtellus</i> , <i>Entolasia stricta</i> , <i>Austrostipa pubescens</i> , <i>Lomandra longifolia</i> , <i>Lomandra obliqua</i> , <i>Lomandra glauca</i> , <i>Xanthorrhoea media</i> , <i>Cyathochaeta diandra</i> , <i>Dianella caerulea</i> , <i>Dampiera stricta</i> , <i>Actinotus minor</i> , <i>Caustis flexuosa</i>
<b>SSRW</b>		Hawkesbury Sandstone;	Ridgetops, plateaus & upper slopes	Hawkesbury Gymea	Sand to sandy loam	<i>Eucalyptus haemastoma</i> , D	Low open-woodland. Typical species: <i>Banksia</i> spp., <i>Hakea</i>



Vegetation Community		Geology	Landscape & altitude (asl)	Soil landscape	Soil characteristics	Typical tree & shrub species	Vegetation structure & typical groundcover species
		rock outcropping, some lateritic gravels may be present		Lucas Heights		<i>E. racemosa</i> , <i>Allocasuarina littoralis</i> , <i>Corymbia gummifera</i> , <i>Angophora costata</i> , <i>Eucalyptus oblonga</i>	spp., <i>Leptospermum trinervium</i> , <i>Gompholobium grandiflorum</i> , <i>Petrophile pulchella</i> , <i>Actinotus minor</i> , <i>Patersonia sericea</i> , <i>Ptilothrix deusta</i>
<i>Aligns with SM CMA communities (DECCW 2009a)</i>	Hornsby Sandstone Exposed Bloodwood Woodland	* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)					
	Hornsby Sandstone Heath Woodland						
<b>SSRW (clay influence)</b>							
<i>Aligns with SM CMA communities (DECCW 2009a)</i>	Hornsby Enriched Sandstone Exposed Woodland	* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)					
<b>SSRW (wet heath)</b>							
<i>Aligns with SM CMA communities (DECCW 2009a)</i>	Coastal Upland Damp Heath Swamp	* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)					
<b>SSGF</b>		Hawkesbury Sandstone; rock outcropping extensively.	Narrow incised gullies/creek lines & slopes >25%	Hawkesbury Gynea Lucas Heights	Shallow, yellow-orange sand to sandy loam.	<i>Angophora costata</i> D <i>Eucalyptus pilularis</i> D <i>Eucalyptus piperita</i> C <i>Eucalyptus saligna</i> <i>Syncarpia glomulifera</i> D <i>Acacia elata</i> <i>Callicoma serratifolia</i> <i>Tristaniopsis laurina</i> ,	Tall forest & patches of closed forest along creeks; mesic & ferny understorey e.g. <i>Cyathea australis</i> , <i>Smilax glycyphylla</i> ., <i>Calochlaena dubia</i> , <i>Blechnum cartilagineum</i> , <i>Pultenea flexilis</i> ,



Vegetation Community		Geology	Landscape & altitude (asl)	Soil landscape	Soil characteristics	Typical tree & shrub species	Vegetation structure & typical groundcover species
						<i>Ceratopetalum</i> species.	<i>Leptospermum polygalifolium</i> ,
Aligns with SM CMA communities (DECCW 2009a)	Coastal Sandstone Riparian Forest	* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)					
	Coastal Enriched Sandstone Sheltered Forest						
	Coastal Sandstone Sheltered Peppermint Apple Forest						
<b>SSGF (clay influence)</b>		Hawkesbury Sandstone; less rock outcrop than above, often lateritic gravels present	Ridgetops, plateaus & upper slopes	Hawkesbury Gynea Lucas Heights	Sandy clay loam	<i>Eucalyptus haemastoma</i> , <i>Corymbia gummifera</i> <i>Eucalyptus oblonga/globoidea</i> <i>Eucalyptus punctata</i> (rare)	Open-woodland. Typical species: <i>Ozothamnus diosmifolius</i> , <i>Kunzea ambigua</i> , <i>Leucopogon juniperinus</i> , <i>Acacia linifolia</i> , <i>Leptospermum trinervium</i> , <i>Banksia spinulosa</i> , <i>Themeda australis</i> , <i>Aristida vagans</i> , <i>Lomandra glauca</i> , <i>Micrantheum ericoides</i> , * <i>Darwinia biflora</i> (threatened species)
Aligns with SM CMA communities (DECCW 2009a)	Coastal Enriched Sandstone Moist Forest	Hawkesbury Sandstone, rock outcrop extensive.	Deep protected sandstone gullies.	Gynea Hawkesbury	Sandy loam (shale enrichment).	<i>Eucalyptus pilularis</i> D <i>Angophora costata</i> D <i>Syncarpia glomulifera</i> D <i>Eucalyptus saligna</i> O <i>Angophora floribunda</i> <i>Allocasuarina torulosa</i> <i>Pittosporum undulatum</i> <i>Ceratopetalum apetalum</i> <i>Glochidion ferdinandi</i> <i>Notelaea longifolia</i>	Tall open forest with mesic understorey & dominant fern ground layer. <i>Entolasia stricta</i> , <i>Smilax glycyphylla</i> , <i>Calochlaena dubia</i> , <i>Blechnum cartilagineum</i> , <i>Hypolepis muelleri</i> , <i>Sticherus flabellatus</i> , <i>Lomandra longifolia</i> , <i>Poa affinis</i> , <i>Oplismenus imbecillus</i>



Vegetation Community		Geology	Landscape & altitude (asl)	Soil landscape	Soil characteristics	Typical tree & shrub species	Vegetation structure & typical groundcover species
						<i>Elaeocarpus reticulatus</i> <i>Synoum glandulosum</i> <i>Astrotricha floccosa</i>	
<b>Gully Rainforest</b>	GRF						
<i>Aligns with SM CMA communities (DECCW 2009a)</i>	Coastal Warm Temperate - Dry Rainforest Coastal Sandstone Gallery Rainforest	* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)					
<b>Saline Wetlands</b> <i>Derived from SM CMA communities (DECCW 2009a)</i>	Estuarine Mangrove Forest (S_SW01) Estuarine Saltmarsh (S_SW02) Seagrass Meadows (S_SW03)						
<b>Forested Wetlands</b> <i>Derived from SM CMA communities (DECCW 2009a)</i>	Coastal Flats Swamp Mahogany Forest (S_FoW02) Estuarine Swamp Oak Forest (S_FoW08)	* To be incorporated upon completion of the Sydney Metropolitan CMA mapping (DECCW, 2009a)					



Ku-ring-gai accepts no responsibility for any misprints, errors, omissions or inaccuracies in these maps or damages resulting from use of this information.



**Legend**

- Cadastre
- Vegetation Community**
- Blue Gum High Forest
- Coastal Shale Sandstone Forest
- Other Vegetation
- Sydney Sandstone Gully Forest
- Sydney Turpentine - Ironbark Forest
- Unmapped

0 25 50 100 m  
Datum: MGA

**Ku-ring-gai Council Vegetation mapping: Mapping to Complex Level**

Source: Ku-ring-gai Council  
Sinclair Knight Merz  
15th June 2010



Ku-ring-gai accepts no responsibility for any misprints, errors, omissions or inaccuracies in these maps or damages resulting from use of this information.



Ku-ring-gai Council Vegetation mapping: Mapping to Form Level

Source: Ku-ring-gai Council  
Sinclair Knight Merz  
15th June 2010



Ku-ring-gai accepts no responsibility for any misprints, errors, omissions or inaccuracies in these maps or damages resulting from use of this information.

Source: Ku-ring-gai Council  
Sinclair Knight Merz

Datum: MGA

Legend

Main Roads

Vegetation Community

- Unmapped
- BGHF (complex)
- BGHF (dry form)
- BGHF (sandstone gully form)
- BGHF (typical form)
- CSSF (complex)
- CSSF (low forest/woodland form)
- CSSF (taller forest form)
- SSTF (shale cap form)
- DF (typical form)
- DF (transition form)
- OV
- GRF
- SSGF
- SSGF (clay influence)
- SSGF / OV
- SSRW
- SSRW (clay influence)
- SSRW (clay influence) / OV
- SSRW (wet heath)
- SSRW / OV
- SSRW / SSGF / OV
- SSRW / SSGF
- STIF (complex)
- STIF (dry transition form)
- STIF (typical form)
- STIF (wet transition form)

0 750 1,500 3,000 m

Ku-ring-gai Council Vegetation mapping: Mapping to Form Level

15th June 2010



Ku-ring-gai accepts no responsibility for any misprints, errors, omissions or inaccuracies in these maps or damages resulting from use of this information.

Source: Ku-ring-gai Council  
Sinclair Knight Merz

Datum: MGA

0 750 1,500 3,000 m

Legend

Main Roads

Vegetation Community

- Blue Gum High Forest
- Coastal Shale Sandstone Forest
- Duffys Forest
- Gully Rainforest
- Other Vegetation
- Sydney Sandstone Gully Forest
- Sydney Sandstone Gully Forest (clay influence)
- Sydney Sandstone Gully Forest / Other Vegetation
- Sydney Sandstone Ridgetop Woodland
- Sydney Sandstone Ridgetop Woodland (clay influence)
- Sydney Sandstone Ridgetop Woodland (clay influence) / Other Vegetation
- Sydney Sandstone Ridgetop Woodland (wet heath)
- Sydney Sandstone Ridgetop Woodland / Other Vegetation
- Sydney Sandstone Ridgetop Woodland / Sydney Sandstone Gully Forest
- Sydney Sandstone Ridgetop Woodland / Sydney Sandstone Gully Forest / Other Vegetation
- Sydney Turpentine - Ironbark Forest
- Unmapped

Ku-ring-gai Council Vegetation mapping -  
Mapping to Complex Level  
15th June 2010



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## **DRAFT ECOLOGICALLY SENSITIVE LANDS POLICY**

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### **EXECUTIVE SUMMARY**

**PURPOSE OF REPORT:**

To present to Council a policy for the protection and management of ecologically sensitive lands within Ku-ring-gai.

**BACKGROUND:**

In 2007 Council requested the development of a policy to inform the protection of ecologically sensitive lands. This has been postponed pending the completion of the mapping of endangered ecological communities.

**COMMENTS:**

The draft policy has been created to assist Council in meeting its ecological, social and legal responsibilities as determined by Federal and State legislation, Council's own policies such as riparian lands and the controls as set within the gazetted local environment plan. Its purpose is to provide an umbrella under which relevant statutes, plans, policies and guidelines sit. The draft policy is consistent with the intent and actions identified in Council's Community Strategic Plan 2030.

**RECOMMENDATION:**

That Council receive and adopt the draft Ecologically Sensitive Lands Policy.



## PURPOSE OF REPORT

To present to Council a policy for the protection and management of ecologically sensitive lands within Ku-ring-gai.

## BACKGROUND

In 2007 Council sought a policy for the protection and management of ecologically sensitive lands. This request was made at the time Council also resolved to map the location and extent of Blue Gum High Forest, an endangered ecological community. This mapping would directly inform the location and extent to which this policy would apply. It was therefore recommended to Council and incorporated in subsequent Management Plans that the development of this policy follow the completion of the vegetation mapping project. This matter was discussed with Council at its policy forum on 12 May 2008 that provided an overview as to the direction of such an instrument.

As outlined in the agenda for the consideration of Council at the Ordinary Meeting of Council 22 June 2010 ("*Mapping and Assessment of Key Vegetation Communities Across the Ku-ring-gai Local Government Area*"), the vegetation mapping project has been completed. This represents the single largest and most accurate ecological study undertaken by Ku-ring-gai Council. Consistent with past discussions with Council, this report seeks to present a draft policy for the management of ecologically sensitive lands.

## COMMENTS

The draft *Ecologically Sensitive Lands Policy* (**Attached**) has been created to assist Council in meeting its ecological, social and legal responsibilities through appropriate management and conservation of local biodiversity in natural and urbanised landscapes at the local level. The policy applies to both public and private land. For the purpose of the draft policy, it includes land containing:

- National or State significant communities, populations or species (as included in relevant legislation);
- Riparian lands (as defined in the Town Centres LEP and Council's riparian policy and relevant DCP controls); and
- Areas of biodiversity significance (as defined in the Town Centres LEP, Council's Riparian Policy and relevant DCP controls).

Supporting this policy are a number of other Council documents including:

- Various plans of management created under the *Local Government Act 1993*
- Ku-ring-gai Biodiversity Strategy (adopted 2006)
- Ku-ring-gai Local Environmental Plan (LEP) (Town Centres) 2010 and associated Development Control Plan (DCP) as well as the future comprehensive LEP and DCP. These plans identify Riparian Lands and Areas of Biodiversity Significance.



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9 June 2010

It would be intended that this list of supporting legislation, strategies and policies in this policy be updated as necessary in line with Federal, State and Local Government reforms to improve the management of ecological resources.

Communication to staff on this policy will be achieved through its integration within the current ecologically sensitive lands training program. For the general community this will primarily be achieved through the provision of up to date information on vegetation and other ecological databases on Council's website.

## CONSULTATION

The consultation undertaken as part of the development of Council's Community Strategic Plan 2030 (adopted 13 October 2009) highlighted the importance of protecting the natural environment in this area. This was reflected in the vision statement developed by the community and Council that has included a clear reference for the need to "...conserve the magnificent environment..". With this and the supporting values and principles there is clear commitment to the intent of this policy. As such and given the recent adoption of this strategic plan it is not recommended that this policy be exhibited for public exhibition.

## FINANCIAL CONSIDERATIONS

Should council adopt this draft policy there will be no additional direct costs to Council. This is largely as council's operations are informed by current legislation and its existing strategies and plans as referred to in the policy. For private land, works and activities are regulated through the *Environmental Planning and Assessment Act 1979* and supporting instruments that are considered as part of determining development proposals.

## CONSULTATION WITH OTHER COUNCIL DEPARTMENTS

Strategy and Environment and Operations Department have provided input into the development of this policy.

## SUMMARY

The draft *Ecologically Sensitive Lands Policy* has been informed from the mapping and identification of the endangered ecological communities across the local government area. Its value is to serve as an umbrella policy from which relevant Federal and State legislation and Council's existing plans, policies and strategies. It has also been drafted to be consistent with the gazetted local environment plan for the town centres and future planning instruments. The policy is consistent with the intent and actions of Council's Community Strategic Plan 2030.



## RECOMMENDATION

That Council receive and adopt the draft *Ecologically Sensitive Lands Policy*.

Penny Colyer  
**Team Leader Natural Areas**

Peter Davies  
**Manager Corporate Planning  
& Sustainability**

Antony Fabbro  
**Acting Director Strategy &  
Environment**

**Attachments:**      **Draft Ecologically Sensitive Lands Policy 2010 - 2010/032295**



# Ku-ring-gai Council

## Ecologically Sensitive Lands Policy

### Purpose

To assist Council in meeting its ecological, social and legal responsibilities through appropriate management and conservation of local biodiversity in natural and urbanised landscapes at the local level.

### Objectives

Our objectives are to:

- Prevent the loss of local native biodiversity on public and private land
- Protect and enhance local biodiversity and habitats across terrestrial and aquatic ecosystems and connectivity therein
- Increase awareness of biodiversity and values within our community and Council

### Definitions

In this policy:

**Biodiversity** is “the variety of life forms, the different plants, animals and micro-organisms, the genes they contain, and the ecosystems they form. It is usually considered at three levels: genetic diversity, species diversity and ecosystem diversity.”<sup>1</sup>

**Ecologically Sensitive Land (ESL)** - Land containing:

- National or State significant communities, populations or species
- Riparian lands
- Areas of biodiversity significance

### Legislative framework

Key relevant legislation affecting the management of ESLs, include:

- *Environmental Planning and Assessment Act (NSW) 1979*
- *Environment Protection and Biodiversity Conservation Act (Commonwealth) 1999*
- *Local Government Act (NSW) 1993*
- *National Parks and Wildlife Act (NSW) 1974*
- *Noxious Weed Act (NSW) 1993*
- *Rural Fires Act (NSW) 1997*
- *Water Management Act (NSW) 2000*
- *Threatened Species Conservation Act (NSW) 1995*

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<sup>1</sup> Commonwealth of Australia 1996, *The National Strategy for the Conservation of Australia's Biological Diversity*, Canberra: Department of the Environment, Sport and Territories.

<b>Doc Distribution</b>	Internal Only	<b>Doc Status</b>	Draft	<b>File/Trim No.</b>	S06560
				<b>2010/032295</b>	
<b>Doc Owner</b>	Team Leader Natural Areas	<b>Contact Officer</b>	Manager Corporate Planning & Sustainability		
<b>Approval date</b>	N/A	<b>Approved by</b>	Manager Corporate Planning & Sustainability		
<b>Effective date</b>	N/A	<b>Review period</b>	2 years	<b>Review date</b>	June 2012
<b>History of approved versions</b>					
<b>Version No.</b>	1.0	<b>Effective Date:</b>	N/A	<b>Summary of changes:</b>	Original



## Principles

Council's actions and decisions will be guided by the principles of Ecologically Sustainable Development (ESD) and Council's Community Strategic Plan 2030 (adopted 14 September 2009).

## Background

The Ku-ring-gai Local Government Area (LGA) has 1164 hectares (ha) of bushland, 60 ha urban parks, 6 ha public gardens. Within the LGA are:

- 12 State listed flora under the *Threatened Species Conservation Act 1995*
- 15 Federally listed flora under the *Environmental Protection and Biodiversity Conservation Act 1999*
- 35 fauna species listed under the *Threatened Species Conservation Act 1995*
- 16 fauna species listed under the *Environmental Protection and Biodiversity Conservation Act 1999*.
- One endangered population, Gang-gang Cockatoo (*Callocephalon fimbriatum*)
- 2 Federally listed critically endangered ecological communities, Blue Gum High Forest and Sydney Turpentine Ironbark Forest
  - 1 critically endangered ecological community, Blue Gum High Forest
  - 4 endangered ecological communities:
    - Blue Gum High Forest
    - Sydney Turpentine Ironbark Forest
    - Duffys Forest
    - Estuarine Salt marsh
    - Estuarine Fringe Forest - Swamp Oak Floodplain Forest

Our bushland reserves, remnant and modified habitats and gardens play an important role in regional biodiversity management providing corridors linking three National Parks. These natural assets are highly valued by council and the community and help define the character of this area.

There are a number of threatening processes as identified by the NSW Scientific Committee that is affecting our ecologically sensitive lands. These will depend on the fauna, flora, population or community, but typically include loss and fragmentation of habitat through clearing and development, invasion by weeds and feral animals, boundary encroachment, urban runoff, inappropriate fire regimes and mowing that stops regrowth.

<b>Doc Distribution</b>	Internal Only	<b>Doc Status</b>	Draft	<b>File/Trim No.</b>	S06560
				<b>2010/032295</b>	
<b>Doc Owner</b>	Team Leader Natural Areas	<b>Contact Officer</b>	Manager Corporate Planning & Sustainability		
<b>Approval date</b>	N/A	<b>Approved by</b>	Manager Corporate Planning & Sustainability		
<b>Effective date</b>	N/A	<b>Review period</b>	2 years	<b>Review date</b>	June 2012
<b>History of approved versions</b>					
<b>Version No.</b>	1.0	<b>Effective Date:</b>	N/A	<b>Summary of changes:</b>	Original



## Implementation

### Public land

#### *Operational*

- All works on public land under the care and control of Council must be undertaken in accordance with all key supporting documents
- Where there are no key supportive documents that inform the management of Environmentally Sensitive Lands, the project is to be referred to Strategy and Environment for review during planning or prior to the commencement of works
- Training on the management of Environmentally Sensitive Lands will be delivered to all relevant staff in accordance with the Ecologically Sensitive Lands Training Strategy (reviewed annually)

#### *Approval*

- All approvals must be undertaken in accordance with key supportive documents

### Private land

#### *Approval*

- All approvals must be undertaken in accordance with key supportive documents.

## Key supportive documents

The principal basis guiding the implementation of this policy is council's current Ku-ring-gai Council Biodiversity Strategy.

Key national, state, regional and local policies and guidelines include:

### National

- Australia's Biodiversity Conservation Strategy 2010-2020 (draft)
- Relevant Recovery and Threat Abatement Plans

### State

- Relevant guidelines, Threatened Species Priorities Action Statement (PAS), Recovery and Threat Abatement Plans (noting these will be modified and updated by the NSW Department of Environment, Climate Change and Water as necessary)

### Regional

- Sydney Metropolitan Catchment Management Authority - Sydney Metropolitan Draft Catchment Action Plan Targets 2010
- Hawkesbury Nepean Catchment Management Authority - Hawkesbury Nepean Catchment Action Plan 2008

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<b>History of approved versions</b>					
<b>Version No.</b>	1.0	<b>Effective Date:</b>	N/A	<b>Summary of changes:</b>	Original



#### Local / Council plans and policies

Supportive documents may be updated or superseded. In the event of this, updated or complementary documents are to apply.

- Ku-ring-gai Local Environmental Plan (Town Centres) 2010 and Ku-ring-gai Development Control Plan (Town Centres) 2010
- Ku-ring-gai Riparian Policy (2004)
- Ku-ring-gai Council Development Control Plan No 47 Water Management (2005e)
- Tree Preservation Order (2009)
- Tree Management Policy, Ku-ring-gai Council 1999
- Weed Management Policy Ku-ring-gai Council 2006
- Bushfire Management Policy, Ku-ring-gai Council 2007
- Recreation in Bushland Policy, Ku-ring-gai Council 1997
- Fauna Management Policy, Ku-ring-gai Council 1998
- Recreation in Bushland Policy (1997b)
- Ku-ring-gai Biodiversity Strategy (2006).
- Ku-ring-gai Council Development Control Plan No 38
- The Ku-ring-gai Residential Design Manual (2006a)
- People, Parks and Bushland, Open Space Strategy for Ku-ring-gai (2005)
- Ku-ring-gai Bushland Reserves Plan of Management (December 2009)
- Ku-ring-gai Bushland Reserves Plan of Management – Operational Plan (May 2006)
- Echo Point Park Plan of Management (2004)
- Ku-ring-gai Bicentennial Plan of Management (2002)
- Parks Generic Plan of Management (2005)
- Sports Grounds Generic Plan of Management(2003)
- Gordon Golf Course Plan of Management(2009)
- North Turramurra Recreation Area Plan of Management (2009)
- St Ives Showground Plan of Management (1999)
- Ku-ring-gai Flying-fox Reserve Management Plan (1999)

<b>Doc Distribution</b>	Internal Only	<b>Doc Status</b>	Draft	<b>File/Trim No.</b>	S06560
				<b>2010/032295</b>	
<b>Doc Owner</b>	Team Leader Natural Areas	<b>Contact Officer</b>	Manager Corporate Planning & Sustainability		
<b>Approval date</b>	N/A	<b>Approved by</b>	Manager Corporate Planning & Sustainability		
<b>Effective date</b>	N/A	<b>Review period</b>	2 years	<b>Review date</b>	June 2012
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## ENVIRONMENTAL LEVY SMALL GRANTS SCHEME - ROUND TEN

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### EXECUTIVE SUMMARY

**PURPOSE OF REPORT:**

To seek Council's support to fund the tenth round of the Community Small Grants Scheme funded by the Environmental Levy.

**BACKGROUND:**

The community small grants scheme is designed to assist the Ku-ring-gai community to fund small community based environmental projects at a neighbourhood level. As part of a review process an independent small grants panel has been established.

**COMMENTS:**

Fifteen (15) applications were received under round ten of the program. Of these, the small grants panel recommended funding seven (7) applications with a combined contribution of \$40,343.

**RECOMMENDATION:**

That Council support the decision to fund the seven (7) projects recommended by the small grants panel as part of the Environmental Levy.



## PURPOSE OF REPORT

To seek Council's support to fund the tenth round of the Community Small Grants Scheme funded by the Environmental Levy.

## BACKGROUND

The Community Small Grants Scheme is designed to assist the Ku-ring-gai Community to fund small community based environmental projects at a neighbourhood level. The scheme was identified in the development of the Environmental Levy with strong support by the residents and Councillors as an opportunity to invest at the local level into projects of direct community benefit. As part of the scheme it was identified that an independent panel be established to provide a community and peer review of grant applications and funding protocols. This panel would then make recommendations to Council for the funding of projects, the subject of this report. Membership of this panel was sought from the Open Space Reference Committee.

Table 1 below outlines the number of projects and amount of money funded by the Environmental Levy in each round to date.

*Table 1: Summary of grants funded by the Environmental Levy to date*

	Number of successful applications	Funding allocation
Round 1	3	\$12,350
Round 2	12	\$52,349
Round 3	9	\$38,982
Round 4	9	\$41,000
Round 5	10	\$39,926
Round 6	11	\$39,720
Round 7	10	\$42,402
Round 8	11	\$40,636
Round 9	12	\$40,069
TOTAL		\$347,434.00

A summary of the current status of small grant projects can be viewed on the Council web page <http://www.kmc.nsw.gov.au/www/html/1132-small-grants-scheme---successful-applicants.asp?intSiteID=1>

## COMMENTS

The tenth round of funding was promoted through advertisements in local news papers, the Mayor's report, rate notices, posters and flyers displayed in Council libraries and main shopping centres and Council Chambers, St Ives Wildflower Garden and the Community Art Centre.



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Additionally, electronic promotion through Council's website, Bushcare News and Kasey.

A total of fifteen (15) applications were reviewed with a total cost of \$82,757.02 (Attached). The budget for Round 10 is \$40,343. Each application was reviewed and rated by the assessment panel. A summary of the recommended projects is proved in Table 2.

*Table 2: Summary of successful applicants*

Applicant	Project Summary	Funding sought	Recommended Funding
Granny Springs Bushcare group 337	Granny Springs embankment planting and stabilisation	\$9,122.50	\$5,000
Mashman's Quarry Reserve Streetcare group	Mashman's Quarry Reserve weed removal on street verge, Sydney Turpentine Ironbark Forest	\$10,000.00	\$10,000
Moore's Creek bushcare group	Improvements to Little Digger bushland reserve including walking track definition and installation of creek crossing	\$3,289.00	\$3,289
The University of Sydney	Survey to quantify possum abundance and radio tracking of rescued possums	\$2,054.00	\$2,054
Bike North Incorporated	Provide directional signs to bicycle routes in collaboration with Council direction	\$5,000.00	\$5,000
Lane Cove National Park	Coupes Creek bush regeneration	\$10,000.00	\$5,000
Pymble Turramurra Kindergarten	First kindergarten to become carbon neutral through a range of energy saving devices, sustainable initiatives and practices. This is an awareness raising initiative and this grant will fund solar panel and LED lighting as part of the Green Journey	\$10,000.00	\$10,000

Eight applications were not successful however the small grants panel provided the applicants with suggestions or opportunities to support the projects through other means.

## CONSULTATION

The advisory panel was selected through seeking volunteers from Open Space Committee, three (3) volunteers from the committee were selected, four (4) Council staff were also chosen to contribute to assessing the applications. Correspondence was via direct mail of a hard copy of each application, email and telephone conversations were then used to converse queries and options. This combination of communication methods alleviated the necessity of face-to-face meetings.



## FINANCIAL CONSIDERATIONS

\$80,000 per year has been allocated for the community small grant scheme as part of the environmental levy, with two rounds of grants available per year. A total of \$40,343 has been allocated for round ten for funds from the 2010/11 financial year.

## CONSULTATION WITH OTHER COUNCIL DEPARTMENTS

Staff from the Operations Department were consulted during the process of review seeking information from two (2) sections, Bushland Maintenance and Engineering Services. Additionally, the Bushcare section of the Strategy and Environment Department were consulted in relation to projects submitted by or affecting existing bushcare sites.

## SUMMARY

This report seeks Council's endorsement for the seven (7) projects to be funded from the Environmental Levy, round ten of the community grant scheme. A total of fifteen (15) projects seeking \$82,757.02 was received for this round of which the panel has recommended that seven projects be funded. The eight (8) applications not to be funded will be provided with feedback that may assist further development of their projects.

## RECOMMENDATION

That Council supports the following applications for funding under round ten of the community small grant scheme:

1. Granny Springs Bushcare Group	\$5,000
2. Mashman's Quarry Reserve Streetcare Group	\$10,000
3. Moores Creek Bushcare Group	\$3,289
4. The University of Sydney	\$2,054
5. Bike North Incorporated	\$5,000
6. Lane Cove National Park	\$5,000
7. Pymble Turramurra Kindergarten	\$10,000
<b>TOTAL</b>	<b>\$40,343</b>

Mary-Lou Lewis  
**Natural Areas &  
Environmental Levy Program  
Leader**

Peter Davies  
**Manager Corporate Planning  
& Sustainability**

Antony Fabbro  
**Acting Director Strategy &  
Environment**

**Attachments: Environmental Levy Round Ten Small Grants applicants - 2010/108736**



**ROUND TEN: Environmental Levy Small Grants Scheme**  
Summary of comments from Panel, 28 May 2010

No.	Round TEN Environmental Levy Small Grant Applications	Contact	Amount requested	Suburb	Panel Member A	Member A rating	Panel Member B	Member B rating	Panel Member C	Member C rating	Panel Member D	Member D rating	Panel Member E	Member E rating	Panel Member F	Advisory committee average priority rating	Recommended funding	Summary of comments by advisory committee and Council staff
1	<b>Granny Springs Bushcare group 337</b> <i>Embankment planting and stabilisation</i>	Keith Kennedy	\$9,122.50	Turrumurra	Strong local community support	2	Good application. Council should supply the plants and save \$2000.	13	Large request but vital. Could be staged ?	1	Could be funded by the catchment management or outlet protection funding from the levy. This should be investigated prior to recommending funding under this scheme.	8	Previously planted and never maintained.	3	10 - cut to \$5k	6.1	<b>\$5,000</b>	Strong community project save \$ by supplying plants reduce amount requested then compliment works by levy funded outlet protection. To be reviewed by Operations staff.
5	<b>Ku-ring-gai Bushcare Association</b> <i>Weed identification for general public</i>	Alan Woolcott	\$5,000.00	All	Will increase public awareness	7	Laudable project but should be part of Council's normal operations, especially wages.	10	Community education important.	3	Could be funded by promotions budget in either the levy or from the bushcare program.	8	Previously funded support purchase of material and the staff time.	9	1	6.3	<b>\$0</b>	To be supported by alternative levy funding- promotions and initiatives.
13	<b>Mashman's Quarry Reserve Streetcare group</b> <i>Contractor Project</i>	Christiane Berlioz	\$10,000.00	St Ives	Good project - large gap in cost (\$23,850) and funding	12	Confusing quotes. The group will need one or two more grants to complete the job.	12	Streetcare needs encouraging.	8	This project will need to be assessed by Peter Clarke. I would recommend half funding to determine progress and integration of the site and should this initial work be successful, requesting a second application for funding for the balance of the work.	2.5	Two quotes received cheaper version for target weeding only.	2	5 - cut to 5k	6.9	<b>\$10,000</b>	Long term project, fund in full
14	<b>Moore's Creek bushcare group</b> <i>Improvements to Little Digger Track and riparian crossing</i>	Marlen Dyne	\$3,289.00	Roseville	Well presented - query over the extent of community usage	9	Must question first quote's use of treated pine in the bush. Second quote removes a camphor laurel and uses it in construction, and the creek crossing is a better design (looks like the very adequate stepping stones across Carnarvon Gorge)	14	Yes. Excellent track record	5	Project has merit and qualifies with the guidelines. The feasibility of the works I would like reviewed by Council's Bushland Operations coordinator	2.5	Fell large camphor laurel. Controlled activity approval required on private land. Staff to review re flow rates and Operations staff to approve. Consult with contractor to show how the design is not impeding the flow.	10	1	6.9	<b>\$3,289</b>	To be reviewed by bushland operation staff and design to be verified to exclude the likelihood of blocking the creek.
11	<b>Princes Park Bushcare group</b> <i>Stabilisation of steep slope</i>	Carolyn Murtagh	\$4,999.50	Lindfield	Concern over broad community usage	10	Clear application. Intent, method, results, management, covering letter; all clear. Fund fully.	13	Yes	4	It is possible to fund this soil stabilisation works as part of the catchment management fund ? The project has merit but a different funding source may be more worth while and result in a properly stabilised site.	8	Stabilise embankment with logs and plants. Reviewed and supported by staff.	6	1	7	<b>\$0</b>	Support in full. Alternative funding from Environmental Levy outlet protection. Operation staff to review.
3	<b>Ku-ring-gai Bushcare Association</b> <i>On-line plant identification catalogue</i>	Anne Matheson	\$2,000.00	All	Concern as to limited application	11	Why the discrepancy in quotes? Maybe the \$10,000 quote would do a better job. Make the weed pictures bigger. Is the applicant aware of the Hornsby Herbarium which would cover some of the same species?	12	Helps many. Yes.	2	Could be funded by promotions budget in either the levy or from the bushcare program.	8	Duplicating other website, Hornsby. For \$2,000 it's worth it ?	13	1	7.8	<b>\$0</b>	Not wholly within brief. Has great merit although duplicating Hornsby website. Fund from Environmental Levy promotions line.
10	<b>The University of Sydney Survey of Brushtail possums population</b>	Tracey Russell	\$2,054.00	All	PHD project	14	What is the cost estimate of the radio tracking devices? How will the results be publicly disseminated? Can the group guarantee that spotlighting, trapping, fitting with devices and recapturing is not traumatic to sentient beings?	10	Yes, as long as trapping works.	6	Modest funding request and should provide some information on fauna movement and habitat. Would like to know how the data will be written up and to ensure Council has some acknowledgement.	5	Possum tagging for release by WIRES no quotes supplied.	12	1	8	<b>\$2,054</b>	PHD project ensure that outcomes are returned to the public and council
4	<b>Bike North Incorporated</b> <i>Directional signs to bicycle routes</i>	Robert Chambers	\$5,000.00	Wahroonga	RTA funding grant; concern as to overall environment benefits	15	Council should be facilitating sustainable transport but has not done much for bicycles. Full funding to make bicycling less death-defying.	14	Other funding ? More sport and recreation.	13	This should be funded by Council, however has fallen off the priority and works program. The project has merit and I would see this being one of many applications by this group.	2	Alternative funding options have been investigated and will be sought to contribute to this project in the future.	1	5	8.3	<b>\$5,000</b>	Support safe cycling.
12	<b>Lane Cove National Park</b> <i>Coupe's Creek Regeneration</i>	Margaret Reidy	\$10,000.00	Wahroonga	Important community asset and use	4	Good to liaise with residents at the source of the problem. However, isn't this a NPWS responsibility?	13	Lovely, but challenging area. Hope maintain OK	7	There is no doubt that this site is heavily weeded. My concern in recommending funding is that once regeneration and weeding has taken place it will quickly revert to current or similar condition. While the application speaks about regeneration within the valley, not sure of its relevance to this specific catchment. Comment from Bushland Operations Supervisor needed as to value for money and who would in the medium term take over the site.	10	To eliminate wind borne weed seeds in valley. No quotes received. Sewer and septic systems checked and found satisfactory on Brown's Road in Council's GIS database.	11	5 - cut to 5k	8.3	<b>\$5,000</b>	Good merit, not in our LGA. Reduce to \$5,000.
15	<b>Pymble Turrumurra Kindergarten</b> Carbon Neutral	Elena Shankland	\$10,000.00	Pymble/ Turrumurra	Unique, well presented, continuation of current environmental project	1	The PV system quoted is 'top of the range'. Another quote must be sought as the price should be closer to \$12,000, or \$6,000 after the rebates. REC's rebates vary and are currently \$36.The LED off-grid system (which it appears the school must install) can be much more cheaply achieved by installing LED lights on-grid.	10	Not our brief. Create precedent. Other funds ?	15	Previously, Council has funded a range or rainwater tanks so this project has precedent in funding. The building is owned by Council and represents a good project for local action and education. The funding amount is very high.	7	LED lights as third phase of a green journey. Good learning program. Check details of submission/requiring funds for solar panel or LED light. Then why off-grid option which is more expensive. Further correspondence included. \$601.70 quote to replace lights and solar panel.	4	15	8.6	<b>\$10,000</b>	Conversed with the applicant who is sourcing cheaper quotes. Commendable project when quote refined. \$601.70 quote to replace lights & solar panel.
2	<b>Wires North Shore Branch</b> <i>Substitute Possum Home</i>	Chantel Nicol	\$4,999.58	All	Important environmental benefit, WIRES link is important	6	No problem with this application. Fund fully.	14	Yes. Needed	9	WIRES has received a number of grants over the years. I would like to know how beneficial they have been before funding more.	10	Previously funded avaries.	14	1	9	<b>\$0</b>	Previously funded a number of WIRES projects. Need to review previous money spent. Investigate alternative funding through Environmental Levy promotions.
6	<b>Pymble Public School</b> <i>Sustainability Project</i>	Kate Fitton	\$3,692.44	Pymble	Well presented proposal, partnership with Ku-ring-gai High School beneficial	3	Not clear why garden beds (steel? iron? galvanised what?) need to be purchased. Commercial retailer providing public school training course - will benefit private interest.	11	Well organised submission but more landscaping than needed.	10	Small project within school. Not sure of the momentum it will create.	8	Advised by Gordon West Public School which we supported before. Well organised and supported by Ku-ring-gai High School, Bunnings, ground keeper and P&C	8	15	9.1	<b>\$0</b>	Like to support this school initiative however limited funds. Invite school to be involved in next year's tree planting and modifications in neighbouring Rushall Street.
9	<b>Lindfield East Public School</b> <i>Going Green</i>	Samantha Tuckerman	\$3,500.00	Lindfield	Good project - more limited in scoping than other higher ranked school initiatives	8	Is the chemical in the treated timber safe for food-growing and the environment?	12	No. P and C. Not good use of grant funds.	11	Small project with potential learning in broader community.	8	Kitchen garden and science program. The garden will be managed by the school as part of the curriculum.	7	15	10	<b>\$0</b>	Limited funds, constrain acceptance of school projects in this Round.
7	<b>Easy Care Gardening</b> <i>Easy Care Gardening</i>	Bruce Taylor	\$4,100.00	All	Very beneficial to aged population	5	Clearly for public benefit and voluntary. Evidence exists throughout community of their good results.	14	Sympathetic but no costings?	14	This essentially involves work on private land that is not the purpose of the levy.	12	Advertising for promotion of Easy Care gardening. Targeting weed control on private land.	5	15	10.8	<b>\$0</b>	Alternative support through Greenstyle. A bush regenerator will accompany the Easy Care working groups to advise sustainable weeding practices
8	<b>Abbotsleigh</b> <i>The Abbotsleigh Eco Garden</i>	Greg Fisher	\$5,000.00	Wahroonga	Less impressive than other school based initiatives	13	Need 2 quotes for capital works. Is a capital improvement for a private enterprise. Not clear where the money is going.	2	Gardening rather than sustainability. Iffy	12	Small project with potential learning in broader community.	8	Same as other school applications, but more expensive	15	15	10.8	<b>\$0</b>	Limited funds constrain acceptance of school projects in this Round
			<b>\$82,757.02</b>													<b>Total</b>	<b>\$40,343</b>	



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## DRAFT CLIMATE CHANGE ADAPTATION STRATEGY

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### EXECUTIVE SUMMARY

**PURPOSE OF REPORT:**

To present to Council for exhibition a draft Climate Change Adaptation Strategy.

**BACKGROUND:**

On 13 October 2009, Council adopted a Climate Change Policy. As part of this resolution it was required to prepare a climate change adaptation strategy from which Council could ascertain the range of actions it could take to minimise the direct and indirect consequences of a changing climate.

**COMMENTS:**

The draft *Climate Change Adaptation Strategy* has investigated the vulnerability and resilience factors to changing weather patterns affecting council and the local community. This involved developing a method to identify and evaluate the specific risks expected across the Ku-ring-gai local government area, prioritising actions based on foreseeable risk, context as well as the social, financial and environmental impacts.

**RECOMMENDATION:**

That the draft Climate Change Adaptation Strategy be exhibited for public consultation.



## PURPOSE OF REPORT

To present to Council for exhibition a draft Climate Change Adaptation Strategy.

## BACKGROUND

On 24th March 2009, Council considered a draft Climate Change Policy containing six greenhouse emission reduction options for Council's corporate emissions and a community emission target. The draft Climate Change Policy builds on from the *Climate Change Mitigation and Adaptation Discussion Paper (September 2007)* and was adopted by Council on 13 October 2009 with the following resolution:

- A. That Council adopt the draft Climate Change Policy.
- B. That Council sets a corporate emission target of 20% by 2020 based on year 2000 emissions and 90% by 2050 calculated on facilities and fleet emissions.
- C. That a Climate Change mitigation strategy be prepared within four (4) months for consideration in the 2010/11 financial year budget.
- D. That a Climate Change Adaptation Strategy for bushfires and storms be developed by June 2010 and reported to Council.
- E. That a new capital works program include an objective as part of the design and budget process to have a zero increase in the energy consumption compared with the current facilities.
- F. That the Revolving Energy Fund be retired.

This report addresses resolution (D) of the above.

## COMMENTS

In 2008, a discussion paper titled '*Climate Change – Mitigation and Adaptation in the Ku-ring-gai Local Government Area September 2007*' reported to Council that the best climate science available indicated that Ku-ring-gai may be affected by climate change in the form of increased intensity and frequency of extreme weather events. This report also noted that regardless of the success of community mitigation efforts, the planet will continue on an accelerated warming trend over the next thirty years.

To some extent this has been reflected in the recently finalised sea level rise policy by the NSW Government that has set a 0.4 metre by 2050 and 0.9 metre increase in mean sea levels by 2100. Along with this much needed direction was also the indemnification of State and local government associated with private (and public) property in relation to the impacts of sea level rise attributed to climate change and subject to government implementing the policy outcomes as articulated.

The consequences of climate change and subsequent litigation remain a significant risk factor for all decisions by government. Given the directions of civil liability litigation all levels of government need to demonstrate that they have investigated the exposure of their communities to the risks posed climate change and instigated plans and actions to reduce the risk exposure. With the extent of information on climate change in the public domain, government cannot claim there was insufficient knowledge about the risks arising from Climate Change. For local government this is



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equally applicable as regionalised modelling available from CSIRO, the Bureau of Meteorology and others clearly demonstrates the risks and have determined the likelihood of occurrence is beyond the threshold of 'on the balance of probability' which is all that is required for civil burden of proof.

The research undertaken as part of the preparation of Ku-ring-gai Council draft *Climate Change Adaptation Strategy* identified four extreme weather events likely to affect this area to a greater extent than has occurred in the past both in terms of frequency and intensity. These include: extreme heat events; drought events; bushfires and storms. Sea level rise is considered to have lesser direct impacts due to the limited area of tidal foreshore zones, for example, Echo Point and Lane Cove National Park.

In the absence of a suitably robust and inclusive model to determine the costs and benefits of adaptation options for local government a new model was created. This was developed to provide Councillors and the community with information on:

- the magnitude and probability of risks occurring;
- the vulnerability of the Ku-ring-gai area to each risk;
- the resilience factors already in place;
- the scope of adaptation options available;
- the ability of each option to reduce a specific risk or suite of risks; and
- the impact of implementing that option in terms of monetary and non monetary costs and benefits.

The draft *Climate Change Adaptation Strategy* (**Attached**) is provided with this report. This covers various adaptation options that were scoped through an inclusive consultation process involving staff across the organisation, local experts from various emergency services organisations, business, state government departments, community members and academics. The individual and collective opinions have guided the assessment of vulnerability and resilience factors and assisted in determining the scope and rank of the adaptation options.

To further investigate the financial cost/benefit of the more complex particularly relevant to higher level investment options a collaboration was formed with Macquarie and Bond Universities to establish a method to provide this information. The case study used for the research was bushfires and the results are reported in the document titled '*Economic Evaluation of Climate Change Adaptation Strategies for Local Government: Ku-ring-gai Council case study (February 20-10)*'.

The collaborative research project was also valuable as it provided staff with the knowledge and expertise to determine the ranking of options and whether they were financially feasible in offsetting the costs of inaction. It also validated a means of using expert opinion to enhance existing data where there is a paucity of data available which is the case in estimating the costs associated with extreme weather events mainly because there have been too few events where good records have been maintained.

The result of this research and as contained in the draft strategy is a suite of ranked adaptation options available for decision makers to examine for their cost benefit. It should be noted the cost benefit analysis method arising from the collaborative research project is not the traditional form of cost benefit but rather a more sustainable cost benefit assessment that factors in costs in terms of financial, social and environmental impacts and benefits in terms of risk reduction capability. These options have been assigned to a lead agency or stakeholder as having the primary



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responsibility with those having secondary responsibilities also identified. For Council this will enable the integration of actions with the delivery and operational plan. Following this work it is recommended to consult with the wider community of Ku-ring-gai to capture feedback on the various options and applicability particularly from the domestic sector. Once this has been obtained it is then recommended that the strategy be returned to Council for further consideration.

## CONSULTATION

Consultation for this project has involved various experts including the following:

- ABARE, Don Gunaskera, Chief Economist
- CSIRO
- Various academics at Bond and Macquarie Universities
- Briefing and feedback from two Sustainability Reference Committee meetings
- Workshop with other councils including the Local Government and Shires Association
- Workshop on adaptation options involving local experts and those within key governmental agencies.

In addition to this, the Sustainability Reference Committee has been consulted on the progress of the development of the draft *Climate Change Adaptation Strategy* on 1 March 2010 and 7 June 2010.

As part of the next stage of consultation it is proposed that this draft strategy be presented to and discussed with the community through workshops as well as traditional methods seeking written comment. This is intended to gain further input into the data by broadening the number of local opinions integrated into the assessment.

## FINANCIAL CONSIDERATIONS

While this is a draft strategy designed for further consultation, it clearly points to the need to consider the allocation of Council's limited resources in relation to addressing risks associated with climate change.

In recent years the Environmental Levy has supported a range of projects to alleviate the impacts of drought and associated water restrictions as well as the construction of important links in the fire trail network as a proactive bushfire management action. It is foreseeable that if Council was to continue with a second Environmental Levy, a key area for its focus could be to fund a range of projects to assist in its preparedness to extreme climatic events be they adapting to climate change or as part of good risk management. Furthermore the adoption and funding of such a strategy would likely provide the necessary and complementary funding from Federal and State Government grants for projects in this area. As this draft strategy positions Ku-ring-gai Council as a leader in this area the likelihood of attracting the early round of government grants is strong.

As part of a review of comments from the exhibition period, a more detailed financial analysis of the draft strategy will be undertaken. This will consider not only the potential actions that are more directly the responsibility of Council but also others where council would play a major role in the dissemination of information.



## CONSULTATION WITH OTHER COUNCIL DEPARTMENTS

All Council Departments invited to review and comment on risks and adaptation options and their rankings. This included various presentations and workshops with Council's internal sustainability reporting team.

### SUMMARY

Contemporary research confirms the need to plan for an increase in the frequency and intensity of extreme weather events in Ku-ring-gai. The major risks relevant to Ku-ring-gai are bushfires, droughts, extreme heat events and storms. Adaptation options were scoped using staff, community and expert opinion. Supporting this draft strategy, a method was developed in conjunction with Macquarie and Bond Universities to guide the prioritisation of adaptations in terms of their ability to reduce specific risks associated with each extreme event and their environmental, social and financial impact. The result is suite of ranked adaptation options for the four significant type of extreme weather event likely to affect this region as a consequence of a changing climate. To further information the development of this draft strategy it is recommended to be placed on public exhibition and workshopped with the community from which feedback will be assessed and a more detailed financial analysis of options and priorities will be undertaken.

### RECOMMENDATION

- A. That the draft *Climate Change Adaptation Strategy* be exhibited for a period of 28 days with a further 14 days for public comment.
- B. That notification of the public exhibition period be advertised in the North Shore Times.
- C. That a further report be presented to Council following the public consultation process, incorporating comments received during the public exhibition period.

Louise Hayward  
**Sustainability Officer**

Jenny Scott  
**Sustainability Program Leader**

Peter Davies  
**Manager Corporate Planning and Sustainability**

Antony Fabbro  
**Acting Director Strategy and Environment**

**Attachment: Draft Climate Change Adaptation Strategy - 2010/106894**





# **Ku-ring-gai Council**

## **Climate Change Adaptation Strategy**

**DRAFT**



*For those who have to make decisions now, we believe it is better to base those decisions on current imperfect models rather than on no information at all, provided the associated uncertainties are made clear.*

**Chief Scientists of the UK Meteorological Office 2007**



## Executive Summary

Contemporary science strongly supports the need for regionalised modelling to better inform decision making around adaptation for climate change.

Regionalised modelling is now available to guide councils in their determinations of risk and planning effective and efficient adaptations. The risks emerging are in the form of more frequent and intense extreme weather events, such as bushfires, storms, droughts and heat waves. Planning adaptation requires investigation of vulnerability (weaknesses that increase risk exposure and impede recovery) and resilience (strengths that reduce risk exposure and enhance recovery).

In Ku-ring-gai, history has demonstrated the magnitude of the impact of extreme weather events and their associated costs. Even as recently as February 2010, Ku-ring-gai experienced a costly extreme rain event resulting in significant storm damage to public and private property. The magnitude of this event is consistent with climate change modelling. Extreme storm events in the form of increased rainfall intensity are but one of the climate change related impacts on the increase.

Over the next 30 years climate scientists advise that changes to our climate will continue irrespective of any reduction in greenhouse gas emissions to the atmosphere. This does not allow government, industry or individuals to be complacent or shift the burden to the next generation. Such action would only exacerbate the challenges we are set to face over this period. Adaptation requires decision makers not only acknowledge the reality of the short term change to our climate but also commence action to reduce risk exposure in their areas of influence.

Downscaling the climate modelling to 2030 for the Sydney region predicts significantly increased spring and summer rainfall while winter rainfall

decreases, higher maximum temperatures, higher sea levels, changing flood patterns with greater runoff in summer and autumn; a longer fire season with increased frequency of very high or extreme fire-risk days and increased fire frequency and intensity.

From a litigious perspective, councils need to take steps to show they have investigated the risks posed to their communities from climate change and put in place plans and actions to reduce the risk exposure.

It is probable that civil liability around climate change will follow a similar path to that of tobacco and asbestos litigation. That is Councils cannot claim there was insufficient knowledge about the risks. Regionalised modelling available from CSIRO and others clearly demonstrates the risks and their likelihood is beyond the threshold of probability which is all that is required for civil burden of proof.

Given the volume and rigour of the evidence supporting climate change, it likely Courts will become unequivocal in their view regarding the need for due diligence amongst decision makers.

The development of this draft Adaptation Strategy involved community consultation, staff consultation, an academic research partnership and several presentations to local government associations and sustainability conferences. The method developed investigates Ku-ring-gai's vulnerability to risks emerging from changing patterns, evaluates adequacy of current resilience factors and plans adaptations designed to reduce vulnerability and improve resilience.

The product is a suite of options of adaptation strategies prioritised according to their ability to reduce risk (benefit) and minimise financial, social and environmental impact (cost). Whilst not strictly a traditional cost benefit model is does conform to the concept of cost



benefit and includes monetary and non monetary factors.

The purpose of this adaptation strategy report is to reinforce the advice that climate change is progressing rapidly; that adaptation action is required to satisfy due diligence in decision making; and that well designed and timely implementation of adaptation strategies can reduce the risks of extreme weather events and enhance sustainability.



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## Introduction

Local Government has a significant role and responsibility to make our communities safer from extreme weather events.

Contemporary science strongly supports the need for regionalised climate modelling to better inform decision making around adaptation for climate change.

Predicted weather patterns<sup>1</sup> for the Sydney region include:

- significantly increased spring and summer rainfall with winter rainfall decreasing
- higher maximum temperatures
- higher sea levels
- changing flood patterns from greater runoff in summer and autumn
- a longer fire season with increased frequency of extreme or catastrophic fire-risk days.

From a litigation perspective, councils are advised that they need to begin to take steps to show they have investigated the risks posed to their communities from climate change and put in place plans and actions to reduce the risk exposure<sup>2</sup>.

It is probable that civil liability around climate change will follow a similar path to that of the individual and class action suits against tobacco and asbestos companies. For government and also industry it is untenable to claim there is insufficient knowledge about the risks as regionalised climate modelling clearly demonstrate the risks, likelihood and consequences as being beyond the threshold of probability which is all that is required for civil burden of proof.

Given the volume and rigour of the evidence supporting climate change, it is likely Courts will become unequivocal in

their view regarding the need for due diligence amongst decision makers.

In Ku-ring-gai, past events have demonstrated the magnitude of extreme weather events and their associated costs. In February 2010, Ku-ring-gai experienced an extreme weather event consistent with climate change modelling. This affected public and private land across urban and natural areas, impacted on major capital works projects and highlighted the limitations in the capacity of council's drainage system for events of this magnitude.

Extreme storm events in the form of increased rainfall intensity are but one of the climate change related impacts on the increase<sup>3</sup>.

While it is imperative to continue investment in climate change mitigation, over the next thirty years scientists<sup>4</sup> advise, that we will experience substantial changes in weather patterns regardless of how much CO<sub>2</sub> is removed from the atmosphere.

It is difficult and in many respects unproductive to split mitigation and adaptation. This is because many mitigation strategies also serve to increase resilience to extreme weather impacts. For example reducing dependence on mains power supply by local generation of sustainable green power such as solar or wind generation has benefits for both adaptation and mitigation. Not only will it give council independence from the vagaries of an already overloaded and unreliable power infrastructure, it also reduces the CO<sub>2</sub> generated by council activity. Therefore actions that will provide benefits across both mitigation and adaptation have the greatest return on investment.

Adaptation requires decision makers to not only acknowledge the need to act but

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<sup>1</sup> CSIRO, 2007

<sup>2</sup> Taplin *et al* 2010

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<sup>3</sup> CSIRO, 2007

<sup>4</sup> Taplin *et al* 2010



to commence action to reduce risk exposure in their areas of influence.

In order to create a credible, rigorous and contextualised climate adaptation strategy for the people and assets within Ku-ring-gai, a range of practitioners have been engaged as part of this review. They have been selected not only for their knowledge of climate science and risk assessment but also because they have valuable local and regional roles to protect the physical and social assets of this area. A list of participants is included in the acknowledgement section of this report.

This strategy has four parts:

1. identification of regionalised weather trends
2. identification of local risks arising from weather trends
3. identification of our vulnerability to these risks
4. identification and prioritisation of adaptation strategies to improve resilience to the risks

Each element was dependent upon the results of previous step. While there are other models and approaches available for local government to use (such as the ICLEI model), none has the capacity to create contextualised, risk relevant adaptation comparisons to guide investment. This approach seeks to address each of these steps and overcome the deficiencies of other climate change adaptation approaches and builds on techniques and concepts developed during the collaborative research project with Macquarie and Bond Universities. Tools such as the Borda Count and Bayesian theory have proved useful in guiding this inquiry.



# Rationale for adaptation

When is a model 'good enough' to inform public policy?

In a given context, how do we define 'good enough'? Does this vary across contexts, scales, assumptions or known errors? The Chief Scientists of the UK Meteorological Office<sup>5</sup> wrote *'for those who have to make decisions now, we believe it is better to base those decisions on current imperfect models rather than on no information at all, provided the associated uncertainties are made clear.'*

For governments and others there is an initial binary decision: to delay action and wait for more certainty of data or to act immediately in response to existing data. The former carries a number of risks not least the consequence if a delay to act made matters worse.

Engineers Australia (2009) have stated that its preferable to educate the community and make them understand that climate change is a shared responsibility.

## What is a reasonable response?

Reasonableness is a long standing legal concept at the centre of the tort of negligence that has been applied in a variety of ways by the Courts to determine if an act or omission was sufficiently mindful of a foreseeable risk of harm<sup>6</sup>.

Across each decision there remains an option whereby legislative immunity could be provided irrespective of action or inaction, though clearly this in itself carries significant risk and uncertainty.

In *Donoghue v Stevenson*<sup>7</sup>, Lord MacMillan recognised that the assessment of

reasonableness must reflect the changing community values and circumstances and that the grounds of action may develop in adaptation to altering social conditions and standards. The criterion of judgment must adjust and adapt itself to the changing circumstances of life. The concept of reasonable foresight in Lord Atkin's speech in *Donoghue v Stevenson* combines both the concept of fact and value. What is foreseeable is a matter of predictive fact and reasonableness is a value judgement<sup>8</sup>.

Given the detailed advice on the evidence supporting the probability and consequence arising from Climate Change it is evident that the concept of fact regarding foreseeability is satisfied. This applies at the global level from the IPCC<sup>9</sup>, for the Sydney region from CSIRO<sup>10</sup> modelling, and specifically Ku-ring-gai in the research by Macquarie University<sup>11</sup>.

Risks to the values cherished by Ku-ring-gai residents and council need to be acknowledged and action taken to prevent harm as far as is practicable. Ku-ring-gai values are articulated in Ku-ring-gai Council's Vision Statement and translated into Council's management plan. Community consultation regarding the risks from extreme weather events combined with historical evidence of the scope and scale of harm arising from past events allow decision makers to estimate the degree of investment warranted in adaptation.

Council decisions may be subject to increasing litigation and legal challenge on the basis of climate change impacts<sup>12</sup>, particularly in relation to policy frameworks such as Town Planning

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<sup>5</sup> [New Scientist 2007, p. 26]

<sup>6</sup> *Tame v New South Wales*

<sup>7</sup> Maxwell 2009

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<sup>8</sup> Maxwell, 2009

<sup>9</sup> IPCC 2007

<sup>10</sup> CSIRO 2007

<sup>11</sup> Taplin *et al* 2010

<sup>12</sup> England 2007



Schemes, Land Zonings, Town Planning Policies, Building Approval regimes, major construction plans, Environmental Protection Policies, etc. Council decision makers must be aware and plan for climate change implications in a very demonstrable way in order to meet the test of "reasonableness" in their defence notes<sup>13</sup>. It is likely the Courts will consider awarding significant damages to plaintiffs against public sector agencies such as Local Governments. If this occurs there could be significant financial implications for the sector if climate change is not treated seriously in the decision making process of Local Government<sup>14</sup>.

Local government is the most vulnerable sector and least well resourced to cope with climate change risks and impacts<sup>15</sup>. As a land manager and custodian of open space with general responsibilities for environmental issues, local government is largely responsible for the implementation of adaptation strategies. Local government needs effective, efficient policies to increase investment and foster creativity and innovation in addressing climate change issues<sup>16</sup>.

For example the basic premise behind each question is the Precautionary Principle, that is:

*"Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation."*<sup>17</sup>.

The Precautionary Principle is contained in Principle 15 of the 1992 Rio Declaration as a fundamental component of the concept of ESD<sup>18</sup>. As the Precautionary Principle is

elemental to ESD it makes sense to analyse potential adaptation options for their capacity to achieve their intended purpose; that is to firstly reduce risk and secondly limit unintended effects that occur in every change process. Where potential impacts are sufficiently uncertain (such as is the case with Climate Change modelling) then it is wise to apply the Precautionary Principle<sup>19</sup>. It is worth noting in terms of civil liability that evidence relating to 'foreseeability' needs to be demonstrated only to the satisfaction of the civil burden of proof that is '*on the balance of probability*'. While government may be granting immunity from liability regarding sea level rise, it is unlikely to be true of other extreme weather impacts. This is because other impacts such as drought, extreme heat, storms and bush fire have occurred in the past and therefore the harm is foreseeable. Sea level rise on the other hand, is much more problematic in this regard.

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<sup>13</sup> England 2007

<sup>14</sup> England 2007

<sup>15</sup> Bainbridge 2008

<sup>16</sup> Bainbridge 2008

<sup>17</sup> Cole, 2005

<sup>18</sup> Cole 2005

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<sup>19</sup> Cole 2005



# Climate Modelling for Ku-ring-gai

To determine the potential weather related changes for Ku-ring-gai, regionalised modelling needed to be examined. Data from CSIRO<sup>20</sup> and the Bureau of Meteorology<sup>21</sup> have been assessed by Macquarie University to develop a regionalised model.

NSW downscaling for the Sydney region predicts significantly increased spring and summer rainfall while winter rainfall decreases, higher maximum temperatures, higher sea levels, changing flood patterns with greater runoff in summer and autumn; a longer fire season with increased frequency of very high or extreme fire-risk days and increased fire frequency and intensity.

## Validity of current data

A critical question is how to produce credible regional information while correctly recognising and communicating associated uncertainties.

The expectation that climate change effects will increase in future has led to an escalating demand for regionalised predictions to guide adaptation plans. Although there is high confidence in the large scale patterns of changes in some parameters, the skill in regional prediction is much more limited and indeed difficult to assess, given that we do not have data for a selection of different climates against which to test models.

Research is being undertaken to try to improve model predictions but progress is likely to be slow<sup>22</sup>. In the meantime, governments and business are faced with making decisions now, and require the best available climate advice today. Despite

their limitations, climate models provide the most promising means of delivering information on climate change. However, the limitations of any regional and local scale predictions must be made clear.

Climate change downscaling for Ku-ring-gai has been completed as part of the Macquarie University collaborative project undertaken in 2009<sup>23</sup>.

The Macquarie team used the Richmond RAAF (Royal Australian Air Force) Base data as a surrogate for Ku-ring-gai because it is almost as close as Sydney Airport and more closely reflects the non-coastal character of Ku-ring-gai.

To optimise regional predictability a coordinated approach with Regional Climate Models (RCMs) and higher resolution global models is required.

Dynamical or statistical downscaling from global models should be used to generate high resolution climate change information for attribution of past change, for understanding the processes that lead to change and for projecting future change. The statistical downscaling of models depends fundamentally on high quality, high resolution and comprehensive observations to inform statistical approaches and to confirm error reductions in models. In addition, appropriate and robust statistical methods are needed for extremes, extrapolation and downscaling, and these methods must be suitable for providing information useful to decision-makers.

Care is needed to ensure that statistical samples of regional models are long enough to be reliable for trend analysis. As other finer-scale events of general importance such as flash floods and

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<sup>20</sup> CSIRO 2007

<sup>21</sup> Bureau of Meteorology 2007

<sup>22</sup> Taplin *et al* 2010

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<sup>23</sup> Taplin 2010



cyclones cannot realistically be resolved, the modelling effort must be supported with careful statistical analysis of the relationship between model-scale features and extreme events.

Government agencies of NSW and the University of NSW have been developing climate change forecasts for the NSW regions<sup>24</sup>. The following summary is from the 'Summary of Climate Change Impacts Central Coast Region of the NSW Climate Change Action Plan'<sup>25</sup>. NSW local governments will have to use these predictions in future planning and reporting.

### Key climate trends

In summary Ku-ring-gai is likely to experience a warmer climate with fewer extreme cold days and increasing number and duration of extreme heat days. Winters will be drier with spring and summer featuring increased rainfall, mostly in heavy storm events. Bushfire weather is intensified, drought periods and water shortages increase and heat stress impact people during prolonged periods of extreme warm temperatures.

Mean daily minimum and maximum temperature are projected to increase by between 1.5 and 3.0°C.

Summer rainfall is projected to increase across the region by 20 to 50%, with a smaller increase in spring. Winter rainfall is projected to decrease.

Higher temperatures and changes to evaporation are likely to create slightly drier conditions in winter and spring.

Sea level rise figures are based on projections by the Intergovernmental Panel

on Climate Change and CSIRO and are still being reviewed to quantify expected local changes. Along the coast, storm events and sea level rise are projected to have a significant impact.

*Increased average daily temperature*

*Overall decrease in average annual rainfall*

*More rainfall during summer*

*Drier winters and springs*

*Sea level rise*

*Greater intensity of El Niño and La Niña cycles*

*Increased runoff*

*Increased extreme temperature days*

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<sup>24</sup> CSIRO 2007

<sup>25</sup> CSIRO 2007



The pattern of the El Niño-Southern Oscillation cycle is projected to continue but with higher temperatures than currently experienced. El Niño years are likely to continue to be drier than average and become hotter. La Niña years are likely to continue to be wetter than average and also to become warmer. In El Niño events, water stress may be more intense due to higher temperatures. During La Niña years, storms with heavy downpours may be more frequent. The frequency of very high or extreme fire-risk days is predicted to increase across NSW. Increases in temperature, evaporation and high fire-risk days could increase fire frequency and intensity across the region. The fire season is likely to be extended as a result of warmer temperatures.

A slight increase in annual runoff likely (with estimates ranging from -5% to +13%), with likely increases in summer and autumn and decreases in winter and spring.

In summer, there is very likely to be a major increase in runoff depths (with estimates ranging from +5 to +22%) and a major increase in the magnitude of high flows. Current levels of low flows are likely to occur with about the same frequency.

In autumn, there will more likely than not be a moderate increase in runoff depths (with estimates ranging from -5% to +16%). There is likely to be a moderate increase in the magnitude of high flows, and current levels of low flows will more likely than not occur slightly less frequently.

In winter, there is likely to be a minor decrease in runoff depths (with estimates ranging from -16% to +11%) and a slight decrease in the magnitude of high flows. Current levels of low flows will more likely than not occur slightly more frequently.

In spring, there is likely to be a minor decrease in runoff depths (with estimates ranging from -14% to +8%). There will more likely than not be a slight decrease in the magnitude of high flows. Current levels of low flows will more likely than not occur moderately more frequently.



# Risks Emerging from Changed Weather Patterns

While climate change may impose new risks in some local location, for Ku-ring-gai the modelling suggests that *no new risks* are likely to emerge, however *existing weather related risks are likely to intensify*.

The challenge is to ascertain the significance of the predicted effects of climate change and to identify local consequences in relation to future liability.

Decision-makers must also consider the benefits foregone and the cost of failure to take pre-emptive action to mitigate and adapt to the more extreme impacts of climate change.

In 2008, two workshops were conducted through a community consultation process by council to discuss the climate change weather predictions and the consequence of altered climatic conditions on Ku-ring-gai. Participants were selected from local business, government agencies, emergency services and NGOs. Participants ranked risks according to the vulnerability of Ku-ring-gai to a particular change and the magnitude of the consequence of that change. The following key risks were identified by participants as the highest priority for Ku-ring-gai:

- Storm frequency and intensity
- Bushfire frequency and intensity
- Potable water supply security
- Heat stress mortality rates.

Participants noted that these risks will have an effect on the environment, especially critically endangered species, the local economy, our community and the administration and operation of council.

## Storms

Risks associated with storms include injuries and deaths, destruction and or damage to houses from wind and water, canopy tree loss, power infrastructure damage and failure, localised flooding, stream and creek scouring and erosion, road pavement destabilisation to name but a few. The consequences of the changed catchment runoff for stream flow will depend on what part of the reported range of change is realised, as well as the influence of water infrastructure. If the drier end of the range were realised, there is a risk of inflow reductions of 10% to 20% during drier periods.

*No new risks are likely to emerge, however existing weather related risks are likely to intensify*

Storms have wreaked havoc in the past. The 1991 storm recorded a clean up and restoration cost of nearly \$700M<sup>26</sup>. If storms are likely to increase in frequency it is clear steps need to be taken to reduce the impact occurring from these events. While the direct loss to council may be offset by state government emergency funding, as per 20B of the *State Emergency and Rescue Management Act 1989*, the drawn down effect on the public purse will accelerate commensurate with the increase in the incidence of these events. The effect of extreme events such as bushfire and storms extends well beyond the financial impact with the disruption to daily life and emotional stress leaving long term psychological and physical damage.

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<sup>26</sup> Pollock 2001



## Bush fire

Bush fires are included in Garnaut's<sup>27</sup> economic analysis of climate change as one of nine types of 'extreme weather events'. It is worth noting that this analysis occurred prior to the Victorian Black Saturday Bushfires and as such are likely to underestimate the extent and costs of wildfire.

The historical record for bush fire weather in South East Australia show<sup>28</sup> that for the period 1973–2007, there has been a general increase in the Forest Fire Danger Index (FFDI) and a statistically significant (above the 95% level) increasing trend in FFDI for most inland locations. Pitman *et al.* (2007) also discuss bushfire incidence under warmed climate conditions in terms similar to those of Lucas *et al.* (2007) but with a probability density function (PDF) that might contribute to economic modelling (Figure 4.4). Pitman *et al.* (2007) predict increases in forest and grassland fire risk by 2050 and 2100 for all Australia. They use two emission scenarios (low and high) but find that by 2050 the magnitude of the increase in risk is relatively independent of scenario. They confirm the findings<sup>29</sup> and earlier analyses<sup>30</sup> that the changes in wind speeds are relatively insignificant in changing fire risk. Increased risk is largely due to alternations in temperature and relative humidity. By 2100 the low emissions scenario further increases the fire risk (above 2050) by ~25% while the high emissions case has increases in fire risk of 50–100% along the NSW coast.

The analysis of the results confirmed bush fire was considered to be the single most serious threat given the area is surrounded by three National Parks, features ridge top development and has significant evacuation issues in the event of a bush

fire emergency. Research has indicated that in terms of risk reduction, hazard reduction burns have limited value (REF). Strengthening houses to withstand ember attack is viewed as a more viable and effective way to reduce infrastructure loss.

## Drought

Droughts create financial pressures and impact the community in variety of ways. While Ku-ring-gai residents continue to take up water tank rebates the progress is slow<sup>31</sup>. Promoting local water and energy security are two impact adaptation programs already underway in council subsidised by State and Federal Government funding. However if Ku-ring-gai is to continue to enjoy the current very high standard of living, more must be done to reduce water and energy consumption and increase local water capture and re-use and sustainable energy production.

In terms of Council, investment in water efficiency, capture and re-use represents considerable financial savings. Investment in low water technology not only serves to reduce operational costs but also showcase relevant technology to local residents and promotes uptake of that technology in local homes.

## Extreme heat

Extreme heat events have occurred periodically in the past. Most detached housing in Ku-ring-gai is of brick and tile construction which withstands heat over short periods. However, lack of ventilation is a common problem with many homes constructed before passive solar design principles came into common use. As such homes heat up during the day and release heat at night. During periods of extended high temperatures the night time temperatures also increase. It is the night time temperature that is a key indicator of heat stress. Houses in these

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<sup>27</sup> Garnaut 2008

<sup>28</sup> Lucas *et al.* 2007

<sup>29</sup> Lucas *et al.* 2007

<sup>30</sup> Beer & Williams 1995

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<sup>31</sup> Climate Clever Shop 2010



circumstances don't cool down at night and the internal temperatures remain elevated increasing the likelihood of heat induced illness.

Appendix 2 contains an article from an edition of the Sydney Morning herald in 2009 discussing the most recent trends in heat related deaths.

## Lessons learnt:

### 2009 Victorian Bushfires Royal Commission

Adaptation should enable the capacity of the community to respond to a specific threat in their context.

Preparedness is a shared responsibility between community and government

Local government has significant responsibility to play a preventative role to make communities safer.

Communicate timely warnings to propel community into action

Information must be current and up to date

Warnings must be simple and use standard language

Ensure peak demand on services in time of crises can be met

Some properties are not defensible. These need to be identified or worse case scenario, contingencies planned for.

Physical and emotional strength is needed for stay and defend policy

Property needs auxiliary power and independent water supply to stay and defend

Defendable public space needs to be identified plus corridors for movement to safe areas kept free of vegetation

Educate community on how to prepare for extreme events

Identify triggers for stay or go



## Existing vulnerability and resilience

In order to create adaptations that are timely and relevant it is necessary to investigate both the vulnerability and resilience factors affecting a local area. The first adaptation workshop conducted in 2008 focused on better understanding the risks arising from climate change by identifying vulnerabilities and establishing the resilience factors to extreme weather events already in place.

Determining the vulnerability and resilience of council and community to projected weather changes allowed council to establish where future adaptation strategies need to be applied. Vulnerability and resilience factors were based on expert knowledge from literature, council staff, historical records of extreme events and advice from local and regional community experts.

Both the vulnerability and resilience factors listed in the following tables are based on current weather conditions and trends.

Vulnerability and resilience are closely related. Vulnerability focuses on the weaknesses in the defence or exposure to extreme weather related risks. Resilience is the level of resistance to endure and recover from a particular extreme weather event.

Each measures the capacity of the community to limit loss and maximise opportunities from future changes. An example of vulnerability is the individual mobility of residents. With nearly 20 per cent of Australians suffering some sort of limitation due to a disability<sup>32</sup> their capacity to prepare and respond to extreme events can be

compromised. Ku-ring-gai has pockets containing significant numbers of people whose mobility is compromised because of age, infirmity, illness or a permanent disability.

If a catastrophic event occurs such as a bushfire, moving these people to safety and assisting them to recover could be a major undertaking for Council, community services and local residents. This example demonstrates how local factors can intensify risk, hence it is a vulnerability.

In terms of resilience, Council and the community have programs or features that improve the capacity to reduce the risk or recover from an extreme event. Research<sup>33</sup> suggests many factors that influence resilience.

First, residents who are well connected to their local community are better able to cope in a crisis as they know how to access information and services they need.

Second, is the ability to maintain an income flow, that is the household income is not jeopardised by the impact of the extreme weather event. For example, illness from heat stress may affect self employed people maintain an income, a storm could destroy a business premises or a bushfire burn out cars leaving people with no means to travel to work. Insurance levels are a key indicator of income protection but the insurance industry is reluctant to share statistics regarding levels of cover.

Insurance and other adaptation measures see to improve the capacity

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<sup>32</sup> Reference

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<sup>33</sup> Handmer (2010)



of council and residents to deal with financial problems. Understanding resilience allows for the opportunity to build on strengths and avoid re-inventing solutions that are already in place. While the following showing risk, vulnerability, resilience and adaptation options are not in priority order, they serve to scope the potential magnitude of impact and works necessary to reduce the likelihood of severe losses.

The following tables provide the vulnerability, resilience and adaptation options available for both council and the community.



# Bush Fire

## Risk

Increased bush fire risk is largely due to alternations in temperature and relative humidity. By 2100 the low emissions scenario further increases the fire risk (above 2050) by ~25% while the high emissions case has increases in fire risk of 50–100% along the NSW coast.

## Vulnerability

Intensification of development on interface

Declining opportunity to conduct hazard reduction burns due to weather

Likely fuel loads will increase due to weather changes

Many endangered ecological communities dependent on specific fire regimes

Changing fire regimes, that is increased frequency hazard reduction burns impacts ecological integrity

Unsuitable development on interface (aged care, hospitals, schools)

Unknown locations of available water resources (i.e. pools)

## Resilience

Adherence to bushfire environmental assessment code

Strategies for fire education rolling out street by street basis

An annual hazard reduction program is undertaken when possible.

Vegetation mapping process complete

Possum ladders, Pool to Pond, Walks and Talks, Wild things program, Fauna and habitat mapping, protection protocol for endangered species from hazard reduction burns

Static Water Supply signage available

## Adaptation

Increase percentage of homes compliant with maximum building code  
Planning private land e.g. increase minimum lot sizes and/or setbacks to bushland in bushfire prone areas, extending area of Level 1 construction, restrict type of development  
Discount or rebate on fire resilient installations in homes  
Increase buffer width on interface  
Conduct community and agency education program

Increased number of prescribed burns  
Invest in R&D Projects, eg. selective weeding, identification of sections of corridor that can be cleared in an emergency, fast decomposing bacteria to reduce fuel - carbon sequestration, or mechanical removal, pre-curing process prior to hazard reduction burns in APZs for hotter burns support natives plants  
Council bulk green waste removal and chipping service (subsidised) in high risk area  
Selective removal of mid-story vegetation  
Map areas of non fire tolerant vegetation communities, *phytophthora* locations, wildlife refuges

Wildlife Protection - animal evacuation, notification of wildlife carers in post burn work, veterinary care capacity identified, habitat boxes to be made out of non-combustible material,  
Planning public land - eg biodiversity offset for APZs, conserve bush corridors including interface areas that link with reserve  
Utilise water sensitive urban design to reduce fuel load from weed invasion

Rezone land to restrict development in high risk areas  
Identify and support residents requiring property maintenance assistance in high risk areas

Increase static water supply volume e.g. tanks



Limitation of access to properties	Extensive network of fire trails 56 fire breaks in Ku-ring-gai	Construct new fire trail Build and operate new RFS
Heat and drought frequency and intensity exacerbates bushfire risk	Hornsby/Ku-ring-gai Disaster Plan developed (DISPLAN) Bushfire Risk Management Plan completed	Enforce fire retardant landscape design Compulsory high risk property acquisition Develop new community fire units Install fire danger signs Install early alert fire warning system
Shortage of sufficient resources to meet demand	Ku-ring-gai Council is the only local government authority in the region with a Bushfire Team	Provision of safe refuge areas for people and pets Evacuation route signage Audit and assure compliance for key fire evacuation routes and develop min. standard or code Consider potential for new roads to reduce evacuation risk



# Bush Fire

## Risk

Increased bush fire risk is largely due to alternations in temperature and relative humidity. By 2100 the low emissions scenario further increases the fire risk (above 2050) by ~25% while the high emissions case has increases in fire risk of 50–100% along the NSW coast.

## Vulnerability

Number of homes located in high bushfire hazard zone (13,000 homes)

Limited community awareness and education programs

Extent of above ground power infrastructure

Complacency of home owners / property managers to reduce risk

Evacuation capacity and process untested and problematic (pedestrian + traffic calming v evacuation)

Older properties less well adapted than new; large stock of aged properties

Limited community knowledge of identified neighbourhood safe places are

Only one RFS station in Ku-ring-gai

Capacity of residents to stay and defend compromised by older demographic

Geographic features maximise exposure to bushfire risk (aspect, slope, vegetation type, fuel loads)

## Resilience

High level of insurance protection  
Enhanced financial buffering capacity  
New dwellings adhere to Aust. Standard for construction of dwellings in bushfire prone areas

High rate of volunteerism

All households within high bushfire prone areas provided with a Fire Wise kit

Many areas of the local government area not classified as bushfire prone

Local Community Fire Units  
Area has an RFS unit

Participation in community groups and connections to local communications networks

Bushfire prone land map  
Participation in Bushcare who undertake some APZ management, Wild Things, WIRES volunteers, conversion of pools to ponds, participation in Clean Up Aust Day

## Adaptation

Maintain adequate fire insurance  
Higher standard of homes – with in-house shelter. Limited heat transfer. Complete with fire retardant door to leave house and internal entrance from with house.

Volunteering in community programs

Relocate power and phone lines underground

Install fire resilient products eg sprinklers, double brick / triple brick homes, ember proofed garage doors etc  
Develop household/business emergency response plan  
Monitor fire warning protocols, be aware of appropriate action and ready to act on them

Voluntary compliance with building code  
Install Static Water Supply signage for emergency services

Nominate house as a safe house  
Build locate or have access to safe refuge areas for pets and people

Increase number of CFUs and recruit more members

assist neighbours to decrease vulnerability to fires  
Psychological preparedness by practicing fire drills

Install additional water source with fire fighting reserve  
Assist in the maintenance of Asset Protection Zones (APZ)

Reduce fuel load on property including gutters  
Use fire resilient garden design, plants and practices



# Drought

## Risk

The pattern of the El Niño-Southern Oscillation cycle is projected to continue but with higher temperatures than currently experienced.

El Niño years are likely to continue to be drier than average and become hotter.

In El Niño events, water stress may be more intense due to higher temperatures.

## Vulnerability

Water capture and reuse project dependent on external funding

Slow uptake of water saving technology e.g. absence of half flush toilets in Council Chambers, tap aerators, water saving dishwasher etc

Parks and gardens increase water demand during drought

Water intensive facilities to service ie pool, golf courses, and sports ovals

Aged community infrastructure damage by shrinking and swelling clay soils

Stress of canopy trees resulting in limb failure or tree death

Food price increases as production in rural areas declines

## Resilience

Stormwater harvesting and re-use

Discounts on water tanks through Council's Climate Clever Shop

Better Business Partnership opportunities

Water Sensitive Urban Design

Drought tolerant grass species on sports fields

Low water demand gardens

Sewer mining and re-use at Gordon Golf Course and North Turramurra Recreation Area

Use of drought resistant turf species

Leachate re-use at the St Ives Showground Precinct

Opportunistic amenities upgrade to water efficient fixtures

Council tree management team assess and manage vulnerable trees

Bland Shire Council support program

## Adaptation

Stormwater harvesting for Council facilities

Install sewer mining/stormwater harvesting for communal use

Undertake community education campaigns

Promote and provide rebates for water saving installations

Enforce planning controls for water efficiency

Monitor water consumption for leaks and anomalies

Install sealed toilet cisterns to prevent leakage

Waterless printing and paper products

Install subsurface irrigation where required

Rainwater tanks on all facilities

Install drought tolerant landscaping at Council facilities

Install synthetic play surfaces

Sewer / leachate mining for Council facilities

Install shade structures for pools

Install backwash recycling at pool

Fix leaking taps

Install dual flush toilets

Install aerators / flow restrictors on taps

Use flexible materials for paths

Use pervious paving materials

Monitor and manage vulnerable trees

Sister city support with rural drought affected communities



# Drought

## Risk

The pattern of the El Niño-Southern Oscillation cycle is projected to continue but with higher temperatures than currently experienced. El Niño years are likely to continue to be drier than average and become hotter. In El Niño events, water stress may be more intense due to higher temperatures.

## Vulnerability

High number of properties with swimming pools

Limitations of State Environmental Planning Policy—Building Sustainability Index (BASIX)

Water dependant European gardens favoured by residents

Increasing costs of water consumption

High level of household water consumption

## Resilience

Number of pool to pond conversions

Space on properties to install water tanks

Sydney Water Love Your Garden program  
Rainwater tank installation

Financial capacity to meet increase water costs

Installation of water efficient technology  
Sydney Water Water Fix program

## Adaptation

Pool water use management  
Shade pools to protect from UV radiation and reduce evaporation  
Install and use pool covers  
Allow pools to form part of stormwater retention and detention systems

Informing sustainable design beyond the BASIX  
Education for health risk reduction for water saving  
Purchase low water and energy star rated appliances  
Install more water efficient toilets eg dual flush

Real time water monitoring (smart metering)  
Install rainwater tank for garden use only  
Promote grey water reuse  
Install trigger nozzles on hoses  
Use drought tolerant grass species in lawns  
Construct drought tolerant landscaping  
Replace lawn areas with synthetic grass

Participate in education programs  
Donate to drought relief programs  
Use products made with less water  
Buy local and Australian produce

Install a rainwater tank and connect to toilet and laundry  
Large scale flow restrictors - pressure reduction  
Install water efficient showerhead  
Take shorter showers  
Install tap aerators / flow restrictors  
Minimise water use when washing the car



Council	Extreme heat			
	Risk	Vulnerability	Resilience	Adaptation
	<p>Mean daily minimum and maximum temperature are projected to increase by between 1.5 and 3.0°C.</p> <p>El Niño years are likely to continue to be drier than average and become hotter.</p>	Dependence on mechanical heating and cooling in council buildings	Number of canopy trees on public land	Install underground living areas that are cool in extreme heat
		Heat island effect particularly in town centres with high rise and little natural shade	Number public rest areas with shade Footpaths shaded by street trees Council pool expansion Number of playgrounds with shade covers Community bus to transport residents to service centres	Use road and footpath surface material to be less heat absorbent Plant more trees in streets, parks and public domain areas Increase shaded areas in public places Synthetic playing surface on council owned ovals to reduce heat and water consumption Ensure that OH&S addresses working outdoor in extreme heat conditions Develop a 'House Buddy' program to assist neighbourhoods to monitor vulnerable residents in time of extreme risks Provide an information telephone service to keep residents informed of appropriate responses Conduct community education program to increase awareness of heat risk and response Shade pools to protect from UV radiation exposure in summer months Ready access to water in public places for pets and people Provide a shuttle bus to vulnerable residents in time of extreme heat
		No backup power to augment supply during blackouts		Backup key facilities with uninterrupted power supplies Place power infrastructure underground to ensure continuity of supply Install and operate co-generation systems to feed power to the grid in times of peak demand Invest in low energy technology to offset price increases of fossil fuel derived power Nominate cool areas with sustainable power supplies where residents can go to escape the heat Rebates for renewable power supply to ensure sustainability of energy supply during peak demand
		Pavement and road surface damage		Upgrade road and footpath structure and materials to improve heat resilience





Poor natural ventilation and passive solar design

Discounts and rebates for passive solar design principles to reduce dependence on mechanical heating and cooling

Aging heat and cooling systems overwhelmed in extreme heat

Community buildings with cooling systems

Insulate council buildings including windows, walls and roof



# Extreme heat

## Risk

Mean daily minimum and maximum temperature are projected to increase by between 1.5 and 3.0°C.

El Niño years are likely to continue to be drier than average and become hotter.

## Vulnerability

Dependence on mechanical heating and cooling in domestic dwellings and businesses.

No back power to augment supply during blackouts

Aging community more vulnerable to the effects of heat

European plants favoured in residential gardens

Aged housing stock with poor ventilation and passive solar design, not up to BCA standards

Railway lines buckle in heat

## Resilience

Proximity to the coast and sea breezes  
Number of pools on private land  
Under cover parking

Number of canopy trees on private land

Participation in community groups and connections to local communications networks

Air conditioned shopping centres

## Adaptation

Apply passive solar design principles to reduce dependence on mechanical heating and cooling  
Insulate buildings including windows, walls and roof  
Alternative working activities in extreme conditions to reduce heat stress  
Plant more shade trees  
Install underground living areas that are cool in extreme heat  
Shade pools to protect from UV radiation exposure in summer months

Install renewable power supply to ensure sustainability of energy supply during peak demand  
Contribute to schemes to place power infrastructure underground  
Invest in low energy technology to offset price increases of fossil fuel derived power  
Install a generator for backup supply in the event of blackouts

Increase capacity of health services to cope with victims of heat stress  
Participate in a 'House Buddy' program to monitor vulnerable residents in time of extreme risks  
Go to cool areas with sustainable power supplies to escape the heat  
Ensure ready access to water for animals and people  
Ensure supervision of children on extreme heat days  
Plant wind breaks where possible

List public buildings with air conditioning  
Know what to do to keep your home cooler on hot days  
Be aware of how to reduce the risk of heat stress and how to manage heat stress  
Planning controls  
Monitor weather warnings for extreme heat days  
Landscape with materials and colours to reduce heat absorption  
Plan of bus line and infrastructure to replace rail network along the highway during periods when network is compromised by heat.



# Storms

## Risk

Summer rainfall is projected to increase across the region by 20 to 50%, with a smaller increase in spring.

During La Niña years, storms with heavy downpours may be more frequent.

## Vulnerability

Drainage infrastructure capacity inadequate to meet increased storm flows

Council chambers unable to withstand extreme rain events

Many council buildings aged and of brick and tile construction.

Council facilities in poor disrepair and subject to water damage

Extent of above ground power infrastructure

Local flooding and water velocity damaging road and footpath infrastructure

Shallow rooted native trees unstable in saturated soils

## Resilience

Storm water harvesting reduces peak flows and velocity

Council insured against storm effects

Council insured against storm effects

Wet weather policy for sports fields

Canopy and tree maintenance program on public land

Water Sensitive Urban Design program

Developing code of conduct standards for fire trails and walking tracks in wet weather

Weed mapping, Noxious weed control program

## Adaptation

Implement Water Sensitive Urban Design for flood management

Increase capacity of stormwater infrastructure

Replace roofing with storm resilient materials

Undertake disaster risk assessments of key infrastructure

Stabilisation works of known high erosion areas

Revise and regulate planning controls which increase resilience of the built environment in storm events

Relocate power and phone lines underground

Install uninterrupted power supply (co-generation) at key council facilities (ie. Council chambers, depot, community centres/meals on wheels)

Assess and reinforce vulnerable infrastructure (ie bridges)

Upgrade road structure and materials to improve resilience

Maintain Local Emergency Operation Centre for the provision of logistical support

Identify and manage vulnerable trees

Replace canopy trees with appropriate trees to withstand high velocity winds

Decrease tree canopy

Discounts or rebates provided for storm resilient



installations (eg, window shutters, corrugated roofing)

Conduct community education program

Train staff in disaster management (ie, chainsaw operation)

Majority of council facilities do not provide under cover parking for fleet vehicles	Council vehicles comprehensively insured	SMS warning system
Roads and drainage systems capacity exceeded in storms	Development of the Hornsby/Ku-ring-gai Disaster Plan (DISPLAN)	Review, update and increase awareness of the DISPLAN Provide mobile welfare support (eg, Meals on Wheels) Install signage for evacuation routes and welfare centres Build and support new State Emergency Service or Rural Fire Service operations Establish Evacuation Centres to manage the provision of emergency accommodation and essential material needs to residents, pets and businesses affected by storms increase tree canopy with appropriate trees to withstand high velocity winds
Tree canopy loss	Street tree planting program	Provide welfare and resource information to residents and businesses affected by storms Council bulk green waste removal and chipping service (subsidised)
Blockage of drainage channels from leaf litter		



## Storms

### Risk

Summer rainfall is projected to increase across the region by 20 to 50%, with a smaller increase in spring.

During La Niña years, storms with heavy downpours may be more frequent.

### Vulnerability

Brick and tile construction vulnerable to wind and hail damage

Steep catchments increase velocity of storm water and damage potential

Older domestic retaining walls not built to withstand extreme rain events.

Canopy trees 'self pruning', that is prone to losing large limbs

Increased hard stand area accelerates runoff and increases volume

Domestic drainage systems overloaded by volume.

Grassed sports grounds closed frequently due to saturation by rain

### Resilience

High percentage of insured dwellings

Many dwelling on ridge tops

State Emergency Service group in Kuring-gai

High percentage of under cover parking

Participation in community groups and connections to local communications networks

Bio-box uptake, increase in visits to Council nursery,

Community programs providing advice and incentives to install water tanks

Controlling weeds in gardens

### Adaptation

Replace roofing with storm resilient materials  
Install storm resistant fixtures (ie, reinforced garage doors, shutters)

Voluntary compliance with building code provide hail resistant shelter for vehicles

Participate in community education programs

Maintain adequate storm insurance  
regularly maintain gutters and drains

Replace canopy trees with appropriate trees to withstand high velocity winds  
identify and manage vulnerable trees  
decrease tree canopy

landscaping for overland flow  
install detention basin (ie water tanks)  
Increase capacity of stormwater infrastructure (ie gutters, downpipes)

Undertake disaster risk assessments of property

Develop household/business emergency response plan

Volunteering in community programs (eg State Emergency Service, Rural Fire Service, Meals on Wheels)  
Assist neighbours to decrease vulnerability to storms

Training in disaster management (ie. first aid, chainsaw operation)

Subscribe to SMS warning system

Install storm surge protection





	Build locate or have access to safe refuge areas for pets and people Install temporary power supply (eg. generator)
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## Bush fire

The management of bushfire risk is largely coordinated at a regional level by the Hornsby Ku-ring-gai District of the NSW Rural Fire Service. Every five years this committee prepares a new bushfire risk management plan the most recent approved in 2010<sup>34</sup>. This plan however does not guarantee protection in the event of a fire, in fact it highlights the number of areas in Ku-ring-gai exposed to extreme risk of wildfire.

Managing fire risk from a development control perspective is addressed in part through the provisions of the *Environmental Planning and Assessment Act 1997*. This references the Planning for Bushfire Protection<sup>35</sup> as amended as the basis for building and development planning and approval.

In the high-risk fire areas it may be time to discourage building in a manner similar to restricting building in flood-prone areas<sup>36</sup>.

Knowledge about places that are particularly high risk, for example due to the topography, (such as north-facing, steep slopes) but it is not being used is available and construction, should either be prohibited or the topography modified. For example some people should be required to alter the grade of slopes they are building on to reduce the fire intensity exposure<sup>36</sup>. However bush fire-related building regulations although helpful would make little difference in extreme events<sup>36</sup>.

## Storms

Ku-ring-gai residents are also vulnerable to impacts from storm events with the extensive tree canopy causing costly damage to homes, businesses and infrastructure. Already the area has suffered considerable damage from

intensifying stormwater flows with storms in February 2010 seeing stormwater damage both to council buildings, roads, stormwater infrastructure and private dwellings. Unlike wildfires, it is far more difficult to predict the areas likely to be impacted by a storm. Past storm events do not reveal a preferred corridor that storms take but rather there is a random pattern of destruction governed by climatic factors on the day.

## Drought

Vulnerability to water shortages is also a long term concern due to the high level of consumption of water per person in Ku-ring-gai. Sydney has long been beyond the threshold for a sustainable supply for water, meaning Sydney cannot store sufficient water in its water supply system to buffer the community from drought. Given the increasing population and decreasing rainfall volume, pressure on the community supply will intensify in the coming years.

## Extreme heat

Heat stress is of concern in Ku-ring-gai given the aging population and the number of elderly people residing in the area. On extreme heat days the probability of the energy infrastructure failing to meet peak demand is very likely. Reliance in homes on mechanical cooling becomes critical but with the unreliability of energy supply combined with reluctance particularly by elderly people on limited incomes to use high cost, energy hungry air conditioning, people are tempted to endure the heat. Responses to heat stress management need to be independent of the mains energy supply.

Cooling responses will not only be targeted to the householder but also to town centres and public buildings where people can gather in the event of extreme heat and energy infrastructure failing. Such location would require an independent power supply.

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<sup>34</sup> Hornsby/Ku-ring-gai Management Committee 2010

<sup>35</sup> NSW Rural Fire Service 2006

<sup>36</sup> Handmer 2010



## Identification and prioritisation of adaptation strategies

Once the vulnerability and resilience factors had been determined, the adequacy of current programs to deal with an increase in risk can be established. Given the historical impact of severe weather events, it is clear there is a level of risk accepted or at least understood by the community. However as these events expand in frequency and intensity it is foreseeable that the community's acceptability will decline which brings with it an escalation in complaints. This is evident with the findings of the 2009 Victorian Bushfires Royal Commission where local responses to this event indicated current efforts were insufficient in the face of a catastrophic impact.

This level of risk, while difficult to quantify, can be considered as the limit of acceptable risk. It is clear from the increasing costs of these events that the level of risk abatement must be improved to maintain a standard of 'reasonableness' in risk mitigation. This brings with it a range of other considerations such as the capacity and prioritisation of public and private resources.

The method used to isolate suitable adaptation strategies involved the use of multi-criteria analysis. The adaptation tables are included in Appendix 4. The tables are divided into the four key risks of bushfire, storm, drought and extreme heat. Each category was then separated into adaptation actions that council could take in order to make Ku-ring-gai more resilient to extreme weather events and community adaptation actions to improve the resilience of local residents and their properties.

Options for each adaptation to an extreme weather event was tested against a set of questions designed to rank each adaptation against:

- a) financial performance
- b) social performance
- c) environmental performance and
- d) the ability of adaptation action to reduce the identified risk

The questions used can also be found in Appendix 2. The purpose of the questions was to test each adaptation option for its ability to reduce a specific risk while minimising any unintended negative consequences. Intrinsically these questions filter each option against aspects of the ESD principles by framing the inquiry with the Triple Bottom Line (TBL). The questions therefore examine aspects of equity, natural resource conservation and true cost issues through a precautionary lens.

By using a precautionary lens to answer each question, an answer can be accorded an empirical value from -3 (high impact, low risk reduction capacity) to +3 (low impact, high risk reduction capacity). By allocating these scores it was possible to incorporate a combination of empirical (quantitative) and social (qualitative) data to identify potential advantages and disadvantages of each adaptation option. To calculate the top scoring option across the TBL involved the application of the Borda Count method.

The Borda count is a method where voters rank issues, options, solutions etc in order of preference. In this project this was determined across three themes from which a score was determined. The Borda count determines the result by giving each issue a certain number of points corresponding to the position the issue is ranked against all others in that particular risk category. Once all scores have been counted the option with the most points is regarded as the most favourable in terms



of risk reduction and the least harmful preference. The Borda Count sometimes elects broadly acceptable options, rather than those preferred by the majority and it is for this reason the Borda count is considered a consensus-based electoral system, rather than a majority one<sup>37</sup>.

The options as determined by staff within the Strategy and Environment Department were then tested through council's Sustainability Reference Team, an internal committee comprising of representatives across all divisions and levels in the organisation. This input was then considered and incorporated into the final count.

A key limitation of this approach up to this point was the absence of a more accurate financial analysis relating to the full capital and opportunity costs and future benefits that could be derived from the option in consideration.

If this level of analysis is required a more detailed method has been developed in collaboration with Macquarie and Bond Universities<sup>38</sup> The objectives of this study was to build on council's risk analysis to find a method to prioritise adaptations according to their return on investment and ability to reduce financial risk. A summary of the Macquarie University project can be found in Appendix 5 and the full document is available on Councils web site.

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<sup>37</sup> Borda Count Method,  
<http://www.ctl.ua.edu/math103/voting/borda.htm>  
(accessed 28/5/10)

<sup>38</sup> Taplin *et al* 2010



# A

## daptation Options

In determining how to adapt to a risk it is important to recognise the various roles and responsibilities of all involved. This can range from Federal and State Government funding for natural disaster, or the revision of building codes, the extent of local government support services, business practice of the private sector and individuals upgrading their homes.

The challenge for local government is to determine which actions are in their direct control, or whether they have an influencing or advocacy role. These decisions are often complicated through the changing in responsibilities by cost shifting, partnerships and in meeting community expectations.

Community options will largely rely on education and promotion of adaptation options. Some options will provide information to householders on methods of increasing their resilience to specific risks and yet others will be strategies to improve resilience to weather related risks in general for example improving connectivity with their local community. There are a range of community projects already underway that assist resilience, some are council initiated and run programs and others initiatives of other agencies such as RFS and DECCW.

While some of these programs do not specifically link to a weather related impact, they all contribute to improving the resilience of Ku-ring-gai to increase pressure from the extreme weather impacts. New programs to further augment resilience can build on existing programs where possible to leverage the interest already evident in environmentally related issues.



# Extreme heat

	Option	Primary Responsibility	Secondary Responsibility	Priority		Comments
Council adaptation	Ensure that OH&S addresses working outdoor in extreme heat conditions	Council	Workcover	1	High	Reduces incidences of heat stroke
	Insulate council buildings including windows, walls and roof	Council	Suppliers	2		Reduces temperature extremes in buildings
	Discounts and rebates for passive solar design principles to reduce dependence on mechanical heating and cooling	Council	Suppliers	3		Provides financial assistance to residents as a prompt to improve the resilience of their own homes.
	Synthetic playing surface on Council owned ovals to reduce heat and water consumption	Council	Suppliers	4		Synthetic surfaces are more resilient to heat extremes compared to turf, which allows Council to provide more usage hours to Council facilities.
	Install and operate co-generation systems to feed power to the grid in times of peak demand	Council	Energy utilities	5		Reduces peak load on energy network and reduces potential for network failures. Also reduces energy costs.
	Invest in low energy technology to offset price increases of fossil fuel derived power	Council	Suppliers	6	Medium	Reduces peak load on energy network and reduces potential for network failures. Also reduces energy costs.
	Develop a 'House Buddy' program to assist neighbourhoods to monitor vulnerable residents in time of extreme risks	Council	Area Health Service	7		Assists the community to monitor each other in extreme events
	Provide an information telephone service to keep residents informed of appropriate responses	Emergency Authorities	Council	8		Provides topical information to the community and helps with preparation and awareness.
	Conduct community education program to increase awareness of heat risk and response	Council	Area Health Service	9		Assists community in being better prepared to adapt to extreme temperatures
	Rebates for renewable power supply to ensure sustainability of energy supply during peak demand	Council	Energy utilities	10		Provides a financial incentive to the community to install power systems which will reduce load on the network during peak periods.
	Backup key facilities with uninterrupted power supplies	Council	Energy utilities	11	Low	Allows for continuous use of air conditioning during periods of interrupted power supply
	Shade public pools to protect from UV radiation exposure in summer months	Council	Pool manager	12		Reduces UV exposure to pool users on high UV days.
	Place power infrastructure underground to ensure continuity of supply	Council	Energy utilities	13		Reduces heat transfer loss on extreme heat days
	Use road and footpath surface material to be less heat absorbent	Council	RTA	14		Reduces urban heat island effect and improves micro climates
	Upgrade road and footpath structure and materials to improve heat resilience	Council	RTA	15		Reduces damage to bitumen surfaces during periods of extreme heat
	Plant more trees in streets, parks and public domain areas	Council	RTA	16		Provides additional shading and improves micro climate of public domain



	Planning controls	Council	State Government	17		Improves the resilience of newly constructed homes
	Nominate cool areas with sustainable power supplies where residents can go to escape the heat	Council	Businesses	18		Provides a cool place for residents who may not have a cool home.
	Increase shaded areas in public places	Council	Businesses	19		Provides additional shading and improves micro climate of public domain
	Ready access to water in public places for pets and people	Council	Businesses	20		Reduces potential for heat related illnesses for residents in the public areas
	Install underground living areas that are cool in extreme heat	Council	Developers	21		Provides naturally cool places which do not require mechanical cooling
	Provide a shuttle to vulnerable residents in time of extreme heat	Council	Area Health Service	22		Allows less mobile residents an opportunity to go to cooler places on extreme heat days.



# Extreme heat

	Option	Primary Responsibility	Secondary Responsibility	Priority		Comments
Community adaptation	Insulate buildings including windows, walls and roof	Resident	DECCW, Council	1	High	Reduces temperature extremes in buildings
	Apply passive solar design principles to reduce dependence on mechanical heating and cooling	Resident	DECCW, Council	2		Reduces reliance on mechanical heating and cooling
	Install renewable power supply to ensure sustainability of energy supply during peak demand	Resident	DECCW, Energy Utility, Council	3		Reduces overload on electricity network during peak times
	List public buildings with air conditioning	Council	Business, Council	4		Helps businesses maintain turnover and promotes havens from heat.
	Provide transport to air conditioned areas	Council	Council	5		Targets elderly or isolated residents
	Increase capacity of health services to cope with victims of heat stress	Area Health Service	Local Hospitals	6	Medium	Improves preparation of our health system
	Alternative working activities in extreme conditions	Businesses	Workcover	7		Reduces incidences of heat stroke
	Contribute to schemes to place power infrastructure underground	Residents	Developers, Council	8		Reduces overload of electricity network
	Know what to do to keep your home cooler on extreme days	Resident	Council	9		Each home will have differences in the optimum methods to keep it cool. By knowing these methods, residents can greatly reduce temperature extremes
	Be aware of how to reduce the risk of heat stress and how to manage heat stress	Resident	Area Health Service	10		Prevents health effects from heat
	Invest in low energy technology to offset price increases of fossil fuel derived power	Resident	Council	11	Low	Reduce the vulnerability towards increasing electricity costs
	Ensure ready access to water for animals and people	Council	Council	12		Reduces heat related illness with people and pets
	Landscape with materials and colours to reduce heat absorption	Resident	Landscape suppliers	13		Reduces urban heat island effect
	Participate in a 'House Buddy' program to monitor vulnerable residents in time of extreme risks	Resident	Council	14		Provides a method of monitoring vulnerable community members
	Plant wind breaks where possible	Resident	Council	15		Provides shading
	Monitor and be aware of weather warnings for extreme heat days	Resident	Bureau of Meteorology	16	Low	Allows for early action and preparation for extreme temperatures
	Install a generator for backup supply in the event of blackouts	Resident	Council	17		Allows for uninterrupted usage of residential and commercial buildings.
	Go to cool areas with sustainable power supplies to escape the heat	Resident	Council, Businesses	18		Provides temporary relief from heat where it is not available in a residents existing home.



	Plant more shade trees	Resident	Council	19		Provides microclimate effect for buildings and external areas
	Install underground living areas that are cool in extreme heat	Resident	Council	20		Provides and in-home haven from extreme temperatures without requiring excessive mechanical cooling
	Ensure supervision of children on extreme heat days	Resident	Schools, childcare	21		Children can be particularly susceptible to heat related illness and require additional supervision
	Shade pools to protect from UV radiation exposure in summer months	Resident	Suppliers	22		Allows for use of pools to cool down whilst reducing excessive UV damage to users
	Planning controls	Council	State government	23		Improve the design of new dwellings to withstand extreme heat periods.



# Storms

Option	Primary Responsibility	Secondary Responsibility	Priority		Comments
discounts or rebates provided for storm resilient installations (eg, window shutters, corrugated roofing)	Council	Supplier	1	High	Provides greater protection to the internal environment of a building and reduces rain inundation
Conduct community education program	Council	Emergency services	2		Improves community self reliance
Undertake disaster risk assessments of key infrastructure	Council	Consultant	3		Provides greater protection to the internal environment of a building and reduces rain inundation
Replace roofing with storm resilient materials	Council	Contractor	4		Provides greater protection to the internal environment of a building and reduces rain inundation
train staff in disaster management (ie, chainsaw operation)	Council	Education	5		Improves clean up response by Council
Relocate power and phone lines underground	Council	Energy Australia	6	Medium	Protects power lines from falling trees and debris. Assists to maintain continuous power supply during storm events
Revise and regulate planning controls which increase resilience of the built environment in storm events	Council	State Government	7		Provides greater protection to the internal environment of a building and reduces rain inundation
SMS warning system		Council	8		Provides warning to allow for early response
stabilisation works of known high erosion areas	Council	Contractor	9		Protects infrastructure and property in high erosion areas
identify and manage vulnerable trees	Council	Contractor	10		Reduces the incidence of damage caused by falling trees
Maintain Local Emergency Operation Centre for the provision of logistical support	Council	Emergency Services	11	Low	Allows for greater coordination at a storm event
replace canopy trees with appropriate trees to withstand high velocity winds	Council	Contractor	12		Reduces the incidence of damage caused by falling trees
Install uninterrupted power supply (co-generation) at key Council facilities (ie. Chambers, Depot, Community centres/meals on wheels)	Council	Contractor	13		Allows for continued operation of key Council facilities throughout power failure events
provide welfare and resource information to residents and businesses affected by storms		Council	14		Assists affected community members to access available services
Assess and reinforce vulnerable infrastructure (ie bridges)	Council	Consultant	15		Protects infrastructure in high risk areas
upgrade road structure and materials to improve resilience	Council	Contractor	16	Low	Protects road surfaces to withstand greater water velocities
Review, update and increase awareness of the DISPLAN	Council	Emergency services	17		Provides relevant and up to date procedures in managing the logistics of emergency events
Provide mobile welfare support (eg, Meals on Wheels)	Council	State	18		Provides food and other services to vulnerable and less mobile community members



			government		
	increase tree canopy with appropriate trees to withstand high velocity winds	Council	Contractor	19	Reduces velocity of wind
	implement WSUD for flood management	Council	Contractor	20	Reduces flooding of downstream properties
	Install signage for evacuation routes and welfare centres	Council	Emergency services	21	Assists affected community members to access safe evacuation or welfare centres
	Build and support new SES or RFS operations	Council	Emergency services	22	Provides infrastructure for greater number of emergency service volunteers
	Council bulk green waste removal and chipping service (subsidised)	Council	Contractor	23	Assists residents in removing green waster after storm events
	Increase capacity of stormwater infrastructure	Council	Contractor	24	Reduces flooding of downstream properties
	Establish Evacuation Centres to manage the provision of emergency accommodation and essential material needs to residents, pets and businesses affected by storms	Council	Emergency services	25	Provides welfare and accommodation to affected community members
	Decrease tree canopy	Council	Contractor	26	Reduces the incidence of damage caused by falling trees



# Storms

	Option	Primary Responsibility	Secondary Responsibility	Priority		Comments
Community adaptation	Replace roofing with storm resilient materials	Resident	Contractor	1	High	Provides greater protection to the internal environment of a building and reduces rain inundation
	Install storm resistant fixtures (ie, reinforced garage doors, shutters)	Resident		2		Provides greater protection to the internal environment of a building and reduces rain inundation
	landscaping for overland flow	Resident	Council	3		Provides methods for moving water away from buildings
	Voluntary compliance with building code	Resident	Council	4		Provides greater protection to the internal environment of a building and reduces rain inundation
	Undertake disaster risk assessments of property	Resident	Insurers	5		Allows building owners to identify key issues with their site
	Develop household/business emergency response plan	Resident	State Emergency Service	6		Provides better response to storms
	Participate in Community Education Programs	Resident	Council	7	Medium	Allows residents to have greater knowledge in protecting their homes from storms
	Volunteering in community programs (eg SES, RFS, Meals on Wheels)	Resident	State Emergency Services	8		Provides greater capacity for our local emergency services
	Assist neighbours to decrease vulnerability to storms	Resident	State Government	9		Reduces the vulnerability
	Training in disaster management (ie. first aid, chainsaw operation)	Resident	Education department	10		Improves self reliance
	Subscribe to SMS warning system	Resident	NSW RFS and BOM	11	Low	Provides warning to allow for early response
	Install storm surge protection	Resident	Council	12		Protects electrical appliances from electrical surges
	Regularly maintain gutters and drains	Resident		13		Provides greater protection to the internal environment of a building and reduces rain inundation
	Replace canopy trees with appropriate trees to withstand high velocity winds	Resident	Council	14		Reduces the occurrence of limb and tree drop on properties
	Maintain adequate storm insurance	Resident	Insurer	15		Provides financial protection from damage
	Install temporary power supply (eg. generator)	Resident		16		Allows residents to still have power during storm related black outs
	provide hail resistant shelter for vehicles	Resident	Council	17		Protects vehicles from hail damage
	Increase capacity of stormwater infrastructure (ie gutters, downpipes)	Resident		18		Provides greater protection to the internal environment of a building and reduces rain inundation
	Build locate or have access to safe refuge areas for pets and people	Resident		19		Provides protection to humans and animals
	install detention basin (ie water tanks)	Resident	Council	20		Reduces flooding of downstream properties
	identify and manage vulnerable trees	Resident		21		Reduces the incidence of damage caused by falling trees
	Decrease tree canopy near dwellings	Resident		22		Reduces the incidence of damage caused by falling trees. However can increase the velocity of wind.



# Drought

	Option	Primary Responsibility	Secondary Responsibility	Priority		Comments
Council adaptation	monitor water consumption for leaks and anomalies	Council	Sydney Water	1	High	Water wastage is detected early
	install synthetic play surfaces	Council	Sports groups	2		No water required to maintain them, and greater use of the sites can be employed
	install sewer mining/stormwater harvesting for communal use	Council	Developers	3		Provides additional water source for communal use
	undertake community education campaigns	Sydney Water	Council	4		Increases education and awareness on actions to reduce water consumption
	Stormwater harvesting for Council facilities	Council	Supplier	5		Provides additional water source for Council facilities and improves resilience of turf sites
	fix leaking taps	Council	Contractor	6	Medium	Water wastage is reduced
	use flexible materials for paths	Council	Contractor	7		Reduces damage to infrastructure through soil shrinking during drought
	install subsurface irrigation where required	Council	Contractor	8		Provides a watering system which reduces evaporation
	install sealed toilet cisterns to prevent leakage	Council	Contractor	9		Water wastage is reduced
	install drought tolerant landscaping at Council facilities	Council	Contractor	10		Reduces drought stress of plants through better plant selection
	use pervious paving materials	Council	Contractor	11	Low	Assists in ground water recharging
	Install shade structures for pools	Council	Contractor	12		Reduces evaporation
	rainwater tanks on all facilities	Council	Contractor	13		Provides alternate water source to facilities
	install dual flush toilets	Council	Contractor	14		Water wastage is reduced
	promote and provide rebates for water saving installations	Council	Sydney Water	15		Provide incentives to residents to improve their drought resilience
	waterless printing and paper products	Council	Suppliers	16		Water wastage is reduced
	install aerators / flow restrictors on taps	Council	Contractor	17		Water wastage is reduced
	Sewer / leachate mining for Council facilities	Council	Contractor	18		Provides additional water source for Council facilities and improves resilience of turf sites
	install backwash recycling at pool	Council	Contractor	19		Water wastage is reduced
	sister city support with rural drought affected communities	Council	Residents	20		Provide support to a rural town affected by drought
	enforce planning controls for water efficiency	Council	State government	21		Water wastage is reduced in new developments



# Drought

	Option	Primary Responsibility	Secondary Responsibility	Priority		Comments
Community adaptation	Install a rainwater tank and connect to toilet and laundry	Resident	Business	1	High	Reduces potable water consumption
	Education for health risk reduction for water saving	Resident	Business	2		Improves knowledge on methods for becoming more resilient to drought
	Participate in education programs	Resident	Business	3		Improves knowledge on methods for becoming more resilient to drought
	Real time water monitoring (smart metering)	Resident	Business	4		Increased awareness of real time water consumption
	Promote grey water reuse	Resident	Business	5		Reduces potable water consumption
	Large scale flow restrictors - pressure reduction	Sydney Water	Resident, Business	6	Medium	Reduces potable water consumption
	Purchase low water and energy star rated appliances	Resident	Business	7		Reduces potable water consumption
	Install more water efficient toilets eg dual flush	Resident	Business	8		Reduces potable water consumption
	Informing sustainable design beyond the BASIX	Developer	Resident	9		Reduces potable water consumption
	Pool water use management	Resident	Supplier	10		Reduces potable water consumption
	Use products made with less water	Resident	Business	11	Low	Encourages suppliers to use less water
	Use drought tolerant grass species in lawns	Resident	Business	12		Gardens are more resilient to drought
	Install rainwater tank for garden use only	Resident	Business	13		Reduces potable water consumption
	Take shorter showers	Resident	Business	14		Reduces potable water consumption
	Install water efficient showerhead	Resident	Business	15		Reduces potable water consumption
	Shade pools to protect from UV radiation and reduce evaporation	Resident	Business	16		Reduces potable water consumption
	Buy local and Australian produce	Resident	Business	17		Reduces transport requirements of products
	Construct drought tolerant landscaping	Resident	Business	18		Gardens are more resilient to drought
	Install and use pool covers	Resident	Business	19		Reduces potable water consumption
	Install tap aerators / flow restrictors	Resident	Business	20		Reduces potable water consumption
	Replace lawn areas with synthetic grass	Resident	Business	21		Reduces potable water consumption
	Minimise water use when washing the car	Resident	Business	22		Reduces potable water consumption
	Donate to drought relief programs	Resident	Business	23		Provides support to towns vulnerable to drought
	Install trigger nozzles on hoses	Resident	Business	24		Reduces potable water consumption



# Bush fire

	Option	Primary Responsibility	Secondary Responsibility	Priority		Comments
Council adaptation	Increase percentage of homes compliant with maximum building code	Council	NSW RFS	1	High	Improves resilience of existing housing stock
	Conduct community and agency education program	Council	NSW RFS	2		Raises awareness of bush fire safety
	Invest in R&D Projects, eg. selective weeding, identification of sections of corridor that can be cleared in an emergency, fast decomposing bacteria to reduce fuel - carbon sequestration, or mechanical removal, pre-curing process prior to hazard reduction burns in APZs for hotter burns support natives plants	Council	NSW National Parks	3		Research into more efficient and effective means of bush fire management
	Develop new community fire units	NSWFB	Council	4		Improve community self sufficiency and awareness
	Discount or rebate on fire resilient installations in homes	Council	NSW RFS	5		Provision of an incentive to improve resilience of existing housing stock
	Identify and support residents requiring property maintenance assistance in high risk areas			6	Medium	Assists vulnerable community members
	Build and operate new RFS	NSW RFS	Council	7		Provides greater number of emergency volunteers
	Planning private land e.g. increase minimum lot sizes and/or setbacks to bushland in bushfire prone areas, extending area of Level 1 construction, restrict type of development	Council	State Government	8		Improves resilience of new housing
	Enforce fire retardant landscape design	Council	State Government	9		Improves resilience of new housing
	Utilise water sensitive urban design	Council		10		Reduces weeds along the interface, therefore reducing fuel loads
	Provision of safe refuge areas for people and pets	Council	NSW RFS	11	Low	Provides a refuge in the case where evacuation is not an option
	Map areas of non fire tolerant vegetation communities, <i>phytophthora</i> locations, wildlife refuges	Council	NSW National Parks	12		Protects vulnerable plant communities
	Wildlife Protection - animal evacuation, notification of wildlife carers in post burn work, veterinary care capacity identified, habitat boxes to be made out of non-combustible material,	Council	WIRES, NSW National Parks	13		Provides protection to fauna
	Increase static water supply volume e.g. tanks	Council		14		Provides additional water sources for emergency services



Rezone land to restrict development in high risk areas	Council	State Government	15	Reduce the increase in dwellings within high risk areas
Fire danger signs	NSW RFS	Council	16	Provides the community with continuous updates regarding fire danger index.
Evacuation route signage	Council	RTA	17	Provide clear direction in the case of emergency
Compulsory high risk property acquisition	Council	State Government	18	Increased buffer and reduced transference of fire
Audit and assure compliance for key fire evacuation routes and develop min. standard or code	Council	RTA, NSW RFS	19	Improved safety
Council bulk green waste removal and chipping service (subsidised) in high risk area	Council		20	Reduce fuel load
Install early alert fire warning system	Emergency Services	Council	21	Improves preparedness
Planning public land - eg biodiversity offset for APZs, conserve bush corridors including interface areas that link with reserve	Council	State Government	22	Improve biodiversity resilience
Consider potential for new roads to reduce evacuation risk	Council	RTA	23	Improve safety
Selective removal of mid-story vegetation	Council	NSW National Park		Reduce fuel load and transference
Construct new fire trail	Council	NSW National Parks		Improve fire fighting capacity
Increase buffer width on interface	Council	State Government		Reduce transference
Increased number of prescribed burns	NSW RFS	Council, NSW National Parks		Reduces fuel loads in high risk areas



# Bush fire

	Option	Primary Responsibility	Secondary Responsibility	Priority		Comments
Community adaptation	Install fire resilient products eg sprinklers, double brick / triple brick homes, ember proofed garage doors etc	Resident, Business		1	High	Improves the resilience of structures to bush fire
	Voluntary compliance with building code	Developer	Residents	2		Improves the resilience of structures to bush fire
	Install additional water source with fire fighting reserve	Resident		3		Improved fire fighting capacity and safety
	Volunteering in community programs	Resident		4		Greater awareness and capacity building of community
	Develop household/business emergency response plan	Resident, business		5		Reduce risk through preparedness
	Build locate or have access to safe refuge areas for pets and people	Resident		6	Medium	Save lives
	Nominate house as a safe house	Resident		7		Save lives
	Monitor fire warning protocols, be aware of appropriate action and ready to act on them	Resident		8		Reduce risk through preparedness
	Reduce fuel load on property including gutters	Resident		9		Reduce fire ignition sources
	Install Static Water Supply signage for emergency services	Resident		10		Improved fire fighting capacity
	assist neighbours to decrease vulnerability to fires	Resident		11	Low	Community capacity building
	Use fire resilient garden design, plants and practices	Resident		12		Reduce fire ignition sources and fuel load
	Maintain adequate fire insurance	Resident, business		13		Reduced financial loss and improved resilience
	Relocate power and phone lines underground	Council	Energy utilities	14		Reduced ignition sources and greater resilience of electricity network during fire events
	Assist in the maintenance of Asset Protection Zones (APZ)	Resident		15		Reduce fuel loads
	Psychological preparedness by practicing fire drills	Resident		16		Improved fire fighting capacity and safety
	Pressed Earth Brick homes – with in-house shelter. Limited heat transfer. Complete with fire retardant door to leave house and internal entrance from with house.	Resident	developer	17		Improves resilience of property



# R recommendations

The Climate Change Adaptation Strategy is designed to be a living document that is regularly updated as new information emerges on:

- regionalised climate modelling;
- community resilience developments;
- new funding programs and priorities by other tiers of government;
- new opportunities to participate in partnerships with other agencies to introduce new opportunities to augment resilience;
- feedback on the most successful ways to partner business and community in the developing resilience;
- emerging trends in legal obligations of local government with respect to climate change
- any other information pertinent to climate adaptation.

It is recommended that Council place a draft of the Climate Change Adaptation Strategy on public exhibition to seek feedback on adaptation options as a final test of adaptation scope and relevance. This feedback will be incorporated into adaptation option tables and analysed against the test questions.

It is then for Council to decide which adaptation strategies it wishes to pursue. The information provided in the tables shows Councillors and the community a simplified cost benefit comparison of all the options. Where more information is desired regarding investment horizons, it is recommended the method from the Macquarie Report be applied.

Where more information is required to target a specific audience exposed to extreme risk an overlay map (for example residents in the extreme hazard area for bushfire) can be used which would

highlight those areas that need to be targeted quickly.

Adaptation are often characterised by their public-good. As such all levels of government must play an important role in stimulating progress to introduce a range of measures. It is very difficult to quantify where the least cost and greatest benefit will lie in any adaptation measure. In many areas the greatest value-for-dollar investment in climate adaptation efforts by council may lie in encouraging action and investment by private households and business.

Barriers to the uptake of sustainable strategies often occur because of a failure to consider the psychological and behavioural aspects of adaptation. Encouraging residents and business to take responsibility for their own future welfare will likely be an effective way to maximise resilience. When ownership and control is in the hands of the resident, this can mean the tasks for council can be concentrated on leveraging funding and facilitating opportunities for the community. This may take the form of encouraging uptake of solar panels, water tanks, storm shutters and providing market information such that each household need not do its own extensive research into sustainable adaptation renovation options such as is the case in the Greenstyles and Climate Clever programs. These strategies will likely link to responsibilities of State owned utilities and corporations. The task for Council is to act as a facilitator and educator to encourage participation in these programs.

Once the community consultation is complete and Council is satisfied with draft Strategy, attention will move into the implementation of the actions. Council needs to consider the adaptation options put forward and particularly understand



the practicality of implementation. Where longer term and larger investment is considered external funding should be investigated if internal funds and capacity are not available.

The final ranking of options will have been thoroughly tested once the public comments have been reviewed and used to adjust or amend options where necessary. Determining the timing regarding which options should be tackled in the short, medium and long term is the next step. Some options will require further research and development with external partners. Where there is a need to develop partnerships with other agencies to implement an option, Council has to take a lead role in forging these initiatives.

A large number of the high scoring options involve community changes in practice and behaviour, as such education and promotion of sustainable strategies will become more prominent in staff work loads. It is recommended Council consider the following questions to determine the priorities for investment. Council may choose to confirm the current order of issues and priorities or it may determine to choose a different order.

- Which risks need to be prioritised?
- Which sectors of the community to target due to their vulnerability?
- Which options contain the best return on investment?
- What should be the timing for implementation?
- Which options require the development of partnerships with external agencies?
- Which options are recommended to implement within the next financial year and beyond?

Finally it needs to be acknowledged that the do nothing option is a risk to both council and the residents. Given the changing face of litigation no decision or inaction falls short of good risk management.



# R

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# A

## ppendix 1

### **Fire Prone Communities Resilient but not Resistant'**

pp 10 CSIRO ECOS article April – May 2010

As people get on with the task of rebuilding their homes and their lives in Victoria's fire ravaged communities and new suburbs continue to expand on Melbourne's fringe, the state is missing an opportunity to make communities more fire resistant, a Melbourne-based academic has warned.

Bushfire CRC program leader Professor John Handmer, who is also director of the Centre for Risk and Community Safety at RMIT, says in the same way that people are discouraged from building in the worst flood-prone areas, action needs to be taken in high-risk fire areas. 'In fire areas we have the same sort of knowledge about places that are particularly high risk, for example due to the topography, such as north-facing, steep slopes but it is not being used,' he says.

Prof Handmer believes that building in some high-risk areas should be prohibited or the topography modified for example, some people should be required to alter the grade of slopes they are building on to reduce the fire intensity to which the house is exposed. 'Bushfire-related building regulations help but would probably make little difference in extreme events,' he says. Prof Handmer has studied the widely debated concept of community resilience. Although there are many different definitions, he says one important underlying feature of resilience is how connected people are in their community or neighbourhood.

'Our studies have shown that people who are well connected have a much better information flow about crises,' he says. A second important element is money flow. 'If you have steady income flow, whatever the source, then you have an enhanced resilience because you have a better capacity to deal with financial problems. 'Individual mobility is also a key factor.

Up to 20 per cent of Australians have some disability and in many cases this limits mobility or stamina. Such limitations can affect people's capacity to carry out aspects of fire preparedness and personal safety,' says Prof Handmer believes that while Australian communities in bushfire-prone areas are resilient, they could be more so. 'When you find that those communities are quite resilient, even in communities where many people died there is strong rebuilding, businesses recovering and a lot of social support. However, it doesn't mean that in 20 years time the community will be significantly better prepared for fire,' is his sobering warning.



## Appendix - 2

### More heat-related deaths 'likely'

DANNY ROSE, Sydney Morning Herald - *March 25, 2009*

Australia's big cities need to guard against a surge in heat-related deaths as they suffer more days with temperatures topping 30 degrees, scientists warn.

Two independent studies looking at projected atmospheric conditions in Sydney and Melbourne have concluded that deaths of older people from heat stress and air pollution could double. The Sydney study, by Dr Martin Cope of CSIRO Marine and Atmospheric Research, sought to forecast the number of days when the maximum temperature exceed 30 degrees during the city's October to March "smog season".

Such sweltering days, with elevated levels of ozone pollution over the city, were projected to increase by about 20 per cent over the next 50 years. "We know that we currently have about a thousand deaths a year in Australia due to heat stress and related illnesses," Dr Cope said.

"Within Sydney itself, we're typically looking at around 200 at the moment, and we think that under climate-changed conditions that may well double."

Sydney's coastal breeze was expected to play a moderating role, Dr Cope adds, as temperatures would rise more in inland areas. In the inner-west suburb of Earlwood, the number of smog season days over 30 degrees was expected to rise from 24 to 30 by 2060. In Richmond, in the city's west, the figure would increase from 44 to 50 days.

The expected increase in deaths would not be driven only by hotter conditions, as the ageing population would put more people in the at-risk group, Dr Cope said. "Looking at heat stress ... the more vulnerable group is the over 65s," Dr Cope said. "The population is going to age over time and by 2050 ... about 20 to 25 per cent will comprise that group."

The Melbourne-based study was done by Nicole Joffe, an honours student at Monash University who is now associated with Net Balance, a sustainable development consultancy and non-profit think tank. She counted 43 extreme days when the average daily temperature was over 30 degrees, and deaths among older people were known to increase, in the 20 years to 2000. Ms Joffe projected the frequency of such days would roughly double to 82 days, but possibly reach as many as 105 days, during the 20 years to 2065.

The study did not take into account the "urban heat island" effect - the ability of a city to produce and retain heat. Other studies have shown the effect can add up to four degrees in Melbourne. Greenhouse gas levels now observable in the atmosphere were also "likely to be tracking higher" than projections used in the study, Ms Joffe says.

Ms Joffe said the research amounted to an effective "doubling of the days linked to [heat stress] mortality". "And these increases could actually be a best-case scenario," she said.

Both studies were released at the Greenhouse 2009 conference in Perth



## Appendix - 3

### Ranking criteria for adaptation actions

Criteria for Ranking across each event (ranked by effect from -3 - +3) using the following definitions: [-3 very bad, -2 moderately bad, -1 mildly bad, 0 no change, + 1 mildly good, +2 moderately good, +3 very good]

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#### Economic

What effect will this option have on:

Capital costs  
Operational costs  
Opportunity cost  
Employment loss or gain  
Insurance premium effect incl. availability  
Negligence litigation  
Independence of assistance

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#### Environmental

What effect will this option have on  
*'insert criteria'* during construction  
and operation?

Resource use  
  
Air emissions including greenhouse emissions  
Catchment water quality (N/P and turbidity)  
Soil condition and erosion  
Noise  
Visual amenity  
Micro-climate  
Biodiversity (flora and fauna esp. threatened species and habitats)

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#### Social

What effect will this option have on  
"insert criteria" during construction  
and operation?

Equity between benefit and cost allocation (-3 the individual benefits and community pays, 0 the individual and community mutually benefit and pay, +3 the individual benefits  
Sense of security (-3 decreases sense of security, 0 no effect, +3 increased sense of security)  
Property / civil rights (-3 negative effect, 0 no effect, +3 positive effect (effect on neighbours)  
Community cohesion / isolation (-3 increases isolation, +3 increases cohesion)  
Self reliance (-3 reliant on community support, +3 independent of community support)  
Crime and vandalism  
Health physical and psychological  
Disruption to daily life

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**Risk Reduction**

What effect will this option have in reducing risk to *'insert criteria'*?

BUSHFIRE Council	<p>Radiant Heat - fire fighting capacity (-3 low capacity, +3 high capacity)</p> <p>Radiant Heat - knowledge and awareness (-3 maintenance, +3 increases knowledge and awareness)</p> <p>Ember Attack - material flammability (-3 highly flammable, +3 fire resilient)</p> <p>Ember Attack - water supply (-3 supply severely decreased, 0 supply sustained, +3 supply increases)</p> <p>Ember Attack - load and transference capacity (-3 high fuel load and transference capacity, +3 low fuel load)</p> <p>Destruction in the event of fire - destruction (-3 increases destruction, 0 no effect, +3 prevents destruction)</p>
BUSHFIRE Community	<p>What effect will this option in reducing risk to <i>'insert criteria'</i>?</p> <p>Radiant Heat - fire fighting capacity (-3 low capacity, +3 high capacity)</p> <p>Radiant Heat - knowledge and awareness (-3 maintenance, +3 increases knowledge and awareness)</p> <p>Ember Attack - material flammability (-3 highly flammable, +3 fire resilient)</p> <p>Ember Attack - water supply (-3 supply severely decreased, 0 supply sustained, +3 supply increases)</p> <p>Ember Attack - load and transference capacity (-3 high fuel load and transference capacity, +3 low fuel load)</p> <p>Destruction in the event of fire - destruction (-3 increases destruction, 0 no effect, +3 prevents destruction)</p>
STORM Council	<p>wind damage (-3 increases destruction, 0 no effect, +3 prevents destruction)</p> <p>overland flooding (-3 increases destruction, 0 no effect, +3 prevents destruction)</p> <p>rain inundation (-3 increases destruction, 0 no effect, +3 prevents destruction)</p> <p>electrocution (-3 increases destruction, 0 no effect, +3 prevents destruction)</p> <p>hail damage (-3 increases destruction, 0 no effect, +3 prevents destruction)</p> <p>flying/falling debris (trees, power poles, roofing) (-3 increases destruction, 0 no effect, +3 prevents destruction)</p>
STORM Community	<p>wind damage (-3 increases destruction, 0 no effect, +3 prevents destruction)</p> <p>overland flooding (-3 increases destruction, 0 no effect, +3 prevents destruction)</p> <p>rain inundation (-3 increases destruction, 0 no effect, +3 prevents destruction)</p> <p>electrocution (-3 increases destruction, 0 no effect, +3 prevents destruction)</p> <p>hail damage (-3 increases destruction, 0 no effect, +3 prevents destruction)</p> <p>flying/falling debris (trees, power poles, roofing) (-3 increases destruction, 0 no effect, +3 prevents destruction)</p>



EXTREME HEAT Council	<p>Ability to perform service obligations to community and environment</p> <p>Heat stress/stroke of Council outdoor staff</p> <p>Infrastructure failure or damage</p> <p>Reduced productivity in indoor staff</p>
EXTREME HEAT Community	<p>What effect will this option in reducing risk to 'insert criteria'?</p> <p>Ability to reduce indoor temperature extremes</p> <p>Reduce the incidence of heat stress/stroke</p> <p>Infrastructure failure or damage</p> <p>Declining productivity</p>
DROUGHT Council	<p>Ability to perform service obligations to community and environment without water (toilet, taps, fire fighting capacity, equipment maintenance, constructed wetlands)</p> <p>Effect on natural systems, eg bushland, creeks and nature reserves</p> <p>Effect on water dependent facilities eg pools, golf courses, playing fields, parks and gardens, plant nursery</p> <p>Water availability, restrictions and increases in cost of water (eg desalination plant)</p>
DROUGHT Community	<p>Ability to reduce pressure on community water supply system</p> <p>Effect on natural systems, eg bushland, creeks and nature reserves</p> <p>Effect on water dependent facilities eg pools, lawns and gardens</p> <p>Water affordability and increasing cost of water</p>



# Appendix - 4

## Assessment matrix

### Extreme Heat Adaptation - Community ranking

Action	Economic					Environmental					Social					Risk Reduction				Other risk reduction	Ranks													
	Capital	Operational	Opportunity cost	Employment	Insurance	Litigation	Independence	Subtotal	Rank	Resources	Air emissions	Catchment	Soil	Noise	Visual amenity	Microclimate	Biodiversity	Subtotal	Rank			Indoor temp	Heat stress	Productivity	Subtotal	Rank								
Insulate buildings including windows, walls and roof	-2	2	1	2	0	0	1	4	9	-1	1	0	0	1	0	1	0	0	2	6	0	2	0	2	8	7	2	2	1	7	7	29	3	
Apply passive solar design principles to reduce dependence on mechanical heating and cooling	-2	2	1	1	0	0	1	3	8	-1	2	0	0	1	0	1	0	0	3	7	1	2	0	2	8	7	2	2	1	6	6	28	5	
Install renewable power supply to ensure sustainability of energy supply during peak demand	-2	2	0	1	0	0	1	2	7	-1	2	0	0	0	-1	0	0	0	4	4	2	2	0	3	10	8	1	1	2	6	6	25	6	
List public buildings with air conditioning																																	8	
Provide transport to air conditioned areas																																	10	
Increase capacity of health services to cope with victims of heat stress																																	11	
Alternative working activities in extreme conditions																																	12	
Contribute to schemes to place power infrastructure underground	-2	0	-2	1	0	0	2	-1	4	-2	1	-1	-1	-2	3	2	1	1	5	1	2	-1	2	1	10	8	2	1	2	1	6	6	23	15
Know what to do to keep your home cooler on extreme days	0	1	0	0	0	1	1	2	7	0	0	0	0	0	0	1	0	0	1	5	0	1	0	2	6	5	2	2	1	6	6	23	2	
Be aware of how to reduce the risk of heat stress and how to manage heat stress	0	0	0	0	1	1	1	2	7	0	0	0	0	0	0	0	0	0	4	1	1	0	1	2	7	6	0	2	2	4	5	22	1	
Invest in low energy technology to offset price increases of fossil fuel derived power	-1	1	0	1	0	0	2	3	8	-1	2	0	0	-1	0	0	0	0	4	4	1	2	0	1	6	5	1	1	2	0	4	5	22	16
Ensure ready access to water for animals and people	0	0	0	0	0	1	1	1	6	-1	0	0	0	0	0	1	0	0	4	4	1	0	2	1	8	7	0	2	1	3	4	21	4	
Landscape with materials and colours to reduce heat absorption	-2	0	-1	1	0	0	1	-1	4	-1	1	1	1	0	2	2	1	0	7	8	2	1	0	1	6	5	1	1	0	1	3	4	21	20
Participate in a 'House Buddy' program to monitor vulnerable residents in time of extreme risks	0	0	-1	0	0	0	2	1	6	-1	0	0	0	0	0	0	0	0	-1	3	2	2	0	2	11	9	1	2	0	-1	2	3	21	14
Plant wind breaks where possible	-1	0	0	-1	-1	1	1	-2	3	0	2	0	1	1	2	2	2	1	10	10	1	0	-1	1	2	3	1	1	0	-1	2	3	19	7
Monitor and be aware of weather warnings for extreme heat days	0	0	0	0	0	1	1	1	6	0	0	0	0	0	0	0	0	0	4	1	1	0	1	0	4	4	1	1	0	3	4	18	7	
Install a generator for backup supply in the event of blackouts	-1	-1	-1	1	0	1	0	0	5	-1	-1	0	0	-1	0	0	-1	-1	-4	2	0	-2	-1	-2	4	4	1	1	2	2	6	6	17	21
Go to cool areas with sustainable power supplies to escape the heat	0	0	0	0	0	-1	1	-1	4	-1	1	0	0	0	1	0	0	0	1	5	1	0	2	-1	2	3	1	1	0	4	5	17	9	
Plant more shade trees	-1	0	-1	0	-1	1	1	-3	2	0	2	0	0	0	2	2	2	2	8	9	1	0	-1	-1	1	2	1	1	0	1	3	4	17	18
Install underground living areas that are cool in extreme heat	-3	-1	-3	1	-1	0	1	-6	1	-2	-1	-1	-1	-2	0	0	0	0	-7	1	0	2	0	3	8	7	2	2	1	6	6	15	17	
Ensure supervision of children on extreme heat days	0	-1	-1	0	-1	-1	-1	-3	2	-1	0	0	0	0	0	0	0	0	-1	3	1	2	0	1	7	6	0	2	1	3	4	15	13	
Shade pools to protect from UV radiation exposure in summer months	-1	0	0	1	0	0	0	0	5	-1	0	1	0	0	-1	0	0	0	-1	3	0	1	0	1	4	4	0	1	0	1	2	4	14	19
Planning controls								0	5										0	4					0	1				0	1	11		



## Appendix 5

### Summary of the Macquarie Bond Universities Collaborative Project

Bush fire was selected to test the model as it was ranked highest of all the risks identified in the consultation process.

Establishing a cost benefit modelling to determine which adaptation options to invest in involved addressing a number of complex questions that drew upon a range of economic theories and techniques. Without the type of assistance of the skilled economists and scientists, it would be overly ambitious for any council to find the skills required to undertake this form of inquiry without considerable cost. Despite the technical resource limitations this study has relevance to local government planning.

The Macquarie Report notes that traditional Cost Benefit Analysis (CBA) has limited appeal for this type of inquiry as it identifies present and future gains and losses incurred by a particular action in the present. It usually applies to financial cases where dollar values exist. Consistent, transparent and replicable, CBA is embraced by local councils; however, when used to value environmental or social impacts, it becomes inaccurate in establishing monetary values for non-market values.

Climate adaptation actions demand immediate attention, an urgency largely accepted in the business community and parts of government. An attempt to use CBA for Triple Bottom Line planning may fail in the environmental case but will almost certainly fail in the social case, where putting dollar values to life, health and pain will be contentious. An incomplete or partial CBA will necessarily reflect the bias of those commissioning the analysis.

Ranking the three elements of TBL had to be individually considered. In this method

ranking in the financial case is purely based on dollar returns and takes into consideration maximum net benefits for each choice. A strategy showing most net benefit will be ranked first. Environmental and social ranking are left to the discourse of council's experts. This system of ordering social and environmental impacts resolves the dilemma of choosing a discount rate inasmuch as no dollar values need be devised for non-market public goods. Accompanying the rankings by qualitative statements describing the costs and benefits and reasons for the ranks assigned would help to make the cases transparent and reduce discrepancies.

The lack of historical data regarding bushfires may be overcome by supplementing historical observation with expert opinion in the estimation process as described in the following section. The Macquarie report (2010) provides a general description of the Loss Distribution Approach (LDA). This approach is used in the financial sector for modelling insurance claims and losses arising from operational risks within the banking industry<sup>39</sup>.

LDA involves the estimation of an adequate frequency and severity distribution for the catastrophic events under consideration. The aggregate loss distribution of the events is then computed by combining these two distributions such that the expected annual loss at the desired confidence level can be computed. Simulations can also be used to derive higher quantiles of the aggregate loss distribution. Once the potential losses have been determined using the appropriate discount rate, the discounted present value (DPV) of the

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<sup>39</sup> Klugman, *et al.* 1998, and Bank for International Settlements 2001



expected losses and costs for a chosen time horizon can be calculated.

When climate change adaptation strategies are compared it is possible to use the DPV of total costs. In financial applications, the discount rate is usually chosen as the cost of capital. However, as previously discussed there are important differences between economic and financial modelling and the appropriate choice of the discount rate. It should be pointed out that in this approach it is assumed that the chosen strategies will have different effects on the parameters of the frequency and severity distribution which will lead to differences in the calculated or simulated loss figures for each year. The approach also provides the possibility of including the effects of climate change by adjusting the parameters of the frequency and severity distribution in the model.

Once the discounted present value of the costs for each adaptation strategy has been calculated, the strategies can be compared with respect to their net benefit or to the business-as-usual scenario. This involves no investment for adaptation strategies, but will likely yield higher figures for the losses arising from catastrophic events.

The Loss Distribution Approach (LDA) and additional statistical techniques that are relevant for the modelling of losses arising from catastrophic events like storms, droughts or bushfires are further discussed with preliminary results on distributions and bushfire loss estimations.

The LDA is a statistical approach for generating aggregate loss distribution. This section provides the algorithms that can be used to compute the aggregate loss distribution and illustrates the calculation of extreme quantiles for losses based on the generated aggregate loss distribution. As mentioned above this

approach is particularly popular in the financial industry<sup>40</sup>. Researchers commonly use the Poisson distribution for frequency and the Lognormal distribution for severity.

To compute the probability distribution of the aggregate loss from bushfires over one year, it is necessary to estimate the probability distribution function of the single event loss and its frequency for one year. With the benefit of internal and external data (data generated outside the current research project for different purposes and adapted for the present project, for example, bushfire losses experienced by other regions of Australia) supplemented by expert opinion, researchers may estimate the probability distribution function of residential property loss and the bushfire frequency over one year. Then it is possible to compute the cumulative residential property loss for one year or longer.

The Macquarie Report details the method applied to determine investment direction but such is complexity of this type of analysis it is recommended that Council only apply this method to projects that involve a high level of investment. The more simplified version applied early by Council officers is sufficient to scope and prioritise adaptation options but the Macquarie method may be necessary to more carefully analyse return on investment where the project is longer term, complex and expensive.

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<sup>40</sup> Klugman *et al.* 1998, and Bank for International Settlements 2001



# Appendix 6

## Risk and adaptation options assessment workshops attendees

### Workshop 1

02-08-08

#### Resource Use, Health, Well Being and Biodiversity

National Parks and Wildlife  
Macquarie University  
SRC/Retirement Village  
Ron Barnes  
David Newhouse  
Sustainability Program Leader  
Environmental Levy Program Leader  
Dianne Miller  
Sustainability Officer  
Rob Hall  
John Mack  
Manager corporate Planning and Sustainability

### Workshop 2

02-09-08

#### Infrastructure and Logistics, Water Energy and Waste, Business and Non-residential, Health and Well Being, Domestic and Property, Emergence Services

Rail Corp  
RTA  
Energy Australia  
Telstra  
Sydney Water  
AGL  
St. Ives and Pymble Chambers of Commerce  
West Pymble Group  
Retirement Village  
Sustainability Reference Group  
SAN Hospital  
Gordon/St Ives Shopping Centre  
Local Service groups (Rotary, Lions, Zonta)  
Meals on Weals  
NSW Fire Brigade  
NSW Rural Fire Service  
State Emergency Service  
WIRES  
RSPCA  
Police  
Resident



## Workshop 3

08-05-10

### Adaptation option assessment

David Newhouse  
Macquarie University  
NSW Rural Fire Service  
NSW National Parks and Wildlife Service  
Department of Lands  
Rail Infrastructure Corp  
RTA  
Energy Australia  
Transgrid  
Sydney Water  
AGL  
Gordon Shopping Centre Manager  
San Hospital  
NSW Fire Brigade  
NSW Rural Fire Service  
NSW State Emergency Service  
NSW Police  
University of NSW  
Macquarie University  
Macquarie University Graduate School of Law  
Wentworth Chambers  
Manager Corporate Planning and Sustainability  
Sustainability Program Leader  
Sustainability Officer  
Sustainability Trainee  
Technical Officer Fire  
Environmental Levy Program Leader



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## **EMERGENCY ACCESS OVER COMMUNITY LAND [DU FAUR RESERVE, NORTH TURRAMURRA]**

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### **EXECUTIVE SUMMARY**

**PURPOSE OF REPORT:**

To obtain Council approval to impose a Positive Covenant over privately owned land known as Lot 1 DP858405, in order to effect a Land and Environment Court condition of consent.

**BACKGROUND:**

The Land and Environment Court (LEC), pursuant to order No.10973 of 2001 upheld an appeal by the applicant, Rosecorp Pty Ltd. The consent included a requirement for an emergency access connecting onto Du Faur Reserve. This reserve is community land and is covered under Council's Bushland Reserves Plan of Management (PoM) adopted September 2009.

**COMMENTS:**

The Land and Environment Court Orders are specific to providing road access to the adjoining development in the event of a natural emergency, and the Plan of Management expressly authorises Council to grant for special uses, leases and licences and easements for authorities, organisations or individuals in favour of private lands.

**RECOMMENDATION:**

That Council impose a Positive Covenant on privately owned land known as Lot 1 DP858405, in order to effect a Land and Environment Court condition of consent Order No.10973 of 2001.



## PURPOSE OF REPORT

To obtain Council approval to impose a Positive Covenant over privately owned land known as Lot 1 DP858405, in order to effect a Land and Environment Court condition of consent.

## BACKGROUND

On 21 May 2002, the Senior Commissioner of the Land and Environment Court (LEC) of NSW, in proceedings No. 10973 of 2001, between Rosecorp Pty Limited as applicant and Council as respondent, upheld an appeal by the applicant relating to a development application which it had lodged in respect of housing for older people and people with a disability at 440 Bobbin Head Road, North Turrumurra, also known as the 'Landings' (**Attachment A**).

Access to the development site is limited by a relatively narrow entrance/exit "laneway" to Bobbin Head Road. Two sides of the land is bounded by Ku-ring-gai National Park and on the Bobbin Head Road side it is separated from that road by private development, another road and the Lady Davidson Hospital and on the southern side by private lands, Du Faur Reserve, and a Sydney Water sewer pumping station and Sandakan Park (**Attachment B**).

The Consent ordered by the Court includes the following conditions:

46. The secondary access point at the southern end of the site connecting onto Du Faur Street is only for natural emergency purposes and there will be no day to day ingress or egress available from this point.
49. To ensure ease of access to the subject property, the roads providing access for fire fighting appliances and trade waste vehicles shall be designed to facilitate the use of a vehicle, having the following dimensions:

[Overall width 6 metres, Track 2.5 metres, Loaded rear axle weight 22 tonnes.]

The LEC Orders are specific to providing road access to the adjoining development in the event of a natural emergency. Given the Court's decision, the only available access point onto Du Faur Street from the development site is across Council's vacant land known as Du Faur Reserve.

## COMMENTS

The development consent provides for limited access/egress rights over Council's adjoining land for natural emergency purposes, with access road to be provided at a certain standard. Du Faur Reserve is classified as Community Land and is covered under Council's Bushland Reserves Plan of Management (PoM) adopted September 2009. The PoM permits special uses, leases and licences and for Council to grant easements for authorities, organisations or individuals in favour of private lands over lands identified in the PoM, i.e. Du Faur Reserve. In addition, the PoM permits authorised vehicles to gain access to reserves for fire management works, service and maintenance of infrastructure (eg. sewer and stormwater pipes) and bushland.



Item 9

**S02804**  
**10 June 2010**

Legal advice was sought as to the best legal options to protect Council's interest, whilst meeting the requirements of the LEC's Order. Council's solicitor Matthews Folbigg Pty Ltd, advised that the most efficient manner of granting the access over the reserve to the development site would be by way of a Positive Covenant imposed by Council on the development site i.e. Lot 1 DP858405.

The Positive Covenant includes essential clauses to ensure the road pavement is built to LEC consent conditions and Council standards, along with an ongoing maintenance requirement, that overland flow paths are managed and drainage is controlled over our land, the installation of a locked boom gate to ensure the access road is not used as a general thoroughfare by the residents of the development.

Additional clauses have been included to ensure that in the event the owner of the development site fails to carry out the required works in accordance with the LEC's Order that Council is expressly authorised to carry out any work and recover the costs incurred.

## CONSULTATION

Council staff have assessed potential impacts (ecological, social, fire hazard and built assets) and ongoing management requirements as a result of the LEC's Order.

Council staff have held lengthy discussions with the developer during this process and direct negotiations have taken place through the developer's consulting surveyor and development consultant to ensure the proposed access road when constructed will comply with all drainage, structural and access/security requirements (**Attachment C**).

The developer's consultant surveyor has consulted with Sydney Water in relation to any potential access road construction impacts on the sewer maintenance hole (SMH) located nearby. As a result, the design levels of the road have been raised to ensure that there is no impact on Sydney Water's infrastructure.

Legal advice was sought as to the best legal options to protect Council's interest, whilst meeting the requirements of the LEC's Order. Council's solicitor Matthews Folbigg Pty Ltd, has prepared the Positive Covenant documentation and conditions to protect Council's interest.

## FINANCIAL CONSIDERATIONS

The developer will be responsible for all costs for the construction of the access road, drainage, boom gate, retention walls, detention basis and overland flow affecting Council's community land.

The property owner must pay to the Council an annual access fee for the right of emergency access to and egress from the land across Council's land. This fee will be established by Council as part of its annual fees and charges determination and must be paid by the property owner. The current fee for access over Council community land ranges between \$1 - \$3,000 based on the cost of the adjoining development.

The developer is also liable for all Council's legal and registration costs associated with the imposition of the Positive Covenant (**Attachment D**).



## **CONSULTATION WITH OTHER COUNCIL DEPARTMENTS**

A number of discussions and site meetings have been held with staff from Development and Regulation, Operations and Strategy and Environment Departments in regard to the development consent to consider all potential impacts including drainage and engineering details for the construction of the new road pavement through the Reserve, and ongoing management requirements.

### **SUMMARY**

Although road access through Council's land is not an ideal option the decision of the Land and Environment Court Order No. 10973 of 2001, has enforced an emergency access for the benefit of the adjoining development over Council's community land known as Du Faur Reserve, North Turramurra.

Council's legal interest will be protected through the imposition of a Positive Covenant on the developed land to ensure that the access provided is only used for emergency access, by relevant service authorities, and that a locked boom gate will be installed to ensure that the newly formed access road is not used for day to day access by the adjoining development.

The developer will be responsible for all costs associated with the access road's construction, drainage requirements and ongoing maintenance, along with Council's legal costs and the payment of an annual fee for the access over Council's land.

### **RECOMMENDATION**

- A. That Council impose a Positive Covenant on privately owned land known as Lot 1 DP858405, in order to effect a Land and Environment Court condition of consent Order No.10973 of 2001.
- B. That Council authorise the General Manager to execute the Positive Covenant over Lot 1 DP 858405, known as 440 Bobbin Head Road, North Turramurra.

Dirk Nagel  
**Strategic Property Advisor**

Deborah Silva  
**Manager Strategic Assets &  
Property Services**

Antony Fabbro  
**Acting Director Strategy &  
Environment**

**Attachments:**

- A. LEC Orders No. 10973 of 2001 - 2010/106639**
- B. Location sketch - 2010/106366**
- C. Road Engineering Plan - 2010/106148**
- D. Positive Covenant - 2010/106264**



**In the Land and  
Environment Court  
of New South Wales**

**No. 10973 of 2001**

**Rosecorp Pty Ltd**

Applicant

**Ku-ring-gai Municipal  
Council**

Respondent

**Order**

**The Court orders by consent that:**

1. The appeal is upheld.
2. Development application to erect housing for older people and people with a disability on lot 1 DP 858405, known as 440 Bobbin Head Road, North Turramurra is approved subject to the conditions in annexure A.
3. The exhibits are returned except Exhibits 10, A and C. .

**Ordered: 21 May 2002**

By the Court

M Greenwood  
Registrar



Council or other Principal Certifying Authority by the presentation of the necessary Certificate of Insurance so as to comply with the applicable requirements of Part 6 of the *Home Building Act 1989*. The requirements for the Builder's Indemnity Insurance does not apply to commercial or industrial building work or for residential work less than \$12,000, nor to work undertaken by persons holding an Owner/Builder's Permit issued by the Department of Fair Trading (unless the owner/builder's property is sold within 7 years of the commencement of the work).

10. Deleted
11. Prior to commencing any construction or subdivision work, the following provisions of the Environmental Planning & Assessment Act, 1979 (the 'Act') are to be complied with:
  - (a) A Construction Certificate is to be obtained in accordance with Section 81A(2)(a) of the Act.
  - (b) A Principal Certifying Authority is to be appointed and Council is to be notified of the appointment in accordance with Section 81A(2)(b) of the Act.
  - (c) Council is to be notified in writing, at least two (2) days prior to the intention of commencing buildings works, in accordance with Section 81A(2)(c) of the Act.
  - (d) Should the development be certified by a Principal Certifying Authority other than Council, a fee of \$15.00 for each Part 4A Certificate is to be paid to Council on lodgement of those Certificates with Council.
12. For the purpose of health and amenity, the disposal of backwash and/or the emptying of a swimming pool into a reserve, watercourse, easement or stormwater drainage system is prohibited. These waters are to discharge via a permanent drainage line into the Sydney Water's sewer. Permission is to be obtained from the Sydney Water prior to the emptying of any pool to the sewer.
13. To ensure compliance with the relevant standards, an effective and approved safety fence with self closing gate complying with the minimum requirements of Australian Standard 1926-1986 'Fences and Gates for Private Swimming Pools' shall be provided to the Principal Certifying Authority's satisfaction in the location indicated on the approved plans prior to any water being placed in the pool.
14. For safety purposes, depth markers shall be provided at both ends of the pool.
15. For safety purposes, prior to the pool being filled a weather resistant poster detailing expired air resuscitation (mouth to mouth) methods shall be affixed



of Council's Code for the Control and Regulation of Noise on Building Sites.

24. To maintain the residential amenity all electricity supply services to the site are to be provided underground.
25. The developer shall submit to Council a letter from Telstra and Optus confirming that satisfactory arrangements have been made for the provision of underground telephone services, prior to the release of the Subdivision Certificate or Occupation. Application shall be made to Optus, Network Operations, Facsimile No 9837 9060, Phone No 9837 9010, or Telstra Phone No 12 455.
26. Air conditioning equipment shall not be used in such a manner that emits noise that can be heard within a habitable room in any other residential premises (regardless of whether any door or window to that room is open)
  - (a) before 8:00am or after 10:00pm on Saturday, Sunday or Public Holidays, or
  - (b) before 7:00am or after 10:00pm on any other day
27. The creation of a Restriction as to use of land under Section 88E of the Conveyancing Act 1919, restricting the occupation of the premises to:
  - (a) People 55 or over or people who have a disability;
  - (b) People who live with people 55 or over or people who have a disability; ✓
  - (c) Staff employed to assist in the administration of and provision of services to housing provided in this development.
28. The development is to remain as Housing for Aged or Disabled Persons within the meaning of State Environmental Planning Policy No 5 at all times. ✓
29. Advertising, signage, marketing or promotion of the sale of the dwellings in this development shall make clear reference to the fact that this is a SEPP5 development and that at least one occupier shall be aged 55 years or over or have a disability.
30. The burning of building refuse and like matter on the site is prohibited.
31. Under no circumstances shall building materials, demolition waste, fill, soil or any other material from any source be placed or stored within any public reserve.
32. For the purpose of health and amenity during construction, effective measures are to be taken at all times to prevent any nuisance being caused by noise, vibrations smells, fumes, dust, smoke, waste water products and the like.



45. That the developer work with the local bus companies to explore whether current bus routes can be extended/modified to service the Retirement Village, and provide proof to Council of these negotiations and the outcomes and resolutions reached.
46. The secondary access point at the southern end of the site connecting onto Du Faur Street is only for natural emergency purposes and there will be no day to day ingress or egress available from this point.
47. For the purpose of residential amenity, all trade waste and waste storage areas are to be graded and drained to the Sydney Water's sewer.
48. The buildings adjoining bushland are to be constructed in accordance with Australian Standards AS 3959 for Development in Bushfire Affected Regions.
49. To ensure ease of access to the subject property, the roads providing access for fire fighting appliances and trade waste vehicles shall be designed to facilitate the use of a vehicle, having the following dimensions.
 

Wheel base	5.0m
Overall length	8.8m
Track	2.5m
Overall width	6.0m
Loaded rear axle weight	22 tonnes
Lifting clearance height	5.2m
Turning Circle	16.2m
Maximum Gradient	> 1:6
50. Land disturbance shall not extend beyond three metres from the extent of the approved development works, other than the access corridor, and approved underground service routes.
51. Only locally occurring native species shall be planted and/or maintained within the Asset Protection Zones. Planting over the rest of the site shall utilise non invasive species.
52. Development and rehabilitation works shall be planned to minimise the area of exposed and disturbed soil at any one time.
53. Natural vegetation, specifically identified as being retained on the approved construction plans and the approved landscape plan shall not be removed.
54. No encroachment upon land adjoining the site including the National Park shall be permitted for any activity, storage or disposal of materials.
55. All trees to be retained on site as identified in the approved construction and landscape plans shall be inspected and monitored by a qualified Arborist before, and during development works to ensure their long term survival. Regular reports from the Arborist to the Principal Certifying Authority shall be required at four (4) week intervals.



Submission of Engineering Plans per A1 plan sheet (resubmission 20% extra)	\$160.00
Drainage Pipelines per metre (minimum \$73.70)	25.00
Inter allotment Drainage per metre (minimum \$73.70)	20.00
Drainage Structures (ie. pits etc.) each	85.00
Common Driveways per metre (minimum \$68.00)	7.50
Detention Structures and Special < 50m <sup>3</sup> of storage	135.00
<u>Inspection Fee</u>	80.70
A re-inspection fee of	120.00

per visit may be charged where remedial work is unprepared at the requested time of inspection or where remedial work is unsatisfactory and a further inspection is requested. Engineering fees must be paid prior to the final approval of the works.

66. The keeping of cats and dogs in the development is prohibited with the exception of dogs that were in the ownership of the resident during the 12 months before moving to the development.
67. The developer shall implement the Emergency Incident and Emergency Evacuation Plan prepared by Conacher Travers and included in a report dated 2 April 2002 prepared by Graham Swain of Conacher Travers
68. All ponds shall be drained and dried annually to prevent the permanent colonisation of the introduced Mosquito Fish.

#### **CONDITIONS TO BE COMPLIED WITH PRIOR TO THE ISSUE OF A CONSTRUCTION CERTIFICATE**

69. Deleted
70. A CASH BOND/BANK GUARANTEE of \$20,000 shall be lodged with Council as a Landscape Establishment Bond prior to the release of the Construction Certificate to ensure that the landscape works are installed and maintained in accordance with the approved landscape plan or other landscape conditions.

Fifty percent (50%) of the this bond will be refunded upon issue of the final Certificate of Compliance, where landscape works as approved have been satisfactorily installed. The balance of the bond will be refunded 3 years after issue of the building certificate, where landscape works has been satisfactorily established and maintained.

It is the responsibility of the applicant to notify Council in relation to the refunding of the bond at the end of the 3 year period. Where a change of ownership occurs during this period it is the responsibility of the applicant to make all arrangements regarding transference of the bond and to notify Council of such.



- (a) Deleted
- (b) The three water quality ponds at the downstream end of the site are to cater for the catchment of the subject property. The size of the ponds is to be maximised and to be at least the size as proposed in the Development Application documentation. The low flow travel paths and hydraulic residence times are to be maximised.
- (c) The provision of a readily maintainable gross pollutant trap at the immediate upstream end of the three water quality ponds at the downstream end of the site. The GPT should be designed to capture all litter, floating debris, organic debris, especially leaves, and coarse sediment.
- (d) The provision of an irrigation system which utilises the captured storm water in the proposed water quality pond system for outdoor watering purposes on the site. Stormwater re-use by irrigation of all common landscaped areas is to be designed so that on an average annual basis the volume of re-used stormwater is commensurate with the total irrigation need of those areas as determined by a suitably qualified and experienced horticulturalist.
- (e) Deleted
- (f) Deleted
- (g) The provision of a detention system which is designed to ensure that the post-development discharge rates from the subject site into the downstream natural watercourse do not exceed the pre-development discharge rates for the 1, 5 and 100 year design average recurrence interval storms for all durations. This is to be demonstrated by the use of suitable time-area computer modelling.
- (h) A suitably designed discharge structure at the downstream natural watercourse which dissipates flows to a pre-development state of flow.
- (i) Provision of new trunk drainage systems to convey runoff from
  - 1. The Du Faur Street catchment.
  - 2. The eastern adjoining site, being 430-438 Bobbin Head Road through the subject site. The imposition of this condition of consent does not affect any obligation of the owners of 430-438 Bobbin Head Road to contribute to the cost of these works.
  - 3. DeletedThese systems are to be designed in accordance with Council's Stormwater Management Manual and cater for both minor and



- (c) Non hazardous damage shall be repaired within a reasonable time as ordered by Council.

**CONDITIONS TO BE COMPLIED WITH PRIOR TO WORK COMMENCING**

80. Prior to the commencement of any work, the Principal Certifying Authority shall be notified in writing of the name and contractor licence number of the owner/builder who intends to carry out the approved works.
81. So as to minimise glare, all roofing material is to be of subdued colour which is compatible with the surrounding environment. A schedule of external finishes is to be submitted to and approved by the the principal certifying authority prior to the commencement of work.
82. To protect the public a temporary 1.8 metre high chain mesh, or similar, fence is required surrounding the construction works and maintained throughout the construction work.
83. To enable the 'ageing in place' philosophy to be achieved in Ku-ring-gai:
- (a) Prior to the occupation of each relevant stage, documentary evidence is to be provided to Council's satisfaction, of an agreement with suitably qualified service provider/s for the provision of the following services if and when required by any of the residents of the development:
- Personal care, including bathing and dressing;
  - Housekeeping, including cleaning and laundry;
  - Home delivered meals; and
  - 24 hour a day monitored emergency call system.
- (b) The documentary evidence is to include the following details:
- Proposed cost to residents of each of the services listed in (a) above; and
  - Proposed means of altering the cost to residents of these services. This may include: linking costs to the Consumer Price Index or a proportion of the Aged Pension; or by selecting a new service provider.
- (c) A comprehensive residents' manual is to be provided to all residents which includes information of relevance to them, such as doctors, churches and other community services and facilities.
84. Access for construction purposes associated with this building shall NOT be taken or gained through the adjoining public reserve. Should no alternative access exist, then application for access to the construction site via the public reserve shall be submitted to Council for consideration and approval before the commencement of works.
85. A Compliance Certificate pursuant to Section 73 Sydney Water Act 1994, as evidence of compliance with the provisions of Division 9 of that Act, to be



- (b) Deleted.
  - (c) Proposed water quality/detention ponds with the site and associated gross pollutant trap.
  - (d) Deleted.
  - (e) Deleted.
  - (f) Deleted.
  - (g) Trunk drainage systems conveying flows from the eastern adjoining catchment, being 430-438 Bobbin Head Road, and the Du Faur Street catchment including both minor and major flow pipes/paths. In addition the designing engineer is to certify that major flows are conveyed through the as-constructed site providing at least 300mm and 150mm freeboard above the design overland flood flow to all habitable floor areas and garages respectively and without exceeding a velocity-depth product of 0.4m<sup>2</sup>/s at any location.
  - (h) Car washing bays.
97. Prior to the release of an Occupation Certificate for the relevant stage of the works, written approval is to be obtained from Council for the following completed works. Council is to be provided with works-as-executed drawings prepared by a Registered Surveyor and the relevant engineers certification for such works:
- (a) The trunk drainage systems traversing the subject site for the Du Faur Street catchment and from Bobbin Head Road along the northern boundary.
  - (b) deleted.
98. The on-site stormwater management system and the three proposed water quality ponds are to be subject to the following on-going maintenance programme. This programme is to be incorporated into a positive covenant, with Council named as the prescribed authority, which is to be registered on the title of the subject property(s) prior to the issue of an occupation certificate:
- (a) Deleted.
  - (b) Proposed water quality ponds  
Maintenance Performance Measure : Macrophytes are sustained and meet design densities. Macrophyte density harvested as required to maintain design density. Permanent water shows signs of health and is not stagnant. Sediment and debris accumulation not to exceed 20% of design permanent storage volume. No litter and only minor amount of organic debris within basin. No weed growth nor algal blooms nor exotic fauna within basins. Any design safety measures intact.
- K



The DA relates to a proposed development at Lot 1 DP 858405, 440 Bobbin Head Road, North Turramurra, NSW, hereinafter referred to as "the Site".

Under Land and Environment Court proceedings NO. 10973 of 2002, Rosecorp Pty Limited v Ku-ring-gai Municipal Council, hearing dates: 16, 17 and 18 April 2002, Senior Commissioner Roseth handed down a judgment on 18 April 2002 in relation to the status of the watercourse at the Site for the purposes of the Part 3A of the Rivers and Foreshores Improvement Act 1948 (R&FI Act). Part of the watercourse at the Site was deemed to be a "river", such part being hereinafter referred to as "the Stream".

A permit issued under Part 3A of the R&FI Act is required to carry out works, including **excavations on in or under**, the area hereinafter referred to as "Protected Land" being in, or within 40 metres of the top of the bank of, or within a radius of 40 metres of the upstream extent of, the Stream, **or works that will, or are likely to, obstruct or detrimentally affect the flow of the Stream.**

Pursuant to Part 3A of the R&FI Act, DLWC, having reviewed the documentation associated with the DA, proposes to grant an approval to DA 807/01 (subject to conditions). DLWC's General Terms of Approval, for inclusion as conditions of consent, are set out below.

**1A** The works shown on the approved plans are permitted within the Riparian Zone and within the Protected Land.

**1. Requirement for Permit**

Any work which requires a permit under Part 3A of the R&FI Act ("Part 3A permit") is not to commence until such time as a Part 3A permit has been applied for, and subsequently issued by DLWC. Any work the subject of a Part 3A permit must be carried out in accordance with drawings and any other documentation required by these conditions, and approved by DLWC, and which will accompany the Part 3A permit.

**2. Cessation of Works**

If, in the opinion of a DLWC officer, any work is being carried out in such a manner that it may damage or detrimentally affect the Stream, or damage or interfere in any way with any work, such work shall cease immediately upon oral or written direction of such officer.

**3. Work as Executed Plans**

If requested by DLWC, work as executed survey plans of a professional standard, and including information required by DLWC, shall be forwarded to DLWC within 14 days of such request.

**4. Remedial Works**



vegetation structure. These densities are to consist of at least 1 tree and 1 shrub (on average) alternately planted at 1m spacings and in addition, groundcover plants at 4 per square metre provided those densities do not conflict with the Bushfire Management Plan. Revegetation is to be carried out over all areas in the Riparian Zone that are temporarily occupied by soil and water management controls, once those controls have been decommissioned and the ground surfaces restored to the correct profile and stabilised.

**9. Soil Suitability**

In the event that any soil is required to be imported to the Site for application to Protected Land, such soil is to be weed free, and similar to that which occurs naturally in local riparian areas. Any soil deemed suitable for the purposes of this condition must be suitable for the establishment and on-going viability of riparian vegetation. Prior to the soil being used on the Site, such soil must be tested and certified by a NATA registered soils laboratory as to the soil's similarity to the naturally occurring local soil and for its suitability for the establishment and on-going viability of riparian vegetation.

Documentation arising from this testing and certification must be provided to DLWC prior to the placement of any soil.

**10. Soil Structure**

The structure of the soils in the Riparian Zone must be suitable for the vegetative rehabilitation of the Site. Such soils are therefore not to be proof rolled or subjected to other unsuitable compaction.

**11. Maintenance of Riparian Zone**

The Riparian Zone must be maintained for a period of at least two years after final planting, where such plantings take place under this DA. Maintenance must include sediment and erosion control, watering, weed control, replacement of plant losses, disease and insect control, mulching and any other requirements necessary for achieving successful vegetation establishment.

**12. Maintenance Report**

If any plantings are to take place in the Riparian Zone under this DA, a report is to be submitted to DLWC every six months up until the end of the two-year maintenance period detailing progress in establishing the Riparian Zone.

**13. Designation of Riparian Zone**

A Riparian Zone **40 metres wide** measured horizontally as projected from the top of the bank of the Stream shall be maintained along **both** sides of the Stream. **Additionally**, a Riparian Zone of **40 metres radius**, measured horizontally from the upstream extent of the Stream, but not such that it produces a bulbous planform shape to the Riparian Zone, shall be maintained.

**14. Selection of Species**



20. Water Quality Pond and Sediment and/or Detention Basin Location

Where the water quality pond or sediment and/or detention basin is located on Protected Land, a complete list of calculations is to be provided to DLWC, to the satisfaction of DLWC, prior to the issue of the Part 3A permit. The format for the calculations must be in accordance with that provided in Appendix 1 of the NSW Department of Housing's publication *Managing Urban Stormwater: Soils and Construction (3<sup>rd</sup> Ed.)(1998)*.

21. Drainage Outlet Structures

Any outlet structure, whether it be pipeline, spillway, the main drainage line across the Site, or any other outlet structure, if proposed to be located on Protected Land, is to be designed and constructed in such a way that it does not compromise the stability of the Stream, or Riparian Zone habitat and ecological functions. The design of any such outlet structure is to be undertaken in consultation with, and with the approval of, DLWC. The main drainage line across the Site is not to be piped or channellised within the Stream or to any extent that erodes the Stream.

22. Implementation of the Soil and Erosion Control Plan

The requirements of the *Soil and Erosion Control Plan* must be implemented prior to any other works commencing on the Protected Land.

23. Maintenance of Erosion and Sediment Control Measures

All erosion and sediment control measures within the Protected Land are to be inspected and maintained as required on a weekly basis and immediately following any rainfall events to ensure the efficient operation of these devices. This obligation remains until the Protected Land has been fully stabilised.

24. Decommissioning of all Sediment and Erosion Controls

Decommissioning of all sediment and erosion controls on Protected Land must be documented in detail to the satisfaction of DLWC. Decommissioning must meet the requirements outlined in the NSW Department of Housing's publication *Managing Urban Stormwater: Soils and Construction (3<sup>rd</sup> Ed.)(1998)*. The timeframes for the decommissioning of the sediment and erosion controls are to be cross-referenced to the implementation of any Riparian Zone plantings.

25. Cash Bond or Bank Guarantee

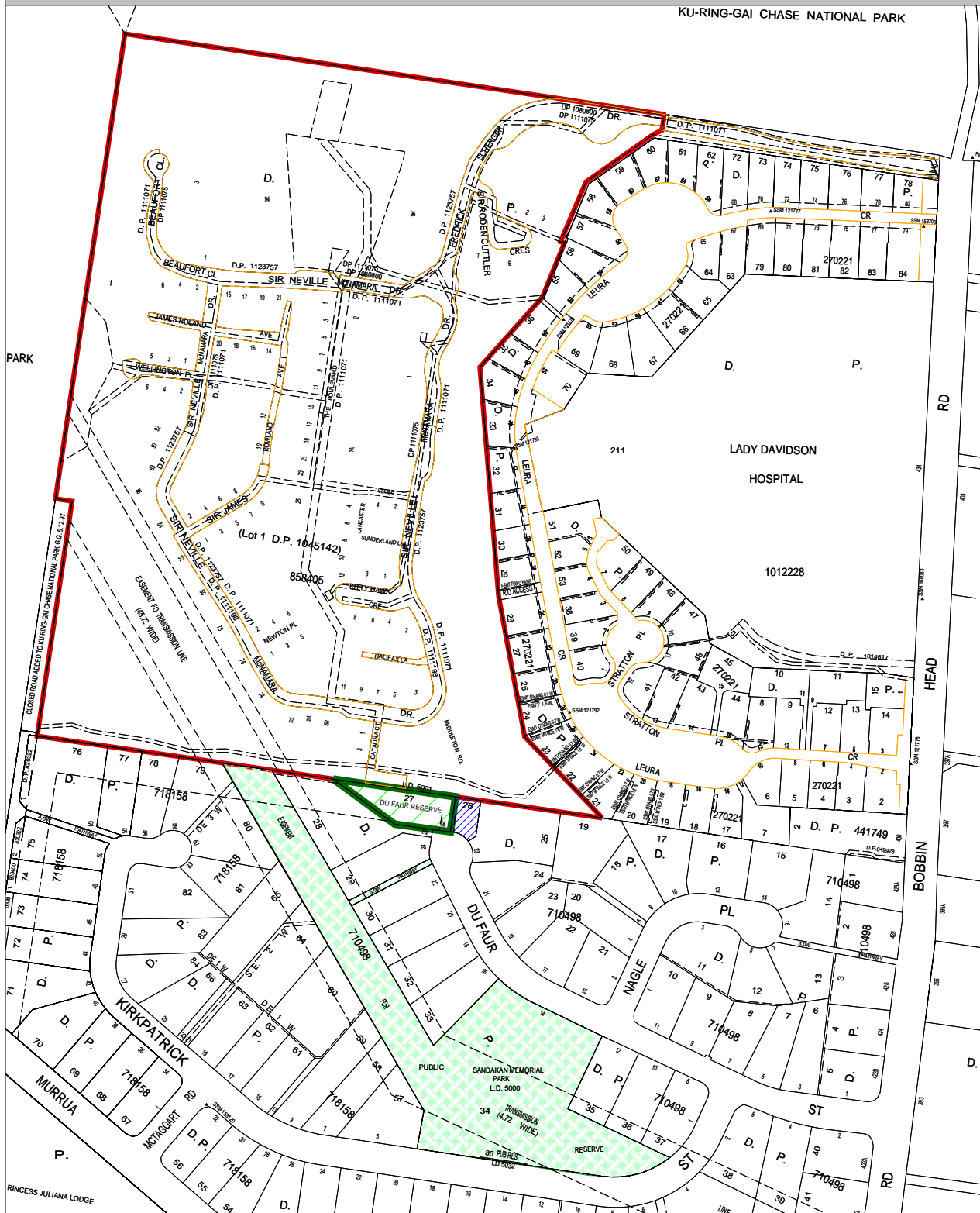
The applicant for a Part 3A permit is, as a pre-condition to the granting of the Part 3A permit, to provide a cash bond or bank guarantee, prior to the issue of any Part 3A permit, to cover the cost of decommissioning any temporary sediment and erosion controls on Protected Land and for the restoration and maintenance of the Riparian Zone as required by these conditions. Costings are to be based on industry standard rates and final estimates are to be approved by DLWC.

Any bank guarantee is to be provided from a bank licensed pursuant to the Banking Act 1959 (Cth) and is to be provided in favour of DLWC. In the case of either cash or a bank guarantee, the moneys will be held until such time as the restoration works and any specified maintenance period is complete. The sum held may be reduced on application to DLWC, subject to the satisfactory completion of stages of restoration. DLWC may at any time, and more than once and without notice to the Part 3A permit holder, demand all or part of the moneys available under the bank guarantee, if in its opinion, the Part 3A



# LOCATION SKETCH

## Middleton Road Development



SCALE: 1:3000  
DATE: 10-06-2010



SANDAKAN MEM.  
PARK



KU-RING-GAI  
COUNCIL



SYDNEY WATER  
CORP.



DEVELOPMENT  
SITE



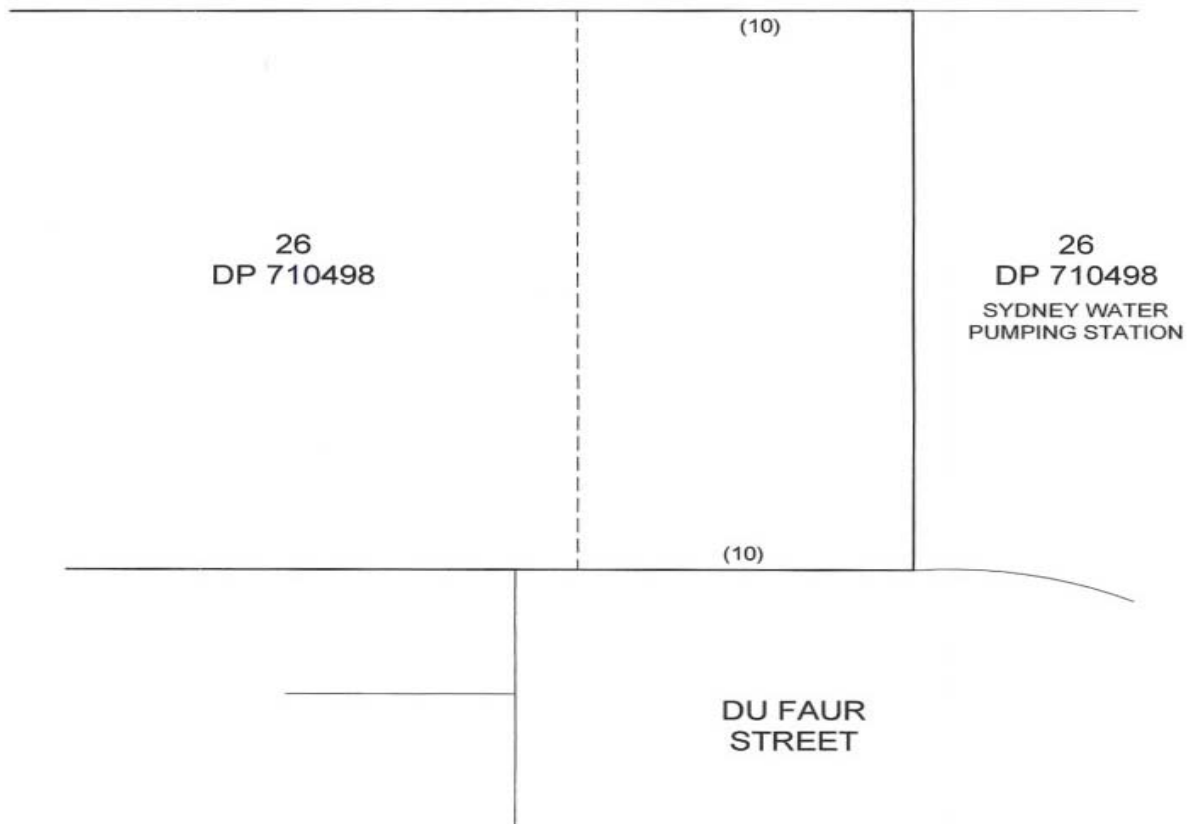


SKETCH

PLAN SHOWING THAT PART OF LOT 27 IN DP 710498 REQUIRED  
FOR EMERGENCY ACCESS PURPOSES AND TO BE THE SUBJECT  
OF A POSITIVE COVENANT BURDENING LOT 1 IN DP 858405  
(COUNCIL REF. S02804/2009/213357)



1  
DP 858405



DAVID A. MEPSTEAD  
SURVEYOR REGISTERED UNDER  
THE SURVEYING ACT 2002



# POSITIVE COVENANT

New South Wales  
Section 88E(3) Conveyancing Act 1919

Leave this space clear. Affix additional  
pages to the left-hand corner.

**PRIVACY NOTE:** Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

(A) **TORRENS TITLE**

1/858405

(B) **LODGED BY**

Document  
Collection  
Box

Name, Address or DX, Telephone, and Customer Account Number if any

Reference (optional):

CODE

**PC**

(C) **REGISTERED  
PROPRIETOR**

SAKKARA INVESTMENT HOLDINGS PTY LIMITED (ACN123 185 900)

(D) **LESSEE  
MORTGAGEE  
or  
CHARGE**

Of the above land agreeing to be bound by this positive covenant

Nature of Interest

Number of instrument

Name

Mortgage  
Mortgage  
Mortgage

AF127825  
AF267064  
AF214851

Bendigo and Adelaide Bank Limited  
Commonwealth of Australia  
Ground Crew at Turrumurra Pty Limited

(E) **PRESCRIBED  
AUTHORITY**

KU-RING-GAI COUNCIL

(F) The prescribed authority having imposed on the above land a positive covenant the terms set out in annexure **A** hereto applies to have it recorded in the Register and certifies this application correct for the purposes of the Real Property Act 1900.

DATE ..... / ..... / 2010

(G) **EXECUTION BY THE PRESCRIBED AUTHORITY**

I certify that the authorised officer of the prescribed authority who is personally known to me or as to whose identity I am otherwise satisfied signed this application in my presence.

Signature of witness:

Name of witness:

Address of witness:

Signature of an authorised officer:

Name of authorised officer: John McKee

Position of authorised officer: General Manager

(G) **EXECUTION BY THE REGISTERED PROPRIETOR**

SEE ANNEXURE "B"

(H)

The ..... under ..... No. .... agrees to be bound by this positive covenant.  
I certify that the above ..... who is personally known to me or as to whose identity I am otherwise  
satisfied signed this application in my presence.

Signature of witness:

Name of witness:

Address of witness:

Signature of SEE ANNEXURE "C"



**This is the Annexure marked "A" referred to in the Positive Covenant dated 2010 between Sakkara Investment Holdings Pty Limited (Registered Proprietor) and Ku-Ring-Gai Council (Prescribed Authority) in relation to the land described in Folio Identifier 1/858405.**

The Registered Proprietor for the time being of the land described in Folio Identifier 1/858405 of the Register (hereinafter called the "Proprietor" and the "land" respectively) covenants with the Prescribed Authority (the "Council") as follows:

1. (a) That the Proprietor must at the Proprietor's cost erect and maintain a barrier on the boundary of the land and the adjacent land owned by the Council being Lot 27 in Deposited Plan 710498 (Council's land") to prevent vehicular access from or to the land via the road to be constructed on the Council's land referred to in Clause 2 below.
- (b) That such barrier must be:
  - (i) constructed not later than six (6) months after the date of this Positive Covenant;
  - (ii) be of a design and constructed of materials acceptable to the Council; and
  - (iii) be kept locked at all times other than during periods of natural emergencies such as bush fires or storms when the Proprietor must permit the barrier to be removed or opened to permit the passage of emergency vehicles such as those of fire brigades (including the Rural Fire Service), the NSW Ambulance Service, NSW Police, State Emergency Services, electricity and gas authorities and those of other services providing rescue and emergency services in relation to natural emergencies.

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For Sakkara Investment Holdings Pty Limited

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John McKee - For Ku-ring-gai Council



2. That the Proprietor must construct upon the Council's land between the boundary referred to in Clause 1(a) and Du Faur Street and adjacent to and parallel with the eastern boundary of the Council's land a road which complies with the dimensions specified in Consent Condition 49 of the approval of the Development Application for the land ordered on 21 May 2002 by the land & Environment Court of New South Wales in Proceedings No. 10973 of 2001. Such road must be constructed to the Council's satisfaction not later than six (6) months after the date of this Positive Covenant.
3. That the Proprietor must keep a key to the barrier at its offices (or those of its manager) on the land and must provide a duplicate of any such key in accordance with customary protocols to local emergency services.
4. That the Proprietor at its cost must maintain (and replace as necessary) the said barrier and the road constructed pursuant to Clause 2. Such maintenance must be in accordance with the Council's reasonable requirements.
5. That the Proprietor must notify the occupiers of the land in writing not later than two (2) months after the date of this Positive Covenant that vehicular access to and egress from the land across Council's land is prohibited. Not later than fourteen (14) days after any new occupant of the land enters into possession of any part of the land the Proprietor must notify that occupier in writing that vehicular access to and egress from the land across Council's land is prohibited.
6. That the Proprietor must pay to the Council an annual access fee for the right of emergency access to and egress from the land across Council's land. Such fee will be determined by the Council as part of its annual fees and charges determination and must be paid by the Proprietor in accordance with Council's levy notice.
7. That upon the release of this Covenant, the Proprietor at its cost shall remove the said barrier and restore the site of the road to be constructed pursuant to Clause 2 as nearly as practicable to its condition prior to such construction.
8. That if the Proprietor shall fail to construct, repair, replace, maintain or remove the barrier or the road (as the case may be) then after reasonable notice in writing served upon the Proprietor (being not less than seven (7) days) the Council may carry out such construction, repair, replacement, removal and/or maintenance works and



recover the costs of so doing pursuant to s.88F of the Conveyancing Act 1919 (NSW) in a Court of competent jurisdiction.

9. That this Covenant may be varied or modified at any time in writing executed by the Proprietor and the Council and may be released by the Council at any time in writing without the need of any consent from the Proprietor.
10. That the Proprietor must pay the Council's reasonable legal costs and out-of-pocket expenses in relation to the drafting, negotiation, execution and registration of this Covenant as well as the costs of removal of such Covenant upon its release.

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For Sakkara Investment Holdings Pty Limited

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John McKee - For Ku-ring-gai Council



"B"

This is the Annexure marked "B" referred to in the Positive Covenant dated 2010 between Sakkara Investment Holdings Pty Limited and Ku-Ring-Gai Council in relation to the land described in Folio Identifier 1/858405.

Executed by Sakkara Investment Holdings Pty Limited (ACN 123 185 900) in accordance with s.127 of the Corporations Act:

\_\_\_\_\_  
Director/Secretary

\_\_\_\_\_  
Director/Sole Director

\_\_\_\_\_  
Name [BLOCK LETTERS]

\_\_\_\_\_  
Name [BLOCK LETTERS]



"C"

**This is Part 1 of Annexure "C" to a Positive Covenant dated 2010 between Sakkara Investment Holdings Pty Limited and Ku-Ring-Gai Council in relation to the land described in Folio Identifier 1/858405.**

Bendigo and Adelaide Bank Limited, the Mortgagee under Mortgage AF127825 agrees to be bound by this Positive Covenant.



**This is Part 2 of Annexure "C" to a Positive Covenant dated 2010 between Sakkara Investment Holdings Pty Limited and Ku-Ring-Gai Council in relation to the land described in Folio Identifier 1/858405.**

Commonwealth Bank of Australia, the Mortgagee under Mortgage AF627064 agrees to be bound by this Positive Covenant.



**This is Part 3 of Annexure "C" to a Positive Covenant dated 2010 between Sakkara Investment Holdings Pty Limited and Ku-Ring-Gai Council in relation to the land described in Folio Identifier 1/858405.**

Ground Crew at Turramurra Pty Limited, the Mortgagee under Mortgage AF214851 agrees to be bound by this Positive Covenant.



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## HERITAGE REFERENCE COMMITTEE - NOTES OF MEETING HELD 19 APRIL 2010

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### EXECUTIVE SUMMARY

**PURPOSE OF REPORT:**

To advise Council of the notes of the Heritage Reference Committee meeting held 19 April 2010.

**BACKGROUND:**

The notes were taken at the meeting held 19 April 2010. Confirmation and acceptance of these notes was at the Heritage Reference Committee (HRC) meeting held 17 May 2010.

**COMMENTS:**

A range of issues were discussed at the Committee's meeting of 19 April 2010 and a number of issues were raised for further consideration.

**RECOMMENDATION:**

That Council receive and note the Heritage Reference Committee meeting notes from 19 April 2010.



## **PURPOSE OF REPORT**

To advise Council of the notes of the Heritage Reference Committee meeting held 19 April 2010.

## **BACKGROUND**

The notes taken at the 19 April 2010 meeting were confirmed and accepted at the Heritage Reference Committee (HRC) meeting held on 17 May 2010.

## **COMMENTS**

A range of heritage issues were discussed at the Committee meeting of 19 April 2010 and a number of issues were raised for further consideration as outlined below:

### **Meeting of 19 April 2010**

#### **Item 1: Tulkiyan – Funding for Interpretive Space**

Council's Heritage Advisor provided an overview of the Tulkiyan Interpretation Space project. Council has received funding under the Federal Government's stimulus package for a new building in the ground of Tulkiyan to house an interpretive space, kitchen facilities and accessible toilets.

#### **Item 5: St Ives Showground & Precinct – Heritage Reference Committee submission**

Council's Heritage Specialist Planner addressed the Committee on the common themes running through committee members individual submissions for the St Ives Showground and Precinct Options Paper. The individual submissions will now be consolidated into a final Heritage Reference Committee submission.

## **CONSULTATION**

The Heritage Reference Committee includes representatives from the community and nominated heritage organisations.

## **FINANCIAL CONSIDERATIONS**

The cost of running the Heritage Reference Committee is covered by the Strategy and Environment Department budget.

## **CONSULTATION WITH OTHER COUNCIL DEPARTMENTS**

Where relevant, consultation with other Departments has occurred in the preparation of the report.



## SUMMARY

The Heritage Reference Committee held its meeting on 19 April 2010. In particular the Committee reviewed and discussed the following key items:-

- Tulkian – Funding for Interpretive Space; and
- St Ives Showground and Precinct Heritage Reference Committee submission.

The notes from the Heritage Reference Committee meeting of 19 April 2010 are **attached** to this report.

## RECOMMENDATION

That Council receive and note the Heritage Reference Committee Meeting Notes of 19 April 2010.

Antony Fabbro  
**Acting Director Strategy & Environment**

**Attachments:**        **Heritage Reference Committee Meeting Notes of 19 April 2010 - 2010/082983**



# Heritage Reference Committee

## Notes of 19 April 2010 Chambers

**Meeting Commenced** 6.30 pm

### **Attendance:**

Councillor Jennifer Anderson (Chair)  
Councillor Cheryl Szatow  
Ian Stutchbury  
Joanne Martens  
Margaret Bergomi  
Zeny Edwards

### **Staff Members:**

Manager Urban & Heritage Planning - Antony Fabbro  
Heritage Advisor - Paul Dignam  
Heritage Specialist Planner - Andreana Kennedy  
Heritage Student Planner - Lara Goldstein

### **Apologies:**

Jennifer Harvey - Ku-ring-gai Historical Society  
Robert Moore - Institute of Architects

### **Declarations of Interest**

None.

### **Adoption of notes from the previous meeting**

The notes from the 15 March 2010 Heritage Reference Committee meeting were accepted by the committee as being correct.

### **Agenda Item 1: Tulkiyan – Funding for Interpretive Centre**

Council has received funding under the Federal Government's stimulus package to the amount of \$80,000, for an Interpretive Centre at Tulkiyan with the deadline for completion of 31 December 2010.

Council's Heritage Advisor provided an overview of the proposal. The committee discussed the wording of the grant and its relationship to the Burra Charter. A management committee is currently being set-up by Council's Manager of Leisure and Cultural development. The management of this grant project will begin with the Heritage Reference Committee, with the aim of passing the management over to the new Tulkiyan Committee, when it is established. Additional information and an update will be provided to the next meeting.



### **Agenda Item 2: NSW LEP Standard LEP template – potential amendments to the heritage clauses**

Council's Heritage Specialist Planner addressed the committee on the potential amendments to the heritage clauses of the NSW LEP Standard LEP template. The committee put forward comments which will be included in Council's submission.

### **Agenda Item 3: Heritage Tourism – Ku-ring-gai Management Plan**

The draft Management Plan of Council includes the preparation of a Tourism Strategy. The possibility of forming a separate sub committee of the HRC for heritage tourism to cover the future of both existing and potential heritage tourism assets in Ku-ring-gai was discussed. Also discussed was the proposal to put forward HRC representatives on a Council wide Tourism Committee that may be formed as part of the proposal.

### **Agenda Item 4: Heritage Awards**

The committee discussed the process of rewarding excellent work undertaken on locally listed buildings. It was agreed that Heritage Week 2011 would be an appropriate time to hold the Council Heritage Awards as it will be the 10<sup>th</sup> anniversary of the previous awards.

### **Agenda Item 5: St Ives Showground & Precinct HRC submission**

Council's Heritage Specialist Planner addressed the committee on the common themes running through the committee members individual submissions, which will now be consolidated into a single final Heritage Reference Committee submission.

### **General Business**

- The committee discussed the idea of an online directory of Ku-ring-gai street names and their origins.
- The committee discussed the potential heritage items currently known to Council. Committee members suggested various indexes that could produce information on other potential items.
- The committee was given a brief update on the Heritage Conservation Areas review.

**Meeting Closed: 9.10 pm**



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## STATUS REPORT ON SECTION 94E DIRECTION BY THE MINISTER FOR PLANNING DATED 4 JUNE 2010

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### EXECUTIVE SUMMARY

**PURPOSE OF REPORT:**

The purpose of the report is to provide Council with such information as is available on the recent decision by the Minister for Planning to cap all local development contributions to a maximum of \$20,000 per dwelling authorised by any consent.

**BACKGROUND:**

Late on Friday 4 June 2010, Council was advised of a s94E Direction issued by the Minister for Planning that came into effect on the very next business day being Monday 7 June 2010.

**COMMENTS:**

The effect of the Direction is that a council, as a consent authority, cannot issue a development consent with conditions requiring a contribution greater than \$20,000 for each dwelling authorised by the consent. As contributions for larger units in Ku-ring-gai are higher than this amount, Council will be financially disadvantaged by this Direction. While the NSW Government have flagged alternative funding mechanisms there are no guidelines available to local government to assess the likely impact of these alternate mechanisms on Ku-ring-gai's ratepayers.

**RECOMMENDATION:**

That the report be received and noted and that staff continue to seek clarity on this matter and keep Councillors informed as concrete information is obtained.



## PURPOSE OF REPORT

The purpose of the report is to provide Council with such information as is available on the recent decision by the Minister for Planning to cap all local development contributions to a maximum of \$20,000 per dwelling authorised by any consent.

## BACKGROUND

Late on Friday 4 June 2010, Council was sent an e-mail containing advice of a s94E Direction issued by the Minister for Planning that came into effect on the very next business day being Monday 7 June 2010.

The effect of the Direction is that a council, as a consent authority, cannot issued a consent with conditions requiring a contribution greater than \$20,000 for each dwelling authorised by the consent.

No prior warning or consultation was provided by the State Government on these changes.

## COMMENTS

### The Ministerial Direction

The abruptness of the Direction stands in direct conflict with the thorough and extensive investigation undertaken by the NSW Government Contributions Review Panel over a three month period from late January to late April in 2009. This investigation involved four stages of submissions and responses plus interviews. This intensive professional review was undertaken by a panel of experts from a broad spectrum of fields including planning, infrastructure provision, finance and development. Ku-ring-gai's submissions were supported by an expert consultant land economist.

The end result of this extensive review process was that 20 councils were successful in justifying a full or partial exemption due to their demonstrated infrastructure demands and particular development patterns. While these 20 represent only a small percentage of Local Governments Areas in NSW, it is likely they would represent a sizeable percentage of the residential development in NSW.

It should be noted that Ku-ring-gai Council has not been singled out by this latest Ministerial Direction; all twenty councils who successfully argued for a full or partial exemption in 2009 have had that exemption revoked. Ku-ring-gai Council complied with the Notes to its Direction of 31 May 2009 and succeeded in putting to exhibition a draft consolidated Contributions Plan. All councils in the State of NSW has been capped without regard to any area's specific needs or demands, growth patterns, land costs and/or any current committed financial expenditure for infrastructure provision.



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### Options for the Future & Available Information

There is, at the time of drafting this report, no information available to Local Government other than:

1. The Direction itself and the circular accompanying the Direction both of which are attached as **Attachment A**.
2. The press release from the Premier of NSW which is attached as **Attachment B**.

The press release is the only official documentation that suggests that IPART will have at least an assessment role in respect of local government development contributions plans, though whether this is in conjunction with a special rate levy or as a uniform requirement is unclear.

The press release makes reference to a 'Comprehensive Housing Supply Strategy' but no document of that name is available through the NSW Government website. The press release refers to a 'Land and Housing Supply Co-ordination Taskforce' to be charged with its implementation but all reference to this body are in the future tense.

As the ramifications of the Direction come to light for the councils who, were granted an exemption to the previously mooted cap, on-going liaison with the Department of Planning, with each other, and with the Local Government and Shires Association and other organisations, will be essential.

At present, staff at the Department of Planning estimate that they may be able to provide advice to the three or four councils who, like Ku-ring-gai, have an exhibited draft Contributions Plan, on options for progressing that draft before the end of this month. It should be noted that the fact that Ku-ring-gai has an exhibited draft Contributions Plan renders it subject to savings provisions at least in respect of Part 5B of the *Environmental Planning and Assessment Act 1979*.

### Draft Ku-ring-gai Contributions Plan 2010

The exhibited *draft Ku-ring-gai Contributions Plan 2009*, with amendments and improvements that have been made in direct response to submissions received as a result of the exhibition process, was due to be reported to this council meeting of 22 June 2010 as *draft Ku-ring-gai Contributions Plan 2010*. The future for this Contributions Plan is now unclear.

Staff are not currently in a position to recommend its adoption, even in principle, due to the implicit risk in leaving Ku-ring-gai without a valid Contributions Plan. The Contributions Plans, which would otherwise be superseded by this document, remain legally in force (although subject to the explicit terms of the Direction) and this validity should not be threatened until the process for progressing the current draft Contributions Plan is addressed by the State Government.

When this situation is clarified, Councillors will be informed.

### Potential for Future Infrastructure Funding by whatever package

It is emphasised that Ku-ring-gai, in successfully achieving the exemption in 2009, demonstrated both the needs inherent in the specific development environment in this area - which is neither greenfields nor inner city - as well as the particular financial challenges it faces in the provision of



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essential infrastructure to support the particular type of new development that is occurring. The draft Contributions Plan further consolidates and strengthens these arguments in one document.

Ku-ring-gai, by undertaking the defence of the contributions plans in 2009, and demonstrating that an average of \$20,000 per dwelling is not adequate to provide the required infrastructure needed to support new development that is far more intense and concentrated than existing development, is now in a better position to put a consolidated case for future funding from contributions or from other sources or a combination of mechanisms, than it otherwise would have been.

The options for seeking future funding remain very unclear, however, staff are continuing to investigate these options with a view to further informing Councillors and seeking an agreed approach to infrastructure funding going forward.

### **Other Local Government Areas**

At the time of writing this report, the Direction has been in affect for less than 1 week. The ramifications are still very much under assessment, not just in Ku-ring-gai but in all 20 of the most seriously impacted Local Government Areas.

It is understood from the Local Government and Shires Association that Camden Council, Liverpool Council and The Hills Shire Council have instigated a short-term moratorium on approving new development applications involving development contributions with a view to instigating dialogue with the state government and to minimise immediate un-recoverable financial loss. It is an option that, perhaps, the other councils who have previously demonstrated valid reasons for levying more than this amount may be considering.

## **CONSULTATION**

The Local Government and Shires Association, Planning Institute of Australia and others are seeking to co-ordinate responses to this abrupt decision. Council staff will continue to liaise with counterparts and professional organisations in this regard and undertake to keep the Mayor and Councillors informed of developments.

## **FINANCIAL CONSIDERATIONS**

In the absence of any form of guidelines from either the Department of Planning, Treasury, IPART or the foreshadowed 'Land and Housing Supply Co-ordination Taskforce' staff are unable, at this point in time, to professionally advise council on the best way forward.

At the time of drafting this report, assessment of the full financial impact and the potential impact on residential rates should council seek to recover the full shortfall remains under assessment. Council staff may be able to provide more information in briefings prior to the Council meeting of 22 June 2010.



## **CONSULTATION WITH OTHER COUNCIL DEPARTMENTS**

In preparing this report and assessing the implications of the Direction, all Departments have been consulted.

### **SUMMARY**

Late on Friday 4 June 2010, Council was advised of a s94E Direction issued by the Minister for Planning that came into effect on the very next business day being Monday 7 June 2010.

The effect of the Direction is that a council, as a consent authority, cannot issue a development consent with conditions requiring a contribution greater than \$20,000 for each dwelling authorised by the consent. As contributions for larger units in Ku-ring-gai are higher than this amount, Council will be financially disadvantaged by this Direction. While the NSW Government have flagged alternative funding mechanisms there are no guidelines available to local government to assess the likely impact of these alternate mechanisms on Ku-ring-gai's ratepayers.

### **RECOMMENDATION**

- A. That the report be received and noted.
- B. That staff continue to seek clarity on this matter and keep Councillors informed as concrete information is obtained.

Kate Paterson  
**Infrastructure Co-ordinator**

Antony Fabbro  
**Acting Director Strategy & Environment**

**Attachments:**      **A. Circular and Direction - 2010/106998**  
                             **B. Premier's Press Release - 2010/106993**



<b>Circular</b>	PS 10-014
<b>Issued</b>	4 June 2010
<b>Related</b>	supersedes PS09-001 supersedes "only that part of PS08-017 which is inconsistent with PS10 -014"

## Local Development Contributions

The purpose of this circular is to advise councils and the public of changes relating to local development contributions as a result of a revised mechanism for setting these contributions and council rates.

### Introduction

On 4 June 2010, the Premier, the Hon. Kristina Keneally MP, announced a revised approach for setting local development contributions and local council rates. It includes:

- a \$20,000 per residential lot or dwelling limit on local development contributions
- allowing councils to apply for special rate variations for legitimate council costs arising from development.

These changes aim to increase housing supply by lowering development charges for infrastructure to stimulate housing construction.

This forms part of a comprehensive strategy to improve housing supply across NSW.

### \$20,000 limit to local development contributions

#### Section 94E Direction

Attached to this circular is a Direction issued by the Minister for Planning under section 94E of the *Environmental Planning and Assessment Act 1979* (the EP&A Act).

The Direction applies to monetary contributions required by conditions of development consent imposed by councils under section 94 of the EP&A Act.

#### Effect of the Direction

The Direction provides that a council must not impose a condition requiring a development contribution under section 94 of the EP&A Act that requires the payment of a monetary contribution of more than \$20,000 for each residential dwelling or for the purposes of residential subdivision, no more than \$20,000 for each lot.

This Direction also revokes:

- the previous Direction under section 94E, dated 13 January 2009
- the previous Directions (dated 31 May 2009 and 10 July 2009) to individual councils

### Development to which the Direction applies

The Direction applies to consents granted, and applications for complying development determined on or after 7 June 2010.

The Direction does not apply to:

- section 94 contribution conditions imposed before 7 June 2010
- voluntary planning agreements
- monetary contributions required under section 94A (fixed percentage levies) of the EP&A Act
- section 94F (affordable housing contributions) of the EP&A Act
- conditions requiring the dedication of land free of cost (section 94(1)(a)).

This Direction does not affect the ability of councils to accept the dedication of land or provision of material public benefits in lieu of monetary contributions (section 94(5)).

### Complying Development

As a result of changes to the EP&A Act that took effect on 17 July 2009 accredited certifiers will now need to take into account directions issued by the Minister for Planning.

### Implementation of Part 5B of the EP&A Act

The Department of Planning is finalising the introduction of the new Part 5B of the EP&A Act. It is expected that this will commence on 1 July 2010.



The changes outlined in this circular will be continued under the Part 5B provisions.

### **Guidelines**

In the coming months, the Government will release guidelines to assist councils in preparing development contributions plans under the new provisions.

### **Reporting requirements**

Commencing in the 2010/11 financial year, councils will be asked to report on development contribution activity to the Department of Planning. A template will be prepared and distributed to councils by 30 June 2010.

More formal reporting arrangements will be investigated for implementation from July 2011.

### **Further information**

If you have queries about the Direction and this Planning Circular please contact the Department's Information Centre 02 9228 6333 or email [information@planning.nsw.gov.au](mailto:information@planning.nsw.gov.au)

If you have queries about changes to council rates contact NSW Treasury.

Note: This and other Department of Planning circulars are published on the web at [www.planning.nsw.gov.au/circulars](http://www.planning.nsw.gov.au/circulars)

### **Authorised by:**

Sam Haddad  
Director-General  
NSW Department of Planning

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**Important note:** This circular does not constitute legal advice. Users are advised to seek professional advice and refer to the relevant legislation, as necessary, before taking action in relation to any matters covered by this circular.

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# Direction Section 94E

under the  
Environmental Planning and Assessment Act 1979

I, the Minister for Planning, in pursuance of section 94E of the *Environmental Planning and Assessment Act 1979* (the Act) direct councils as consent authorities to comply with the requirements set out in this Direction.

This Direction revokes the previous Directions issued under section 94E of the Act as set out in the Schedule to this Direction.

 - 4 JUN 2010

TONY KELLY, M.L.C.,  
Minister for Planning

## Requirements of this Direction

- (1) A council as a consent authority must not impose a condition of development consent under section 94(1) or 94(3) of the Act requiring the payment of a monetary contribution exceeding \$20,000 for each dwelling authorised by the consent or in the case of a development consent that authorises the subdivision of land into residential lots, exceeding \$20,000 for each lot authorised by the consent.

## Date this Direction takes effect

- (2) This Direction takes effect on and from 7 June 2010.

## Definitions

- (3) Words and expressions in this Direction have the same meaning as they have in the Act unless otherwise defined.
- (4) In this Direction:
  - (a) **Dwelling** means a room or suite of rooms occupied or used or so constructed or adapted as to be capable of being occupied or used as a separate domicile,
  - (b) **Residential lot** means a lot created by the subdivision of land (as defined in section 4B of the Act) for the purpose of a dwelling not being a lot, which in the opinion of the council, is to be further subdivided for the purpose of creating lots to be used for dwellings.
- (5) Notes do not form part of this Direction.



## Notes

Section 94EC(1A) of the Act provides as follows:

The imposition of a condition by an accredited certifier as authorised by a contributions plan is subject to compliance with any directions given under section 94E(1)(a), (b) or (d) with which a council would be required to comply if issuing the complying development certificate concerned.

## Schedule

(1) The following directions are revoked by this Direction:

- (a) The Direction, dated 13 January 2009, to councils exercising functions as a consent authority,
- (b) The Directions, dated 31 May 2009, to Blacktown City Council, Camden Council, City of Sydney Council, Ku-ring-gai Council, Lake Macquarie City Council, Liverpool City Council, Maitland City Council, Penrith City Council and Wyong Shire Council,
- (c) The Directions, dated 10 July 2009, to Campbelltown City Council, Holroyd City Council, Leichhardt Municipal Council, Palerang Council, Pittwater Council, Shoalhaven City Council, The Hills Shire Council, Tweed Shire Council, Wollondilly Shire Council and Yass Valley Council.



## SIGNIFICANT REFORM TO LOCAL COUNCIL INFRASTRUCTURE CHARGES

Friday 4 June, 2010

The NSW Government today announced major sweeping changes to local council charges on new housing development.

The changes will lower the cost of new housing construction, and provide certainty, transparency and fairness to councils, landowners, developers and the community.

The **\$44 million Comprehensive Housing Supply Strategy** will deliver additional land releases, lower levies and faster planning decisions, including:

- A hard cap of \$20,000 a lot for council-imposed charges on new development, (these are commonly known as Section 94 contributions);
- Retaining rate pegging, but providing a more transparent process of setting the rate through an IPART determination. To do so, IPART will develop a Local Government Cost Index; and
- Tasking IPART to determine special rate variation requests by councils, including variations for essential and community infrastructure;
- As well as the \$20,000 cap, councils will need to limit contributions in their Section 94 plans to essential infrastructure that is necessary for the development to happen, such as land for open space and community facilities, road works and stormwater management.

Premier Kristina Keneally and Minister for Planning Tony Kelly announced the **Comprehensive Housing Supply Strategy** today at Green Square in Sydney's inner-south.

"These reforms are necessary to increase housing affordability and kick start housing construction," Ms Keneally said.

NSW has seen low levels of housing construction starts in recent years, and with Sydney's population anticipated to increase by 1.7 million in 2036, over 25,000 dwellings a year will be required to meet the needs of our growing and ageing population. That's 770,000 dwellings from 2006 to 2036.

In some areas, Section 94 contributions can be up to \$50,000 to \$60,000 a lot - which can make a good project unviable.

Bringing down Section 94 contributions is a way for State Government to bring down costs.

"The changes announced today to local government charges follow the Government's decision to slash the State Infrastructure Charges (SIC) to the current \$11,000 per lot in December 2008," Ms Keneally said.

All council infrastructure plans will be reviewed by IPART, including those within the \$20,000 cap.

Minister for Planning Tony Kelly said the changes would make a dramatic difference to local councils.



"This will provide a more transparent process for rate setting and give councils the ability to fund important local infrastructure," Mr Kelly said.

"Councils have been telling me that their ability to provide local infrastructure has been hampered by their inability to fund it - which is why Section 94 charges have grown so disproportionately high.

"The Government is now delivering on that request."

Councils will need to demonstrate to IPART that they are efficient and that they have managed their finances.

This will mean councils must show they have managed their finances and service delivery appropriately.

Minister for Local Government Barbara Perry said the Integrated Planning process councils undertake with their communities will be essential to demonstrate to IPART their infrastructure plans do reflect the needs and aspirations of the local community.

"The integrated planning and reporting reforms have provided local councils with an historic opportunity to plan for financial sustainability and deliver the services their community want on time and within budget," Ms Perry said.

To assist councils to support and accelerate new housing growth, the Comprehensive Housing Supply Strategy will also deliver:

- \$35 million over two years to accelerate and improve local planning approvals;
- \$8.9 million over two years for the Department of Planning to speed up planning assessment processes in high growth areas and ensure the construction of new well designed vibrant communities close to transport hubs;

Mr Kelly said a new Land and Housing Supply Co-ordination Taskforce will be tasked to ensure new land release and development is done as efficiently as possible.

"This new Taskforce will implement the NSW Government's housing strategy, facilitating the release of land and delivery of infrastructure," he said.

#### **Background notes:**

- The new cap on council-imposed levies will start immediately.
- Existing s 94s will stay as they are - if they have DA approval already, otherwise they will revert to the new system.
- The taskforce will contain independent members and key chief executive officers involved in this Government priority.

#### ***The \$44 million Comprehensive Housing Supply Strategy includes:***

- A Land and Housing Supply Coordination Taskforce chaired independently of government will be charged with implementation of the strategy.
- The taskforce will contain two further independent members and key chief executive officers involved in this Government priority.
- This new taskforce will implement the NSW Government's housing strategy, removing obstructions to the release of land and delivery of infrastructure.
- It will include independent representatives as well as representatives from key Government agencies including Premiers, Treasury, Planning, Transport and Roads, and other agencies as required.
- Sydney Water will accelerate the provision of water infrastructure to selected precincts to deliver the early release of home sites to new residential lots in north west and south west Sydney.



- **\$35 million over two years to accelerate and improve local planning approvals, including:**
  - \$10 million for a Local Environmental Plan (LEP) Acceleration Fund to deliver local plans which provide the ground rules for the assessment of new housing proposals – priority areas will be Sydney, the Lower Hunter and the Illawarra;
  - \$20 million for a Building Approval Advancement Fund will reward councils that exceed their average residential building approvals;
  - \$5 million to fast-track local development contribution plans which will then be assessed by the Independent Pricing and Regulatory Tribunal.
- **\$8.9 million to the Department of Planning over two years including:**
  - \$2 million to review and update both land release sequencing in Sydney's growth centres and the existing criteria used when deciding on government support for major new land release outside the growth centres.
  - \$2.9 million to assist in the delivery of council-wide LEPs, accelerate spot rezonings and review existing planning controls to identify and remove inappropriate housing restrictions;
  - \$2 million to assist high-growth councils process development applications – this is expected to help process approximately 1,000 dwellings a year without compromising the quality of community outcomes;
  - \$2 million to deliver a Transit Orientated State environmental planning policy which will help create new well-designed, vibrant communities around public transport with additional housing and jobs.
- ***New \$20,000 cap on local government infrastructure levies***
  - The NSW Government will make the current \$20,000 threshold a legal cap on all local development contributions and put in place mechanisms to allow councils to fund legitimate infrastructure costs that cannot be recovered under the cap.
  - In the event of any council seeking an increase above that cap, IPART will now review that application.
  - If IPART determines an increase is warranted, the council will then take responsibility for funding the difference, meaning developers will not pay any more than the cap.
  - This will provide consistency for the housing industry, and allow councils to take control for funding the needs of their growing communities.
  - Future ordinary rate increases will also be determined and set by IPART and not the Government under new criteria to be finalised with the Local Government Association (LGA).
  - These measures follow the delivery of some \$179 million in interest-free loans earlier this year to 33 local councils across NSW to build new road and water infrastructure to accelerate housing and employment land supply.



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## ST IVES SHOWGROUND & PRECINCT OPTIONS PAPER & EXPRESSION OF INTEREST

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### EXECUTIVE SUMMARY

<b>PURPOSE OF REPORT:</b>	To seek Council endorsement of the draft Options Paper for the St Ives Showground and Precinct and approval to commence preparation of a draft Plan of Management for the Precinct incorporating the adopted preferred options for the sites.
<b>BACKGROUND:</b>	At the Ordinary Meeting of Council of 1 December 2009, Council resolved to place the draft options for the St Ives Showground and Precinct on public exhibition and call for expressions of interest for the major elements of the precinct that would benefit from public/private partnerships or partnerships with other levels of government. 48 comments were received from local residents and stakeholder groups as part of the consultation and 11 expressions of interest were received.
<b>COMMENTS:</b>	Following the consultation process the major amendment to the exhibited plan is to retain the Ku-ring-gai Mini Wheels Training Club at its current location and to carry out associated environmental management works to regenerate the Duffys Forest vegetation community. The expression of interest supported the direction of the draft plan and it is recommended that a Draft Plan of Management for the site be prepared prior to commencing significant works to the precinct.
<b>RECOMMENDATION:</b>	That Council support the revised option paper for the St Ives Showground and Precinct and that this be used to prepare a draft Plan of Management in consultation with the community and stakeholders and for the approval of the NSW Land and Property Management Authority.



## PURPOSE OF REPORT

To seek Council endorsement of the draft Options Paper for the St Ives Showground and Precinct and approval to commence preparation of a draft Plan of Management for the Precinct incorporating the adopted preferred options for the sites.

## BACKGROUND

At the Ordinary Meeting of Council of 1 December 2009, Council resolved:

- A. *That Council place the draft options for the St Ives Showground and Precinct on public exhibition from December 2009 to mid February 2010, as outlined in the report.*
- B. *That Council seek comment from the NSW Land and Property Management Authority and Department of Environment, Climate Change and Water on the draft options.*
- C. *That Council approve the calling of expressions of interest for the major elements of the precinct that would benefit from public/private partnership or partnerships with other levels of government.*
- D. *For Council to seek recognition of the State Heritage Register or local listing in Schedule 7 of the Ku-ring-gai Planning Scheme Ordinance (KPSO) for those buildings or built elements and their curtilage assessed as having potential state or local cultural significance within the St Ives Showground and the Ku-ring-gai Wildflower Garden.*
- E. *That the draft options plan be incorporated within the development of the Draft Ku-ring-gai Contributions Plan 2009.*
- F. *That the General Manager or his delegates commence discussions with the NSW Land and Property Management Authority and the NSW Department of Environment and Conservation and Water, seeking their formal support for Council to retain access rights over the adjoining Green Waste Tip site.*

This report presents the public response from exhibition and meetings to the draft options paper for the future of the St Ives Showground and precinct (SISGP) and the Expressions of Interest (EoI) called for the major elements of the precinct from public/private partnership or partnerships with other levels of government.

Drawing from this public response, this revised options paper has been prepared for Councillors to consider and endorse, and agree to the preparation of a draft Plan of Management based on these adopted revised options.

Supporting this report are a number of attachments that provide detail as to the direction of the sites in response to the consultation, expression of interest and Councillor input. In summary the attachments include:



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1. Existing Land Management arrangements across the site.
2. Revised Options Plan, SISG & Precinct that provides the detail on one plan as to the configuration and proposed uses.
3. Ku-ring-gai Mini Wheels Training Club detailing the environmental management and rehabilitation of parts of this site that forms part of the new licence agreement with this club.
4. Land and Property Management Authority Position Paper dated February 2010 in relation to the operation of caravan parks and camping grounds in crown reserves.
5. Report results of noise testing related to the trial of the mini wheels enduro event at the Greenwaste tip.
6. Ku-ring-gai Wildflower Garden detailed precinct plan.
7. Ku-ring-gai Council Nursery detailed precinct plan.
8. St Ives Showground Small Arena, mini-wheels and equestrian detailed precinct plan.
9. St Ives Showground Main Arena events and dog training area detailed precinct plan.
10. Greenwaste Tip and Honda Driving Training site detailed precinct plan.
11. Public Exhibition comments on the draft options paper.
12. Confidential report on the analysis of the expressions of interest.

### Options Paper

This options paper was prepared to meet an objective within the 2008-2012 and 2009/2010 Council Management Plans that seeks to identify opportunities to re-use sites in the precinct for recreation.

This report includes a number of sites in the St Ives Showground Precinct, most notably:

- Ku-ring-gai Wildflower Garden (KWG);
- Council Nursery Site;
- St Ives Showground (SISG);
- Honda Driver Training Facility (HART) and
- the disused greenwaste tree tip site.

All parts of the precinct are zoned 6a Recreation (existing), other than the driver training facility which is zoned 5 (a1) Special Uses, and the tree tip site which is zoned 5 (a) Municipal Purposes under the Ku-ring-gai Planning Scheme Ordinance.

All of the St Ives Showground and precinct are owned by the Crown. (**Attachment 1**) and identifies the areas in question and shows the mixture of reserve trusts, permissive occupancies, licences, leases and unassigned land.

### Expression of Interest

Part of Council's resolution in December 2009 was that Council call for expressions of interest (EOI) for the major elements of the precinct that would benefit from public/private partnership or partnerships with other levels of government.

A major purpose of the EOI was to confirm that proponents do exist who may wish to finance, construct and operate some of the major components identified in the draft Options Paper.



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The EOI has demonstrated that realistic opportunities exist to have existing facilities embellished and new facilities created within the framework of the draft options exhibited to the community, in particular at the existing Council Nursery site.

The EOI Assessment Panel Report is included as **Confidential Attachment 12**.

**Crown Land Management**

The NSW Land and Property Management Authority (LPMA) is responsible for the sustainable and commercial management of Crown land. A 2003 external review of Crown land management identified reforms to streamline land administration, simplifying processes, and to achieve a fair and reasonable return on the Crown land assets of the State. This review also led to the strategy on sustainable land management that seeks to balance conservation and biodiversity outcomes with the social and economic needs of the community.

The government notification or dedication of a reserve sets out the purposes for which that reserve may be used. Generally, a reserve's use can only be consistent with or supporting the purposes stated in the reservation or dedication. However, the *Crown Lands Regulation 2006* lists various additional purposes for which reserves can be used under temporary licences. Where possible, multiple uses of reserves are encouraged, where those uses are consistent with the purpose of the reserve. Changes in circumstances or in a community's needs may require a change in the way in which a reserve is used.

A change in the stated purpose of the reserve may need the existing reservation or dedication to be replaced with a new reservation or dedication. This process will usually require consultation with the local community. Discussions with the LPMA should cover the appropriate means and scale of public consultation and whether land assessment will be needed. Under the changes introduced by the 2005 amendments to the *Crown Lands Act 1989*, a reserve may be authorised to be used for a purpose which is additional to the purpose for which the land was reserved or dedicated, if the new purpose is generally compatible with the existing purpose, consistent with the principles of Crown land management and in the public interest.

Additional uses of Crown reserves can be authorised by a plan of management or by order of the Minister. In both cases, the Minister for Lands will consult with the reserve trust managing the reserve and with any other Minister who has an interest in the reserve. A reserve trust, or Crown Lands Act trust, is the legal body which enables the temporary ownership of reserved or dedicated Crown land so it can be managed by the trust on behalf of the public. A trust can only make decisions and take actions concerning the reserve in the interests of the reserve itself, and the public.

The reserve trust is set up under the *Crown Lands Act 1989* (the Act) to have responsibility for the care, control and management of a Crown reserve. While a reserve trust is a legal entity in its own right, it cannot operate without having someone appointed to manage its affairs. A reserve trust can be managed by an incorporated body, though this is usually a local council.

A reserve trust can now also be managed by more than one manager, with the different management responsibilities being determined on either a geographical or functional basis. This will provide increased flexibility in establishing the most appropriate management structure for reserves, particularly where a number of different uses are located on the reserve. A reserve trust



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manager must not receive any personal benefit from fulfilling their role as manager or through their dealings with the trust property.

When a council or a corporation is appointed as manager, decisions regarding the operation of the reserve must be made in accordance with the rules which govern the council's operations or the corporation's own constitution, as applicable, as well as the *Crown Lands Act 1989*. As reserve trust manager, a council has all the functions of a council under the *Local Government Act 1993* in relation to public reserves. However the council has no power to classify the Crown reserve under the Local government Act. Consequently the plan of management affecting Crown reserves is made under the *Crown Lands Act 1989*, not the *Local Government Act 1993*.

Local councils as reserve trust managers can be authorised by the Minister for Lands to grant leases, licences and related easements over the Crown reserves they manage in certain circumstances (as defined by the Minister for Lands) without the need to obtain the Minister for Lands' consent.

In making the decision to grant this power, the Minister for Lands can take into account the council's performance in managing public land, and may request information on this performance from the Minister for Local Government. This authority does not apply to agreements longer than 21 years which will still require the Minister for Lands' consent.

The provision enables councils, where it is warranted and appropriate, to have similar levels of autonomy and accountability over Crown land as they have under the community land provisions of the *Local Government Act 1993*.

LPMA has advised Council by letter of 21 August 2009 that they want the St Ives Showground and Precinct reserves amalgamated under the draft Plan of Management for the Precinct.

*"Two reserves marked 752017 for future public requirements, the closed Crown road (R752017) and Reserve 752038 (South of Mona vale road) for Future Public Requirements are not under trust management. The DPoM (Draft Plan of Management) should investigate appropriate reservation and tenure of these lands.*

*Management planning should consider the amalgamation of all existing reserves and move towards trust management of the Honda Site. This among other things means proceeds can be allocated across the whole precinct under s 106 of the CLA 98. This can be discussed in the DPoM "*

LPMA has also advised Council by letter dated 4 May 2010 regarding the Greenwaste tip site permissive occupancy 1972/66

*"It is appropriate that Council retains the Permissive Occupancy until such time as the site is benign and poses no further risk to the environment."*

To date the LPMA supports Council's role in the preparation of a draft plan of management and has participated in the exhibition and consultation process for the draft options paper.

Council placed the draft options for the St Ives Showground and Precinct on public exhibition from December 2009 to 1st March 2010 in accordance with the resolution using:



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- information displays at libraries, Council Chambers, St Ives Shopping Centre, and Crown Lands Office and the Showground;
- Council website and local paper advertising including Mayoral Column; and
- written invitation to comment to all involved in the project to date.

Council also held a community presentation at St Ives Showground on Wednesday 17 February 2010 after inviting 946 residents and stakeholders by mail and placing a notice in the North Shore Times and on Council's website.

The responses from the public exhibition are discussed in the comments section of this report.

## COMMENTS

### *Options Paper*

In arriving at the revised options presented in **Attachment 2** consideration was given to a range of statutory requirements, demands and expectations (current and future), site layout and configuration, heritage and environmental values of the site, traffic and circulation, community consultation feedback and other issues. A discussion on some of the key themes is presented below as they have provided context and support for the revised options.

### Environmental Considerations

The major environmental consideration has been the presence of the Duffy's Forest Ecological Community on parts of the site. This has been identified as part of Council's vegetation mapping project that commenced in 2008. This ecological community has a very restricted distribution being found primarily on relatively deep residual lateritic soils on ridges and plateaus overlying Hawkesbury Sandstone. The associated soils are slightly more fertile and have higher clay content than normal Hawkesbury Sandstone ridge top soils. This laterite soil is now uncommon and should be preserved wherever possible.

The recognised core areas of the Duffy's Forest Ecological Community on the site have been identified for its long term survival. The primary purpose of these core areas will be for conservation. It is envisaged access would be restricted within these core areas to controlled and defined tracks as part of ordinary use, and particular care would be necessary during recovery periods after fire.

In response the revised options plan proposes to:

- Provide physical protection for Duffy's Forest Ecological Community and other existing natural vegetation on the St Ives Showground lands from encroachment, vehicles and compaction, nutrients, weeds and rubbish, except in the Ku-ring-gai Mini-Wheels Training Club (KMWTC) area which has been damaged over a long period of time. A separate plan '*Regeneration, drainage and silt management (10 Sept 2009) and Review of Environmental Factors*' has been prepared to guide the use of the area licensed to KMTWC. (**Attachment 3**)
- Improve habitat and actively encourage regeneration.
- Manage run-off and associated erosion within the catchment.
- Engage regular users in actively supporting environment and conservation activities for their area or precinct.



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- Assess existing vegetation and prioritise tree management and needs in terms of hazard abatement and asset protection zones.
- Use educational opportunities to build the value placed on the natural and built heritage of the precinct by regular and casual users.
- Recognise the active recreation role of the St Ives Showground lands and the likelihood that formal and informal use will increase as the population of Ku-ring-gai and Sydney increases.

The *Threatened Species Conservation Act 1995* and Regulations require Council to implement the Duffy's Forest Ecological Community Recovery Plan. Actions include:

- Develop a community education, awareness and involvement strategy to inform the community of the conservation requirements and threats affecting this endangered ecological community (EEC).
- Co-ordinate recovery program.
- Update and maintain fire management guidelines.
- Develop Best Practice Management Guidelines for Duffys Forest Ecological Community remnants.
- Prepare and implement a plan of management on public land.
- Assess and manage the impacts of horse riding and mountain bike activities (this would also extend to Ku-ring-gai Mini Wheels Training Club).
- Incorporate outcomes from research into preparation and implementation of Best Practice Management Guidelines.
- Prioritise, cost and implement threat management and ecological restoration works.
- Establish and implement a threat management monitoring program.

The recovery plan management strategies for all areas containing Duffy's Forest Ecological Community will also maintain and improve habitat to assist the retention of identified threatened bird and animal species including the Red-crowned Toadlet, Grey-headed Flying Fox, Heath Monitor, Powerful Owl, Southern Brown Bandicoot and Glossy Black Cockatoo. A comprehensive list of species will be prepared for inclusion in the draft PoM.

### Traffic and transport

As a consequence of increasing population growth and demographic change, locally and regionally, the draft options will expand the diversity of activities across the sites. This will lead to an increase in user numbers and associated traffic and transport requirements. To operate efficiently, sustainably and safely, an increased demand for public transport will require negotiation on existing bus routes (Forest Coach Lines) for bus services to service bus shelters outside the Nursery/Green Waste Tip site and the Showground/HART site.

It is also recommended that the existing Mona Vale Road speed limit of 90km/hr be discussed with RTA to consider reduction to 70km/hr through the precinct from the Local Government Area (LGA) boundary, a distance of 1,200 metres. This will add approximately 15 seconds to the trip for the average car user and importantly ensure safer road crossing for pedestrians, cyclists and vehicles.

The Roads and Traffic Authority (RTA) has been approached to consider the installation of signalised traffic lights for pedestrian and vehicle crossing and have indicated they favour use at two key locations – entry/exit to Showground and HART and entry/exit to Richmond Avenue and the Ku-ring-gai Wildflower Garden, St Ives. The need for traffic lights was previously identified in the



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adopted St Ives Showground Plan of Management. The traffic lights would only be supported by the RTA if the increased use meets the warrants required by the RTA. Costs would be borne by Council.

A separate cycle track suitable for use by all cyclists, including children, is proposed along the southern boundary of Mona Vale Road along the existing cleared power easement within the road reserve. This would connect from Richmond Road to the traffic lights at the Showground/HART site to enable safer cycle crossings between St Ives and the Showground precinct. Road cycling would still be available to experienced riders as currently exists.

An internal sealed cycling circuit road has been amended from the previous proposal to connect the precinct internally from the nursery site to the showground. Drainage from this road will be managed and treated to minimise inputs to local waterways. The cycle track on the northern side of Mona Vale Road is approximately 3km long, none of which is in Ku-ring-gai Wildflower Garden. In the longer term, construction of a crossing tunnel under the road between the Showground at the HART site for pedestrian and cyclist use as proposed in the draft Options Paper has been generally supported. Combined with the HART road, using a tunnel under Mona Vale Road, the combined distance of cycling tracks would be approximately 4.5km.

Walking track links will be retained to and through the St Ives Showground precinct. This includes walking tracks to Ku-ring-gai Chase National Park, Warringah Shire, Harbour to Hawkesbury Walk, St Ives Chase, Garigal National Park, St Ives South, Cascades, Belrose, and Middle Harbour. Should traffic lights be installed on Mona Vale Road, the existing Harbour to Hawkesbury walking track could be re-routed from traversing suburban roads in St Ives to wholly within bushland and along the shared cycle path to the Showground.

## Heritage

### *Aboriginal Heritage*

A review by the Aboriginal Heritage Office (AHO) and other reports has not identified any Aboriginal heritage items within the St Ives Showground and precinct (Aboriginal Sites Management and the Aboriginal Potential Areas Reports). The reports were written with the knowledge of all recorded site data from the Department of Environment, Climate Change and Water. It should be noted, however, that not all areas of Ku-ring-gai Council have been subject to systematic survey and unrecorded sites certainly would exist. Any proposed works within the precinct will consider potential sites and areas as part of any approvals for development, in liaison with the AHO.

To further investigate Aboriginal site heritage, and establish if there is a need for a comprehensive study, a preliminary site investigation has been organised through the AHO in liaison with the Metropolitan Local Aboriginal Land Council (MLALC) with assistance from Council staff for fieldwork. This work is scheduled to commence on Thursday 17 June 2010 and the findings will be integrated into the draft PoM and any future Development Applications for the site.

### *Non-Aboriginal Heritage*

At the Ordinary Meeting of Council held on 1 December 2009, Council resolved to seek recognition of the State Heritage Register or local listing in Schedule 7 of the Ku-ring-gai Planning Scheme Ordinance (KPSO) for those buildings or built elements and their curtilage assessed as having potential state or local cultural significance within the St Ives Showground and the Ku-ring-gai Wildflower Garden.



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These include:

1. Army Relief Map
2. Bar Building (Army Era Regimental Aid Post)
3. Canteen
4. Agricultural Show Office
5. Dog Shed B (Army Era Amenities Building)
6. Horse Superintendent's Office
7. Sewer Treatment Facility
8. Concrete Slab 1
9. Concrete Slab 2
10. Concrete Slab (west horse wash)
11. Concrete Slab (east horse wash)
12. Grandstand – south
13. Grandstand – east
14. Broadcast Box
15. Stables
16. Sullage Treatment Tank
17. Ku-ring-gai Wildflower Garden Pavilion

Council has commissioned curtilage identification for these items and also a statement of significance for the Ku-ring-gai Wildflower Pavilion. A copy of this heritage report is expected in the near future and will be incorporated into the draft PoM. The final heritage report will be used to list items on the State Heritage Register, or locally in Schedule 7 of the Ku-ring-gai Planning Scheme Ordinance. This heritage report information will be referred to the Heritage Reference Committee (HRC) for comment though noting that this Committee provided a submission as per **Attachment 11** item number 48).

Heritage listing will assist interpretation, conservation and funding from the Capital Works Program and potential grants. The draft plan has identified the conservation and re-use of the buildings including:

- the Bar Building is proposed to be used for a local site museum and interpretive display;
- the Canteen will be used as a visitor information centre and site office;
- the Agricultural Show office will be retained for Northern Suburbs Agricultural & Horticultural Society show use;
- Dog Shed B will be retained in its current use;
- the Horse Superintendent's Office will be available for community use.
- The sullage building will be interpreted as an item of interest.
- The Ku-ring-gai Wildflower Garden Pavilion will remain in public use and its listing will inform future use and much needed conservation.

Other identified items will be retained, conserved and interpreted as part of a heritage walk for the precinct, including two farm dams (shown on the plans) which are relics of past market gardens uses.

**Crown Land**

Part of the draft option consideration was to amalgamate various existing Crown Reserves into larger units. The benefits of this approach include:



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- Reserve land can be assessed and managed in a holistic way, in consultation with the community, rather than in isolation.
- The use and management of the St Ives Showground and Precinct supports public requirements, and increases capacity to direct resources where they are needed most.
- The land can be managed responsibly for the environmental, social and economic needs of our community.
- Changing needs for recreation and community facilities caused by expanding population can be accommodated while preserving natural and culturally significant areas.
- The precinct land will be available for the enjoyment of both the existing community and visitors to the area, enabling improved multiple uses and maximising public access and elevating public awareness of the area.
- Administration of Reserve Trust funding and income requirements, leases and licences, can be improved and has the potential for creating efficient management of the Precinct between Land and Property Management Authority and Council.
- Amending trust gazettal conditions where they are made under superseded Acts and inconsistent with current legislation, to be relevant and consistent.

The NSW Land and Property Management Authority has also raised the need to consider opportunities for income generation and funding self sufficiency as part of the site planning and future draft Plan of Management. It is expected that such initiatives would need to have joint benefit to the Authority and Council.

Advice has been requested from DECCW to formalise access provisions for Council and users using the existing fire trail over adjoining Garigal National Park to the current greenwaste tip site.

### Camping

Caravan parks and camping grounds which are advertised and used for general public caravan and camping are subject to approval under the *Local Government Act 1993*, and must be in compliance with the *Local Government (Manufactured Home Estates, Caravan Parks, and Camping Grounds and Moveable Dwellings) Regulation 2005*. Development consent is required and an approval to operate must be consistent with the Regulation. Crown Lands consent is required for the development and concurrence for the approval to operate, as well as a business plan to demonstrate the facility viability and that it can generate enough funds to operate at a profit, hence contributing funds back for Showground maintenance. None of this has been undertaken for the SISG and Precinct.

Presently the permissibility of camping in the precinct is in question as it is not identified in the existing Trustee agreement or the adopted or any previous Plans of Management. It is commonly believed camping can be permitted as a licensed activity for the purpose of supporting agricultural and other shows at the site, but further advice and approvals must be obtained from LPMA before this activity can be included in the draft Plan of Management. **Attachment 4** from Land and Property Management Authority, Crown Land Division, Position Paper February 2010 entitled *The Use of Crown Reserves for Operating Caravan Parks and Camping Grounds* states approval must be obtained for:

*"All facilities on Crown land advertised for public tourist accommodation, including showgrounds"*



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The Paper also advises:

***Position***

*i) Approval to Operate*

*The approval to operate a caravan park and/or a camping ground in NSW (either on Crown land or freehold land) is required under:*

*Section 68 of the Local Government Act 1993 (LG Act), in compliance with the relevant provisions of*

*the Local Government (Manufactured Home Estates, Caravan Parks, Camping Grounds and Moveable Dwellings) Regulation 2005.*

*ii) Approval to Develop*

*State Environmental Planning Policy No. 21 – Caravan Parks (SEPP 21) requires that “development for the purposes of a caravan park may be carried out only with the development consent of the [local government] council”. Note that the definition of ‘caravan park’ includes a camping ground.*

*However, if a caravan or camping ground is prohibited under another plan, for example, a council’s local environmental plan, SEPP 21 does not change that position.*

*Also, the establishment of a new caravan park or camping ground on Crown land requires the Authority’s consent (land owners consent) which is subsequently submitted with the development application.*

*The local Council is the consent authority for development under SEPP 21 and for an approval to operate.*

Camping is prohibited without development consent under the KPSO in a 6a zoning, and this has not been obtained at any stage during the operations of the Showground site. Currently camping at the SISGP is in question.

This issue of existing and proposed camping in the precinct will be further investigated as part of the draft PoM. In this regard it is suggested that flexibility for camping across various parts of the site be incorporated to enable event specific events such as within the KWG and Greenwaste Tip.

**Ku-ring-gai Mini-wheels Training Club (KMWTC) Test event at greenwaste tip site**

The exhibited draft options paper for the precinct included the relocation of the KMWTC from its existing location at the St Ives Showground to the greenwaste tip site.

On Sunday 18 April 2010 Council’s Environmental Health Officer’s conducted detailed noise testing of a Ku-ring-gai Mini Wheels Training Club (KMWTC) enduro test event held at the greenwaste tip site. The test event was organised by the club and approved by Council and the LPMA.

The purpose of the test event was twofold:

a) to test the suitability of the site for the club to potentially relocate some or all of its activities (which take place on about 30 days per year) from its current location at the St Ives Showground; and



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b) to conduct noise testing throughout the day to measure the noise created by the motorbikes from the residences in St Ives on the ridge directly across the valley from the greenwaste tip.

The detailed report with the results of the noise testing is included as **Attachment 5**.

Following the exhibition period and the test event it is the recommendation of Council staff that the proposed relocation of the club to the greenwaste tip site not proceed and that the club remains at its existing location within the St Ives Showground.

Relocating this club was not supported by the community consultation process because of noise impacts on the area surrounding the tip site, particularly residents living along the adjoining ridge in St Ives.

During the public exhibition period Council received 15 letters of objection to the proposed KMWTC relocation to the greenwaste tip site, all based on noise impacts. Following the test event on 18 April 2010 a further (two) 2 letters of objection were received complaining about the noise emanating from the tip site during the event.

With the recommendation for KMWTC to remain at their current location, Council staff will continue negotiations (which commenced late 2009) for a new licence with the club which includes more stringent controls on the club's use of the site, such as site rehabilitation to control run-off and erosion. Where remaining areas of endangered Duffys Forest in the Mini-Wheels area is in good condition, it will be rehabilitated and regenerated under Recovery Plan principles. The area will be further assessed when any lease is renegotiated in the future.

### **Expression of Interest**

Part of Council's resolution in December 2009 was that Council call for expressions of interest (Eol) for the major elements of the precinct that would benefit from public/private partnership or partnerships with other levels of government.

The Eol sought responses from the private and not-for-profit sectors as to their interest in helping Council realise one or more of these facilities. Following Council adoption of the options paper Council and the NSW LPMA will prepare a new draft Plan of Management for the St Ives Showground and Precinct in consultation with the community. Once approved, the Plan of Management will then pave the way for Council to call for formal tenders for the delivery of any facilities authorised by the Plan of Management.

The Eol is not the catalyst to progress immediately to tender for any of the nominated options. The assessment panel's role was to assess the responses based upon the criteria of the EOI.

A total of eleven (11) submissions were received by the closing date and two late submissions were also received. Late submissions were not considered. The Eol Assessment Panel Report is included as **Confidential Attachment 12**. This attachment is classified confidential under section 10A(2)(d) because it deals with information in relation to commercial propositions that, if released, may result in a disadvantage to both Council and the persons concerned. It is not in the public interest to reveal the details behind the expressions of interest as some of these submissions contain financial and leasing propositions that need to remain confidential at this point in time.



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A major purpose of the EOI was to confirm that proponents do exist who may wish to finance, construct and operate some of the major components identified in the draft Options Paper.

The EOI has demonstrated that realistic opportunities exist to have existing facilities embellished new facilities created within the framework of the draft options exhibited to the community, in particular at the existing Council Nursery site.

A full description of the submissions received by the closing date is included in the EOI assessment report attached to this report. A brief summary of submissions received is outlined below.

**AFL NSW/ACT**

Outlines the growth of the sport within Ku-ring-gai and seeking access to the main arena along with a willingness to contribute towards any future capital works that Council proposes.

**Aboriginal Heritage Office (AHO)**

Supports the concept of having an Indigenous Heritage Centre at St Ives including administrative, educational activities and a Museum along with Bush Tucker/ Aboriginal Site Walks and a Café & Gift Shop. This is consistent with the recommendations for this site.

**Australian Plants Society**

Seeking Council to preserve the Wildflower Gardens and seeks funding from Council to develop programs, displays and information.

**Basketball NSW & The International Facilities Management Group**

An offer to lend their experience to the design, development, construction and the ultimate management of a four court indoor facility on behalf of Council. However, they have not demonstrated an interest or ability to build or finance a facility.

**Cricket NSW**

Stating that their strategic objectives include the funding for and design of, on and off field facilities in co-operation with local government and compatible co-users.

**Greenfields Sports Turf Systems**

A turf supply company seeking involvement in the building of facilities.

**Ku-ring-gai Netball Association**

Seeking to manage or co-manage a facility of six indoor courts. The association would make an upfront contribution towards capital costs as well as ongoing contributions based on the level of availability of the courts and security of tenure. A long term tenure is sought.

**North Sydney Sports Academy**

This is a consortium of NSW Hockey, NSW basketball and NSW Netball. The primary facilities include:

- One wet-turf Hockey field
- One multi-use turf field
- One specialist basketball court
- One specialist netball court
- Three multi use indoor courts.



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This submission requires a component of government funding for the capital cost of the project.

**Salt Group**

A construction company seeking appointment to build facilities.

**St Ives Sports Club P/L**

A private organisation focussing on the development of a "world class" multi-sports facility including:

- Gymnasium
- Licensed Café
- Professional rooms for physiotherapy and massage
- 4 court indoor sports centre for basketball/netball ect
- 4 synthetic grass futsal/handball/cricket courts
- 25 metre four lane indoor/outdoor swimming pool
- 12 "Hydro court" clay tennis courts
- 2 Plexicushion acrylic tennis courts
- 1 synthetic grass hockey/football field lit to Australian Hockey Standards
- Parking for over 200 Cars

The proponent is offering the fund the whole facility and seeks a long term lease.

The provision of tennis courts on the Nursery site was not a nominated use in the draft Options Paper and although this proposal would see one synthetic field rather than two being constructed the proposal is consistent with the use of Crown Lands.

**Team Sports 5**

A private venture proposing to fund a full size flood lit artificial grass field, 12 small floodlit artificial grass multi-purpose training courts and an amenities building. Seeking a long term lease of the land.

**The Precincts**

The following provides a description of the preferred draft options for each of the precincts. The plans have been revised to show the preferred options.

**Ku-ring-gai Wildflower Garden (KWG) Precinct (Attachment 6)**

1. The Crown Land Reserve boundaries (R68222 Public Recreation, R86262 Promotion of the study and the preservation of native flora and fauna, R752017 Future Public Requirements) will be consolidated into a single reserve trust.  
At the request of the NSW Land and Property Management Authority the gazetted Rules and Regulations of 08/03/1968 for the management of R86262 under the *Public Trusts Act 1897* will be updated to be consistent with the *Crown Lands Act 1989* and subsequent Regulations.
2. As Part of this boundary consolidation, a small portion (approx 8,000m<sup>2</sup>) of the Existing Nursery Site (R81542 Reserve from sale for Recreation and Plantation) will be incorporated into the KWG.



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3. The Closed Crown Road will be incorporated into the KWG as a buffer to the adjoining Existing Nursery Site.
4. Investigation for control of dogs entering the KWG will be undertaken to exclude dogs but allow access for hikers and cyclists through the KWG from adjoining St Ives Showground and National Parks link tracks (such as Harbour to Hawkesbury Walk).
5. The existing 2.23km Solander Trail bitumen roadway around the KWG is proposed to be retained in its current condition, and disturbed bushland and runoff creating weed plumes and erosion along the existing road corridor will be ameliorated by a program of gradual improvements as funds permit.
6. The bitumen roadway will be continued through the high voltage transmission easement where the car parks, currently gravel, will be formalised and impacts reduced on adjoining bushland, to link with the adjoining Nursery site and the Showground. This will allow a second entry and exit point to the KWG and showground from Mona Vale Road.
7. The remaining walking tracks will be retained and upgraded as required to be excellent examples of best environmental practice and to be consistent with Australian Walking Track Standards. Tracks and their links will be clearly signposted and interpreted. "No Dog" prohibition will be enforced. Mountain bike use will be restricted to existing suitable fire trails only.
8. The small retail section of Council's Community Nursery will be relocated to the KWG and sited adjacent to the existing Australian Plant Society (APS) greenhouse, together with a bush foods garden, where the promotion of the study and the preservation of native flora and fauna educational activities can be mutually supported. This would include an office space for the APS, the retail nursery function and the AHO bush foods education programs all within a fenced enclosure with available parking.
9. The existing house (currently used as an office) will be extended to provide a purpose built Ku-ring-gai Environmental Education and Cultural Centre containing theatre and lecture/meeting room, Aboriginal and heritage interpretive displays, exhibitions, visitor services, staff services and administration offices for management of the whole Showground precinct and education rooms, storage, kitchen/kiosk and amenities, all within the existing secure compound area.
10. The Centre will be a demonstration of a 6 Green Star Sustainable Building that maximises light, roof-mounted solar panels, natural ventilation, grey-water recycling, and composting, including an organic garden and fauna program areas. There is parking for 57 cars.
11. The existing pavilion (with some minor repair and sensitive upgrading work) will be Heritage Listed as a Significant 1960s Sydney School (Architect John Daubney) pavilion. It will cater for multi-purpose use as an environmental education and events centre, for themed Eco functions, community use, local history displays and provide a bush foods café/kiosk.
12. A new education annexe building for multi-purpose and community use will be built on the adjacent existing cleared car park land and also be a demonstration sustainable building. To be sympathetic to the existing pavilion it is proposed the architect of the pavilion building be approached to prepare concept plans and set contextual guidelines for design and construction.
13. Lamberts Clearing will be upgraded to cater for greater use through the provision of power, improved group picnic facilities, and improved playground facilities.
14. Picnic facilities generally in the KWG will be added to existing cleared areas to cater for increased demand and the surrounding vegetation will be protected similar to Lamberts Clearing.
15. Locations of rare plants have been identified and these areas will be protected from damage and impacts. Location of these species is confidential to ensure their protection.



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This area of Crown Reserve (R81542) is under Council's care control and management for Recreation and Plantation. It is distant from adjoining residential neighbours but easily accessible from Mona Vale Road. The site was previously used as a market garden, and then Council depot with materials recycling and storage area, and now council nursery

1. It is proposed to construct two full sized synthetic playing fields, one field available for all-weather use and one field available for all-weather hockey use. Currently there are no fields available for all-weather use, in the Ku-ring-gai local government area (LGA), despite demand for these facilities from local football and hockey clubs. The synthetic field could also be used for sports such as tennis and netball, and cross training for a wide range of activities.
2. These fields will be lit for night-use purposes. There are 58 parking spaces dedicated to the fields with a link road to overflow parking for 57 cars in the existing cleared area under the transmission lines at the adjoining Ku-ring-gai Wildflower Garden.
3. The fields will be set back from the existing site boundary with a managed buffer zone to prevent any environmental impacts to the adjoining KWG land. The fields will be used to treat and collect run-off water for re-use. The fields will act as an asset protection zone in the event of bushfires.
4. The closed Crown Road will be incorporated into the KWG as a buffer zone between KWG and the Nursery site.
5. The northern boundary of the site will be realigned to incorporate the existing walking track/fire trail and head of Tree Fern Gully Creek and associated important habitat into the KWG.
6. It is proposed to construct an indoor sports centre with four (4) timber floor multi-purpose courts, gymnasium, amenities and kiosk. This site can also accommodate expansion for an additional two (2) timber floor multi-purpose courts should demand require it. There is no indoor sports centre for Ku-ring-gai residents in the LGA, and a demand has been recognised for this facility in recent studies undertaken by Council.
7. By using the existing slope of the land, the indoor sports centre can provide up to 142 parking spaces beneath it but be accessible. This would be incorporated into the detailed design of the facility and would be similar in scale to the centre at the Brick Pit at Thornleigh.
8. An internal roadway is proposed through areas of non-threatened species or weedy bushland to connect the Nursery site, Ku-ring-gai Wildflower Garden (KWG) and St Ives Showground. This road will be shared use for circulation within the precinct and managed specifically during major events for site parking.

**Small Arena, Mini-Wheels and Equestrian Precinct (Attachment 8)**

1. The Ku-ring-gai Mini-wheels Training Club will remain on the Duffy's Forest Ecological Community (DFEC) area at the Showground and A separate plan '*Regeneration, drainage and silt management (10 Sept 2009) and Review of Environmental Factors*' has been prepared to guide the use of the area licensed to KMTWC. Restrictions to use will be rigorously enforced under the terms of their licence. The Ku-ring-gai Mini Wheels site is currently being rehabilitated to control run-off and erosion. Relocating this club was not supported by the community consultation process because of noise impacts on the area surrounding the tip site, particularly residents on the adjoining ridge in St Ives. Where



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remaining areas of DFEC in the Mini-wheels lease area are in good condition, they will be rehabilitated and regenerated under Recovery Plan principles. The area will be further assessed when any lease is renegotiated in the future.

2. The proposal to formalise camping in the mini-wheels area is not possible without their relocation. As there is considerable doubt as to the approval and legality for camping at the showground (**Attachment 4**), camping will be suspended at the site for other than small hike tents associated with the Harbour to Hawkesbury Walk. The current unstructured approach to camping using a RV, large tent or caravan is negatively impacting upon the environment, availability and use of the Showground, and contributing little to the costs of operation and maintenance.
3. There will be provision of 8 sustainable small hiking tent camping platforms and basic shelter for overnight Harbour to Hawkesbury walking track accommodation, with access to facilities at the Grandstand. Fires will not be permitted and principles of Eco camping with no-impact will be enforced.
4. The existing Ku-ring-gai Model Flying Club arena will be shared with an area for temporary stage or screen events such as concerts and/or outdoor cinema. The Ku-ring-gai Model Flying Club need level grass landing strips in good condition to operate safely, so regular communication as well as co-ordinated scheduling and restrictions for hiring will be negotiated between hirers, Council and Ku-ring-gai Model Flying Club. The maintenance of the area after events will directly link back to hiring costs and bonds to ensure good grass cover.
5. The existing Ku-ring-gai Model Flying Club building will be supplemented with additional storage space and consideration for toilets, in character with its existing fabric, should funds permit.
6. A proposal has been received during the community consultation process for an adventure ropes course to be accommodated in the precinct. This activity especially caters for school groups from 10 – 17 years and will be busy during weekly school hours. The operators require a cabin, access to a training area the size of a tennis court and zip lines between trees. The environmental impact of this activity is advised as low. It is proposed to consider this activity located on the degraded Council materials stockpile area, enabling the bushland which is not Duffy's Forest to be used down the hillside facing the nursery site. Further research will be undertaken prior to inclusion of this activity, but LPMA supports this activity and advised the proponent to contact Council. This would provide a much needed youth recreation focus, as well as catering for all age groups. The adjacent car parking will be formalised (37 spaces) with run-off impacts managed. Edge impacts on the Duffy's Forest Ecological Community will be controlled.
7. Existing picnic areas will be enhanced with additional shelters, and random parking spaces will be formalised to reduce bushland encroachment and damage. Road edges will be managed and controlled to reduce and prevent run-off and erosion.
8. Northside Riding Club use of Princess Anne Equestrian area remains and the arena will be improved by irrigation and drainage and control of nutrient and run-off impacts on adjoining bushland. The fenced edges of Duffy's Forest Ecological Community will be continued where access control is needed.
9. The existing dressage area will be reconfigured to the correct dimensions (60m x 20m) and the edge spaces retained as warm up areas. A proposal to roof the arena, to be funded by the riding clubs, will require a heritage impact assessment to be undertaken to consider the impact of such a large structure on the heritage character and context of the site.
10. The heritage Horse Superintendent's Office will be restored and made available for community use. The stable building and horse wash areas will also be retained.



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11. The existing sediment basin will be cleaned out and maintained to reduce run-off impacts into bushland. A track will generate from this area running around the perimeter of the mini-wheels site and out to the lookout and views, and link to the Nursery and KWG sites.
12. Camping is removed from this area thereby reducing potential conflict between campers and horses and enabling additional areas to be available for equine float and trailer parking in a more controlled manner. Formalising parking for floats and trailers will be further investigated in liaison with the riding clubs.
13. Camping is also removed from the area adjacent to Picnic Area 6 (playground and junior cycle track) and two large group picnic shelters installed to cater for larger picnic groups. These areas will be available for hire.
14. Agreed areas will be set aside for hitching horses to designated posts. Unwanted compaction directly under trees will be remediated and these areas removed from continual use. Management practices will be implemented for manure and waste substances which will be composted for horticultural use off site.
15. The main arena will continue to be used for equestrian and show events similar to current bookings.

**Main Arena, Show and Pavilions and Dog Club Precinct (Attachment 9)**

1. The Jim Watson Arena (Main Arena) is remediated to eliminate the trotting track to expand the area available for use and the surface will be improved with irrigation from recycled water and drainage.
2. The Main Arena has a long history of multi purpose use such as sports, show events, equestrian events, dog off-leash area and other one-off events permitted by Council, which will continue. The provision of water supply will enable better grass recovery, previously not available. Existing field lighting will be improved to meet relevant Australian Standards.
3. The existing grandstand will be improved and extended within its existing clearing, with sustainable design features and amenities/change rooms to better address the arena and provide covered viewing of events. Roof water will be collected and recycled.
4. The Louise Lennon Pavilion will be extended to provide two flexible spaces. A Men's Shed will be constructed adjacent to the Douglas Pickering Pavilion for which Development Application (DA) approval has been given. The draft PoM will include 'community use' at the Showground site as requested by the LPMA in its letter supporting the DA approval. All buildings will incorporate sustainable principles such as water recycling tanks which will also serve to collect uncontrolled run-off which would otherwise cause significant erosion. A dedicated hydrant for fire control purposes should be located in this area, and water tanks fitted with appropriate fire fighting (Storz) connections.
5. A 6m wide perimeter road for shared use will be routed behind the existing pavilion buildings through the existing degraded areas of Duffy's Forest Ecological Community. This road will act as a boundary control edge to contain encroachment and run-off, as well as creating a bushfire asset protection zone for pavilion buildings. Should this road be connected by a tunnel under Mona Vale Road, the existing road that bisects the Dog Rings will be closed to through traffic and fenced at the end to prevent dogs escaping into the road.
6. Existing male and female toilet blocks will be renovated to sustainable and aesthetically improved standards and access upgraded.
7. Existing picnic areas will be enhanced with shelters in a range of sizes and seating will be scattered in positions under shade trees.



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8. Random parking spaces will be formalised to reduce compaction under existing trees, bushland encroachment and damage. Road edges will be managed and controlled to reduce and prevent run-off and erosion.
9. The Dog Rings and the Northern Suburbs Dog Training Club area will be retained and nutrient and run-off impacts on adjoining bushland remediated. The fenced edges to the Duffys Forest Ecological Community will be continued where access control is needed.
10. The existing Canteen building will be conserved and extended to provide a centralised accessible Visitor Services office. Site Rangers will provide visitor information services, seasonal site information, and administer events, regulatory duties and after hours security control.
11. The existing Northern Suburbs Agricultural and Horticultural Society Inc (NSAHS) show building will be conserved and retained for show purposes.
12. The existing degraded Flagpole area will be relocated adjacent to the Army Relief Map which is being conserved and interpreted as a war time Army relic of heritage significance.
13. The Rotary Kiosk will be paved outside to provide an improved café and kiosk.
14. The open grassed areas used for Markets and Heritage Craft Fair will be improved and increased funded maintenance services will be considered. Barrier fences will be removed and replaced with bollards (similar to existing) to facilitate pedestrian circulation whilst preventing unwanted vehicle access. Formal markers will be laid into the ground to facilitate setting up of temporary stalls and entry points can be clearly identified and turf resilience strategies incorporated to reduce wear and compaction. Flagpole area removal will open up the link between the existing main hardstand area and the grassed area thus improving access and circulation especially during wet weather.
15. The main entry will be made more visible with rural styled fencing and banner poles along Mona Vale Road leading to the entry, with improved signage. Security gates will be installed to enable optional securing of the site such as at night or during bushfire emergencies. Internally, way-finding signage will be co-ordinated with promotional brochures and interpretive elements to guide users around the site and inform them of events, points of interest and items of heritage or natural significance. The gate pillars built in 1960s from locally quarried stone will be retained.
16. The Ku-ring-gai & Warringah Radio Control Electric Car Club Inc area will be retained and erosion and run-off remediated.
17. Bar Building (Army Era Regimental Aid Post) of significant local heritage value will be conserved and used as a Local Site History Museum with interpretive displays, such as information and relics of show and military history.
18. The Showground Caretaker's Cottage will be fenced off and screened from the public with an adjacent works compound and shed for machinery and tools. Water storage tanks for irrigation of the main arena can also be sited in this compound. Long term superseded stored items from Council demolition such as fencing materials, light poles, play equipment and other materials will be removed from site to an approved recycling facility.
19. The main parking area adjacent to the main entry will be formalised for 140 cars with stands of Duffy's Forest Ecological Community and laterite retained to encourage regeneration. Run-off and erosion will be managed with a suitable natural surface treatment.

**HART and Green Waste Tip Precinct (Attachment 10)**

1. The lease area land currently leased by Council and sub leased by HART will be rationalised to include the areas R100219 (Licence 315729) and R752038 (Mole Trig) all to be allocated to Council's care control and management.



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2. Trail Bike and 4WD track areas are still required by HART. Hart has a permissive occupancy licence over Lot 2842. Should the LPMA determine to consolidate these separate parcels of land under one reserve trust which they have proposed, this land will come under Council's care, control and management and it will be added to the area sub-leased by Council to Honda as part of the draft PoM.
3. The unassigned Crown land adjacent to the south-eastern boundary of the Green Waste Tip lands will be included together with the green waste tip site under Council's care, control and management as multi-purpose recreational land for community use. This land will also act as a buffer zone to prevent impacts on Garigal National Park.
4. The bushland areas with existing tracks may be made available for negotiated use for mountain biking and Mini-wheels enduro events through HART, who have indicated:  
*"In accordance with our lease requirements for 4WD and off-road bike training, there are periods where the areas are not used and we agree we can negotiate with the Mini-Wheels club, bike groups and/or Council or their potential use."*
5. The green waste tip site has been allocated funding under the Climate Change Fund from NSW Department of Environment and Climate Change and Water (DECCW) to recycle green waste water into valuable water for irrigation and nursery purposes. This project has been supported by LPMA and HART. A tender has been awarded for design, construction and operation of the project.
6. The differential settlement of the site due to its previous tip function limits use of the land to functions that can tolerate land that is uneven and settling over time. Sports facilities relying on stable surfaces such as playing fields are currently unsuitable for this area without considerable expenditure. The tip site will be set aside for consideration for future uses for recreation and leisure. The site is still being managed for ongoing remediation by Council.
7. It is proposed to move Council's Community Nursery to the green waste tip site adjacent to the available water source to facilitate efficient use of this resource.
8. Relocation includes nursery propagation and wholesale functions, including seed collection and storage for provenance stock supply, production and holding nursery functions, material bays, glasshouses, shade houses and administration functions and staff/community volunteer facilities area . There will be room for some expansion.
9. The relocated nursery can be constructed to maximise environmental sustainability and recycling processes and based on green design principles, in accordance with Council's Sustainability Plan.
10. A right-of-way to use the existing vehicle access road through Garigal National Park for controlled access to tip site and leachate pump house will be negotiated as a shared permanent access road, for Council lease area users with controlled gate use. The existing road which was to be removed at the cessation of tip remediation works has now been classed as an essential fire trail (Category 1) by Hornsby Ku-ring-gai Fire Control. Correspondence has been sent to DECCW by Council to request clarification on use of the road given its changed status. The status of this road will be clarified during the preparation of the draft PoM. It is maintained by Council and is in good condition.
11. Potential for an alternate second access road through south-west boundary of HART is available if existing National Parks and Wildlife Service (NPWS) road is not available for Council use. The NPWS access road is expected to be retained as permanent access is required for NPWS and transmission access for Energy Australia.
12. The existing road will continue to support cycle and walking track links to the existing network of trails through Garigal National Park and to Warringah Shire.
13. The tip site will continue to be maintained and rehabilitated and environmental impacts monitored.



## NEXT STEPS

Should Council adopt the options paper and recommendations therein, this would form the basis for the preparation of a new plan of management affecting all of the precincts as sought by the LPMA.

Other supporting actions include:

1. Getting planning approval for camping and caravan use at the site in accordance with the requirements of the NSW Government and Council's own planning instrument in relation to this use on Crown Land.
2. The Crown Land Reserve boundaries within the Wildflower Garden and elsewhere will need to be consolidated in accordance with the recommended options in this plan.
3. At the request of the NSW Land and Property Management Authority the gazetted Rules and Regulations of 08/03/1968 for the management of R86262 under the *Public Trusts Act 1897* will be updated to be consistent with the *Crown Lands Act 1989* and subsequent Regulations.
4. Preparation of a business plan for the nursery at its new site and how this could be funded
5. Undertake the next level of site planning (that would reflect on the guiding principles as per 7) and financial analysis of the options that would then be incorporated into future business planning and Council budgeting processes.
6. Finalise the Aboriginal heritage assessment (field work undertaken 17 June 2010) and environmental assessment (drawing from the completed vegetation mapping work).
7. For Council to develop a set of guiding principles for the future use of the site.

## Plan of Management

As the land management falls within LPMA legislation, any draft Plan of Management (draft PoM) shall be sent to LPMA for comment and final approval by the Minister for Lands. To assist with preparation of the draft PoM, Council has received approval for grant funding from LPMA for \$37,500.

The revised options considered the principles of the management of Crown lands as outlined in the *Crown Land Act 1989* which ensures that:

- enjoyment of Crown land is encouraged
- natural resources are sustainably managed and the environment is protected for future generations
- land is used for multiple purposes
- Crown land is occupied, used, sold, leased, licensed or otherwise dealt with in the best interests of the State and its people.

It is proposed that the draft PoM for the St Ives Showground and Precinct be commenced as soon as possible after the adoption of the revised options by Council, and subsequent LPMA approval.



## CONSULTATION

As part of process for the development of an options paper, the following ten stages were identified, as below. The process and subject of this report is at stage 6, which is seeking Adoption by Council of the preferred options for the site.

### Stages of development of the St Ives Showground Precinct options paper and Plan of Management:

1. Ideas forum – this was undertaken on Saturday 21 February 2009 with an aim to identify possible options that would form part of the deliberations by Council and the Minister for Lands as to the future use of the area. Fifty-five people attended representing 24 groups or associations. Participants were encouraged to present their ideas on the day and along with those unable to attend, were asked to write down their ideas as part of the data collection for this stage of the project. A memo summarising the outcome of the consultations was circulated to Councillors on 24 February 2009.
2. Technical review by staff – this considered outcomes from the forum and provided additional input from relevant sections of council.
3. Preliminary draft options report – this presented a number of options for the various sites and was presented at the Planning Committee on 1 July 2009.
4. Consultation with user groups and stakeholders, including Department of Lands. The preliminary draft options were presented to various interest groups and others to ascertain their preference and reasons in support or not of the various options. This was used to inform the current draft options.
5. Draft options paper. This was considered by Council and placed on public exhibition for broader community consultation.
6. Adoption by Council of the preferred options for the site.
7. Preparation of a draft plan of management for the precinct – this would similarly be prepared in consultation with the community and stakeholders.
8. Draft plan of management adopted by Council and Department of Lands.
9. Detailed financial plan, landscape plan, relevant approvals, lease/licence agreements.
10. Staged implementation of the site master plan and plan of management.

The *St Ives Showground and Precinct Draft Options Paper* was presented to Council at the Ordinary Meeting of Council of 1 December 2009. At that meeting, Council resolved to place the draft Options on Public exhibition from December 2009. This exhibition period concluded on 1 March 2010. The plans were exhibited in accordance with the report:

- At a community presentation meeting held in February 17 2010 attended by 55 people.
- Information displays at libraries, Council Chambers, St Ives Shopping Centre, Crown Lands Office and the Showground to commence in December 2009 and continue through the consultation period
- Website
- Local paper advertising, including Mayoral Column, and article in NST of 10th Feb 2010
- An Expressions of Interest advertised to gauge the interest of the levels of government and the private sector in partnerships or other models to help realise the construction and operation of the facilities
- Staff presentation and site inspection with Ku-ring-gai Heritage Reference Committee.



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- Written invitation to comment to all involved in the project to date. These written invitations included:
  - 100 letters to members of 60 stakeholder groups,
  - Letters to 946 residents within a 1km radius,
  - Relevant members of parliament
  - Relevant officers from LPMA and NPWS,
  - Previous members of the Park Sports and Recreation Reference Group,
  - Councillors
  - Relevant Council staff.

As part of the trial Mini-wheels event held on Sunday 18 April 2010, 506 letters were sent to surrounding residents.

To date the LPMA supports Council's role in the preparation of a draft plan of management and has participated in the exhibition and consultation process for the draft options paper.

This report recommends the final options for the site to Council. Once agreed, the process for the Plan of Management will proceed in consultation with the community, stakeholders, LPMA and DECCW.

## FINANCIAL CONSIDERATIONS

At this stage the draft options have not been costed. The philosophy behind this approach has been to enable users, stakeholders and others to envisage medium to long term options for the site without being unnecessarily constrained by current or possible budget for this site.

As part of this approach, the draft options paper was used as a basis for an open expression of interest to gauge a reaction from the private sector and the not-for-profit sector to fund or to jointly fund part or all of the draft plan. This approach was considered appropriate at this early stage as any interest, supported by possible financial backing or other arrangement, may help Council and the Department of Lands finalise the direction for the sites based on a likelihood of implementation that meets the needs of the community.

Furthermore, the expressions of interest will help inform any future business planning that would be necessary if the draft options are adopted. Given the nature and scale of many of the items identified, it is not anticipated that these would be funded in total by Ku-ring-gai Council and its ratepayers without careful analysis of the business risks and opportunities, financial returns, and community benefits.

Notwithstanding the above, Council has secured external grant funding for the leachate re-use from the Green Waste Tip site to irrigate the Showground and Nursery and a company has been engaged for the design, construction and operation of the project.

Council has also allocated funding for various projects within the St Ives Showground precinct in the draft Ku-ring-gai Contributions Plan 2009 as follows:

- Pathway and cycleway in the precinct - \$4,500,000
- St Ives Heritage Walk (2.5km walking track) - \$1,234,000



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- Upgrades of car park areas, internal access roads, picnic areas and open space areas - \$3,000,000
- Synthetic hockey field and multi-purpose sportsfield at the existing Council Nursery site - \$4,500,000

It should be noted that the total development contributions estimated to be collected throughout the life of the Contributions Plan is uncertain following the decision by the NSW Minister for Planning on 4 June 2010 to place a cap on the contributions that can be collected for the development of new dwellings and the purpose for which the money can be used. In light of the Minister's announcement Council will need to revisit the Contributions Plan although the process for this is yet to be determined.

With regards to the draft Plan of Management for the lands in the precinct, the LPMA has awarded Council a grant of \$37,500 for the preparation of the raft plan.

## **CONSULTATION WITH OTHER COUNCIL DEPARTMENTS**

Internal consultation was undertaken with relevant staff from Community, Development and Regulatory, Operations and Strategy and Environment Departments for the preparation of the Draft Options for the St Ives Showground and Precinct.

## **SUMMARY**

The draft options have proposed a number of major changes to the site reflecting the needs of current and future users. The options have accommodated all existing uses and importantly identified areas for increased diversity and intensity of use within the environmental constraints of the site and surrounding bushland. After public consultation, comments have been assessed and changes made where concerns raised can be supported. The preferred revised options for consideration in the draft PoM, are described below.

### **Ku-ring-gai Wildflower Garden**

The existing house (currently used as an office) will be extended and upgraded to a 6 green star sustainable environmental education and cultural centre. This would complement the existing activities at the site and also provide a new area for local tourism initiatives and for other community uses. A new education annexe building is also proposed near the current pavilion, designed in sympathetic context. A retail outlet for Council's nursery will be relocated adjacent to the existing Australia Native Plant Society greenhouse and a bush foods garden and interpretive and education area will be included.

### **Nursery Site**

An indoor sports centre would be constructed to accommodate four multi-purpose courts (with an optional extension of another two courts) with underground parking. Adjacent to this would be two synthetic playing fields; one dedicated to hockey the other a multi-use surface. An internal roadway would be built connecting the Ku-ring-gai Wildflower Garden and the Showground. This roadway would be linked to the construction of traffic lights on Mona Vale Road at the showground to enable safer egress and ingress to the sites.



**Showground**

The Ku-ring-gai Mini-wheels training facility will be retained and environmental management and restrictions enforced. Eight small hiking tent platform sites will be included near the lookout and linked to walking tracks. An adventure ropes course will be considered located adjacent to the Model Aeroplane arena and linking downhill to the Nursery site. The balance of this site containing Duffy's Forest Ecological Community would be rehabilitated. The existing Ku-ring-gai Model Flying Club arena would enable shared use for events such as concerts and outdoor cinema. The dressage area would be reconfigured to the appropriate standard and roofed, should heritage impact be minimal, providing a supporting facility to the Princes Anne equestrian area. The adjacent heritage building would be restored to support multiple uses.

The trotting track would be removed from the main arena as part of a general upgrade to the playing surface that will also accommodate improvements to lighting and an irrigation system from the recycled leachate of the green waste tip. The grandstand would be extended and improvements would be made to the amenities facilities. The Louise Lennon Pavilion would be extended and a new pavilion built adjacent to the Douglas Pickering Pavilion for the Men's shed. Across the site, general improvements will be made to amenities and other buildings, new picnic areas installed and a 6m perimeter road constructed to support vehicle movement and to help with asset protection. The entrance to the site will be improved to be more visible and an internal link road will connect with the main parking area providing for 140 vehicles. This will allow for improvements to the small remnant stands of Duffy Forest.

**HART and Green Waste Tip sites**

In order to achieve the objectives identified within this report it is proposed to consult with HART to permit occasional use of all bushland track areas for mountain bike and Mini-wheels enduro events. Council's production nursery would be located on-site, near the leachate pond which will provide water for irrigation. Ongoing rehabilitation and management to this site would be required and it is proposed that access would continue via a right-of-way through the National Park from Mona Vale Road. A second entry point is proposed along the south-west boundary of the HART site, if necessary. Important to note is that the proposed access paths will not impact on HART operations.

The next direction for the project is to undertake the Plan of Management. This will be informed through traditional consultative processes and be brought back to Council and the NSW Land and Property Management Authority for consideration, anticipated to be early 2011.

**RECOMMENDATION**

- A. That Council endorse the preferred options in the St Ives Showground and Precinct Draft Options Paper with the amendments as outlined in the report:
- B. That Council, in conjunction with the NSW LPMA commence preparation of a draft Plan of Management incorporating the St Ives Showground, Council Nursery site, Ku-ring-gai Wildflower Garden, green waste tip site, and HART leased site, based on the adopted options paper for the precinct.



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- C. That Council write to all persons and groups who made a submission during the public exhibition and expression of interest period to inform them that their comments have been considered by Council and thank them for their submission.
- D. That Council write to all organisations who responded to the call for expressions of interest to thank them for their submissions and inform them of the next steps, that being the preparation of a plan of management to facilitate the range of options adopted by Council for the future use of the sites.
- E. That a report be brought back to Council, following adoption of the draft Plan of Management by the LPMA, seeking approval to tender for public and / or private partners to help Council deliver specific components of the site.

Alison Walker  
**Principal Landscape Architect**

Roger Faulkner  
**Team Leader Open Space Planning**

Peter Davies  
**Manager Corporate Planning & Sustainability**

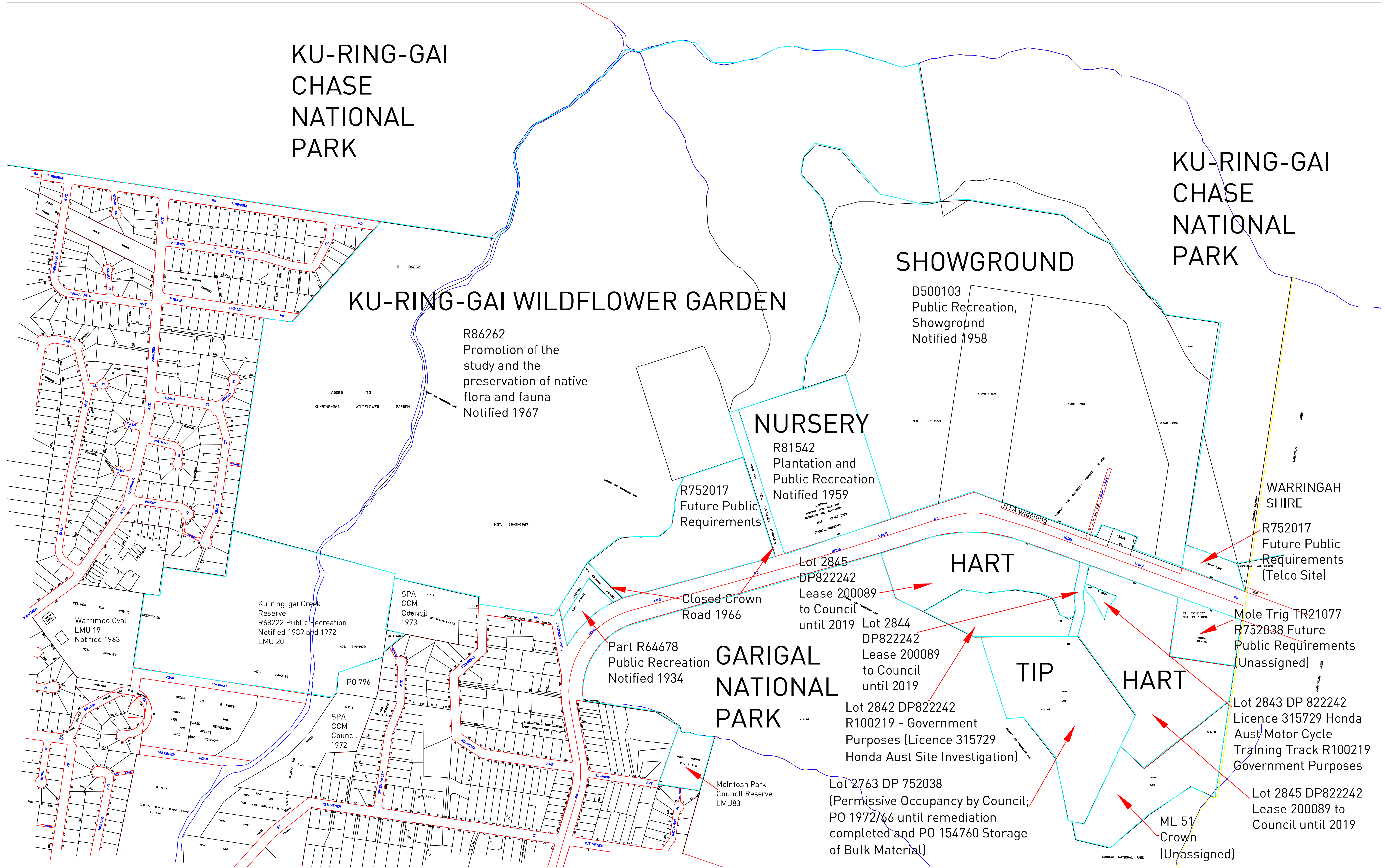
Ian Dreghorn  
**Manager Special Projects**

Antony Fabbro  
**Acting Director Strategy & Environment**

- Attachments:**
- 1. Existing Land Management - 2010/108046
  - 2. Revised Options Plan, SISG & Precinct - 2010/108053
  - 3. Ku-ring-gai Mini Wheels Training Club - Site Usage and Restrictions - 2010/108058
  - 4. LPMA Position Paper February 2010 - the Use of Crown Reserves for Operating Caravan Parks and Camping Grounds - 2010/108085
  - 5. Report results of noise level testing - KMWTC test event - 2010/108241
  - 6. Ku-ring-gai Wildflower Garden precinct plan - 2010/108276
  - 7. Ku-ring-gai Nursery precinct plan - 2010/108282
  - 8. SISG Small Arena, Mini Wheels, Equestrian Area precinct plan - 2010/108284
  - 9. St Ives Showground Main Arena, Events & dog club area precinct plan - 2010/108286
  - 10. Greenwaste Tip and HART site precinct plan - 2010/108289
  - 11. Public Exhibition Comments Summary, March 2010 - 2010/108297
  - 12. Expression of Interest Report - Confidential



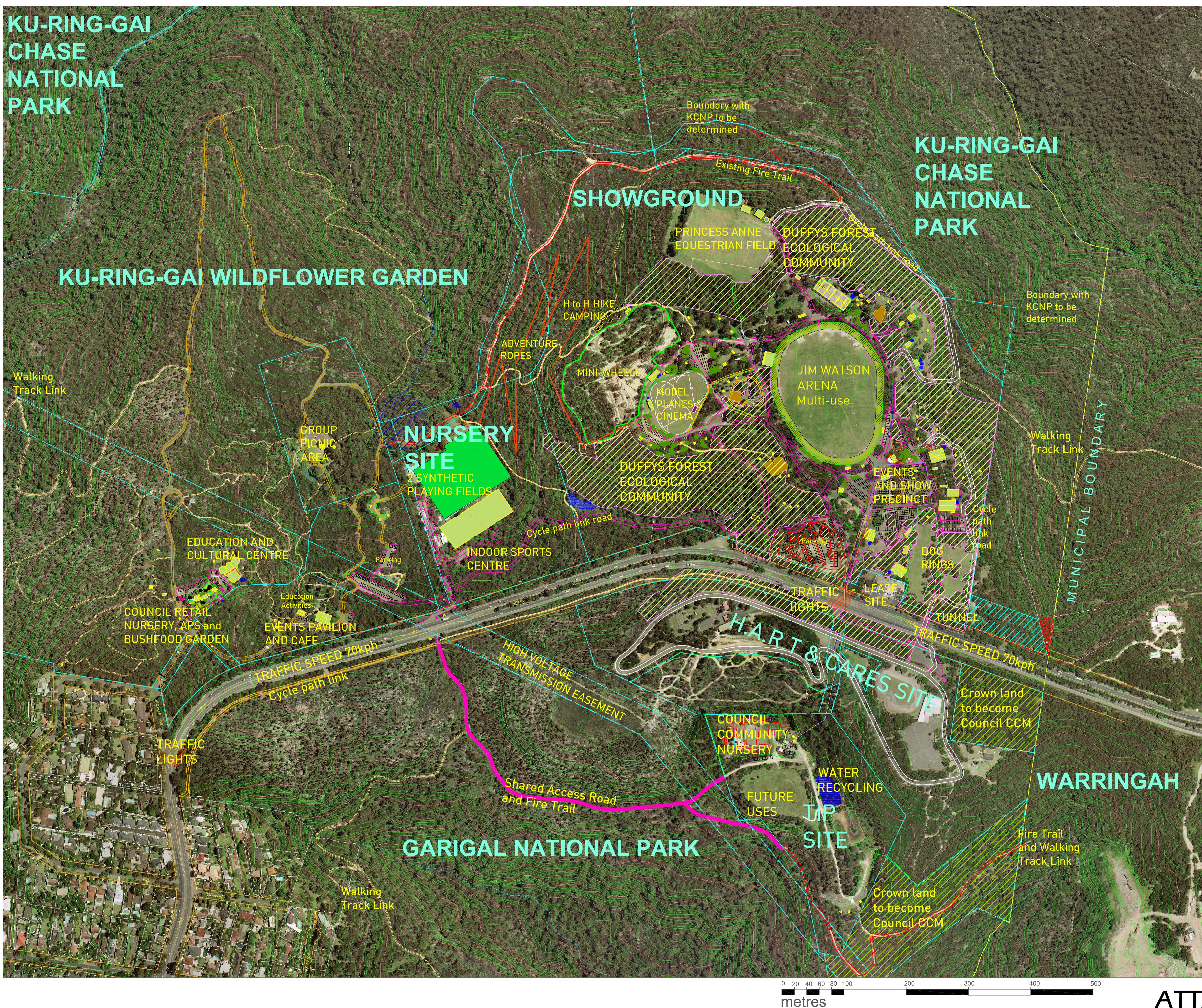
# EXISTING LAND MANAGEMENT



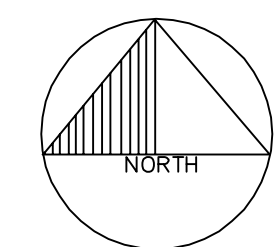
# ATTACHMENT 1



# STIVES SHOWGROUND PRECINCT



**REVISED**  
JUNE 2010



## ATTACHMENT 2

SCALE 1:3000 @A1



Legend

Miniwheels\_Tracks

- Track (events / trials)
- Minor Access Track

Use Zones

- Event and Trials Area
  - ET1
  - ET2
  - ET3
  - ET4
  - ET5
- Restricted Trials Area
  - RT1
  - RT2
  - RT3

Future site management to be undertaken in accordance with the *Regeneration, drainage and silt management for KMWTC Facility St Ives Showground Plan* (10 September 20009).



Sources: Ku-ring-gai Council, Sinclair Knight Merz

Status: Draft

Datum: MGA

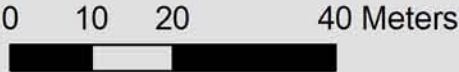
Council approved Mini Wheels site usage and restrictions

Date: 5 November 2009

\* Restricted Trial Area - A maximum of 4 trials each / year (provided their is sufficient break between trials)

\* Proposed routes are to be marked, with existing vegetation islands to be avoided.

All areas outside of specified zones and trails as displayed on this map are considered out of bounds to motorbikes / events.



Ku-ring-gai council accepts no responsibility for any misprints, errors, omissions or inaccuracies in these maps or damages resulting from the use of this mapping



## **The Use of Crown Reserves for Operating Caravan Parks and Camping Grounds**

The purpose of this paper is to clarify for Local Councils and other organizations with an interest in operating caravan parks and camping grounds, the position of the Land and Property Management Authority in respect of the use of Crown reserves for operating caravan parks and camping.

### **Introduction**

The Land and Property Management Authority (the Authority) is committed to sustainable tourist destinations that cater for caravans, campervans, motorhomes, tents and other moveable dwellings. However, the Authority cannot, nor does not, condone illegal caravanning and/or camping on Crown land. All facilities on Crown land advertised for public tourist accommodation, including showgrounds, must be approved.

### **Position**

#### *i) Approval to Operate*

The approval to operate a caravan park and/or a camping ground in NSW (either on Crown land or freehold land) is required under:

- Section 68 of the *Local Government Act 1993* (LG Act), in compliance with the relevant provisions of
- the *Local Government (Manufactured Home Estates, Caravan Parks, Camping Grounds and Moveable Dwellings) Regulation 2005*.

#### *ii) Approval to Develop*

*State Environmental Planning Policy No. 21 – Caravan Parks* (SEPP 21) requires that “development for the purposes of a caravan park may be carried out only with the development consent of the [local government] council”. Note that the definition of ‘caravan park’ includes a camping ground.

However, if a caravan or camping ground is prohibited under another plan, for example, a council’s local environmental plan, SEPP 21 does not change that position.

Also, the establishment of a new caravan park or camping ground on Crown land requires the Authority’s consent (land owners consent) which is subsequently submitted with the development application.

The local Council is the consent authority for development under SEPP 21 and for an approval to operate.

### **Endorsement**

This position paper is endorsed by the following Government Agencies and Organisations:

- NSW Department of Planning
- Tourism New South Wales
- Local Government & Shires Association
- Caravan & Camping Industry Association of NSW
- Campervan & Motorhome Club of Australia

### **Further Information**

Further information may be obtained by contacting the Crown Land Division, LPMA, Level 4, 437 Hunter Street, Newcastle NSW 2300; or [www.lands.nsw.gov.au](http://www.lands.nsw.gov.au).

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4 May 2010

## MEMORANDUM

TO: Roger Faulkner, Sport And Recreational Planner

COPY TO: Anne Seaton, Manager Regulation And Compliance

FROM: Trudi Coutts and Karen Boulter, Environmental Health Officers

SUBJECT: Trial Event - Ku-ring-gai Mini Wheels Training Club - Sunday 18 April 2010

### BACKGROUND

Ku-ring-gai Council is currently reviewing the use of facilities including St Ives Showground, Council Nursery, Wildflower Garden and the former St Ives green waste tip. An options paper has been prepared to outline potential uses of these sites and one of the proposals is for the relocation of the Ku-ring-gai Miniwheels Training Club from the St Ives Showground to the former green waste site.

The green waste site is located on the southern side of Mona Vale Road and adjoins Garigal National Park as shown in Map 1. There are a number of residential streets on the eastern side of Mona Vale Road that overlook the National Park in the direction of the green waste tip. Council has received correspondence from residents concerned about the potential noise impacts should the Miniwheels Club be relocated to this site.

It is understood that the Ku-ring-gai Miniwheels Training Club has a current lease agreement with Council for up to 40 events a year at the St Ives Showground, with these events held on both days of the weekend, but predominantly on Sundays. In order to gain an understanding of the potential noise impacts on residential premises, the Ku-ring-gai Miniwheels Training Club participated in a planned trial of the use of the green waste site for their club activities. This trial was conducted on Sunday 18 April 2010 and involved the club running a practice day between the hours of 9:30am and 2:30pm.

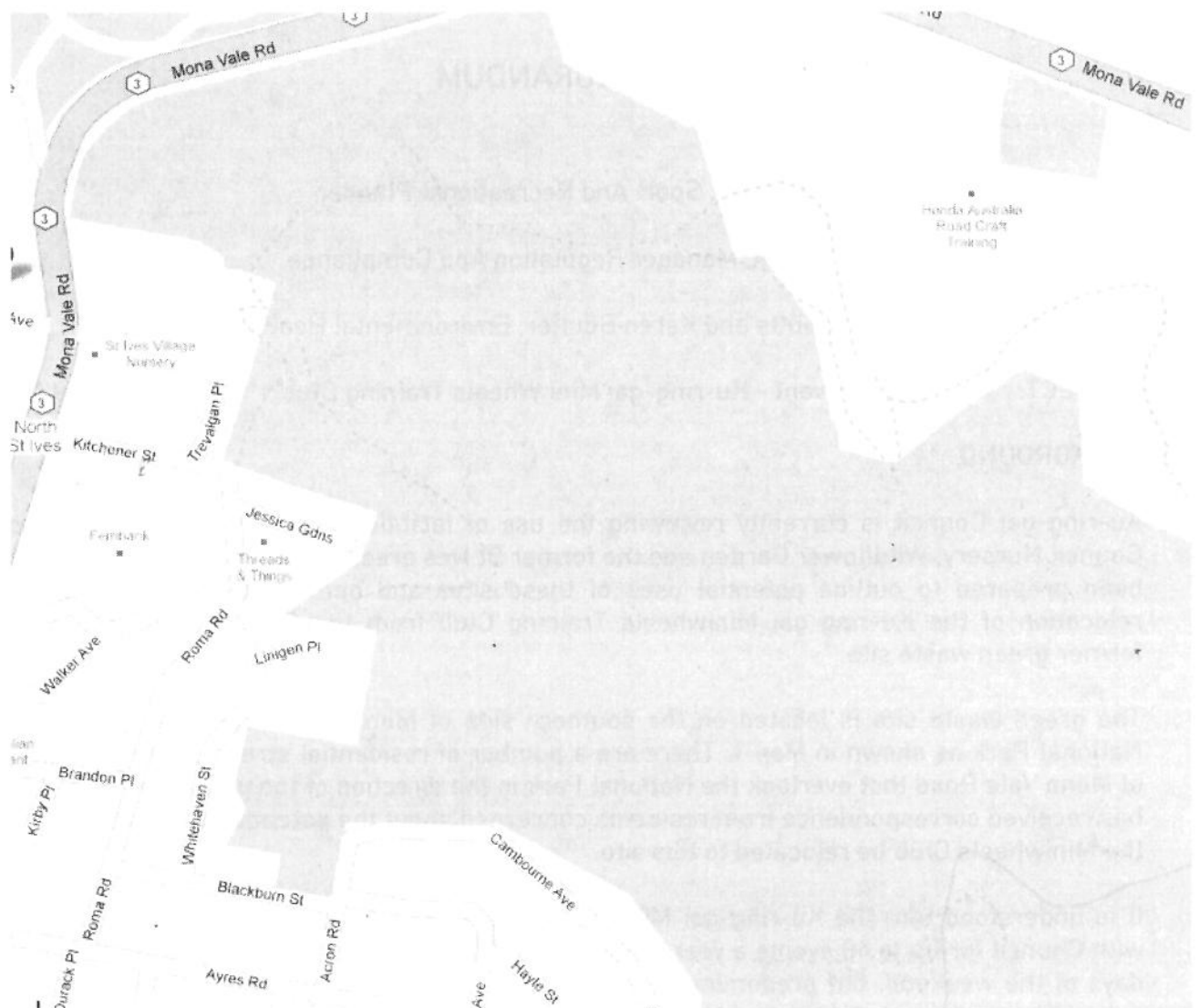
Observations and assessment of the noise generated by the event was undertaken throughout the day at a number of potentially affected residential locations including Fernbank Retirement Village, Richmond Avenue, Jessica Gardens, Athena Avenue and Cambourne Avenue, St Ives.

### SITE DESCRIPTION AND CONSIDERATIONS

Due to the topography of the local area and the green waste site it was determined that the most potentially affected residential properties would be those on the eastern side of Mona Vale Road and in particular on elevated land, facing east, adjoining or overlooking Garigal National Park. The primary locations are identified as Sites 1 to 6 on Map 1 and include Richmond Avenue, Trevalgan Place, Kitchener Street, Jessica Gardens, Cambourne Place and Athena Avenue, St Ives.



Map 1: Location of proposed site and potentially affected properties



Ambient sound levels were established throughout the week prior to the event at each of the above locations. It was intended that these ambient sound levels would allow for some comparison of the overall increase in noise that the activities of the Ku-ring-gai Miniwheels Club at the site may contribute. Where possible, further background readings were taken on the day of the event during periods of no activity on site. The background readings on a weekday ranged from 35 dB(A) up to 44 dB(A) in areas closer to Monavale Road.

The event was run with two classes of bikes being 65cc class and 85cc class. There were four 65cc class and fourteen 85cc class participating on the day. These classes were run separately with the 65cc class being the first event of the day. The Ku-ring-gai Miniwheels Club advised that the 85cc class are largest and the loudest of the bikes used by the members of the club. All bikes were tested prior to the event to ensure compliance with Motorcycling Australia's sound output requirements of a maximum of 95 dB(A). Telephone communication was ongoing throughout the day with the co-ordinators of the event and confirmation of the activities occurring was sought prior to each noise assessment.



## SOUND LEVEL MEASUREMENTS

### Equipment

- Bruel and Kjaer sound level meter - model 2260 (serial number 2426337)
- Bruel and Kjaer calibrator 4231 (serial number 2422600)

The calibration of the meter was checked before and after each measurement. The sound level meter and calibrator have been calibrated by Bruel and Kjaer within the last 2 years.

### Site 1: Fernbank Retirement Village

Fernbank Retirement Village was selected as the initial location for the assessment of noise during the event as it was the most elevated location with direct line of sight to the green waste site. The noise meter was set up on the uppermost balcony of the community building within the complex and noise assessments were taken during the period of arrival and set up of the participants; the initial sighting laps; and during laps of the track by the 65cc and 85cc bikes. In addition three location tests were conducted which involved the stationary positioning of four bikes at the northern, centre and southern section of the site. The purpose of these short tests was to determine if there were sections of the track where topography or other factors may influence the travel of noise and therefore cause greater impacts on residents.

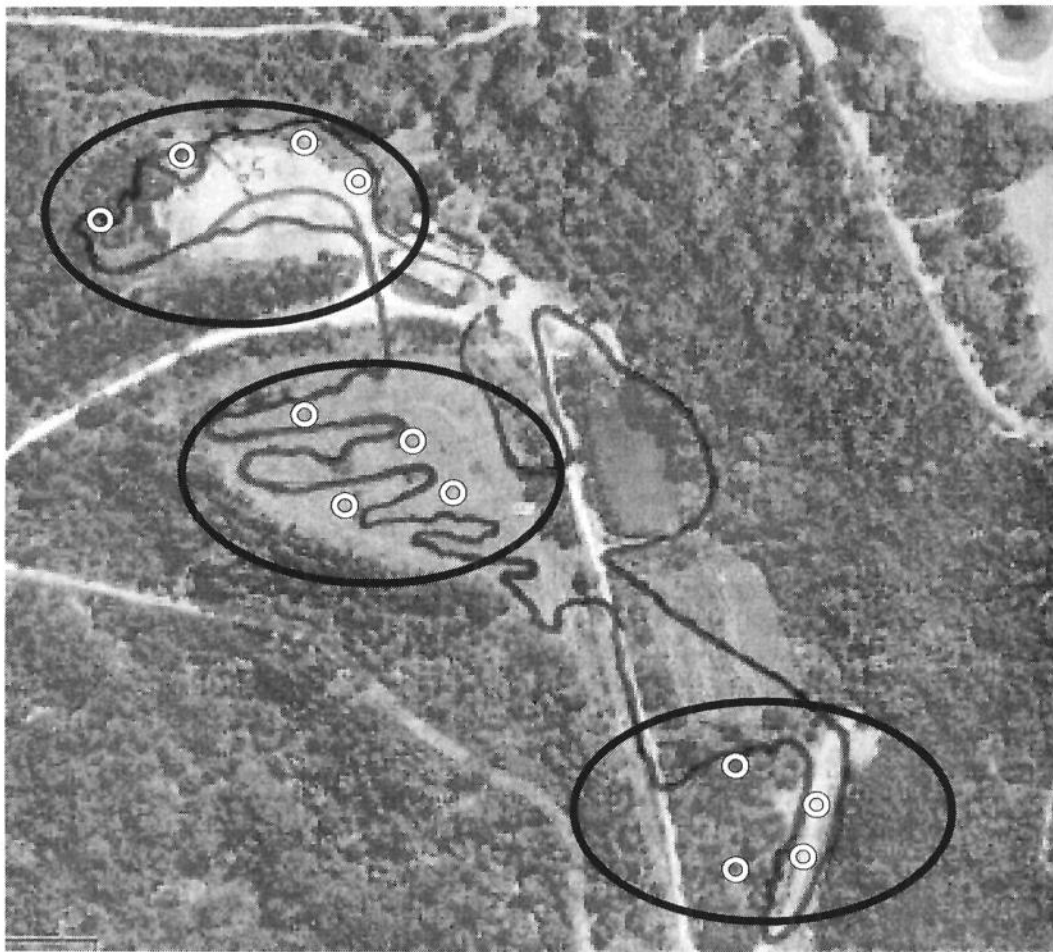
**Set up and sighting laps** - The background noise level established at Fernbank Retirement Village on Sunday was 37.2 dB(A) and during the week was slightly higher at 40.4 dB(A). No significant noise could be detected during the arrival and set a phase of the Ku-ring-gai Miniwheels Club at the site. The club advised that access to the site was permitted from 8:15am and that some bikes would be circulating the track to check the condition during the period of 8:45 to 9:15am. The programmed events ran behind schedule at the start of the day and the sighting laps did not begin until 10am. Noise readings during all of these activities revealed that the overall background noise level did not increase although an occasional bike could be heard.

**65cc Class** - The first event began at approximately 10:30am with the 65cc class and the noise was measured over a 15 minute period. The source noise levels during this period revealed no increase to the background noise overall, even though bikes were audible from the direction of the green waste site.

**85cc Class** - The 85cc class began at approximately 10:45am and the bikes were more audible, particularly, in the south western section of the course. Overall sound levels readings were found to be 41.6 dB(A) which is an increase of just over 4 decibels above weekend background noise levels. The peaks of the noise were measured to be between 48 and 55dB when the bikes were moving in the southern end and between 42 and 44dB when they were in the centre of the course. It was noted that there was increased bird activity when these bikes started their laps of the track. Assessment at this site determined that the 85cc bikes were the class of bikes likely to cause the greatest noise impact and became the focus of monitoring and assessment at subsequent sites.



## Stationary Bike Assessment



Four bikes (3 x 85cc and 1 x 65cc) were set up at four points, alternatively along the northern, centre and southern section of the track. The bikes were audible from each of the sites and smoke could be seen when the bikes were revved however the overall noise level was not significant enough to be distinguished by the noise meter. The observation on site was that the bikes could most consistently be heard from the southern section of the course including travelling to and from this section.

### Site 2. Jessica Gardens

The daytime background noise level previously established for this area was 38.4dB(A) however it was noted that there was less vehicle noise audible from Mona Vale Road on Sunday than during the week, therefore, the background noise level was lower. A bike was also audible further south west of where the Ku-ring-gai Miniwheels event was being held which may have been riding on tracks in the National Park. The event organisers advised that this bike was not from their group.

The 85cc class began at approximately 12.15pm and the bikes could be heard but not as clearly as at the previous monitoring site. The maximum levels were between 44 – 48dB and the overall reading was 35.4 dB(A) which was lower than the background reading obtained on a weekday. The activity of the bikes was not audible when inside the residential premises closest to the monitoring location.



### Site 3. Richmond Avenue

Traffic noise from Mona Vale Road is most noticeable in this location and intermittent noise could also be heard from the model airplanes in use at St Ives Showground. The background noise level on Sunday was established to be 38dB(A).

The 85cc class began at approximately 1.25pm and the bikes were audible but were intermittently heard and it was difficult to distinguish between their locations on the track. The maximum noise levels were between 44 and 48dB and the overall noise level was 39dB(A) which was an insignificant increase above background noise levels at the time.

### Site 4 – Trevalgan Place

Ambient noise levels were taken during the week at this location, however, due to observations on the day, no source readings were taken as the alternative locations were considered indicative of the noise levels at this site.

### Sites 5 and 6. Athena Ave and Cambourne Place

Background noise readings taken prior to the event found this area to be one of the quieter areas with background noise levels of approximately 35dB(A) during the week.

The 85cc class began at approximately 2.10pm and it was noted that there was a slight breeze blowing in the direction of the monitoring sites which may have assisted to carry noise from the green waste site. The bikes could be intermittently heard in the distance but the noise levels were not significant. A 15 minute noise reading of the source could not be undertaken at this location due to activities occurring on nearby residential properties which contributed to an elevation of the background noise such as people entertaining and children playing in their yards.

## NOISE CRITERIA

### Offensive noise

Noise from motor vehicles is covered under the *Protection of the Environment Operations Act 1997* and *Protection of the Environment Operations (Noise Control) Regulation 2008*. A site is considered to be acceptable if it is not a source of "offensive noise". The *Protection of the Environment Operations Act 1997* defines 'offensive noise' as meaning:

Noise:

(a) that, by reason of its level, nature, character or quality, or the time at which it is made, or any other circumstances:

- (i) is harmful to (or is likely to be harmful to) a person who is outside the premises from which it is emitted, or
- (ii) interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted, or

(b) that is of a level, nature, character or quality prescribed by the regulations or that is made at a time, or in other circumstances, prescribed by the regulations.



## Intrusive Noise

The Noise Guide for Local Government also lists requirements for intrusive noise. A noise source is considered to be intrusive if noise from the source, when measured over a 15-minute period, exceeds the background noise by more than 5 dB(A). Intrusive noise is often used as a guide to represent offensive noise, but other factors such as noise characteristics and cumulative noise impacts also need to be considered.

## CONCLUSIONS

It should be noted that these findings are based on one attended noise assessment of a trial event that may or may not have been typical of the usual activities carried out by Ku-ring-gai Miniwheels. The site was not altered for the trial event and therefore noise mitigation measures that might be integrated as part of any permanent use were not in place. Additionally, background noise levels were obtained during weekdays and it has been determined that these levels are not representative of background noise levels on Sunday. These factors need to be resolved in order to draw more accurate conclusions on the suitability of this site for any proposed relocation of the Ku-ring-gai Miniwheels Club.

On-site observations at the various locations revealed that the noise from the Miniwheels activities was intermittent and audible particularly when the 85cc class bikes were in use. A significant increase in overall noise levels above background levels on Sunday was not detected, however, the full definition of 'offensive noise' needs to be considered in this situation, as the nature, character and the time at which the noise is made, may cause disturbance to some of the surrounding residents.

The nature and character of motor bike noise is not typical of noise sources within the current bushland environment. The intermittent nature of the noise with peaks of up to 48 dB(A) at most sites and 55 dB(A) at Fernbank Retirement Village would be likely to cause annoyance and the Noise Guide for Local Government recommends a correction factor of 5 decibels be applied. In the case of Fernbank Retirement Village, this calculates as an increase of approximately 9 decibels above the measured background levels.

It is therefore considered that the permanent use of the green waste site for the Ku-ring-gai Miniwheels Club, particularly by 85cc bikes and on Sundays, may create offensive noise as defined above. In addition, according to the Club's 2010 schedule, events are held twice a month, predominantly on Sundays and occasionally on consecutive Saturdays and Sundays. This frequency and duration of events is likely to have a negative impact in that it may lead to a decreased tolerance for the activity by residents and a perceived increase in noise levels over time.

Some of the above issues may be addressed through the implementation of appropriately considered noise mitigation measures, track orientation and operational controls. In order to comprehensively determine the suitability of the green waste site for this activity and the full extent of potential noise and other impacts, further investigation of the following is required:

- Confirmation of all Miniwheels activities proposed for the new location including regular use, interclub meets, competitions, state titles and any other events that may involve increased participation;



- Details including the maximum number of participants and spectators for all events, the type and class of motor bikes involved and the likely frequency and duration of individual events;
- Assessment of the existing Miniwheels activities at the St Ives Showground site and interclub meets or competitions to gauge the potential for noise impacts from the different uses;
- Background noise assessments in the absence of the Miniwheels events on Saturdays and Sundays. Future investigations should concentrate on Fernbank Retirement Village and Jessica Gardens as these sites were the most affected locations and considered indicative of noise levels and impacts at the other sites;
- Noise mitigation, sediment and erosion controls necessary and appropriate for the site. Further trial events at the green waste site with some noise mitigation measures in place may be necessary.
- Potential ecological and environmental impacts of dust, erosion and sediment runoff on the adjoining Garigal National Park.
- Traffic management assessment of vehicles entering and exiting the site from Mona Vale Road and on-site car parking arrangements;
- Potential site contamination issues in terms of SEPP55 requirements for use of the site and any requirement for development consent for this activity.

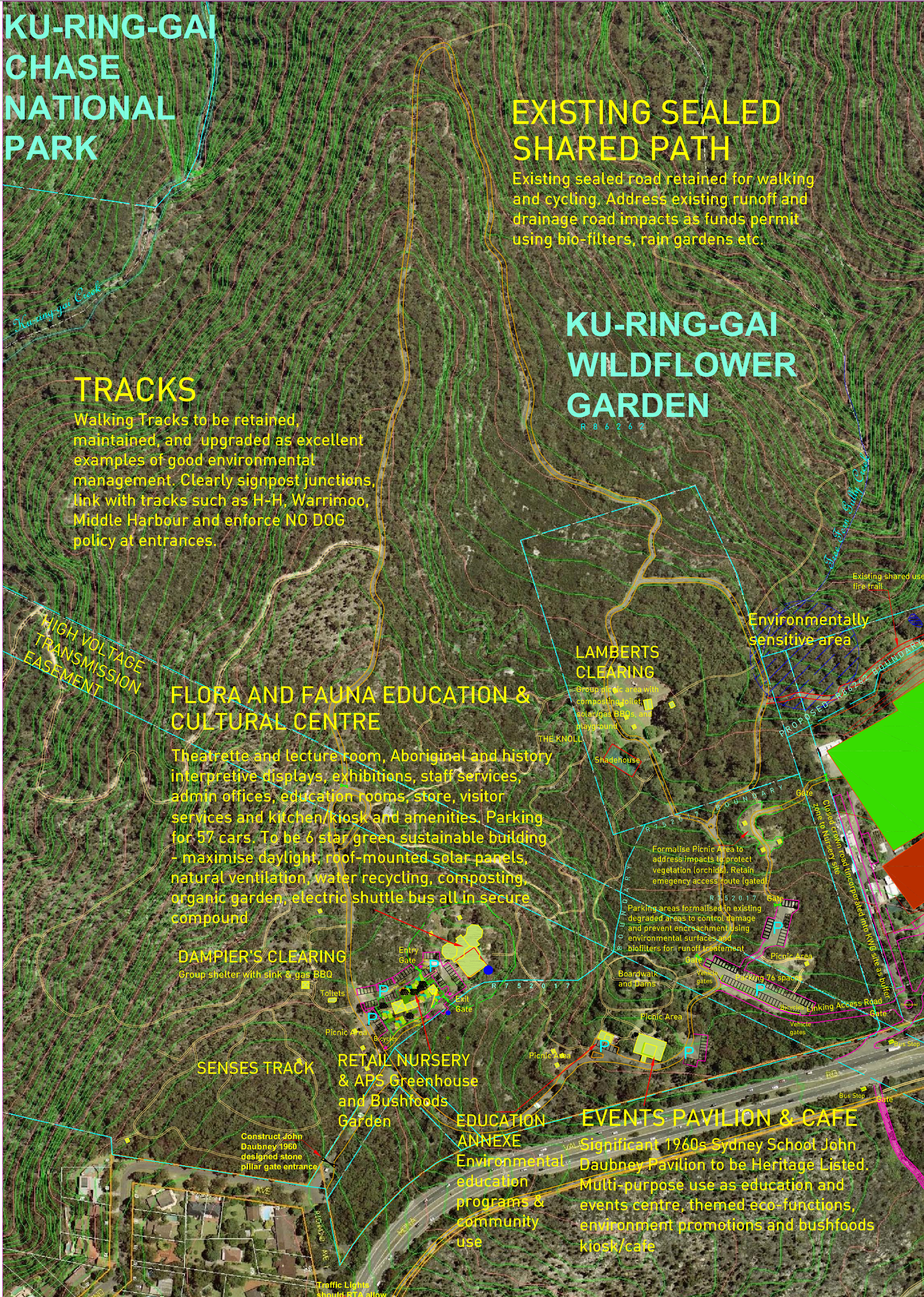
Additionally, if the proposed use were to proceed, control of the activities on site would need to be conditioned (either through development consent or lease agreement) and monitored on an ongoing basis. Concerns include the potential variation of the circuit for enduro events which predominantly go through the bush rather than an established track. This would necessitate alterations to noise, sediment and erosion control measures and ongoing monitoring of these impacts. Other controls measures should include the following:

- Limitation of
  - (a) the total number of participants and the number and frequency of events with consideration given to no use of the site on Sundays or public holidays;
  - (b) the duration of all types of events with no early morning or late afternoon use permitted and scheduling of respite periods;
  - (c) the type of events that can be held on the site – eg interclub competitions, motorcross, enduro events and the like.
- Implementation of a Noise Management Plan which includes:
  - (a) on site noise mitigation measures such as track orientation to use the existing topography to reduce noise;
  - (b) locating noisier activities furthest from noise sensitive receivers;
  - (c) using earth mounds and barriers to reduce noise levels and ongoing noise monitoring;
  - (d) ensuring compliance with Motorcycling Australia noise specifications for bikes and Protection of Environment Operations Act 1997 requirements;
- Provision of permanent:
  - (a) fencing or site security to stop illegal riders using the track;
  - (b) dust suppression, sediment and erosion control measures.

-----  
Environmental Health Officer

Environmental Health Officer





KU-RING-GAI  
CHASE  
NATIONAL  
PARK

EXISTING SEALED  
SHARED PATH

Existing sealed road retained for walking and cycling. Address existing runoff and drainage road impacts as funds permit using bio-filters, rain gardens etc.

KU-RING-GAI  
WILDFLOWER  
GARDEN

TRACKS

Walking Tracks to be retained, maintained, and upgraded as excellent examples of good environmental management. Clearly signpost junctions, link with tracks such as H-H, Warrimoo, Middle Harbour and enforce NO DOG policy at entrances.

FLORA AND FAUNA EDUCATION & CULTURAL CENTRE

Theatrette and lecture room, Aboriginal and history interpretive displays, exhibitions, staff services, admin offices, education rooms, store, visitor services and kitchen/kiosk and amenities. Parking for 57 cars. To be 6 star green sustainable building - maximise daylight, roof-mounted solar panels, natural ventilation, water recycling, composting, organic garden, electric shuttle bus all in secure compound

DAMPIER'S CLEARING

Group shelter with sink & gas BBQ

SENSES TRACK

RETAIL NURSERY & APS Greenhouse and Bushfoods Garden

EDUCATION ANNEXE  
Environmental education programs & community use

EVENTS PAVILION & CAFE

Significant 1960s Sydney School John Daubney Pavilion to be Heritage Listed. Multi-purpose use as education and events centre, themed eco-functions, environment promotions and bushfoods kiosk/cafe

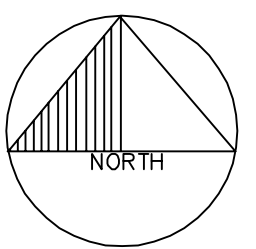
LAMBERTS CLEARING

Group picnic area with composting toilet, sink/gas BBQs, and playground

Environmentally sensitive area

REVISED

JUNE 2010



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KU-RING-GAI WILDFLOWER GARDEN ATTACHMENT 6

ST IVES SHOWGROUND PRECINCT



[illegible]

# COUNCIL NURSERY SITE

**REVISED** JUNE 2010



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## ATTACHMENT 7



**SHOWGROUND**

**ADVENTURE ROPES COURSE**  
Low impact

**H to H HIKE TENT CAMPING PLATFORMS**  
Eco camping with no impact policy

**LOOKOUT AREA**  
Extensive views over KCNP

**WALKING TRACK TO KWG**

**MINI-WHEELS**  
Site subject to strict environmental management controls and fenced to prevent expansion in accordance with signed agreements.

**ADVENTURE ROPES COURSE**  
Low impact

**Clean out silt from dam. Interpret market garden use of Nursery site**

**PRINCESS ANNE EQUESTRIAN ARENA**  
Investigate irrigation and drainage and control of nutrient and runoff impacts on adjoining bushland.

**DRESSAGE**  
60 x 20m area. Lightweight roof structure subject to heritage impact assessment. Retain surrounding fenced area for warm-up.

**ANIMAL AREA**  
Retain for Horse/Show use and manage for horse waste and compaction under trees. Restore heritage building for community use.

**GRANDSTAND** improved and extended to better link with arena and provide covered viewing of events with sustainable design features and amenities/change rooms

**JIM WATSON ARENA**  
Multi-use

**Formalise all casual parking spaces and edges to prevent damage and erosion**

**Restore heritage building for site history museum**

**Model cars**

**Core areas of DFEC - restrict access and ameliorate impacts.**

**Core area of Duffys Forest Ecological Community (DFEC) - restrict access and ameliorate impacts.**

**Core areas of DFEC - restrict access and ameliorate impacts.**

**Shared cycles pedestrian and vehicles access road**

**Shared use access trail sealed for cycle events & co-ordinated to avoid use conflicts.**

**Fenced Horse Access Track**

**Picnic Area**

**Horse float parking**

**Group Picnic Area**

**Toilets**

**Stage/Screen set-up area for events with power supply**

**Parking area**

**Playground and junior cycle track**

**Upgrade Playground**

**Cycle events sealed off wide path**

**Interpret heritage storage Heritage item**

**Recover DFEC**

**Model Aeroplanes and Moonlight Cinema/events**

**Shared USE ZONE**

**Obtain level and smooth grass landing and takeoff strips and centre spot**

**Re-use existing building and extend for storage and toilets**

**Mini-wheels and use for picnic toilets**

**Ropes Course Training Area**

**Cabin**

Core areas of DFEC restrict access and ameliorate impacts.

Investigate irrigation and drainage and control of nutrient and runoff impacts on adjoining bushland.

An aerial photograph of a building with a yellow grid overlay. A red line is drawn across the grid, and a green line is visible on the right side of the image.

Eco camping with no impact policy

Retain for Horse/Show  
use and manage for  
horse waste and  
compaction under trees



An aerial photograph showing a river confluence. A yellow arrow points to a specific location on the riverbank, likely indicating the site of the study.

Site subject to strict environmental management controls and fenced to prevent expansion in accordance with signed agreements.

Model  
Aeroplanes and  
Moonlight  
Cinema/events

JIM

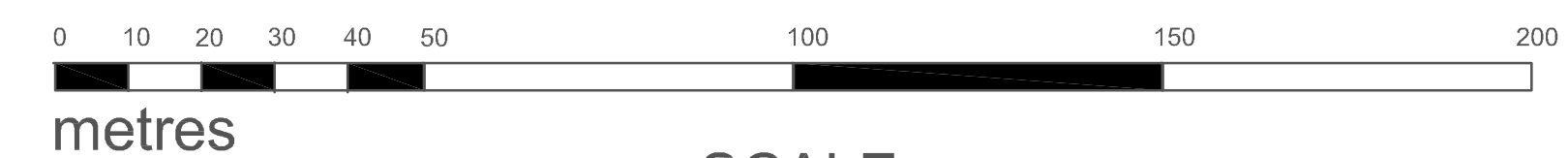


A close-up photograph of a plant stem, likely a grass or similar herb. The stem is covered in fine, dark, longitudinal lines. Two prominent, parallel yellow lines run diagonally across the frame. A single pink line runs vertically along the right side of the stem. The background is a blurred, natural setting.

A close-up photograph of a textured, brownish surface. A green dashed line runs diagonally from the top left towards the center. A pink solid line runs diagonally from the bottom left towards the center, intersecting the green dashed line.

Shared cycles pedestrian and vehicles access road

JUNE 2010

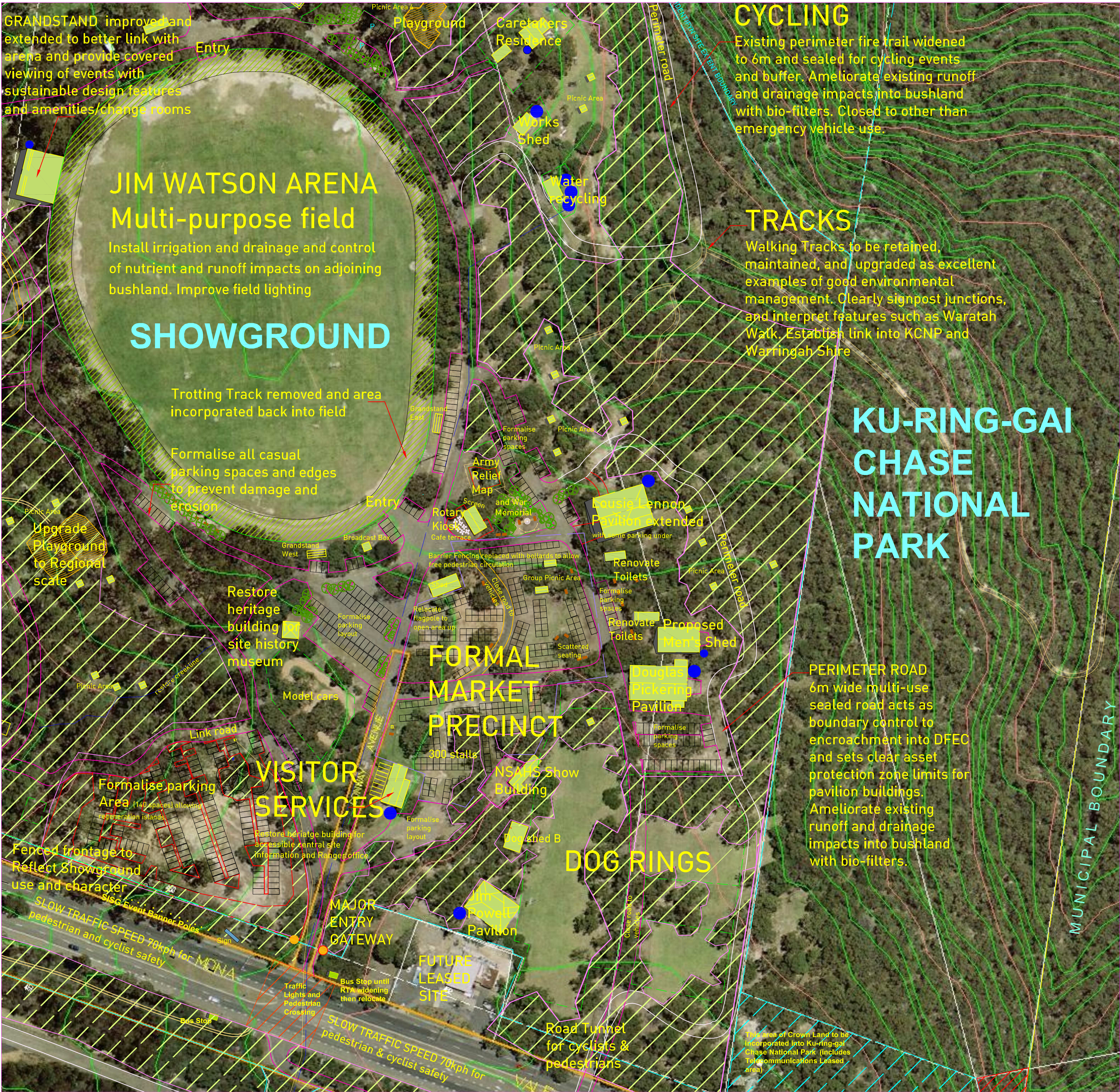


## ATTACHMENT 8

# SMALL ARENA, MINI-WHEELS, EQUESTRIAN AREA

# STIVES SHOWGROUND PRECINCT





**CYCLING**  
Existing perimeter fire trail widened to 6m and sealed for cycling events and buffer. Ameliorate existing runoff and drainage impacts into bushland with bio-filters. Closed to other than emergency vehicle use.

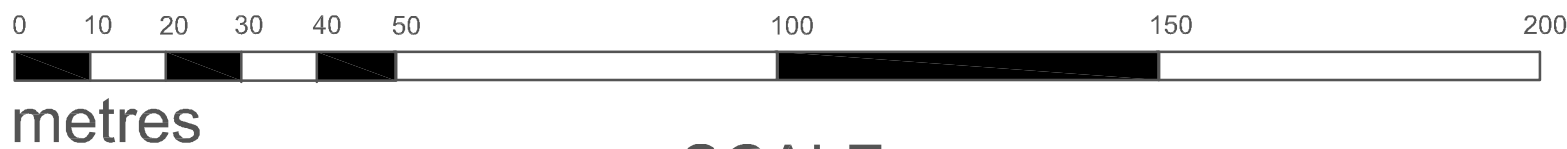
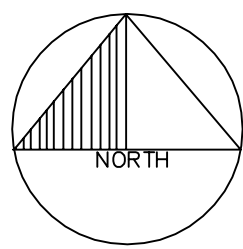
**TRACKS**  
Walking Tracks to be retained, maintained, and upgraded as excellent examples of good environmental management. Clearly signpost junctions, and interpret features such as Waratah Walk. Establish link into KCNP and Warringah Shire

**KU-RING-GAI  
CHASE  
NATIONAL  
PARK**

**PERIMETER ROAD**  
6m wide multi-use sealed road acts as boundary control to encroachment into DFEC and sets clear asset protection zone limits for pavilion buildings. Ameliorate existing runoff and drainage impacts into bushland with bio-filters.

**REVISED**

JUNE 1010



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ATTACHMENT 9

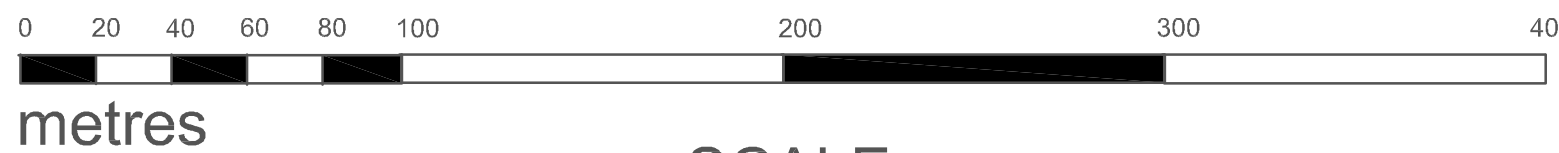
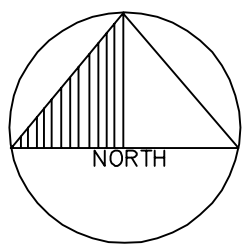
# MAIN ARENA, EVENTS & DOG CLUB AREA





**REVISED**

JUNE 2010



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# GREENWASTE TIP, NURSERY AND HART SITE

ATTACHMENT 10

ST IVES SHOWGROUND PRECINCT



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response
1	<b>Jo-Anne Perry, Ku-ring-gai Netball Association (KNA) Committee</b>	Need more netball facilities		none	Netball potentially catered for in indoor sports centre at Council nursery site. KNA submitted expression of interest to be involved in the project.
	There doesn't appear any allowance for the long term future of netball within this community				
	What allowance has been made to cater for future growth of this sport, particularly in line with current locations, and parking/community issues.				
	Are there any other sites/locations proposed for the future and anticipated expansion ?				
2	<b>John Nolan, Secretary Ku-ring-gai Model Flying Club</b>	Degrading of surface for model aeroplanes	support sharing site with conditions of regular communication with Council and opportunity for input and approval at each stage and discussions and timetabling of best shared use options with staff prior to any approvals. Establish regular communication process	none	Set up process and forum for users to discuss issues between themselves and with Council and have input into precinct function - especially development and bookings.
	Ku-ring-gai Model Flying Club needs an established avenue of communication with council (Councillors);				
	Our attempts lately have been unsatisfactory.				
	We cannot make informed comment on the draft options if we cannot get our questions answered.				
	A special meeting of KMFC on 5th December 2009 resolved unanimously:				
	1. That we ask Ku-ring-gai Council not to proceed with any artificial flying surface, but that it remains an option to be revisited after we have settled				
	in to the new sharing arrangement and assessed how the sharing affects our grass surface				
	2. That we tell Council that we accept the proposed occasional sharing with moonlight cinema/ concerts in principle, and ask that a procedure be put				
	in place that will give us access to each step of the implementation of the sharing plan.				
	The flying club has welcomed the discussions with Council to date, and looks forward to continuing these as the plan develops.				
3A	<b>Alan Fredericks, Open Space Reference Committee</b>	Prefer traffic lights at showground and nursery site.	strong support	none	Cross Country: Currently, schools design their own course and provide a site map as to the course layout. Council does enforce that all sections of the course should be on cleared paths, roads and trails and not to use any National Park areas. Officials and appropriate cones/signs are set up on any parts of the course that use roads for safety. The concern with setting up a cross country track is that each school would have a varying distance to the next (ie public school v a high school) and varying numbers
	Excellent presentation. Good community consultation. Concept plan is good. Objections raised are mostly minor and all can be addressed.				
	I prefer traffic signals at (old) Nursery site entrance and Showground entrance. Congratulations to Staff				
	I wish to record my strong support for the decision of Council to draw up the concept plans for this area, which is under the care control and management of council. I also support the process adopted, in particular the community consultation process and the professional assistance provided by Council staff in developing the concept plans.	Link road between sites supported			
	I am supportive of provision of indoor sports centre at the Nursery; upgrade of main arena; multi-use of Model Plans oval not sole use; upgrading of camping facilities; walkway/cycle path/link road around the site linking all precincts; movement of retail nursery to the Wildflower Garden;	bushwalking tracks and cross country running trails for school use provided and maintained			
	overall linking of Regional walking trails; signalled traffic lights at both the proposed Nursery entrance and Showground entrance.				
	A link road from the Nursery entrance off Mona Vale Rd to the Wildflower Garden should be considered which could also service the Richmond Ave residents.				
	I wish to place on record the need to ensure sufficient bushland tracks are identified and maintained to ensure school and other group cross country running events are catered for				



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response
	Re Mini-Wheels options and noise: the current facility appears to be approximately 600 metres from the nearest residents and the proposed location approximately 400m.				varying numbers.



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response
3B	<p><b>Alan Fredericks, Ku-ring-gai Little Athletics Centre, Council Liaison Officer</b></p> <p>On behalf of Ku-ring-gai Little Athletics Centre Inc, representing 350 families, I wish to provide comment on the above draft options plan. Our organisation wishes to record our strong support for the decision of Council to draw up the concept plans for this area, under the care control and management of Council. We also support the process adopted, in particular the community consultation process and the professional assistance provided by Council staff in developing the concept plans. We now wish to comment on the plans as set out</p> <p>1. We support provision for an indoor sports centre at the Nursery site as such a facility has long been identified as a priority in Council's Recreation Needs Study and its strategic Plan for Sportsfields and Courts – 1997. The all weather synthetic hockey and sports utility field also are much needed.</p> <p>2. We support the upgrade of the Showgrounds Main Arena to not only cater for existing users but to also cater for additional uses of this facility.</p> <p>3. We support the multi use of the Model Planes oval to service wider compatible users and a broader demographic of the community.</p> <p>4. We support the upgrading of the camping facilities on site.</p> <p>5. Also, we strongly support the plans for a walkway/cycle path/link road around the site linking all precincts and the provision of facilities for cycling and biking generally – all much needed in the municipality.</p> <p>6. Movement of the retail nursery component to the Wildflower Garden makes sense, as does car parking there for this facility.</p> <p>7. We support the overall linking of Regional walking trails throughout the site.</p> <p>8. Traffic – we support the plans indication of signalled traffic lights at both the proposed Nursery entrance and Showground entrance, as this would appear to give the best outcome to all for all concerned</p> <p>9. We strongly support the fact that current users maintain existing use, albeit with improved facilities.</p> <p>10. We wish to place on record the need to ensure sufficient bushland tracks are identified and maintained to ensure school and other group cross country running events are catered for and will continue in the precinct</p> <p>It is our view that until agreed concept plans have been adopted by Council, realistic funding considerations cannot be advanced. In conclusion we strongly support Council's decision to draw up concept plans and compliment them on the process and are very supportive of the plans as produced.</p>	very supportive of the plans as produced.	strong support	none	See comment regarding Cross Country running above.



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response
4	<b>Jim Close</b>				
	<p>Proposal: to use the link road between KWG and Old Nursery as the main entry point to the KWG and close-off access into KWG from Richmond Avenue.</p> <p>Given the increased traffic on Richmond Avenue accessing the upgraded Wildflower Garden, consideration should be given to closing access to the Garden via Richmond Avenue completely and using the proposed road running between the proposed Nursery Upgrade (Multiplex Sports Area) and the Garden. This would have the benefit of having one single access point on Mona Vale road into both venues – with traffic lights installed at this junction, rather than having a complicated access and departure point at Richmond Avenue and Mona Vale Road – also negating the need for another set of traffic lights at Richmond Avenue to accommodate the increased flow into the Garden.</p>	Close-off access into KWG from Richmond Avenue.(Referred to Operations for comment on this)	<p>general support</p> <p>supports internal road</p>	none	<p>A Traffic Management Plan (TMP) would need to be prepared and forwarded to RTA for consideration/approval. In the TMP, consideration needs to be given to factors such as identification and assessment of impact of the closure, measures to ameliorate the impact of re-assigned traffic, assessments of effect on existing and future developments with transport implications in the vicinity of the closure and in adjoining council areas. A TMP which adequately assesses this proposal would require a traffic study to be undertaken.</p>
					RTA prefers lights at Richmond Rd rather than at the Nursery site at the bottom of the hill.
	The proposed Education Centre for the Garden should be located beside the existing Visitors Centre and incorporate the proposed additional classrooms that were proposed to be built at the same location. This would free up the existing Office to be retained as a fully functioning office complex and reduce the overall construction costs of the new Education Centre (plus classrooms). I would propose that this new Education Centre be located as far away from Mona vale Road to reduce the ambient noise level i.e. on the western side of the existing Visitors Centre where the car park is currently located. Additional parking would be provided at the same location as the currently proposed classroom site and downhill from there along the boundary with Mona Vale Road. The current Visitors Centre could then be upgraded/converted or utilized as a Convention Hall or the like with food services provided.	Education classroom located in car park to west of KWG to avoid road noise and car park located in space available			With context and design undertaken sensitive to Pavilion significance, curtilage and impact,this idea is supported due to less traffic noise impacts at this site. Building concept to be designed by same architect if possible.



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response
	Given the very nature of the Garden as an instructional and educational venue where primary school children and elderly people are often moving along the tracks and roads within the Garden, it would not be appropriate to have these tracks and roads converted to bike tracks as proposed, where there would be the distinct possibility of serious injury should a collision occur. There was some discussion that these bike tracks would be used for bike competitions – thereby necessitating the virtual closure of the Garden to any other activity at the time these activities took place and during the setup stages. This would compromise the purpose of the Garden as an instructional and educational centre. If there is still a need for a bike track, locate it at the Showground where there is larger area to work with and more remote from the likelihood of injuring children and elderly people.	wider internal road system for road bike events not supported - impact on users (children and seniors at risk)			Agree that this would have major difficulties - environment, fauna, cost, people, safety.
	One of the proposals put forward at the Public Meeting was to incorporate a retail outlet at the Garden for the sale of Nursery plants because people were mistakenly turning into the KWG instead of the Council Nursery. I cannot see the sense in this at all given the location of the Nursery will be at the redesigned HART location where there is a source of adequate water for the Nursery. The retail outlet for Nursery products should be where the Nursery is i.e. at the HART location, so products can be readily moved from the Nursery to the retail outlet with the minimum difficulty. This would also reduce the building costs of constructing duplicate storage sheds and retail/wholesale sales personnel.	No nursery function at KWG.			The nursery function could underpin like uses of APS shade house and fern house and environmental education programs at this site with bush foods indigenous planting and also relate to existing organic garden education programs at KWG.
	At the Public Meeting I asked whether any land had been put aside at the redesigned Nursery/HART location for a Community Based Vegetable Garden – not unlike that current operation at Turramurra. If it has not been previously proposed, I would like to propose it now for consideration.	need community garden			Community garden is adequately addressed at other sites. Organic garden program at KWG already. Prefer location closer to denser housing facilities.
	I thank you for the opportunity to submit these points				
5	<b>Peter Taylor</b> Community garden request within St Ives Showground ( <i>also Turramurra Lookout Community Garden</i> )			none	
	Please see my attached letter seeking inclusion of a community garden within the options plan.	Need community garden			Community garden is adequately addressed at other sites. Organic garden program at KWG already. Prefer location closer to denser housing facilities.
	I would ask that space be allocated within the St Ives Showground precinct ... at the existing community nursery site .... for a community garden ... which could showcase lifestyle responses to global warming ... As part of a council education program ....				
6	<b>Brett Ashcroft, Gordon Hockey</b>	Hockey support	yes	none	
	The presentations and overall intentions of the council are superb and deserve commendations at all levels				
	Gordon Hockey, NSW Hockey and NSW Basketball will be interested to assist council move the plans into				
	Please pass on my thanks to the team involved in generating these plans and presenting the same on Wednesday night.				



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response
	They deserve significant respect – especially in light of balancing the needs of the many competing interest groups.....				



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response
7	<b>John Dailey</b>			none	Community garden is adequately addressed at other sites. Organic garden program at KWG already. Prefer location closer to denser housing facilities. Laterite soils at Showground would require major additives to grow vegetables which is not supported as the soil type is already scarce.
	Supportive of the letter submitted by Peter Taylor seeking an additional community garden at SIS. Specific request in this letter for inclusion of a community garden at the Showground site.	Need community garden			
8	<b>Gavin Bruce, St Ives Radio Control Car Club</b>			none	
	Submitted 9 page attached plus 2 maps requesting extensive new facility be considered for them at SIS	major upgrade request for space well beyond what is available.			Already advised this cannot be accommodated given constraints of users and environment.
9	<b>Angela Rozali</b>		yes		
	The intent of creating a more functional and environmentally sustainable St Ives Showground and Precincts is evident in these draft options with eco-camping facilities, cycle paths and maximum use of existing infrastructure. I think most of it is great !	Noise due to mini-wheels			Recommend Mini wheels remains at current location at showground.
	Two concerns: Noise due to Mini-Wheels activity. I look forward to transparent and personally mailed information on the progress and opportunities to provide feedback and visit the site when activities are on. Plus, the maintenance of the existing static water supply for fire fighting capacities.	Available water at tip to be retained for use as static water supply in event of fire			There are 10 houses in Jessica Gardens with pools that would be available as static water supplies for Davies Pumps and Community Fire Unit (NSWFB) should be investigated to improve fire resilience of this street if not already in place. Water supply at the tip is shallower in times of dry weather, but Hornsby Ku-ring-gia District of RFS can advise further.
10	<b>Anthony Thornton</b>				



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response
	Strong support for the proposed synthetic hockey pitches and indoor basketball/netball facility proposed.	Hockey and basketball & netball support	yes	none	
11	<b>John Ceccato, KDSA General Manager</b>				A process to address the issue of communication and liaison between stakeholders, staff, Council and user groups can be considered to assist with information flow.
	Well done for last night. I believe the overall plan is excellent. I noted with concern the comments made by the model flying people. Suggestion: Maybe a working party be formed by the Open Space Reference Group – People with an open mind that will be able to research practices elsewhere.	excellent	yes	none	
12	<b>Adam Hyman, Athlete Development and Mentoring, St Ives Basketball Club</b>				
	The proposed draft options for the SIS and precincts are of great importance to the community due to the growing demand for indoor sporting facilities in the Ku-ring-gai area. ....	a must	yes	none	
	As the proposed options are not due to be completed in the immediate future, ... my initial proposal for the Douglas Pickering Pavilion to be converted into a single indoor basketball court (at my cost) be implemented.				
13	<b>Rod Hill, Honda, Manager HART NSW, Honda Australia Roadcraft Training</b>				
	Honda Australia appreciates the effort council has made to listen to and incorporate our requirements into the proposed plan. ... you have indicated on the plan that Lot 2844 will be used for underground easement access ... this will ensure we can continue to operate our site in the manner it was designed for, ie. controlled access to ensure a safe and predictable driving education environment.	support underground service easement access through Lot 2844	yes		
	Also, Lot 2843 currently utilised under licence will be incorporated into our main lease arrangement, again a positive outcome for us.	support additional lease area Lot 2843			Need formal approval for this from LPMA in DPoM process for Council as trustee and then sub-lease back to HART.
	Lot 2842 is also under direct licence to Honda Australia from the Lands department. We have requested, through our lease renewal negotiations with Council that this Lot also be included under our lease. We request that this be noted on Attachment 6 of the plan.	want lot 2842 already leased directly to them		existing use is Honda's	This supports the notion of not moving miniwheels as tracks are still used by Honda - they would allow periodic use for enduro events.
	Honda Australia supports, in principle, Council's option of traffic lights at the entrance to HART/Show ground and/or a pedestrian tunnel under Mona Vale Road. We see this will enhance the safety at these access points.	support lights at showground			Depends on RTA warrants.



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response
	<p><u>Shared use of facilities:</u> .....Potential shared use of our off-road tracks due to the relocation of the Mini-Wheels club and some bike groups ..... whilst we agree to the concept, Honda Australia must remain principle and ultimate control over the land it leases and/or is licensed to us.</p>				<p>This supports the notion of not moving miniwheels as tracks are still used by Honda - they would allow periodic use for enduro events.</p>



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response
	At the public information night, it was indicated that we do not use the off-road tracks. This is incorrect. We do use them in accordance with our lease requirements for 4WD and off-road bike training. There are periods where the areas are not used and we agree we can negotiate with the Mini-Wheels club, bike groups and/or council or their potential use.	noise due to mini-wheels may be attributed to Honda prefer not used by mini-wheels		noise	
14	<b>Jeff Pettett</b>				
	... I believe the proposals put forward will greatly benefit the community. Keep up the good work.	supported	yes	none	
15	<b>Jennifer Lamb and Susan Lamb</b>				
	.... The draft plan advertises that Mini-Wheels will be moved to the Green Tip site for more ecologically sustainable and compatible uses. Compatible uses is not defined, nor is it stated ... why the designated space for Mini-Wheels will be much larger when moved.	Ecological and environmental concerns		yes	Can be managed through DPoM
	It has not been stated whether this move will affect other threatened species or communities after the proposed move.	Not in favour of mini-wheels expansion on new			noted
	..... There are 50 listed threatened species in Ku-ring-gai LGA as well as STIF, BGHF that have not been considered in this draft plan. Species are listed in Appendix 1 (Confidential).	Threatened Species, STIF and BGHF concerns			Liaison with DECCW will co-ordinate protection of threatened species. Vegetation mapping indicates no STIF or BGHF on precinct site.
	... I suspect that the draft plan will have the following impacts on native flora and fauna:				
	increased weed and exotic species invasion into natural bush land and neighbouring National Park....				Environmental controls and barriers not currently in place could make net improvement as part of DPoM
	Increase in noise impacts on diurnal and nocturnal species ....	noise			Noted
	Increased risk of road kills due to influx of visitors .....	road kill			Noted
	Habitat loss, eg nursery site ..	Habitat loss on Nursery site			The nursery site is considerably altered from its original state and works will seek to retain or improve existing areas of habitat.
	Increased trampling of neighbouring bush land & National Park by site visitors ...	more visitors to NP bushland			This is management of NP land , not Council



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response
	Increased run-off from additional roads and developments ....	increased runoff from development			Environmental controls and barriers not currently in place could make net improvement as part of DPoM.
	Increased habitat fragmentation ....	habitat fragmentation			Co-ordination of management under a single reserve trust and linking areas of remnant vegetation and regeneration will assist habitat, managed under Councils Bushland PoM.
	Trail bike impacts to soil composition and native vegetation. Trail bikes are also identified as a threat to survival for the DFEC (Duffy's Forest Ecological Community).	trail bikes			Trail bikes not permitted off road in the precinct.
	Of the 50 species listed as threatened in the Ku-ring-gai Council LGA, 32 are fauna species & 18 are floral (Appendix 1, Confidential). These species should be considered by means of survey and research. The impacts of these species ..... should be analysed before the draft plan progresses further. .... before and after control impacts' research to isolate the impacts of development on Crown Land and neighbouring bush land and National Park. This would also provide the grounds for further improvement into sustainable development.	analyse impact on flora and fauna in more detail			to be done as part of DPoM research and reference to Biobank database.
	Separate submission from <b>Jenny Lamb:</b>				
	... concerned about the noise from these developments and in particular the mini-bikes ..... the whole valley acts as an amphitheatre, magnifying the sound ..... this noise is enhanced by the prevailing north easterly winds.	noise objections for bikes			Noted
	... every weekend, it would become an imposition and effect the ambience of our property. .... Regular sporting competitions would also increase the noise levels across the whole area.	noise objections for sports			Sports use noise levels would be part of assessment to be done as part of DPoM research. Noise levels to be within legal limits.
	Most weekends .. motor bike riders illegally riding along the fire trails ... extremely noisy, annoying and disturbing.	illegal trail bikes now			Refer to national parks to manage on their land, or Council rangers on Council land.



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response
	We purchased this property because of it's quite natural ambience. The noise from more motor bikes, public address systems, sporting cheers etc. would substantially affect the lifestyle we have here.	impact on lifestyle			Change is inevitable with increased population growth supported by State & Federal Govt. Noise levels to be managed and within legal limits.



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response
16	<b>Bruce Lamb</b>				
	<u>The location of the Green Tip/Clippings Tip:</u> The proposed site is adjoining Garigal National Park & opposite many residents who live adjacent to the bush for its natural and quiet ambience. The noise created from the Mini-Wheels facility will definitely have noise impacts on the residences adjacent to the bush, thereby ruining the ambience and peace. Noise can lead to impacts on human health and welfare.	noise objections for bikes		yes	Noted
	.... Although relatively disturbed, this (proposed) site still has an array of native species present.				
	<u>Public involvement of the draft plan:</u> Residents of Ku-ring-gai council are stakeholders too & should have been entitled to more involvement in the process & on a continual basis. The public meeting was only advertised very close to the end of the public exhibition period (late February), thereby restricting input time after the details were given at the public meeting.	Public involvement should be greater			In the DPoM process this will occur
	It is somewhat surprising that Mini-Wheels would be offered many times more space than they have on the Showground site. This is somewhat notable as other stakeholders have not seemed to benefit to such a large extent.	Not in favour of mini-wheels expansion on new			Noted
	<u>Indigenous Cultural heritage:</u> I note that the Mayor .... Recognised the original owners of the land. What other roles have the traditional owners of the land played in this process ?	Aboriginal issues			AHO commissioned to undertake site survey. AHO generally has no objections to development but sites require respect and recognition where they occur. AHO advise there are no known remaining traditional owners from this clan area.
	<u>More appropriate use:</u> How about a tip that is in the process of being rehabilitated to involve the community in sustainable activities that incorporate the re-establishment of the natural environment and synthesis of the Garigal National Park. This could also incorporate a fostering of green attitudes & lifestyles as well as a bush regeneration buffer between Crown land & Garigal National Park through indigenous principles.	Give land to national Park and Regenerate			National Parks have advised they don't want this damaged land.LPMA support Council as Trustee.
	<u>Current issues and future issues:</u> .... Motor cyclists illegally use the fire trail and clippings tip area on a regular basis ... they deliberately make additional off-track excursions as well as seriously cut holes in the path with their burn-outs.	illegal trail bikes now			Refer to National Parks to manage on their land, or Council rangers on Council land.
	<u>Support for the Council Nursery to exist on the Green Tip site:</u> I support the relocation of the Council Nursery to the Clippings tip site ... minimal impact on the neighbouring Garigal National Park's flora & fauna and in particular threatened species.	Nursery relocation	supported		
	<u>Mini-Wheels:</u> I am not absolutely opposed to a Mini-Wheels track but this should be located within the HART area and use a limited area – see attached rough layout ... on the proviso that it does not interfere with the natural/quiet ambience of the area. .	mini-wheels use limited to HART site			Infrequent use can be arranged through HART.



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response
	<u>Proposed Picnic area:</u> ..... near the Mini-Wheels track, which is hardly a suitable location for a relaxing picnic in a bush setting.	picnic area poor location			Noted
	<u>Specific Suggestion:</u> Overall use for this site should be natural and include:				
	a. Ku-ring-gai Municipal Farm & Allotments: A farm area that is managed by the community and work and produce shared – this is entirely consistent with the traditional use of the showground as an Easter Show Horticultural environment where excellent in fruit and vegetables is competitively recognised ... showpiece for school children, schools & interest groups .... Additionally, I would envisage allotments that individuals can have as their own mini farms. .... Aging population & increase in retirement villages ... KMC leader in lifestyle enrichment.	community allotment farms run by Council			Community garden is adequately addressed at other sites. Organic garden program at KWG already. Prefer location closer to denser housing facilities. Laterite soils at Showground would require major additives to grow vegetables which is not supported as the soil type is already scarce.
	b. Ku-ring-gai Park: Where indigenous practices and native food and preparation can be shown ... refer to the outstanding example of this is Alice Springs Desert Park ( <a href="http://www.alicespringsdesertpark.com.au">www.alicespringsdesertpark.com.au</a> ). This may well be an annex to the activities of the Wild Flower garden's educational activities.	Indigenous practices demonstration area			
	Comments on MAP (Attachment 6): * car parking under power lines for bush walkers & farm allotment				
	Gate remains locked. Opened only for Nursery use & Ku-ring-gai farm manager.	locked gates			Area for Bush foods and education incorporated into KWG. Difficult to introduce Aboriginal culture when AHO advise there are no known remaining traditional owners from this clan area.
	Access road to remain gravel to limit run-off and allowing walkers & cyclists to use it.				LPMA do not support locked gates and areas locked up such as community gardens on Crown land.
	Use of Clippings Tip site for broader community & original Ku-ring-gai tribe, reflective of today's values, .. not just one interest group.	broad use of tip site			Noted



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response
17	<b>Rasheed Iraninejad</b>				
	.... I would like to thank council for their public engagement in connection to this most important project. I have lived in St Ives for more than 27 years ... concerned that the current Showground project will somehow take away more than it gives to the local community.			yes	
	.. At no stage should council seek to convert the main field into a sports arena ... thereby excluding general recreation enjoyed by many. I seek council assurance of their commitment to maintain the classification of the main field as recreational.	main arena not to be sports arena			Recorded use for sports since 1937 when 3 cricket pitches and football listed. No change to existing situation envisaged
	.. proposed relocation of the mini wheels club & track .. I find no logical reason as to why an area that has never been exposed to such noise pollution of which my street is one, should now be exposed & the area that has for many years been exposed, turn into a peaceful tranquil area enjoyed by only a few.	no mini-wheels/noise pollution			This supports the notion of not moving miniwheels as tracks are still used by Honda - they would allow periodic use for enduro events
	.. Apart from noise pollution ... concerned with level of pollutants that may be released from the disturbance of the land mass at the new proposed site ... To dramatically change the physical substructure of this site prior to the completion of a leaching report and its effect to the surrounding bushland would not only devalue the environmental management carried out on the site to date, but would also increase the real risk of environmental damage to both soil as well as water.	site disturbance			Report of existing leachate and impacts completed by Council which supports recycling and re-use of water.
	.. the water catchment that currently exists on the new proposed site for the mini-wheels club & track ... Council must at all costs commit to the maintenance of this emergency water supply even if the mini-wheels relocation project receives the green light.	emergency water supply to be kept			Water recycling program already adopted and approved by LPMA and Council.
	My final concern is with the actual funding of the .... project. I seek Council confirmation & commitment that should the project go to the next stage, at no time will private funding from clubs, associations or business be sought and that the entire project be directly funded by council, state government or combination of both. ... Projects that promise to work for the greater good of the community and to act as a catalyst to bring them closer when in reality these works simply pulled them apart ... By the community and for the community should be the motto adopted by council ...	funds from government			To be investigated further as part of DPoM.



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response
18	<b>Zeny Edwards</b>				
	An indoor sports centre would destroy the very promising potential of expanding what is already there - the wildflower sanctuary and the promotion of flora and fauna in Ku-ring-gai. I have long envisioned the site as ideal to establish an indigenous bush food sanctuary. And the ideal site would be the Wildflower Garden where a substantial section devoted to this growing interest in bush food and the preservation of this threatened heritage food resource. This would supplement and complement the Environmental Education/Aboriginal Cultural and Conference Centre to hold these classes, workshops and seminars on heritage flora and fauna, and the propagation and use of indigenous food from the bush in Australian cuisine. Eco-camping and other forms of accommodation would provide hands-on experience and educational courses on all aspects of Aboriginal arts, crafts, and culture.	indigenous bush food sanctuary		no more sports	Nursery site is set aside for Public Recreation and Plantation so sports are permitted. Bush foods can be better included in KWG site
	This will be a unique opportunity for Ku-ring-gai to be the first to promote cultural, educational and environmental tourism in this way rather than a sporting complex which will benefit only a few. We don't need any more hard surfaces and enclosed spaces. We need to conserve what is already there i.e. Wildflower Garden and Nursery, and respect the resource and make use of what it can teach us.	tourism needed not sports			Sports facilities supported by the demographics and rec studies. KWG site can accommodate Tourism.
19	<b>Neralie Coulston, President, Northside Riding Club</b>				
	.... We thank KMC for the opportunity to contribute to future planning for the St Ives Showground Precinct .... we support the proposal for the equestrian area. We reiterate the need for dedicated parking for horse floats and trucks to be included in development of the area.	support equestrian area and parking for horse floats	yes		Consult further for detailed planning requiremenst for this type of parking at the showground for inclusion in DPoM.
	We are also keen to be involved in the planning and development of the area....				Will be included in DPoM process
20	<b>Barry Tompkinson, STEP Inc.</b>				
	STEP is the largest environmental community group on the North Shore, with over 400 members in this area. Our aim is to preserve natural bushland for the enjoyment of future generations. Our comments on the above options are framed with that objective in mind.				
	1. STEP is <i>supportive</i> of the overall plans for the precinct and the professional approach Council staff have adopted in drawing them up.	supportive overall	yes		
	2. STEP is particularly <i>supportive</i> of the stated intention to protect in perpetuity the Duffy's Forest Ecological Community. We refer you to our detailed comments of 31 August 2009 and urge that you base your protection plans using the information supplied therein.	protect duffys forest			Follow requirements of legislation



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response
	3. STEP is <i>supportive</i> of the removal of Mini Wheels from its present site. It is clear that is quite inappropriate to have such an operation located in such an environmentally sensitive site. It has already caused great damage and its continuation on that site will see the area die the death of a thousand cuts under the continuing impact of Mini Wheels activities.	support removing mini-wheels			Mini-wheels can improve existing situation using environmental controls and REF completed for licence agreement to be rigidly enforced. Expansion not available at this site so no further areas will be degraded.
	4. STEP is <i>strongly against</i> the proposal to construct a six metre wide sealed cycling track along the external [fire trail] perimeter of the Duffy's Forest Ecological community and the Ku-ring-gai Chase National Park. Sealed tracks are the cause of both short and long term environmental damage and the chosen location could not be more environmentally fragile. Sealed tracks also have the effect of opening up new areas of high quality bushland to easy access by some thoughtless mountain bike riders, who have a well earned reputation for causing great damage with their illegal tracks.	no support for bitumen circuit road for bicycle events adjoining KCNP			Noted
	5. STEP suggests that the <i>preferred route</i> for the sealed cycleway should be the proposed track that runs between Duffy's Forest and the Princess Anne Field and then the Jim Watson Arena. This will allow for an extended cycleway while still protecting the heartland of the Duffy's Forest community.	short internal bitumen shared road supported			Noted
	6. STEP is <i>supportive</i> of the proposal to retain the Wildflower Garden in its current location and to relocate the Nursery to the new site.	support nursery relocation			Noted
	7. Finally, STEP would like to repeat its call for an independent environmental report to assess the overall cumulative impact of the proposals, both for facilities and for parking and traffic arrangements. Bushland becomes degraded over time due not only to loss of habitat and boundary encroachment, but also due the impact of inappropriate [and some times inadvertent] stormwater and soil nutrient enrichment activities. Internal mechanisms to monitor these impacts are often ineffective.	independent environmental report to assess cumulative impacts of proposals - control mechanisms ineffective			Environmental issues and sustainable management for the future to be done as part of DPoM.
	STEP looks forward to the implementation of the final proposals and their being locked in legislatively so that that demographic pressure do not destroy the value of this area at some time in the future.	support PoM adopted by minister to protect future use of site			Noted
21	<b>Michael Ledzion, Adventure Forest Pty Ltd</b>				
		ropes course - popular for school and tourism	yes		Provides a much needed youth activity (10 - 17 y) as well as other ages.



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
	On the recommendation of John Filocamo of the NSW Land and Property Management Authority, I am delighted to make this submission .... which proposes that a zip wire and/or ropes adventure course be included in the final plans for the St Ives Showground and Precinct ... almost zero environmental impact .....used by schools for education and adventurous activities .. <i>(7 page submission)</i>	need 35 car spaces max use		none	investigate feasibility - and minimum impact claims to include for consideration in DPoM



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
22	<b>Phil Berry, Campervan &amp; Motorhome Club of Aust.</b>		yes		
	There are now over 330,000 Recreational Vehicles (RV) registered across the country and an estimated 70 – 80,000 on the road at any given time. Domestic RV tourists spend on average \$500 per week & international RV tourists are spending double that amount. Any town that provides accommodation for these travellers will see their local businesses benefit from this spending which in 2008 totalled \$8b.	motor home camping is profitable			Camping is currently not approved under the KPSO nor LPMA for the SISG Precinct. Approvals are required for the activity to be permitted.
	As part of the 'eco camping' proposal, we ask Council to consider having an area available for self-contained vehicles. These units carry fresh water, have holding tanks for grey and black water waste, and generate their own power, generally by solar.				Opening up additional areas not possible to vehicles without significant damage to EEC
	Access to a dump point for the disposal of grey and black water waste is very important for these self-contained RV tourists. CMCA is willing to give Ku-ring-gai Council a 'Dump-Ezy' dump point unit under a subsidy scheme that we operate in conjunction with KEA Campers Australia. The CMCA promotes environmentally responsible camping and overnighting at all times.	need dump point			Noted
	We take this opportunity to wish Council every success in the proposed redevelopment of this very important site				
23	<b>Wendy Grimm</b>				
	The Ku-ring-gai Wildflower Garden is a separate piece of Crown Land and should be kept separate. There is no justification for changing the gazetting of this land. People's enjoyment of the Garden as a flora and fauna reserve should be encouraged but not to the detriment of what is being preserved.	keep separate and retain gazettal			Gazettal needs to be updated to meet current legislation. LPMA (owners) have requested a simplification of management into single reserve trust. The area gazetted for Study and preservation of Flora and Fauna will remain focussed on that purpose.
	The huge recent development of housing in St Ives means that areas such as the KWG take on an even greater significance because small areas of bush and vegetation are being lost at an alarming rate.				Noted
	<b>Looking at the plan in detail</b> . Picnic tables, widened tracks and formalise car parking has been sited ..... on the locations of the following species of orchids: <i>17 orchids listed (confidential)</i> .	orchids			Adjust proposals to avoid impact
	This is not the complete list of orchids in KWG, only those that I am aware will have their actual location physically covered by the proposed changes. Orchids seem to prefer to grow on the periphery of tracks and cleared areas. Formalising the track to the showground will compromise <i>Genoplesium baueri</i> . Widening the Solander Track alone will destroy much of the habitat of seven of these orchids. Picnic tables and formalising the parking areas, I believe from looking at the proposal, will destroy the rest.	orchids grow on disturbed ground -			proposal to formalise parking areas will have net benefits environmentally. The TS orchid will be avoided (as is already shown)



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response
	Please respect the confidentiality of these readings. They are not to be disseminated to the general public but are to be used for the protection of these vulnerable species.	confidential species locations			proposal to formalise parking areas will have net benefits environmentally. The TS orchid will be avoided (as is already shown)
24	<b>Margery Street , Australian Plants Society – North Shore Group</b>				
	The Australian Plants Society - North Shore Group (APS-NSG) has been meeting continuously in the Hornsby-Ku-ring-gai area for 50 years and comprises over 200 members. APS-NSG supports Council in the promotion of native flora through education and practical programs.				
	APS-NSG members and volunteers at the Ku-ring-gai Wildflower Garden (the Garden) provide the following services for the community and the wider public:				
	□ Walks and Talks program running weekly throughout four terms □ Maps for Walks and Talks program (planned for 2010)				
	□ Whole Walks and Talks program to go online (planned for 2010) □ Plant identification course (most years)				
	Displays of plants currently flowering in the Garden Botanical and interpretive signage (in progress) for the Garden				
	□ An Access database of plants in KWG and their locations □ An accurate map of the paths in the Garden, given to Council				
	□ A revitalised Knoll, demonstrating plants' potential use in home gardens □ Native plant propagation opportunities for learning and doing				
	□ Bush regeneration throughout the Garden □ Displays, local provenance plants, and expertise for the annual Wildflower Festival				
	The Committee of APS-NSG, on behalf of its members, appreciates this opportunity to respond to Ku-ring-gai Council's St Ives Showground and Precinct Options (the Options).				Noted
	We are concerned to retain the value and character of the Garden as envisaged by the Council and APS-NSG, realised by official Gazettal forty-two years ago: ' <i>... for the promotion of the study and preservation of native flora and fauna</i> '. The Options, as proposed, will change the function of the Garden and alter its character by making it a commercial and community income-generating space integrated with the St Ives Showground, a driver training school, and a disused landfill tip. 'Eco-' activities such as organic gardens, weddings, bushfood, electric shuttle and solar power are laudable but not directly supportive of the original charter. The encouragement of road-bike events will, as an unintended consequence, also promote unauthorised access for mountain bike riders who have been unfortunately, but frequently, associated with destruction of the bush.	keep separate and retain gazettal			Gazettal needs to be updated to meet current legislation. LPMA (owners) have requested a simplification of management into single reserve trust. The area gazetted for Study and preservation of Flora and Fauna will remain focussed on that purpose.



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response
	<b>Widening and Proposed Use of Existing Cycle track:</b>	Bicycle events track not supported			Noted
	<u>Alienate Garden space:</u> The concept of a high speed bicycle track to be used for 'events' several times a year is inimical to the purposes of the original Charter established for the Wildflower Garden. On several weekends a year when families would enjoy the passive enjoyment of accompanying their children on bicycles through the safe and peaceful bush, there will be multiple 50+ kph passes by brightly lycra-ed racing cyclists.	impact on families, children, safety, sexist, aegist			
	Families will be alienated from the bush road not only because of safety, but also because of the man-made disturbances they wished to avoid. Moreover, the altered access to the road is sexist and ageist.				
	<u>Bitumen:</u> The issue of road construction material has been raised by various groups with conservation interests. Bitumen releases destructive chemicals both during construction and over its lifetime. Plants have been observed to be less plentiful on the verges of the current Solander Track. The act of widening by half as much again, the present width of 4 metres, will exacerbate stress on the bush and the catchment.				
	<b>Access Roads and Overflow Parking:</b> <u>Bitumen.</u> ..... Crushed sandstone has been recommended as a preferred, inert, alternative.	use of bitumen not supported - use crushed sandstone			Hard-stand areas must be designed and surfaced to meet environmental and sustainable best practice.
	<u>Dogs:</u> Dogs are not allowed in the Wildflower Garden nor in the surrounding National Park. Providing an access road to the Wildflower Garden for the purpose of overflow parking for the Showground will invite dogs in cars. The very smell of a dog, even without its faeces, barking, growling or aggressive behaviour, frightens native wildlife.	No dogs - design will allow dogs			Improve reg function to enforce no dogs policy, signage fines and policing especially weekends.(increased resourcing required for this). Irresponsible dog owners should not limit use by responsible people.
	<u>Proximity to Rare Rock Warbler, Orchids and Frog:</u> Council is justly proud of the discovery of a rare <i>Genoplesium baueri</i> orchid, discovered and identified in the Garden only last year; of its Rock Warbler found in few other places in NSW, and of the rare Red-crowned Toadlet – all in the	keep rare habitat areas			Already indicated on plans.
	Wildflower Garden today! A few roads bounding their habitat and their future is tenuous.				
	<b>Use of present Nursery Site:</b> Upland swamps, found in the area below the Nursery Site, are an essential element of our water catchments because of their filtering and purifying effect on water downstream. Ku-ring-gai Council is proud of its remaining clean streams; in	retain upland swamps and clean water			Full environment study and management plan to be undertaken and implemented prior to any site development
	particular, the catchment streams alongside and downstream of the Nursery Site leading to Cowan Water.				



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
	<u>The intensification of the use of the present nursery space:</u>				
	The Options suggest				
	Two outdoor artificial playing fields; Six indoor courts and more to come; Night time lighting; Day and night traffic				
	□ Sudden influx of people possibly unused to bushland values				
	Such developments may create an invitation for vandalism in the Wildflower Garden as it is unlikely rangers will be patrolling the whole area until 10:00pm.	increased vandalism at KWG			Improve regulatory function to enforce bushland protection, gated car parks with time controls, signage fines and policing especially weekends.(increased resourcing required for this)
	<b>Education and Cultural Centre:</b> APS-NSG would require at least as much space for propagation as used at present. The dimensions of the propagation components are given below. The shade house was built and financed by APS-NSG for the propagation.	retain existing shade house and propagation			Shown already on plans
	Australian native plants from both seed and cuttings. It includes an 'intensive care' area where the plants are initially propagated as well as an area under shade cloth. Both of these areas are serviced by an automated watering service designed to minimise water usage. A 5000 litre rain water tank and pump system was jointly financed by APS and KWG.	storage required			Can be accommodated
	<u>Dimensions:</u> Shade House: 10 metres by 9 metres; Soil storage bin area: 5 metres by 3 metres.				
	APS-NSG also uses one quarter of the equipment shed as a locked storage area.				
	<u>Parking:</u> Constructing parking space for 47 cars will create more hard surfaces and_petrochemical pollution to land, air and water catchments within and beyond the_Garden boundaries.	pollution from cars			Hard stand areas must be designed and sufaced to meet environmental and sustainable best practice.
	<u>Implications of moving the retail portion of the Nursery Site:</u> Mutual support is an admirable aim – but is there a demonstrated need for such_support? Will Council's Retail Nursery be attended by Council staff throughout every day ?	retail nursery - mutual support an admirable aim - will there be full time staff available?			Nursery business plan to be completed to establish retail gudelines. Operating with APS and Bushfoods function can be staffed on a share basis linked to Ed & Cultural Centre.



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
	Community Use Hall (St Ives Guides)				The land proposed for this use is Crown land dedicated for future public requirements not flora and fauna.
	<u>Alienating land:</u> Constructing a Guides Hall may be a socially useful idea, however, it excises more land from the Wildflower Garden for a non-public purpose without directly supporting the aims of the Garden. The construction of a hall and parking for 55 cars will create more impervious and chemical-laden surfaces whose runoff will pollute one of the cleanest catchments in the local government area.	No guide hall use and no parking			Additional space has been identified as a need by KWG staff and proposals to extend heritage building cannot be supported. This expansion can be accommodated in an adjoining building available for hire to any approved user by Council, including Guides. Hard stand areas must be designed and surfaced to meet environmental and sustainable best practice. The existing car park runoff directed into the dams is filtered.
	<b>Conclusion</b>				
	Some of these points have been repeated by community groups during the consultation phase of the Showground's redevelopment, but Council has retained the essence of many of the original 'Options'. Increased vehicular access from the Showground on hard-surfaced roads, particularly for the purpose of overflow parking and high-speed bicycle racing, will damage the values of the Wildflower Garden. Increasing the building footprint and intensifying the numbers of people and cars for many of the purposes planned is antipathetic to the aims of the Garden, namely 'promotion of the study and preservation of native flora and fauna'. Many in the community view these changes as Council's promotion of organised sport at the expense of passive recreation – particularly since the Wildflower Garden is such a small part of the LGA, and was set aside, utilising extensive voluntary expertise and labour, for the express purpose of study and preservation of the living things in Australia's bushland. Volunteer groups in the future may look at the history of APS-NSG's contribution, intelligently and cooperatively donated.	don't promote organised sport at the expense of passive recreation			The study of the flora and fauna at KWG will still be the major purpose of this area. The car park areas have always been used for this function and are under a separate gazettal.



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
	..... where their labours will lead, when a gazetted agreement can be so comprehensively altered. Council stated its aim to 'provide facilities for generations to come'. It is essential that these 'facilities' include space for quiet, safe, family-oriented spiritual contemplation of the ancient Australian bushscape. We must ensure that the vision of those who preceded us will not be obliterated by ephemeral pursuit of the dollar.	how can gazetted agreement be so comprehensively altered			LPMA wants the gazettal updated and in keeping with current relevant Act (CLA 1989). The KWG land has two areas for different purposes and this is in keeping with those. A PoM for the site will enable better management, less adhoc maintenance and greater environmental controls.
25	<b>Allan Gibson, President, Hornsby Ku-ring-gai Basketball Association,</b>				
	Thank you for the opportunity to write a submission regarding the proposed development of the St Ives showground site. The Hornsby Ku-ring-gai Basketball Association, HKBA, fully supports the option that includes an indoor sports centre at the site. Currently there is no indoor sports centre in the shire to cater for sports such as basketball, netball, volleyball, futsal, badminton, martial arts and table tennis. Ku-ring-gai residents have to travel out of their shire to either the Brickpit at Thornleigh or the Rooftop centre at Crows Nest to participate in their indoor sport. The HKBA is based at the Brickpit. We run local competitions for both genders from year 1 to over 30s. We currently have around 320 teams playing weekly. The adult competitions run for 48 weeks a year and the junior competitions run for around 40 weeks during school terms. These competitions run for 6 days per week and finish at 11pm most nights. The association is running to capacity and our growth is limited due to lack of available court space.	indoor sports centre for basketball currently not available in LGA	yes	none	Agreed
25	As well as the local competitions we run a representative program for both genders from under 12 to the Waratah ABA League, a nationwide club championship. The Hornsby Ku-ring-gai women's team has won the Waratah League in 2007 and 2009. The representative program allows talented athletes to develop and compete at a higher level. Several players have represented NSW at National Championships and several others have been given basketball scholarships to college in the USA.	cater for both genders			Gender equity
	Our association is widely recognised as being efficiently and professionally run in the Basketball Community. In recent years we have won the best club in NSW and the best Medium size club in Australia awards.				
	In the age of the obesity crisis an indoor sports facility would benefit the health and social structure of the Shire. An indoor sports centre would be well used. Currently the Brickpit at Thornleigh has over 50 regular users. An indoor sports centre would allow major events such as National championships to be held in Ku-ring-gai. This would bring considerable income and prestige to the Shire.	obesity crisis will be assisted			Health promotion
	Correct configuration of the centre would allow the venue to be used for such things as a school presentation night.	multi-use facility			Agreed
	There is also the issue of equity. Council spends a considerable amount of money on outdoor sports facilities.				
	As far as finances are concerned the facility would be self funding after construction. The HKBA currently pays out around \$320000 pa in court hire.	can be self-funding			Investigate with EOI process
	We use 11 different venues for either local competitions or representative training. The only venues we don't use are either unsuitable or unavailable.				



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
	The sport of Basketball is healthy at the grass roots level. It is a participator sport rather than a spectator sport. Our neighbours at Northern Suburbs are also running to capacity. They are the biggest basketball association in NSW with around 4500 members. The HKBA is the third biggest with around 2600 members.	great interest (2600 members)			Ready support



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
26	<b>Charles Dunn, Ku-ring-gai Mini Wheels Training Club Inc.</b>				
	Referring to our letter dated the 24th August 2009 where we identified concerns about the inclusion of the Council Nursery and the restrictions being placed on usage in sections of the site being proposed for use by KMWTC. We register and appreciate that the Council has included an additional section (East Enduro Range) and formalised the access to HARTS (West Enduro Range) and these assist greatly. There remain some fundamental concerns about the proposed site. <i>See further 2 pages of observations &amp; supporting information about the site map and label .....</i>		yes		
	It was also noted that there were some strong concerns voiced by local residents about noise at the open forum meeting on Wed the 17th of Feb. While we understand their concerns and the process we are undertaking of running some events in the location to gauge community feedback, we ultimately do not want to end up in a battle with the local residents. We noted during the meeting that there were some statements made by council about restrictions on use and frequency of use that are currently placed on us at our current location, we would not want to see these restrictions preserved if a move were to occur. Further the following points were communicated in our original letter to you on the 7th of April 2009 and 24th August 2009 and remain as items that would need to be worked through in detail prior to KMWTC supporting a move.	no restrictions on new location if moved			Can't agree that Mini-wheels operate without restriction due to noise, environment etc.
	1. Term of Lease – we would like to see a long term lease with the club having an option to automatically extend. The lease would need to include wording that reflects the usage of the facility and would protect KMWTC from other government bodies	long term lease			up to legislation
	from intervening in its operation.				
	2. Ability to develop the required facilities and maintain them without unreasonable restrictions				
	3. Council assistance	Council Assistance			Additional funds not currently available
	4. Accommodations to cover the transition period				
	5. Make good requirements				
	Our position remains one of supporting the move but we need to ensure that time, effort and costs associated with the move will deliver a benefit to all parties for the foreseeable future. In absence of this we remain committed to the current location. We welcome a	only move if there is a benefit - otherwise committed to			Agreed
	continued dialogue with Council on this matter to reach mutually agreeable adjustments to the draft plans.				
27	<b>Jacqui Evans</b>				
	Our family is part of the Northern Suburbs hockey community. We have seen the preliminary proposal prepared by council in relation to the current nursery site. We would like to express our strong support for this proposal. Apart from addressing a strong need for hockey and basketball facilities for the northern suburbs, we note the opportunity this creates for numerous community event for many generations to come.	supported	yes	none	



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
28	<b>Jennifer Anderson</b>	not written as Councillor			
	The St Ives Showground Precinct currently has a unique, undeveloped, rural atmosphere. Underpinning this, the prime focus is, undoubtedly, on the natural bushland environment, in which the precinct sits. One cannot visit the precinct without the area's flora and fauna being central to the experience. Retaining this character, focus and purpose should remain fundamental to all future uses in the precinct.	retain bushland character			Agreed
	Council undertook an extensive consultative and interview process with Ku-ring-gai residents as part of its Sustainability planning. More than any other aspect, residents placed their priority on our bushland environment. The St Ives Showground Precinct, being on the fringe of Ku-ring-gai and relatively undeveloped, epitomizes this priority.				
	The St Ives Showground definitely remains a Showground in character ..... It also contains a number of items of heritage value. This character and heritage should not be diminished. Suggested uses presented in the Options Paper all seem compatible for the Showground and should preserve, and indeed improve, the heritage value evident on the Showground site itself. However, suggestions for other sites within this precinct, raise concerns	heritage values in other than showground raise concerns			
	The options paper includes a suggestion that the Plant Nursery site be transformed into a modern indoor sporting complex, surrounded by artificial courts, creating a place for intense sporting usage day and night. I believe this proposal is at odds with the precinct retaining its environmental focus.	nursery precinct to retain environmental focus			Current gazettal for recreation and plantation - not environmental focus.
	There is no doubt that Ku-ring-gai already needs more sporting venues, both indoor and outdoor. This must be addressed with vigour and urgency. Now is time to think creatively and outside the square. Demand will grow dramatically as the population increases but already it is obvious that current needs are not being met. Nevertheless, land is finite and will never be able to satisfy future requirements endlessly for the generations ahead..... Is it impossible to cater for all sports? Where do we set the limit? How do we develop a basis for determining what sports are introduced, what sports stay and what sports go? Are there alternative answers that preserve our natural environment while providing sporting facilities in a different way than proposed for the St Ives Precinct in the draft options paper? .....	LGA needs more sporting venues. Must be addressed with vigour and urgency. Land is finite			LGA needs sporting venues for known demand and to provide facilities not provided in the LGA already. Land is finite so address the areas not yet catered for - best use of available land
	Ku-ring-gai Council owns or manages sportsgrounds at 42 locations, provides 250 parks, 29 sealed netball courts, 71 tennis courts, with additional property holdings such as open air carparks. .... Whilst some may argue that due to a lack of neighbours, the St Ives Showground Precinct is an excellent choice for sport due to the noise sports create, not therefore impacting on neighbours ..... it is equally the exact reason why a serene precinct should not be disturbed by noise pollution. ....	noise pollution from sport should not disturb serene precinct			Existing uses such as Mini-wheels and model aeroplanes are big noise generators, Hart creates vehicle noise including off-road motorcycles and traffic noise from Mona Vale Road is significant . A majority of the serenity will still be available.



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
	Indoor sports centres ..... can be located in urbanised locations and still serve their purpose. There is no compelling reason why the St Ives Showground Precinct is the only location for an indoor sport centre, additional netball courts or new hockey fields. There are important reasons why it should not.	Locate indoor sports centre, hockey and netball somewhere else			This search has been ongoing for these facilities by Council for more than 10 years and not supported anywhere yet by Council or residents due to impacts of noise and traffic. Need a isolated site away from residences.
	The noise from sporting complexes in urbanised locations is more able to be concealed amongst surrounding ambient noise sources. Greater priority should be given to identifying locations for indoor sports centres and new courts amongst the 42 sportsgrounds, 250 parks, 29 sealed netball courts, 71 tennis courts and additional Council property holdings such as carparks, in more urbanised locations. Environmentalists have expressed concern about widening existing paths or tracks in the precinct and the impact they may have on birdlife and other fauna. I believe this to be an issue of utmost importance that should be investigated so as not to endanger a delicate eco-system.	widening paths or tracks will have impact on fauna			Retain paths or tracks at existing widths but in better condition to control environmental degradation and improved wayfinding- require resources
	Rare undeveloped land in bushland settings should remain focused on an environmental purpose. This in particularl so for that part of the St Ives precinct, which forms a continuous strip comprising the Wildflower Garden, the Plant Nursery and the Showground. This continuity should not be broken up or diminished by a significant change of focus from the environment to intense sporting use. Rather the three parcels should complement one another in theme, character and purpose. ....				The small cleared area of the nursery will not impact on the majority of the contiguous bushland between the KWG, SIGS and KCNP sites - only a small percentage of the bushland is being developed and the site is already cleared.
	The demand for sporting facilities has reached a level where Council should be developing plans to convert selected grass playing fields into artificial surfaces and choose appropriate locations for indoor sporting facilities on selected parks, carparks or sporting fields. Combining several different sporting activities within indoor sporting facilities is possible in an indoor facility, perhaps through public/private partnerships or developer agreements. This would be a far better approach than making incursions in bushland settings. This does not mean there are no alternative valuable options for the Plant Nursery site if it is relocated to the Tip site. ....	Council should be developing plans to convert selected grass playing fields into artificial surfaces and choose appropriate locations for indoor sporting facilities on selected parks, carparks or sporting fields			The existing parks, sports and courts cater for an existing demand as do car parks - previous consulting to locate sporting facilities into car parks were not supported by Council or residents. Please nominate the existing sites you wish to see redeveloped for staff to begin the process of conversion.



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
	More recently, an article in the Financial Review of 21 August 2008 entitled "Trailer park treasure" provided insight into Pittwater Council's plans for Lakeside ... plus, Another success story is the Lane Cove River Tourist Park, which has won many eco tourism and sustainability awards and is operated by NSW National Parks and Wildlife Service. A relatively recent innovation of Lane Cove River Tourist Park is attention to Aboriginal culture. Website information .....				
	This shows that a combination of Aboriginal culture and eco camping is highly compatible in a natural bushland environment. Ku-ring-gai has a unique opportunity to follow up interest from the Aboriginal Heritage Office to relocate from its present location in an office block in the Northbridge shopping centre to the Wildflower Garden, incorporating this into an expanded environmental education/Aboriginal cultural and conference centre. ....	promote Aboriginal culture and eco camping			The AHO has shown some interest in the Education and Cultural centre at KWG. There is very little Aboriginal Culture knowledge about our local tribes and clans . 50 - 80% of Aboriginals in Sydney Harbour area died by 1789 and knowledge not handed on as no-one suitable left. AHO needs to run and endorse any educational and cultural programs.
	It is pleasing to see eco-tourism included in the draft St Ives Showground Options paper Exhibition. However, the extremely limited number of sites proposed therein on the Showground (approx 20 for caravans, campervans) would not be able to provide the economic benefits experienced by Pittwater.	Not enough economic benefits from 20 camping sites			Research indicates no camping sites are currently approved under KPSO or by LPMA in the SISG and Precinct, and the use is not permitted without this approval.
	Ku-ring-gai Council does not currently have an adopted Economic Development /Tourism Policy, although a draft has been prepared ..... the NSW Dept of Industry and Innovation, Jon Mason, the Business Development Manager ... has already written expressing keen interest in providing grant funding for a feasibility study and business plan for tourism initiatives in the St Ives Showground Precinct as outlined in this submission. Both in Australia and overseas many campsites are in bushland or woodland forest settings. These are far less impactful than large indoor sport facilities. There would also be opportunities to plant indigenous species within a campground as shade and privacy are desirable. ....Late last year, Ku-ring-gai Council resolved to issue an Expression of Interest to qualified individuals/companies to submit quotations to undertake a strategic analysis of the benefits in establishing an Economic Development Unit. Tourism would be a key component. Council's recognition of the importance of such an initiative would be best	Tourism development			Development of major camping area would have significant impact environmentally - roads, services, lighting, laundries, recreation rooms, disabled access, fire hazard reduction, polluted runoff, hard stand areas,circulation roads, levelling, clearing, parking, vandalism,caretaker
	Whilst there are other sites that could be examined for indoor sports centres and courts within Ku-ring-gai, including bitumen carparks or already developed as parks or sporting locations, there would not be a better bushland tourism precinct in Ku-ring-gai than the St Ives Showground precinct.	other sites can be used for indoor sports and courts			Would welcome advice as to where these other sites are located for indoor sports centre and playing fields and courts.



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
	The newly established Precinct Unit within Tourism New South Wales has been established to work with councils across the State to identify precincts within their LGAs and develop tourism. I suspect the Unit would enthusiastically work with Ku-ring-gai Council to explore the St Ives Showground Precinct for its unique tourism potential, which has already also been recognised by Jon Mason, Business Development Manager from NSW Industry and Innovation.	Tourism development			Although not the focus of this options paper, the Education and Cultural Centre could be a major draw card for tourism within the KWG with track links radiating into the rest of the precinct. Build on the existing infrastructure, history, educational programs and beauty of the KWG facility.
29	<b>Northern Suburbs Dog Training Club Inc., Gael Goldsack. Honorary Secretary</b>				
	In response to your request for feedback from the meeting at St Ives Showground on 17 February last, and discussions at yesterday's General Meeting of Northern Suburbs Dog Training Club Inc., we would like our comments noted in regard to the proposal.		yes		
	The proposed cycle track passes in close proximity to the dog rings and is planned to exit the Showground via a tunnel under Mona Vale Road. This in itself does not present a threat to the safety of our members or their dogs per say unless the Showground exit gate (currently kept closed and locked) is to be left open. If this were to be the case, it would pose a significant safety risk to our members and their dogs and seriously affect our training program. There is a simple solution to this problem should it arise and that is the fencing of the whole Dog Ring 1 from Mona Vale Road fence to the roadway, leading to the Douglas Pickering Pavilion, in a similar fashion to the fencing already in place around the smaller dog rings. This would keep the dogs away from the cycle way, exit point and from the traffic on the feeder road and still allow training and our trials to	Bicycle path not supported - provide additional fencing to whole dog precinct for safety			If tunnel proceeds, examine options to close road bisecting dog rings to through traffic and fence to contain dogs away from road. Can be considered as part of DPoM
	The safety of all showground users is an issue that both the Council and the Roads and Traffic Authority need to address in regard to traffic using the main entrance of the Showground. The current arrangement for traffic turning in and out of the Showground is most unsatisfactory with the lack of traffic control (traffic lights) at the intersection and the current speed limit of 90kph on that section of Mona Vale Road.	traffic safety at SISG			support the need for traffic lights at SISG and reduced road speed



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
30	<b>The National Trust of Australia (New South Wales), Graham Quint, Advocacy Manager</b>				
	The National Trust makes the following comments on the publicly exhibited Draft Options for St Ives Showground and Precincts.				
	St Ives Showground was listed on the National Trust Register in September 1999. The Listing Report notes the Showground's significance and				
	<ul style="list-style-type: none"> <li>the importance of its continuing use for the annual St Ives Show</li> </ul>	annual show			will continue along with existing support from Council for use of site.
	<ul style="list-style-type: none"> <li>the conservation and continuing presentation and interpretation of the Army relief map</li> </ul>	army relief map			agreed but additional resources to allow conservation are required
	<ul style="list-style-type: none"> <li>conservation of the significant vegetation and ecological communities</li> </ul>	conserve vegetation			Agreed
	<ul style="list-style-type: none"> <li>retention of as many of the large, mature trees as possible.</li> </ul>	retain trees			Agreed
	The Draft Options appears to aim at consolidating these existing uses, retention of all of the important built/natural elements, and the addition of some playing fields on the vacant former nursery site. In terms of the construction of the additional playing fields adjoining the Wildflower Garden, the Trust urges all possible caution in terms of controlling nutrient run-off (which may have negative impacts on phosphorus-sensitive proteacious plants (e.g. <i>Banksia spp</i> , <i>Grevillea spp</i> , <i>Hakea spp</i> . etc. Also of potential concern would be the invasion of the Wildflower Garden by lawn grasses from the playing field and/or imported weed species seed in top soil used in the construction of the playing fields adjacent to the Wildflower Garden.	control nutrient runoff from nursery site, weeds and grass invasion of bush.			Potential for contamination by nutrient runoff and weed species will be addressed in the DPoM and Environmental management Plans and controls for any developments, and also POEOAct.
	The Trust notes that Council at its meeting on 1 December, 2009 resolved: -				
	<i>"For Council to seek recognition of the State Heritage Register or local listing in Schedule 7 of the Ku-ring-gal Planning Scheme Ordinance (KPSO) for those buildings or built elements and their curtilage assessed as having potential state or local cultural significance within the St Ives</i>	State heritage listing or Local listing supported			proceeding with CMP information and establishing curtilages for inclusion and consideration for relevant level of heritage listing A copy of the completed report can be sent to the National Trust for Comment.
	<i>Showground and the Ku-ring-gai Wildflower Garden."</i>				
	The National Trust strongly supports this action by Council and would be pleased to offer any assistance in the identification of those items and places, assessment of their heritage significance and the nomination process for their heritage listing.				



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31	<b>St Ives Progress Association, Christiane Berlioz, President</b>				
	The Association concedes the need in Ku-ring-gai for increased sporting facilities and the opportunity that the St Ives Showground precinct offers for an upgrade. Whilst there is scope for development of facilities in the Showground precinct it is believed that the ensemble of current proposals represent an over development and overuse of the area that will threaten the unique character of the Showground and also threaten the environment including Duffy's Forest declared "threatened ecological community" under NSW law.	concedes the need for more sporting facilities, but options overdevelop the precinct			Options will be rationalised during DPoM process
	1. UNIQUE CHARACTER AND HERITAGE: The Association supports Council's proposal to heritage list the John Daubney Pavillion.	supports heritage re-use of buildings.			Agreed
	Wildflower Gardens and to restore heritage army buildings in the Showground allocating them a useful function including a Museum. The Showground retains qualities that are unique and rare in Sydney - a rural character, a bushland setting, almost uninterrupted use as a Showground since its inception at the turn of the century. The site is also historically significant in its association with the history of the urbanization of St Ives a	rationalise and reduce uses and functions to keep character			Rural or Show Character will be identified by key elements and context which will be detailed in the DPoM to be retained.
	Dairy and fruit growing area that remained largely rural until the 1960s. The proposed overdevelopment, overuse and commercialization of the area threaten the sustainability of the precinct. The number of activities and extent of development should be rationalized and reduced.				
	2. DUFFY'S FOREST: The Association supports Council's proposal to establish control measures on all arenas to control	duffys forest retained and recovery plan activated			Agreed
	Nutrient, weed and water runoff in neighbouring bushland. Large areas of Duffy's Forest have been identified and mapped in the Showground precinct. It is clear that certain existing activities are actually listed as threats under NSW Threatened Species Conservation Act				
	Threats				
	• Loss and fragmentation of habitat through clearing and development.				
	• Habitat degradation by weed invasion and physical damage from inappropriate access and disturbance by people, horses, trail-bikes and other vehicles.				
	• Boundary encroachment. • Inappropriate fire regimes.				
	• Inappropriate plantings in and around remnants. • Stormwater, soil erosion and nutrient enrichment.				
	Refer to <a href="http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10254">http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10254</a>				
	Excessive activity will attract more users and increase the need for access by vehicles and demand for parking. More serious consideration should be given to diminish any threats to the future of existing Duffy's Forest.	control cars and parking			Agreed



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	Of serious concern is the proposal for 7km of sealed roads for bike riding along the perimeter track of the precinct and through Duffy's Forest. This is absolutely unacceptable. The 6m wide sealed roads proposed through the Wildflower Garden and Showground will cause increased water runoff,	Bitument road Cycle track not supported. Conflict with fauna, runoff, pedestrians etc			Noted
	physical damage, and boundary encroachment. The proposal for implementing measures to control run off is inadequate; reports exist of several plant species that have disappeared due to the existing bitumen track in the Wildflower Garden.				
	The note on CYCLING at <a href="http://www.kmc.nsw.gov.au/resources/documents/Main_Arena_Events_and_Dog_Club_Area_Att_5.pdf">http://www.kmc.nsw.gov.au/resources/documents/Main_Arena_Events_and_Dog_Club_Area_Att_5.pdf</a> to avoid risk of wildlife activity by using the track at dawn or dusk further illustrates the inappropriateness of cycling through bushland. In addition, the shared use of the proposed bike road (occasionally used for professional bike races) and bush walkers are conflicting. The proposed bike track running parallel to Mona Vale Road (but not through Duffy's Forest) may be acceptable. As an alternative, discussions with Warringah Council for a bike track to extend the entire length of Mona Vale should be investigated.	propose a bike track on Mona Vale Rd with WARRINGAH Council for whole length			RTA would need to agree. Interesting proposal.
	3. WILDFLOWER GARDENS: The role of the Wild flower Gardens has been to promote the education, propagation and conservation of Australian Plants. The development of a Cultural Centre with associated parking, establishment of a retail outlet for Council Plants, commercialization of the John Daubney Pavillion and construction of a Community Hall for use of girl guides with associated carparking is overdevelopment.	KWG proposal is overdevelopment			Noted
	COMMUNITY HALL: • The Community Hall is a duplication of function that should be met by the Pavillion or Cultural Centre. Other Community Halls are also planned in the nearby Town Centre Facility.	No hall needed			Education classroom requested by KWG as additional demand by schools cannot be met.
	• It is inappropriate to have scouts or girl guides established in a plant conservation area; experience in Sheldon Forest demonstrates that Scout activities conflict with environmentally sensitive areas. Alternatives locations should be designated eg shared facilities with Scouts are Warrimoo Oval or other. We do not support the construction of the Community Hall and its associated parking area.	No scouts or guides			This area of crown land gazetted for future public requirements supports the additional Education building which would be available for community groups hire.
	CYCLE TRACK: Reports exist of several plant species that have disappeared due to the existing bitumen track in the Wildflower Garden. The widening of the walking track for increased cycle use is unacceptable.	No widening of KWG road			Noted
	OVERFLOW CARPARK: Development to encourage visitors and events at the Wildflower Gardens will create increased parking demand. Given that most events and sporting activities occur on weekends it is likely that the demand for the overflow carpark (to be shared with the sport users on the Nursery site) will coincide. As experienced at St Ives Village Centre, there are inevitable conflicts between users of the shopping centre and the Village Green with shared carparks. The carpark in the Wildflower Gardens should be designated to the Wildflower Garden users.	No shared car park			Sharing can be accommodated as the KWG festivals and events can be scheduled on off weeks for major sports or showground events.



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response
	RETAIL NURSERY OUTLET: The sale of native plants on this site seems logical. However, the cost effectiveness of separating the retail point and the Council Nursery requires further study. Staffing at both areas, transport of plants and maintenance being considerations.	Sale of plants logical at KWG but require additional resources that may not be economic.			Nursery business plan to be completed to determine retail need. Combined with Educational Cultural centre and APS and bushfoods will extend the market available.
	CULTURAL CENTRE: Point 4 of this submission proposes as an alternative option relocation of the Cultural Centre and camping to the Council Nursery site.	Relocate cultural centre to Nursery site			Better associated with KWG which is already set up for education.
	4. COUNCIL NURSERY SITE: The establishment of two synthetic playing fields and an indoor sports centre in this particular location is at odds with the bushland setting and the adjacent environmentally sensitive zones indicated on the map <a href="http://www.kmc.nsw.gov.au/resources/documents/Nursery_site._Att._33.pdf">http://www.kmc.nsw.gov.au/resources/documents/Nursery_site._Att._33.pdf</a>	bushland setting			The facilities will be in the existing damaged cleared areas and impacts will be managed.
	The proposition of an indoor centre built like the Thornleigh Brickpit building to accommodate parking on the building footprint is commendable. This building however would be suitable for a more accessible urban setting or a less environmentally sensitive area. In addition the multipurpose synthetic fields require parking areas that pose a problem of more hard surfaces. The site would be more appropriate for the establishment of a eco-camping park similar to the one developed in Lane Cove.	supports camping at nursery as less environmentally damaging			Development of major camping area would have significant impact environmentally - roads, services, lighting, laundries, recreation rooms, disabled access, fire hazard reduction, polluted runoff, hard stand areas, circulation roads, levelling, clearing, parking, vandalism, caretaker accommodation, office, bathrooms and change rooms, rubbish removal, covered bbq and picnic areas, fire pits, walking and cycling routes etc (all this is at Lane Cove). Traffic noise from Mona Vale Road would need to be addressed as currently negatively impacting on sites.
	• Due to its size it could accommodate more camping cars and tents than the proposed site in the St Ives Showground and increase commercially viability.				
	• This use would be consistent with the bushland setting and activities.				
	• This site could also be an appropriate alternative site for the development of the Cultural Centre. The Cultural Centre would be adjacent and accessible to the Wildflower Garden but it could also be an information centre for the campers.				



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
	<ul style="list-style-type: none"> <li>This would negate the need for a linked road with the Wildflower Gardens and limit the link between the sites to a pedestrian pathway from the Wildflower Gardens Carpark that could serve the Cultural Centre and Wildflower Garden.</li> </ul>	no link road			Link road required to get people out of KWG and join the precincts
	<ul style="list-style-type: none"> <li>This would free up the proposed Cultural Centre site for continued use by the Australian Plant Society and Retail Nursery site.</li> </ul>				
	<ul style="list-style-type: none"> <li>The site would be ideal to incorporate the eco garden, organic and bush food gardening.</li> </ul>	eco garden, organic and bush food gardening			Noted
	<ul style="list-style-type: none"> <li>This would limit the demand for carparking on site.</li> </ul>	no carparking demand			Noted
	<ul style="list-style-type: none"> <li>This would reduce the vehicle numbers accessing and exiting the site and presumably provide a more constant vehicle flow than sporting activities concentrated on weekends.</li> </ul>				
	5. ST IVES SHOWGROUND: The Association supports the upgrade of playground facilities including the very popular children's tricycle/bicycle track.	No cycle road			Noted
	The widening of the fire trail and development of new roads to accommodate cycling is not supported as explained in Point 2 mainly on environmental grounds. It is noted that the Front Frontage of the Showground is to be artwork themed, this is not supported. The showground is a natural area and this along with banners, signs, and formal entrances an artwork themed frontage is unnecessary and detracting from the areas unique character.	No artwork - detracting from character			Not everyone would agree with this. Public Art policy requires public art inclusion.
	St Ives Showground is badly serviced by public transport, intense sporting or commercial activities that attract masses of people in vehicles as participants and observers should be limited.	bad public transport service			Already an existing route that can be increased if demand is there and bus stops provided.
	6. THE HART/TREE TIP SITE MINIBIKE / MOUNTAIN BIKE TRAIL: Residents at consultation sessions have raised their concerns based on past experience with the transfer of noise from the proposed new Minibike site to their homes in Jessica Gardens and Newhaven Place and surrounds (eastern side of Mona Vale Road). In the 1970's the Police used the Hart site for driving and there were frequent complaints about the noise generated from the site. The residential dwellings on the eastern side of Mona Vale Road are closer to the proposed Minibike site than the homes in Richmond Avenue (western side of Mona Vale Road) to the existing Minibike trail. The topography of the area means that the noise from the Hart site	noise at tip site			Investigate further impacts of noise.



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
	area carries to the homes nearby. Council officers claimed that the track was only used fortnightly. This is little reassurance for the residents who have to put up with the noise. There is no certainty that the use would not become more frequent. The proposed Minibike track is much more extensive than the existing trail. It would not be unreasonable to conclude that this will encourage more users and more frequent use of the track				
	Council's proposal to measure decibel levels should be measured under different wind conditions and to be truly representative by a full contingent of minibikes. Council proposes to mitigate the noise if it proves to be a problem but it does not specify how this would be done.				
	7. FUNDING: The Council Report refers to "the amalgamation of all the existing reserves in the precinct into larger units for planning and management purposes. These would fall under the administration of Ku-ring-gai Council." Areas of land like the Trig station are proposed for amalgamation. Many questions remain unanswered. What is the source of funding for these facilities that are situated outside the Town Centre boundary? What is the cost to Council to lease the lands from State Government? What is the cost to Council to maintain these lands (including any additional reserves)? How does Council plan to cover costs of running maintenance of the lands and facilities? Is Council's business plan viable?	Is Council's business plan viable			Investigate business planning and funding options as part of DPoM
	8. OPEN SPACE: At Ku-ring-gai Council Meeting Dec 1 2009 planning for the site is justified in terms of NSW Metropolitan Strategy:				
	At a regional level, planning for the site has also considered the Department of Planning NSW Metropolitan Strategy advice that:				
	"Population growth and demographic change will create new demands for parks and public places in the North Subregion. Since growth is predominately planned for existing areas, the focus for open space will be to improve accessibility and quality of existing areas. Opportunities				
	for new open space should be identified."				
	Ku-ring-gai Council Meeting Dec 1, 2009 <a href="http://www.kmc.nsw.gov.au/resources/documents/rptomc1Dec2009GB.04-Amended.pdf">http://www.kmc.nsw.gov.au/resources/documents/rptomc1Dec2009GB.04-Amended.pdf</a>				
	It is important to note that the definition of open space is very broad and ranges from areas that are active in nature such as parks and sports fields, to areas that are passive in nature. With urbanization of our Town Centres and associated parks it is vital to get the balance right and preserve the existing passive nature of the Showground precinct to offer passive leisure as an alternative to Ku-ring-gai residents.	passive leisure required in precinct			Noted
	<b>CONCLUSION:</b> Optimizing the location and qualities of this natural bushland site requires a balanced approach to ensure conservation environmentally sensitive areas, and the provision of more passive leisure opportunities as an alternative to insatiable sporting and commercial demands.				



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
32	<b>Ku-ring-gai Netball Association, Kathy Staggs, President</b>				
	Sporting facilities in Ku-ring-gai are already falling short of existing user needs, facing strong pressures from other users and surrounding land uses and in need of much stimulation. This has been recognised in a number of Council Plans but most recently the Draft Sports Facilities Management Plan. It is imperative that the Council find solutions that meet the needs of all user groups and the plans for St Ives Showground and Precinct provide a visionary approach to meeting some of those needs. KNA supports the plans for the inclusion of indoor sports courts and encourages Council to strive to deliver the maximum number of courts available to netball and other similar sports possible on the Council Nursery Site. The success of the Brickpit at Thornleigh and the inability of new users to gain access to this resource combined with the non-existence of any similar facility in the Ku-ring-gai Local Government Area (LGA) support the need for this facility now. This does not however address the expected increasing needs into the future.	facility will address existing shortfall - no room for future expansion			Noted
	KNA has worked with Council over many years to develop responsible, cooperative solutions to providing the needs of the Ku-ring-gai area both in relation to netball and to the wider community. At all times, KNA has been cognisant of the desires of the wider community and in particular, nearby residents of sporting facilities at Lofberg Road.				
	Since the late 1990s KNA has assisted Council to assess potential sites for development of netball however to date no alternative site has been identified that is both suitable and available. In our view, this site could provide that location. We would welcome the opportunity to enable us to transfer total operations (existing competitions and future growth and development which we have been unable to deliver to members) to this site to utilise both indoor and outdoor multi use facilities. Such a facility could still be available to a wider range of sports than netball only.	transfer all of netball to SISG and free up Canoon road and lofberg			Investigate indoor sports and hockey at Canoon Road and Lofberg Road courts.
	KNA notes that Council's conclusion in the report to the Planning Panel dated 24 October 2008 is that "demand from sports clubs and current level of use indicate there is insufficient facilities to meet current needs"				
	KNA believes that as the population grows, the existing level of use of each facility will need to increase. Where Council has in the past sought to downgrade a number of facilities, KNA believes that all sporting facilities will need to be improved and become used to a greater intensity.	need to improve all venues for increased use and			Noted
	KNA supports the objectives of the St Ives Showground and Precinct Draft Options Paper to provide for a range of new facilities to cater for current and future demand.				
	KNA looks forward to working with Council to progress the leasing opportunities to the greatest benefit of Ku-ring-gai's sports people.				
33	<b>Ted Bell</b>				
	I refer to the proposal to move the Mini-Wheels organization from the showground area to the former tree lopping site. .... It is impossible to obtain a representative reading of noise unless tests are carried out in all streets in the area and in all variations of time and weather. ... the area is like an amphitheatre and noises .. can be heard readily over a very wide area. Loud speaker announcements when the police driver training school was in operation were clearly audible. .... This site has been subjected to several proposals in the past which have been rejected. It would be relevant to consider this history: 1. About 25 years ago it was proposed to build a recycling plant. This was stopped by the state government. 2. The St Ives Bus Company obtained a lease of this area and applied to move their depot to one built on this site. Council objected and the matter sent to the Land and Environment Court where the bus company obtained a favourable decision. The state government then quashed that decision and the problem was eliminated. I believe there were also proposals for model aeroplane flying ... and a helicopter pad. All four proposals have been rejected largely on a	noise at tip site			Noted



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
34	<b>Michael J David</b>				
	..... my wife and I must protest most strongly that consideration is being given to moving the Mini Wheels facility from its current location to the former tree loppings tip in Garigal National Park. This is moving a noisy pastime very much closer to residential streets in north St Ives. .... I would add that other sufferers from the additional noise would be the residents of Fernbank Retirement Village.	noise at tip site			Noted
35	<b>Ken &amp; Jenni Bradley</b>				
	I have just learned from one of your Councillors that your Council is to consider a report on Tuesday 1 December to relocate the Mini Wheels facility from the St Ives Showground to the former Mona Vale Road tree lopping site, with a view to setting up an eco-camping village on the existing showgrounds site. .... My wife and I moved into our house in St Ives in 1971 .....we do not want an eco-camping village in St Ives Showground ..... it adds to the likelihood of creating bushfires. .... our major concern is the relocation of the Mini Wheels Club from its current position to the former tree lopping area ..... the noise would cause our current peaceful weekends to be shattered. .... Detrimental effect on the native bird life.	noise at tip site			Noted
	Our other major concern is for the aged residents of Fernbank Retirement Village ..... they would be subject to the unbearable noise when ever a club meeting is held.				
36	<b>Stan and Kathleen Smith</b>				
	We have been living in Trevalgan Place, St Ives since 1968 and raised six children ..... We cannot believe that consideration could be given to relocating this club as it is tucked away behind the Showground and not in range of existing residences ..... We cannot imagine the noise factor would not be taken into consideration if the new site ... was selected ..... A big factor would have to be the traffic on Mona Vale Road. People travelling from the St Ives area and further south would have to turn right to exit which, with the traffic conditions on a weekend would not be good. Whenever there are events at the Showground, Mona Vale Road becomes chaotic and with traffic on the opposite side – impossible. We, therefore, object strongly to proposals to move the Mini	noise at tip site			Noted
37	<b>John Albert &amp; Marjory Roberts</b>				
	As residents of this quiet street for 35 years, we would like to register our opposition to the proposed relocation of the Mini-Wheels Club.	noise at tip site			Noted
38	<b>Sue McRoberts</b>				
	.....peace and serenity that our house offers ..... Mini Wheels, model airplanes & car clubs are grouped together not bothering anyone ..... Why would you wish to move a club that does not want to be moved ..... and to a site surrounded by rate payers who have purchased their properties for that peace & tranquillity that St Ives is rapidly running out of ! ..... Could you please advise us on the reasoning and thought process behind such a	noise at tip site			Noted



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
39	<b>Robert Bleach and Luciana Smink</b>				
	At present, we and our neighbourhood receive no noise from St Ives Showground activities. We are concerned that the noise from motor bike activities located as planned will severely disturb the peace in our home, as well as the enjoyment and amenity of the general area and the national park. We request that the proposal not be accepted. We would appreciate receiving advance notice of future development and activities planned for the	noise at tip site			Noted
40	<b>Keith &amp; Marjorie Perry</b>				
	If, as Tony Hall says, there is a proposal to move the noisy Mini Wheels Club from St Ives Showground to Garigal National Park then we wish to register our objection to the proposal which would have a considerably adverse impact on the peaceful, quiet environment enjoyed by all the residents in this area including those in Fernbank Retirement Village St Ives. Additionally we understand that the club does not want to be moved.	noise at tip site			Noted
	No doubt additional traffic would also adversely impact the wildlife in Garigal National Park.	traffic impacts			Noted
	If Ku-ring-gai Council is truly an advocate for the preservation of the natural environment, then it must be pointed out that the local wildlife would be considerably better cared for if no new development involving extra vehicular traffic was made in Garigal National Park.				
41	<b>Mrs Jenny Tomkins</b>				
	..... Our property backs directly on to the Garigal National Park and the Kitchener Street Fire trail. We are almost in a direct line with the tree lopping site and noise from the proposed relocation of the Mini Wheels club activities would carry across the valley and have a big impact on our life ..... the thought of how the noise could further affect my husband's health is very distressing. Our family moved here in 1982 because of the peaceful bush setting. The bushland adjacent to our home is a wonderful sanctuary for our native wildlife, therefore I hope the council will take into consideration the effect that the noise will also have on their habitat.	noise at tip site			Noted
	I was wondering why the eco-camping area cannot be located within the Showground caravan area instead of moving the Mini-Wheels facility.				
	Previously my husband and I have travelled with our caravan throughout Australia and it is quite common to have caravan and camping together.				
	..... I therefore hope that the Council will reject the proposal in the report.				
42	<b>Lori and John Marham</b>				
	Presently the homes along the ridges of Garigal National Park get, during training sessions, considerable noise from the HART facility.	noise at tip site			Noted
	We feel that the moving of the Mini Wheels facility will add to this noise .... That there must be other options – not so close to long established areas.				
	The other issue specifically mentioned by Dr Hall is the moving of the Avondale Pony Club for, of all things, soccer fields. ....	Also against Avondale pony club changes advised by Dr (sic) Tony Hall			Not relevant



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
	I feel certain that, with more thoughtful planning by your experts, a more generally acceptable, well considered, proposal can be found for these very important issues.				



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
43	<b>Maria and Jozef Zazulak</b>				
	.... We would like to give our full support to the proposed development of the Wildflower Garden Precinct. We feel that this proposal fulfils the principles of management of Crown Lands as outlined in the Crown Lands Act 1989 which seeks to ensure that:	support for KWG	yes		
	The enjoyment of Crown Land is encouraged; Natural resources are sustainably managed and the environment is protected for future generations; Land is used for multiple purposes; Crown land is occupied, used, sold, leased, licensed or otherwise dealt with in the best interests of the State and its people; The proposal is in perfect harmony with the site at the KWG; The Ku-ring-gai area is in dire need of an Educational and Cultural Centre. Local tourism would benefit from this new building in that local crafts people would be able to exhibit, demonstrate, produce and sell their products to the public.	benefit of cultural centre for tourism and arts			Noted
	..... the upgraded Educational and Cultural Centre would be a superb platform to promote our Aboriginal Heritage ..... The retail outlet for Council's Nursery also makes financial and environmental sense as this is in harmony with its surroundings. ...	promote Aboriginal heritage			Only with support from AHO and MLALC
	With regard to the Nursery Site, we have strong reservations about the land being used for a sporting facility. The amount of concrete involved in building sports centres ..... clashes with the ethos of ensuring 'that natural resources are sustainably managed and that the environment is protected for future generational'. .... Sports complexes should be located in less environmentally sensitive areas. .... Council has a duty of care to protect this area so that its peacefully tranquillity can be enjoyed by all. This land could be more sensitively used for other purposes eg. An eco-camping facility. We have read the draft proposals with interest and thank Council for the opportunity to make this submission.	Nursery more sensitively used for camping			Development of major camping area would have significant impact environmentally - roads, services, lighting, laundries, recreation rooms, disabled access, fire hazard reduction, polluted runoff, hard stand areas, circulation roads, levelling, clearing, parking, vandalism, caretaker accommodation, office, bathrooms and change rooms, rubbish removal, covered bbq and picnic areas, fire pits, walking and cycling routes etc (all this is at Lane Cove). Traffic noise from Mona Vale Road would need to be addressed as currently negatively impacting on sites.



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
44	<u>Jennifer Harvey, Heritage Reference Committee</u>				
	Jennifer Anderson has raised some very valid points in her submission. As we are all aware this is a very complex issue. There are two points I would like to express.....				
	It is imperative given the large amount of Potential Heritage Items located at St Ives Showground and precincts that an <u>Independent</u> Heritage Impact Assessment should be undertaken before an informed discussion can be made.	Independent heritage Impact assessment for			Will be incorporated into DPoM
	The second issue deals with the Heritage Data Form for the <i>Army Relief Map</i> . Under Historical Notes	army relief map			Another issue to be dealt with separately
	It is important to understand WHY the map was constructed. Therefore under History,				
	<u>end of the first sentence:</u>				
	The understanding at the time was that the Mona Vale Road would be a strategic conduit for advancing forces and that the 18 <sup>th</sup>				
	Battalion would prevent the enemy landing and penetrating the Broken Bay sector by holding 'the beaches at Warriewood and Mona vale and prevent access to Barrenjoey Peninsula, West head peninsula and Brooklyn Peninsula'.				
	<u>the following should be inserted:</u>				
	It was against this background that the Intelligence Officer, Lieutenant Bill Freeman suggested using a scale model relief map rather than the usual maps. The relief map would be far more suitable allowing more soldiers to familiarise themselves with the area and appreciate that actions which would need to be taken should the enemy land. (the notes above were extracted from DRAFT Relief Map in St Ives Showground by the				
45	<u>Meagan Ewings</u> , Senior Threatened Species Officer, Biodiversity Conservation Section, Metro, <u>Department of Environment &amp; Climate Change &amp; Water</u>				
	Concern re KWG <i>Genoplesium baurei</i> threat.	Please avoid threatened species and habitats			Further liaison planned with DECC as DPoM prepared.



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
46	<b>Kevin Callinan</b>				
	I am pleased to note that the proposals being considered relate to the needs of the local community and do NOT include the gross demands of state organisations for football and cricket.	support	yes		
	My overall opinion is that the scope of facilities being proposed are long overdue and will be of considerable benefit to the Ku-ring-gai community.				
	My concerns however relate to each of the following but not in any particular order of priority:				
	· The proposed cycle track linking each of the sites should remain the width appropriate to a fire trail and avoid the expansion to meet the needs of the professional cycling community. I believe that the surface could be a mixture of bitumen (restricted to steep grades) and be soft absorbent surfaces (eg clay) on moderate slopes and flat areas. In this way the cycle track would provide an interesting variety of surfaces for community use. It could also be a good walking track.	cycle track not be widened and retained for shared use			Noted
	· Traffic needs to be given priority ensuring that ease of access and egress and <u>safety for users ahead of major facilities development</u> . Specifically the main entrance for the Wildflower Garden and the Nursery sites should be through a traffic light controlled point entering at the Nursery entrance. This could be linked to a cycle way down the border of Mona Vale Road from the Hart site to this controlled entry. This would ensure safety for bike riders coming to and from St Ives along Mona Vale Rd. A more appropriate routing of traffic from Kitchener St providing access to Mona Vale Rd would be through this controlled intersection.	support Traffic Lights			Noted
	· The proposed personnel and bike rider tunnel close to the HART site is an absolutely essential safety need that must be provided .....	tunnel absolutely essential			Noted
	· Consideration should be given to barriers and/or trees to ameliorate any noise ..that the dirt bike facility can be accommodated on the old tip site.	consider noise barriers for tip site			Investigations suggest this would still be insufficient to remove noise completely
	· Traffic flows throughout St Ives Showground precinct must be improved radically.	improve traffic in precinct			Noted
	· Rationalisation of parking through hardstand parking must give proper consideration to water run off and collection, storage and reuse. Water recycling must be a high priority and used to water not only playing areas but also other areas of planting.	car parking to be improved and environmentally managed with recycled runoff.			Noted
	· Eco Camping and caravan sites are very worthwhile .....	camping not worthwhile			Noted
	· Adequate resources must be applied to preserving and promoting the history of the heritage items on the site.....	promote history and heritage			To be included in DPoM



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
47	<b>Sharon Richards</b>				
	Our family is part of the Northern Suburbs hockey community. We have seen the preliminary proposal prepared by council in relation of the current nursery site. We would like to express our strong support for this proposal. Apart from addressing a strong need for hockey and basketball facilities for the northern suburbs, we note the opportunity this creates for numerous community events for many generations to come.	support for hockey and basketball with inclusive community events into the future	yes		Noted
48	<b>Heritage Reference Group Draft Submission – April 2010</b>				
	These sites should be conserved and managed as one cultural landscape	Conserved and managed as one cultural landscape			Agreed – supported by request of LPMA for single reserve trust.
	Elements which contribute...include the alignment of existing roads, the random dispersal of buildings, the various views and vistas, and the numerous entrances	Keep contributory Elements			Will be included in DPoM
	Unique, undeveloped, rural atmosphere...peaceful and natural ambience... Retaining this character, focus and use should remain fundamental to all future uses in the Precinct.	Retain Character			Fundamental to DPoM
	The Committee supports Council in its intention to seek heritage listing for the significant cultural heritage of the Precinct.	Support heritage listing			Included in DPoM and Registers
	Road noise is very invasive				
	<b>SHOWGROUND</b> - any future use must be compatible with and not diminish the St Ives Showground's cultural significance	Keep cultural significance			Will be included in DPoM
	<b>Link Road</b> - A link road connecting the three sites should be a high priority. Cycle-ways and walking tracks will boost accessibility and useability. The Precinct should be managed holistically, as a cultural/natural landscape..future works address the impact on the place as a whole	Link Road supported			Agreed
	<b>Horse Superintendent's Office:</b> Traditional views and vistas to and from the potential heritage items including the dressage area should be retained. The design of the dressage area should be the subject of a Heritage Impact Assessment before a final decision is made. Heritage Reference Committee prefer an uncovered dressage area.	design of the dressage area should be the subject of a Heritage Impact			Agreed
	<b>Sewer Treatment Facility:</b> interpreted and if possible reused and added to the key buildings listed in Report	Conserve and interpret			Interpretation of the whole precinct will be requirement of DPoM
	<b>Army Relief Map:</b> highly significant. Options for the best conservation method for the map should be explored. Interpret and protect	Conserve and interpret			Interpretation of the whole precinct will be requirement of DPoM
	<b>Entrance gate posts / columns and road:</b> main entrance ..historically important. The traditional view to the site is important. The entrance road and gate posts / columns should be assessed as to their cultural significance.	columns and road: main entrance ..historically important			Not built until the 1960s. May be effected by RTA widening and any traffic lights. Could be retained but moved. Seek more detail re significance



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No.	Name, contact details and comment	Main issue	Support	Objection	Response
	<b>Overall:</b> Maintenance of trees and dead branches, Fencing throughout the Showground should be traditional and of the period.	Fencing of the period			Most fencing installed 1960s and 1970s. DPoM will detail types of furniture and fittings that contribute to retaining precinct character
	Opportunity for outdoor recreation compatible with the existing cultural landscape i.e. orienteering, bushwalking, ropes course that may include the exploration of the three sites,	recreation compatible with cultural landscape			Ropes course considered and link tracks to be in DPoM
	use of the site both as a Showground and during WWII needs to be explained through interpretive signage.	Interpretative signage			Interpretation of the whole precinct will be requirement of DPoM
	<b>KU-RING-GAI WILDFLOWER GARDEN</b> - The Daubney building is significant and the associated buildings that are proposed to be built need to be complementary to this building. John Daubney and those associated with the original design of the pavilion should be consulted on the design of the proposed new buildings. The organic theme and the use of natural materials should be highly referenced in the new designs.	Any new buildings to be in context and request for design from original Architect			Agreed subject to agreement by architect and purchasing policy
	<b>COUNCIL NURSERY</b> - Indoor Sports Centre would be more suited to an urban area	Sports centre in Urban Area			Previous studies for sports centre closer to residences not supported. The removal of this site from impacts on residences is one of its key benefits
	more suitable uses - a repository of endangered plants and trees of the Ku-ring-gai	repository of trees and shrubs endangered			Function of KWG
	-restoring the original market garden dams for irrigation	Dams for irrigation			Conserve and consider possibility for adaptive re-use
	-an education centre - working with the Wildflower Garden in botanical and horticultural practices benefit the community e.g. visitations and on site classes from Ryde Horticultural College, garden	Education centre			Function of KWG
	-the use of the paddock as an arboretum	arboretum			Prefer to build on existing arboretum sites already established elsewhere in LGA
	-improve publicity so the public knows that they can purchase plants from the Council nursery	nursery publicity			Will be included as part of DPoM and Nursery Business Plan
	<b>Other issues:</b> the schedule, proposed costing, funding, role of stakeholders for management, financial viability and administration of the buildings and proposed amenities	schedule, costs, management, funding			To be determined as part of DPoM



**ST IVES SHOWGROUND Public Exhibition COMMENTS, March 2010**

No.	Name, contact details and comment	Main issue	Support	Objection	Response



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## ACCEPTANCE OF TENDER T21/2010 - HAULAGE OF WORKS DEPOT WASTE

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### EXECUTIVE SUMMARY

**PURPOSE OF REPORT:**

For Council to consider the tenders for the haulage of works depot waste and accept the preferred tender.

**BACKGROUND:**

Council's contract for haulage of works depot waste is due for renewal and tenders have now been called to perform this service.

**COMMENTS:**

Five (5) tenders have been received. The contract tendered will be for a three (3) year period with two (2) year option.

**RECOMMENDATION:**

That DATS Environmental Services Pty Ltd be awarded Council's contract for the haulage of works depot waste.



## PURPOSE OF REPORT

For Council to consider the tenders for the haulage of works depot waste and accept the preferred tender.

## BACKGROUND

Council's contract for the haulage of works depot waste generated from operational work's activities is due for review. Tender Number T21/2010 has been called to consider providers for these services. Materials requiring transport consist of mixed waste, engineering waste which includes concrete, asphalt, soil and other excavated materials, vegetation and scrap metal.

A range of bin sizes are provided for these materials and, when full, are transported to the respective facilities under current Contracts with Council.

Tenders were advertised in accordance with the *Local Government Act, 1993* and opened in public at 2.30 pm Tuesday 25th May 2010.

Listed below are the received tenderers (not in order of preference):

1. Waste Service NSW Environmental Solutions;
2. DATS Environmental Services Pty Ltd;
3. J.J Richards & Sons Pty Ltd;
4. Transpacific Industries; and
5. Fretus Waste Services Pty Ltd.

## COMMENTS

Tenders have been called to supply and transport the works waste materials under a three (3) year contract with a two (2) year option to deliver waste to locations currently under contract with Council to receive process, recycle and where necessary dispose of materials generated from Council's operational activities.

Bins sizes supplied consist of 10, 15 & 30 cubic metre bins. These bins are designed as "roll-on-roll" bins using hook lift transport vehicles. These vehicles have been requested as they allow suitable delivery and pick from within Council's Depot.

## TENDERERS

### Waste Service NSW Environmental Solutions

Waste Service NSW Environmental Solutions is the incumbent contractor and has performed the service well throughout the existing contract with Council.

Waste Service NSW Environmental Solutions are licensed to transport waste and have provided bins in good condition and well maintained.



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15 June 2010**

The operations staff has been reliable and professional and has performed the service to Council's satisfaction.

However, notwithstanding their current good service, Waste Service NSW Environmental Solutions have submitted costs for the new contract at a substantially higher price than current costs and in comparison with other tenderers.

**DATS Environmental Services Pty Ltd**

DATS Environmental Services Pty Ltd has been operating in the non domestic waste collection industry for over 20 years.

Vehicles to be supplied for this contract include hook lift cab chassis and a significant number of bins. These bins include:

- 30x15m<sup>3</sup>;
- 30x20m<sup>3</sup>;
- 30x26m<sup>3</sup>; and
- 20x30m<sup>3</sup> bins.

DATS Environmental Services Pty Ltd has Risk Management Policies and Procedures in place such as Occupational Health and Safety and an Environmental Policy. This also includes \$20 million coverage for Public Liability Insurance.

Reference check from Burwood Council indicates DATS Environmental Services Pty Ltd provided similar services as required in Ku-ring-gai Council's contract. Burwood Council have indicated satisfaction with the services provided by DATS Environmental Services Pty Ltd.

Mainbrace Construction Management Services has been presented as a further customer prepared to offer reference to DATS Environmental Services Pty Ltd ability to perform the bin service within the private sector.

DATS Environmental Services Pty Ltd pricing provides the best value for Council compared to the other tenderers. DATS Environmental Services Pty Ltd are located at Belrose, have an extensive fleet of vehicles and bins and their non cost attributes are assessed as meeting Council's service requirements.

DATS Environmental Services Pty Ltd is the preferred tender.

**J.J. Richards & Sons Pty Ltd**

J.J. Richards & Sons Pty Ltd is a privately owned waste company operating throughout Australia over many years.

The following bins have been nominated:

- 2 x 15m<sup>3</sup> bins for engineering waste;
- 1 x 30m<sup>3</sup> for vegetation;
- 1 x 30m<sup>3</sup> for mixed waste; and
- 1 x 15m<sup>3</sup> bin for scrap metal.

They have the required Risk Management Policies and Procedures in place and are licensed to transport waste.



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J.J. Richards & Sons Pty Ltd has offered suitable vehicles and bins, however, not as extensive in number as other tenderers. Their pricing schedule is not as competitive and, as such, is not recommended for this contract.

**Transpacific Industries**

Transpacific Industries is a waste collection that has grown substantially in Australia and New Zealand within recent years.

Transpacific Industries Risk Management Policies and Procedures are compliant including Public Liability Insurance coverage which meets Council's requirements.

The submission provides limited information on vehicles, bin numbers and bin types that would be available for operations with this contract.

Transpacific Industries pricing is the second lowest of all tenders received. However, given their limited information on operational vehicles and bins this tender is not considered the preferred tender.

**Fretus Waste Services Pty Ltd**

Fretus Waste Services Pty Ltd have been involved in contracts previously with Council prior to 1998 as part of Council's domestic and trade waste collection service.

Fretus Waste Services Pty Ltd has nominated four (4) bins only to perform the service. These bins consist of:

- 2x15m<sup>3</sup>; and
- 2x30m<sup>3</sup> hook lift bins.

Reference checks indicate that Fretus Waste Services Pty Ltd has performed satisfactory services to other customers.

Fretus Waste Services Pty Ltd current Public Liability Insurance coverage is \$10 million and would be required to be raised to \$20 million in the advent of Fretus Waste Services Pty Ltd being successful with this contract.

The pricing structure provided is the third lowest when compared against other tenderers and therefore, they are not the preferred tenderer.

## CONSULTATION

Tenders were called for this service in the public tenders section of the Sydney Morning Herald.

## FINANCIAL CONSIDERATIONS

Notwithstanding that DATS Environmental Services Pty Ltd is the lowest tender; the costs associated with this operation will result in an increase of approximately 30% on current haulage costs for the relevant sections within Operations that utilise this service.



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A review of the budget associated with these costs will be required for the first quarter budget review for 2010/11

## **CONSULTATION WITH OTHER COUNCIL DEPARTMENTS**

Consultation has taken place with relevant Operations and Corporate Departments involved with using this service and in the tender assessment.

## **SUMMARY**

Based on the selection criteria of operational experience, satisfactory performance history, provision of suitable plant and equipment and price DATS Environmental Services Pty Ltd is recommended as the preferred tenderer to perform this service under the proposed contract.

Due to the increase in costs for this service, compared to the current contract, a review of expenditure may be required for disposal costs. However, this will depend on operational activity and waste generation rates. Any changes to the recurrent budget will be reported in the first quarter budget review for 2010/11.

## **RECOMMENDATION**

- A. That Council accepts the tender from DATS Environmental Services Pty Ltd for a three (3) year contract with a two (2) year option to transport Council's Depot waste.
- B. That the Mayor and General Manager be delegated authority to sign the contract and affix Council's Seal.
- C. That the remaining tenderers be advised of Council's decision.

Colin Wright  
Manager Waste, Cleansing and Drainage

Greg Piconi  
Director Operations

**Attachments: Confidential Tender Committee Report**



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## FEDERAL NATION BUILDING BLACK SPOT PROJECTS 2010 TO 2011

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### EXECUTIVE SUMMARY

**PURPOSE OF REPORT:**

To seek acceptance of the 2010/11 Federal Nation Building Black Spot Grant for the upgrade to the intersection of Junction Road and Grosvenor Street, Wahroonga.

**BACKGROUND:**

Council has applied for a grant for the upgrade to the intersection of Junction Road and Grosvenor Street, Wahroonga under the Federal Nation Building Black Spot Project

The Roads and Traffic Authority has now advised that Council was successful in obtaining a grant of \$80,000 to construct kerb blisters on Junction Road approaches, at the entry to the roundabout and to improve pedestrian facilities.

**COMMENTS:**

The upgrade of the intersection is considered essential to overcome some of the accidents and to improve pedestrian safety with a revised splitter island.

The Roads and Traffic Authority has advised Council of the grant under the Federal Nation Building Black Spot Project and the conditions associated with the grant.

**RECOMMENDATION:**

That the Roads and Traffic Authority be advised of Council's acceptance of the grant and the terms and conditions associated with the grant.



## PURPOSE OF REPORT

To seek acceptance of the 2010/11 Federal Nation Building Black Spot Grant for the upgrade to the intersection of Junction Road and Grosvenor Street, Wahroonga.

## BACKGROUND

Council at its meeting of 11 August 2009 considered the minutes of the Traffic Committee relating to the nominations for the 2010/11 Blackspot funding. Council resolved to submit a number of projects for funding assistance including the construction of kerb blisters at the intersection of Junction Road and Grosvenor Street, Wahroonga.

The Roads and Traffic Authority has now advised that Council was successful in obtaining a grant of \$80,000 for the upgrade to the intersection to provide for the construction of kerb blisters, returns and kerb ramps on approaches in Junction Road and to incorporate pedestrian access with a revised splitter island.

## COMMENTS

Attached is a copy of the letter from the Roads and Traffic Authority advising of the grant and the conditions associated with the acceptance of the grant.

Council is required to advise the Roads and Traffic Authority of the acceptance of the grant by 30 June 2010.

If approved by Council the project will be included in the 2010/11 Capital Works program.

## CONSULTATION

No direct consultation has taken place with the residents of the area but following acceptance of the grant, local residents will be advising of the proposed work. Temporary notices will need to be installed only for the period of construction advising of the Federal Government's Black Spot funding.

## FINANCIAL CONSIDERATIONS

The Blackspot grant is fully funded by the program and as such Council is not required to contribute to the funding. If approved by Council, the project will be included in the 2010/11 Capital Works program under the Traffic Facilities program

## CONSULTATION WITH OTHER COUNCIL DEPARTMENTS

Consultation has taken place with staff from Strategy and Environment and Corporate Departments with regard to the program and funding.



## **SUMMARY**

Council has requested assistance with the funding for the upgrade to the intersection of Junction Road and Grosvenor Street Wahroonga which was considered to be a blackspot under the criteria for blackspot funding.

The upgrade of the intersection to provide kerb blisters on Junction Road approaches, at the entry to the roundabout and to improve pedestrian facilities is considered essential to overcome some of the accidents that have been occurring at the site for several years.

The Roads and Traffic Authority has advised Council of the grant under the Federal Nation Building Black Spots Project and the conditions associated with the grant. Council staff will undertake the design for the work and arrange for installation before June 2011.

## **RECOMMENDATION**

That the Roads and Traffic Authority be advised of Council's acceptance of the grant of \$80,000 for traffic facilities improvements at the intersection of Junction Road and Grosvenor Street, Wahroonga.

Greg Piconi  
**Director Operations**

**Attachments:**        **Letter from Roads and Traffic Authority - 2010/102846**



Reference: 238.5415  
1 June 2010



The General Manager  
KU-RING-GAI COUNCIL  
DX 8703 GORDON

Attention: Mr Greg Piconi / Director Operations



### 2010-2011 Nation Building Black Spot Program

Dear Sir / Madam

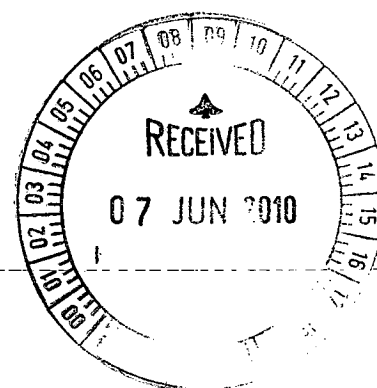
The Federal Minister for the Department of Infrastructure, Transport, Regional Development and Local Government has approved the project(s) listed below for construction by *Council* under the Nation Building Black Spot Program.

You are requested to respond by 30 June 2010 agreeing to the conditions outlined in the Council Acceptance Form enclosed.

RTA PROJECT NUMBER (WBS)	PRIMARY ROAD	INTERSECTING ROAD	SITE DESCRIPTION	BENEFIT COST RATIO (BCR)	PROPOSED TREATMENT	APPROVED ESTIMATED COST
S/05371	JUNCTION RD	GROSVENOR ST	INTERSECTION	5.2	CONSTRUCT KERB BLUSTERS, RETURNS AND KERB RAMPS ON APPROACHES IN JUNCTION RD AND INCORPORATE PEDESTRIAN ACCESS IN REVISED SPLITTER ISLAND.	\$80,000

#### Roads and Traffic Authority

27-31 Argyle Street Parramatta NSW 2150  
PO Box 973 Parramatta CBD NSW 2124 DX28555  
[www.rta.nsw.gov.au](http://www.rta.nsw.gov.au) | 13 17 82





Council's representative is requested to provide the information detailed in the Council Acceptance Form to the RTA as soon as possible.

Should Council wish to discuss the project, including the scope of the project, program for delivery of the project, monthly reports and cash flow forecasts please contact Mrs Divna CVETOJEVIC on 8849 2591.

Council Liaison & Regional Projects Manager



# COUNCIL ACCEPTANCE FORM

## FEDERAL NATION BUILDING BLACK SPOT PROJECTS

### Program Year 2010/11

Council Name: \_\_\_\_\_

Date of Acceptance: *(must be before 30<sup>th</sup> June 2010)* \_\_\_\_\_

Council hereby accepts Federal funding up to the maximum approved amount for the following list of project(s) and agrees to comply with the terms and conditions outlined in the

National Black Spot Program "Notes on Administration"

[<http://www.nationbuildingprogram.gov.au/publications/administration/>]

RTA PROJECT NUMBER (WBS)	PRIMARY ROAD	INTERSECTING ROAD	SITE DESCRIPTION	BENEFIT COST RATIO (BCR)	PROPOSED TREATMENT	APPROVED ESTIMATED COST
S/05371	JUNCTION RD	GROSVENOR ST	INTERSECTION	5.2	CONSTRUCT KERB BLISTERS, RETURNS AND KERB RAMPS ON APPROACHES IN JUNCTION RD AND INCORPORATE PEDESTRIAN ACCESS IN REVISED SPLITTER ISLAND.	\$80,000

*Terms includes:*

- Council is requested to give the delivery of this project(s) high priority, as this project(s) has been nominated by Council, supported by the RTA and funded by the Federal Government because of its poor crash history. This will enable the road safety benefits generated by the improvements to be achieved and passed onto your road users as soon as possible.
- The project must comply with Federal (and State) environmental legislation.
- The Nation Building Black Spot Program requires monthly project status reports and this office must be kept informed of progress on a monthly basis.
- The Federal contribution is fixed at the approved estimated cost or final cost, whichever is the lesser, and no additional funds will be available if the estimate is exceeded without prior approval.
- If there is a change in project scope, submission of a variation is required and formal approval must be sought prior to commencement of construction. [In accordance with *Section 6* of the *National Black Spot Program "Notes on Administration"*,  
[<http://www.nationbuildingprogram.gov.au/publications/administration/>]
- Approved Nation Building *Black Spot Signposting* must be installed at all sites prior to construction. Where the project cost is less than \$100,000 the signs are to be temporary, and need only be left in place for the period of construction. However, if the project allocation is \$100,000 or greater then the signs are to remain in place at the site for two years.
- Council is required to complete the project prior to 30 June 2011, as all funds unspent at that date will revert back to Federal Treasury.



- Final payment will only be made to council once the project has been completed in accordance with the agreed scope, up to the maximum approved estimated cost by 30 June 2011 and upon submission of the "NSW Blackspot Project Completion Form". This must be submitted no later than four weeks following project completion.

*The following must also be submitted to RTA, Sydney Region:-*

- A detailed timeline for delivery of the listed approved project(s), by Friday 30 July 2010,
- Accurate monthly cash flow forecasts (which must be updated by Councils monthly) by the 15<sup>th</sup> of each month,
- Should cash flow not be in accordance with Council's forecasts, the RTA may seek information regarding the reason for the variation,
- Any design plans for new Traffic Control Signals (TCS) or modifications to TCS to must be submitted to the RTA by 30 September 2010 for approval.
- Confirmation of the completion of final designs for the proposed treatment should be provided by the end of August 2010 (to demonstrate the treatment being installed targets the existing crashes and is consistent with the agreed project scope).

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Signature (*Council Officer*)

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Name (*Council Officer*)

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Date



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## UPDATED RURAL FIRE DISTRICT SERVICE AGREEMENT & RURAL FIRE SERVICE ZONING AGREEMENT

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### EXECUTIVE SUMMARY

**PURPOSE OF REPORT:**

To advise on the updated Service Agreement and Zoning Agreement with the NSW Rural Fire Service.

**BACKGROUND:**

At a meeting on 13 May 2008, Council approved a Zoning Service Level Agreement and Zoning Agreement with a proposed operating period for three (3) years from 1 January 2008.

The Zoning Service Level Agreement and Zoning Agreement were not signed as the Rural Fire Service considered there were too many alterations to the standard template. Consequently, the process stalled. In the intervening period a new template has been negotiated between Rural Fire Service and Local Government and Shires Association of NSW.

The Zoning Agreement underpins the Service Level Agreement and defines the management. The Service Level Agreement defines the operational issues.

**COMMENTS:**

The updated Service Level Agreement has some important differences relating to tasks and requirements, and particularly in terms of cost sharing for Fire Control Centre operating costs, Brigade operating costs and capital equipment.

**RECOMMENDATION:**

That Council endorse the updated Service Agreement and Zoning Agreement with the NSW Rural Fire Service in accordance with the recommendations.



## PURPOSE OF REPORT

To advise on the updated Service Agreement and Zoning Agreement with the NSW Rural Fire Service.

## BACKGROUND

At a meeting on 13 May 2008, Council resolved to approve a Zoning Service Level Agreement (SLA) and Rural Fire Service Zoning Agreement with a proposed operating period for three (3) years from 1 January 2008.

The Zoning Service Level Agreement and Rural Fire Service Zoning Agreement were not signed as the Rural Fire Service (RFS) considered there were too many alterations to the standard template. Consequently, the process stalled. In the intervening period, a new template was negotiated between Rural Fire Service and Local Government and Shires Association of NSW.

The Service Agreement covers two (2) Rural Fire Districts, namely Hornsby and Ku-ring-gai, which have been combined into a zone and covered by a Zoning Agreement.

Formerly referred to as the Zoning Service Level Agreement, the document is now known as Rural Fire District Service Agreement. The document name, Rural Fire Service Zoning Agreement, remains unchanged.

The Rural Fire Service Zoning Agreement underpins the Rural Fire District Service Agreement and defines the management, while the Rural Fire District Service Agreement defines the operational issues.

## COMMENTS

The major changes to the agreement are to remove the responsibility for the hazard reduction certificate and the complaints process from council since legislation was changed in 2009. This is to provide a basis for equitable finance and accounting changes with regard to cost sharing that better reflect the division of service delivery across the two (2) areas and to standardise the documentation. The main changes are outlined below:

### Rural Fire Service Zoning Agreement - changes

#### Section 4, - Background

- added to note the background of the two (2) areas already operating as a zone and the agreement is to formalise what is already in place.

#### Section 5, - Name

- The name of the Zone would be Hornsby/Ku-ring-gai District, not Hornsby/Ku-ring-gai Zone. Rural Fire Service contends that this is in keeping with what the volunteers and community already know. Therefore, there would be no need for a name change and the resulting impact on branding.



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10 June 2010

Section 11, - Equipment

- The Zoning Agreement requires all fleet maintenance, repairs and servicing to be co-ordinated through the Zone Operations Officer. A fleet maintenance agreement, in the form of Memorandum of Understanding (MOU) by agreement between Council and the District Manager, will be prepared with each council to undertake all fleet and small plant maintenance, repairs and servicing. Council staff has no issue with this requirement, as these tasks are already undertaken, and this Memorandum of Understanding seeks to formally document this service.

Section 14, - Finance and Accounting

- This section identifies cost sharing to better reflect the division of service delivery across the two (2) areas. This will facilitate the two (2) councils developing an agreement to split costs relating to the Rural Fire Service for the Fire Control Centre operating costs, Brigade operating costs and capital equipment. In relation to the costs for Rural Fire Service staff, it has been altered to reflect a more equitable distribution of cost to each council than currently exists. This has been burdened by Hornsby in the past.
- Specifically, for staff salaries and overheads, the proposed split is 60% from Hornsby Council and 40% from Ku-ring-gai Council. For comparison, the current split of around 90/10 is not equitable when all areas of staff work are accounted for across mitigation, engagement, operations, L & D and support. It is believed by Rural Fire Service that the current split may have been based on a number of brigades which is not an appropriate basis. The rationale for this new proposed split is tabled below:

a	<p>Rural Fire Service busiest office functions for staff, not including pure coordination and management of volunteers, are compared below for the 1 September 2009 to date are:</p> <ul style="list-style-type: none"> <li>• DA's –       Hornsby - 268                   Ku-ring-gai - 292</li> <li>• Hazard Complaints                   Hornsby - 47                   Ku-ring-gai - 24</li> <li>• Hazard Reduction Certificates (HRC)                   Hornsby 17                   Ku-ring-gai 4</li> <li>• Total Hazard Reductions on works program 2009/2010 FY                   Hornsby 35                   Ku-ring-gai 26 2010-2011 FY                   Hornsby 46                   Ku-ring-gai 20</li> <li>• Hazard Reduction Certificates and complaints process are newest in the workload for Ku-ring-gai since changes in legislation last year, 2009, and has seen an additional staff member and workload taken on by the Rural Fire Service.</li> </ul>
b	<p>In terms of operational duties, the Rural Fire Service contribute significant effort to all calls in both local government areas including coordinating responses for out of area which involves all brigades.</p>



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c	In terms of queries relating to bushfire and emergency management related issues, Rural Fire Service believes they experience a very similar workload from both local government areas.
d	In relation to land area, while Ku-ring-gai accounts for approx 15% of the area that Rural Fire Service look after, the challenges and associated requirements that the significant direct urban interface, which in Ku-ring-gai, are significant.
e	The management of training and support, community engagement and support activities, for brigades is done as a Zone effort and is not broken into local government area matters. While there are more individual matters for Hornsby based members and brigades, events are open to all brigades.

- Other costs shown to be shared on a council agreement by the establishment of a Memorandum of Understanding and are to be facilitated by the District Manager. This will be about agreeing on co-contributions to capital and operating costs and is more related to the volunteers and their activities.

### Rural Fire District Service Agreement - Changes

The additional change to the Service Agreement update is following the amendments to the *Rural Fires Act 2009*. More recent additional changes have been to streamline the Service Agreement and provide a uniform arrangement between Local Government Authorities and the Rural Fire Service Districts across NSW and have been prepared from the template supplied by Rural Fire Service and agreed to in-principle by the Local Government and Shires Association of NSW. The only area Rural Fire Service has been able to alter to fit local needs is in the schedules. These relate to what services each organisation will provide to one another. The reason behind the changes is to achieve a simplified standard across the state in relation to the interaction between councils and the Rural Fire Service and to ensure all agreements are achievable. The main changes are outlined below:

- Under the recitals, three (3) have been removed. These relate to consultation. Throughout the agreement it outlines that consultation and review must occur through the District Liaison Committee. This committee is to be formed under the Service Agreement.
- Section 4, - Commissioner to Exercise Council's Functions and Manage the Zone has had significant changes made.
  - This section now outlines functions that the Rural Fire Service Commissioner will exercise, on behalf of Council, rather than it being identified in attached schedules. This will stop duplication and reflect a standard across all local government areas.
  - Section 4.3 of the last signed document outlined that the Commissioner would not, without the agreement of Council, change the staff structure or resource levels/types in the area. This has been removed as it is unachievable given that the Rural Fire Service must abide to decisions made by other authorities and be able to manage resources to ensure best service delivery to the community.
  - Under the new Section 4.3, the requirements for reporting, which relate to *Rural Fires Act 2009*, cannot be changed. Reporting occurs as part of the Bushfire Management Committee process with agencies reporting on what they do and form part of the team formulating what they will do.



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- Section 5, - District Equipment. This section has been altered to remove reference to equipment listed in an attached schedule. This schedule serves to simplify the process and outline the ensurance, by the Commissioner, that equipment will be listed on a register and will be maintained in accordance with Rural Fire Service - Service Standards. These Service Standards have been developed to comply with the *Rural Fires Act 2009*.
- Section 6, - Land and Buildings. The changes remove the statements relating to construction of a new Fire Control Centre. This has already occurred.
- Section 8, - Finance. Changes remove statements relating to time for preparation of an estimate bid for the Rural Fire Fighting Fund (RFFF) and a statement warranting the council contribution will accurately reflect the services provided within the Zone. This is covered by the requirement, within the draft agreement, that the estimates must be presented to the District Liaison Committee which council is represented upon, prior to submission to the Rural Fire Service. Further modifications, within this section, reflect the ensurance of the Commissioner to consult with council regarding their capacity to contribute to the Rural Fire Fighting Fund and the allocation of resources. There is a requirement that the Rural Fire Service will provide council with a ten (10) year capital works projection.
- Section 10, - Agreement Monitoring in the last signed document has been removed. All of requirements are now covered in Section 9, - Liaison Committee.
- Section 10, - Insurance and Related Covenants. This section has removed the need for council to attach its insurance scheme documentation. The same requirements for insurance still exist but the attached schedule is no longer required.
- Section 14, - Review in the last Agreement has been removed as agreements no longer have an end date. Review and ability to terminate is covered by Sections 12 and 14 of the new Service Agreement.
- The last notable change is the attached Schedules, most of which have already been mentioned. Previously, there had been six (6) schedules. There is now only three (3) as outlined below:
  - Schedule 1, - Council Premises Occupied by the Rural Fire Services;
  - Schedule 2, - Council Services Provided to the Rural Fire Services; and
  - Schedule 3, - Hornsby/Ku-ring-gai Rural Fire District Service Business Plan. The Business Plan contains Commissioner listed items determined on an annual basis and formulated in conjunction with the Bush Fire Management Committee. Rural Fire Service has decided to include it as part of this Service Agreement.

This has been done as all other material is now covered within the agreement template. It is viewed that this simplification allows councils and the Rural Fire Service to agree on service. It is important to note that neither Schedule 2 nor Schedule 3 contain any additions or deletions to ensure service delivery to the community and the volunteers.

Beyond these highlighted changes there are some changes to wording and numbering to ensure the document is accurate and compliant with the *Rural Fires Act 2009*.



## CONSULTATION

Council staff have held meetings and exchanged documentation with the Service District Office staff at the Hornsby Fire Control Centre. Exchange of correspondence has been made between Hornsby Council staff directly in relation to the Agreements.

## FINANCIAL CONSIDERATIONS

For funding of staff salaries and overheads, identified in Section 14 of the Zoning Agreement, the direct additional cost to Ku-ring-gai Council, resulting from the proposed split of 60/40, compared to the current split of around 90/10 (Hornsby /Ku-ring-gai ) is estimated to be \$40,000.

This will have an impact on Council's budget for 2010/11 onwards and therefore will be taken into account for future budgets.

## CONSULTATION WITH OTHER COUNCIL DEPARTMENTS

Consultation was not considered with other council departments as the Agreements have been prepared from the template supplied by Rural Fire Service and agreed to in-principle by the Local Government and Shires Association NSW, with the only area the Rural Fire Service have been able to alter to fit local needs is in the schedules which relate to services each organisation will provide to one another.

## SUMMARY

While approved in May 2008, the Zoning Service Level Agreement and Rural Fire Service Zoning Agreement were not signed as the Rural Fire Service (RFS) considered there were too many alterations to the standard template. Consequently, the process stalled. In the intervening period, a new template was negotiated between Rural Fire Service and Local Government and Shires Association of NSW.

Formerly known as the Zoning Service Level Agreement, the new document is now the Rural Fire District Service Agreement. The Rural Fire Service Zoning Agreement remains unchanged.

Key changes to the documents include:

- Remove the responsibility for hazard reduction certificate and complaints process from council since legislation changes in 2009,
- Costs will be shared to better reflect the division of service delivery across the two (2) areas. This will facilitate the two (2) councils developing an agreement, in the form of a Memorandum of Understanding, to split costs relating to the Rural Fire Service for Fire Control Centre operating costs, Brigade operating costs and capital equipment for the 2011/12 financial year
- Terms of agreements no longer have an end date. Review and ability to terminate is covered by Sections 12 and 14 of the new Service Agreement.



## **RECOMMENDATION**

- A. That the General Manager be given delegated authority to sign the new Hornsby Ku-ring-gai Rural Fire District Service Agreement and the Hornsby/Ku-ring-gai District Rural Fire Service Zoning Agreement prior to submitting it to the Commissioner of the NSW Rural Fire Service.
- B. That Authority be given to affix the Common Seal of Council to Hornsby Ku-ring-gai Rural Fire District Service Agreement and the Hornsby/Ku-ring-gai District Rural Fire Service Zoning Agreement as required.
- C. That Council appoints one Councillor as a member of the District Liaison Committee as required under Section 9 of the Hornsby/Ku-ring-gai Rural Fire District Service Agreement.
- D. That the General Manager be given delegated authority to negotiate and approve a Council agreement with Hornsby Council for sharing of costs associated with the district under Section 14 of the Hornsby/Ku-ring-gai Rural Fire Service Zoning Agreement.

Ian Taylor  
**Manager Engineering Services & Projects**

Greg Piconi  
**Director Operations**

**Attachments:**    **1. Hornsby/Ku-ring-gai District Rural Fire Service Zoning Agreement - 2010/104469**  
                         **2. Hornsby/Ku-ring-gai Rural Fire District Service Agreement - 2010/104465**



**The Council of Hornsby  
The Hornsby Shire Council  
&  
*The Council of Ku-ring-gai*  
The Ku-ring-gai Council**



**Hornsby / Ku-ring-gai District  
RFS Zoning Agreement**



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### Annexure 1 Staff Structure



## Agreement made between Hornsby Council and Ku-ring-gai Council effective on TBA

**Parties**           The Council of Hornsby of 296 Pacific Highway Hornsby in the state of New South Wales ("**the Hornsby Shire Council**")

and

                          The Council of Ku-ring-gai of 818 Pacific Highway Gordon in the state of New South Wales ("**the Ku-ring-gai Council**")

### Recitals

- (A) The Councils have agreed to operate and manage the Rural Fire Districts as a Zone.
- (B) The Councils and the Commissioner have agreed to operate and manage the Zone under the terms of a Service Agreement (SA).
- (C) The Councils have agreed to delegate certain functions, powers and duties to the Zone Manager (fire control officer) in accordance with the SA.

The parties agree

---

## 1. Definitions

In this agreement:

- (a) "**Act**" means the *Rural Fires Act 1997 (NSW)* as amended.
- (b) "**Councils' functions**" means the functions that the Commissioner has agreed to exercise on behalf of the Councils
- (c) "**delegations**" means the delegations made by the Councils to the Zone Manager
- (d) "**Districts**" means *[insert relevant rural fire districts]*
- (e) "**fire control officers**" and "**FCO**" means the Zone Manager
- (f) "**Fire Fighting Apparatus**" means all vehicles, equipment and other things used for, or in conjunction with, the prevention or suppression of fire protections of life or property in case of fire.
- (g) "**Fire Fighting Equipment**" means the fire fighting apparatus used by the rural fire services operating in the Districts.
- (h) "**Advisory Committee**" means the Committee of senior field officers established to consult with and advise the Zone Manager.



- (i) **"Minister"** means the Minister responsible for the administration of the Act.
  - (j) **"Premier"** means the Premier of New South Wales.
  - (k) **"Premises"** means the land and buildings or parts of land and buildings currently occupied or used by rural fire services operating in the Districts specified in the Service Agreement.
  - (l) **"rural fire services operating in the Districts"** means the fire control officer for the Districts, the deputy fire control officers for the Districts, the groups officers and the volunteer rural fire fighters forming the rural fire brigades in the Districts.
  - (m) **"Service Standards"** means the Service Standards issued by the Commissioner pursuant to the provisions of section 13 of the Act.
  - (n) **"Zone"** means the combined area comprising the Districts.
- 

## 2. Interpretation

In this Agreement:

- (a) headings are for convenience only and do not affect interpretation; and unless the context indicates a contrary intention:
- (b) words importing the singular include the plural and vice versa; and words denoting a given gender include all other genders;
- (c) the expression "person" includes an individual, the estate of an individual, a body politic, a corporation and a statutory or other authority or association (incorporated or unincorporated);
- (d) references to parties, clauses, sub-clauses, schedules, exhibits and annexures are references to parties, clauses, sub-clauses, schedules, exhibits and annexures to or of this Agreement and a reference to this Agreement includes any schedule, exhibit and annexure;
- (e) references to this Agreement, or any other deed, agreement, instrument or document shall be deemed to include references to this Agreement or any other deed, agreement, instrument or documents as amended, novated, supplemented, or replaced from time to time;
- (f) a reference to an agreement includes a representation, undertaken, deed, agreement, or legally enforceable order or arrangement or understanding, whether or not in writing;
- (g) a reference to a document includes any written agreement and any certificate or not or other document of any kind;
- (h) references to any person or to any party to this Agreement include that person's party's executors, administrators, successors and permitted assign's;



- (i) where any word or phrase is given a defined meaning or other part of speech or grammatical form in respect of that word or phrase has corresponding meaning;
  - (j) where the day on or by which any sum is payable under this Agreement, or any act, matter or thing is to be done is a day other than a Business Day, that sum will be paid and such act, matter or thing will be done in the immediately preceding Business Day;
  - (k) where 2 or more parties to this Agreement make a joint covenant, undertaking, representation or warranty, it will be construed to refer to and bind each of such parties jointly and each of them severally;
  - (l) references to payments to any party of this agreement will be construed to include payments to another person upon the direction of such party;
  - (m) all payments to be made pursuant to this Agreement will be made by unendorsed bank cheque or other immediately available funds; and
  - (n) references to any legislation or to any section or provision of any legislation include any statutory modification or re-enactment or any statutory provision substituted therefore and all ordinances, by-laws, regulations and other statutory documents issued thereunder.
- 

### **3. Commencement and term**

- 3.1 Notwithstanding the date upon which this Agreement is signed the parties agree that the operation of the Agreement will commence on *TBA* and continue until further notice, unless it is terminated pursuant to the provisions of clause 19.
  - 3.2 Prior to the expiration of the Agreement the parties may agree in writing to extend the term of the Agreement for a further period.
- 

### **4. Background**

The Hornsby and Ku-ring-gai councils have operated the associated Rural Fire Districts in line with the Zoning principles for some years, this agreement serves to formalise those arrangements.

---

### **5. Name**

The zone will continue to be called Hornsby / Ku-ring-gai District and will incorporate Hornsby and Ku-ring-gai Rural Fire Districts.

---



## **6. Staff Structure**

- 6.1 The staff structure for the *Hornsby / Ku-ring-gai District* is set out in Annexure 1 attached to the Agreement. The structure establishes functional areas of responsibility as specified.
  - 6.2 Appointment to positions will be in accordance with Rural Fire Service Policy
  - 6.3 Positions unable to be filled from existing district staff will be advertised and appointed in accordance with Rural Fire Service Policy
- 

## **7. Group Officer Structure / Advisory Committee**

- 7.1 The district Group Officer structures will be retained. Any structural reform will only occur in accordance with the Service Standards.
  - 7.2 The Group Officers will continue to comprise the Senior Leadership Team
- 

## **8. Brigade Structure**

- 8.1 The current district brigade structure will be retained. Any structural reform will only occur in accordance with the Service Standards and Service Agreement provisions.
  - 8.2 Appointment of brigade officers will be in accordance with the Service Standards and delegations specified in the Service Agreement.
- 

## **9. Brigade Management**

- 9.1 The current communication / information flow systems will continue. Minimum standards are to be adopted by brigades for internal communication and intra-zone communication. All correspondence is to be referred to the Zone Manager.
- 9.2 All brigades will be administered in accordance with the brigade constitution prepared and adopted in compliance with the Service Standards. Zone staff as delegated by the Zone Manager may attend brigade annual general, and general meetings.
- 9.3 The Zone Administration Centre in accordance with the Service Standards will maintain a brigade membership register. The Firezone management system will be the basis for the membership register.
- 9.4 Discipline and grievances will be managed in accordance with the Service Standards. Issues will be referred through the Group Officers and / or District Liaison Officers to the Zone Manager.



- 9.5** Captains meetings will be held in accordance to the Service Standards with the dates set annually. The location of Captains meetings may be varied throughout the Zone. All Captains are eligible to attend these meetings.
- 

## **10. Zone Headquarters**

- 10.1** The Zone Administration Centre will be a category one fire control office that will operate from 1049 Pacific Highway Cowan.
- 

## **11. Equipment**

- 11.1** Current estimates planning and equipment allocation systems will continue initially with a transition to improvement and replacement programs based on Service Delivery Model recommendations.
- 11.2** Rural fire tankers will remain the responsibility of the individual districts in terms of maintenance, replacement and new allocation. Service Delivery Model improvements and replacement programs will be developed for the Zone.
- 11.3** All fleet maintenance, repairs and servicing will co-ordinated through the Zone Operations Officer. A fleet maintenance agreement will be prepared with each council to undertake all fleet and small plant maintenance, repairs and servicing.
- 11.4** Rural Fire Stations will remain the responsibility of the individual districts in terms of maintenance, replacement and new allocations.
- 11.5** Personal Protective Equipment (PPE) will continue to be issued to volunteer firefighters in accordance with Service Standards.
- 11.6** District equipment store facilities will be maintained and reviewed in conjunction with continuous service improvement programs. Stores tracking systems will be implemented for equipment allocation and issue.
- 

## **12. Brigade / Volunteer Training**

- 12.1** Training will continue to be provided throughout the Zone in compliance with RFS training standards. Current district based training will be made available to eligible volunteers from brigades throughout the Zone
- 12.2** All current training venues will be retained. Training venues for specific courses or training activities will be determined to suit the majority needs of the trainee participants.



- 12.3** The current Training Committee will continue with the Zone Learning and Development Officer holding the Executive Officer position on the Committee.
- 12.4** Functional training co-ordinators maybe appointed for defined functional training disciplines within the Zone(e.g. Chainsaw, RFD, VF etc).
- 

## **13. Community Education**

- 13.1** Community education programs will be developed and facilitated through the Zone Community Education Committee. The Community Safety Officer will be the Executive Officer to the Committee.
- 13.2** The current Community Education Committee will be retained.
- 

## **14. Finance and Accounting**

- 14.1** Hornsby Shire Council will continue to provide primary financial and accounting support services for the Zone. Financial and accounting support services will be provided in accordance with the Zone Service Agreement.
- 14.2** Estimates will be prepared for the Districts annually in consultation with the respective Council. Councils will approve the budgetary limits for estimates each year. Councils will contribute 11.7% of the total estimates approved.
- 14.3** Funding for the Zone will be apportioned to the Districts on the following basis:
- Zone Office and fire control centre operating costs - Costs to be shared on council agreement.
  - Staff salaries and overheads – 60% Hornsby Council and 40% Ku-ring-gai Council
  - Brigade operating costs including M&R, fuels etc – Costs to be shared on council agreement.;
  - Capital Items and new equipment – Costs to be shared on council agreement.;
  - RFS Program costs – apportioned pro-rata based on district estimates.
- 14.4** Each district will retain current district arrangements for the insurance of RFS building assets and RFS vehicles.
- 

## **15. Service Agreement**

- 15.1** The Zone Service Agreement (SA) defines the conference of functions and responsibilities between the Councils and the Commissioner of the NSW Rural Fire



Service. The SA specifies the services and level of support provided by each of the organisations to each of the organisations.

- 15.2** The Zone SA contains schedules listing the premises and equipment assets of each of the districts
- 15.3** The performance of the SA is monitored and reviewed by the Zone SA Liaison Committee. The membership of the committee is established by the Service Standard and is set out in the SA.
- 

## **16. Further Assistance**

The parties covenant and agree that each will do all acts and things and execute all deeds and documents and other writings as are from time to time reasonably required for the purposes of or give effect to this Agreement.

---

## **17. Governing Law**

This Agreement will be governed by and construed in accordance with the laws of New South Wales.

---

## **18. Waiver**

No waiver of any breach of the Agreements will be held or construed to be a waiver of any other subsequent or antecedent breach of this Agreement.

---

## **19. Review**

- 19.1** The Councils may agree to conduct a review of this Agreement not less than 12 months after its commencement.
- 19.2** The review shall be conducted in such a manner and by such persons as may be agreed in writing between the Councils.
- 

## **20. Notices**

- 20.1** All notices, requests, consents and other documents authorised or required to be given by or under this Agreement will be given in writing and either personally served or sent by facsimile transmission ("**fax**") addressed as follows:

**The Councils**

To: The General Manager



Fax no:                      Hornsby Shire Council  
                                    296 Pacific Highway  
                                    Hornsby NSW 2077  
                                    02 98476999

To:                              The General Manager  
                                    Ku-ring-gai Council  
                                    818 Pacific Highway  
                                    Gordon NSW 2072  
Fax no:                        02 94240880

**20.2** Notices, requests, consents and other documents ("**Notices**") will be deemed served or given:

- (a)** If personally served by being left at the address of the party to whom the Notice is given between the hours of 9.00am and 5.00pm on any Business Day, then in such case at the time the Notice is so delivered;
- (b)** If sent by fax, then in such case when successfully transmitted during business hours, or if not during business hours, then when business hours next commence.

**20.3** Any party may change its address for receipts of Notices at any time by giving notice of such change to the other party. Any Notice given under this Agreement may be signed on behalf of any party by the duly authorised representative of that party and will be sent to all other parties to this Agreement.

---

## **21. Counterparts**

This Agreement may be signed in any number of counterparts and all such counterparts taken together will be deemed to constitute one and the same document.

---

## **22. Modification**

This Agreement may not be modified, amended, added to or otherwise varied except by a document signed in writing signed by each of the parties.

---

## **23. Legal Costs**

Each party will bear their own legal costs in relation to this Agreement.

---



## **24. Entire Agreement**

This Agreement comprises the entire agreements between the parties and no earlier agreement, understanding or representation, whether oral or in writing, in relation to any matter dealt with in this Agreement will have any effect from the date of this Agreement.

---

## **25. Severability**

In the event that part or all of any clause of this Agreement is held to be illegal or unenforceable it will be severed from this Agreement and it will not effect the continued operation of the remaining provisions of this Agreement.

---



**Signed** as an agreement.

The Council of the Shire of Hornsby by  
its duly constituted Attorney ROBERT  
JOHN BALL pursuant to Power of  
Attorney Book No. 4218 Registered  
No. 500

---

Mayor

---

General Manager

**The Common Seal of the** Ku-ring-gai  
Council was affixed in pursuance of a  
resolution passed by the Council on  
the day of TBA in the presence of:

---

Mayor

---

General Manager

**Signed by**  
**Shane Fitzsimmons AFSM**  
**Commissioner,**  
**NSW Rural Fire Service**  
in the presence of:

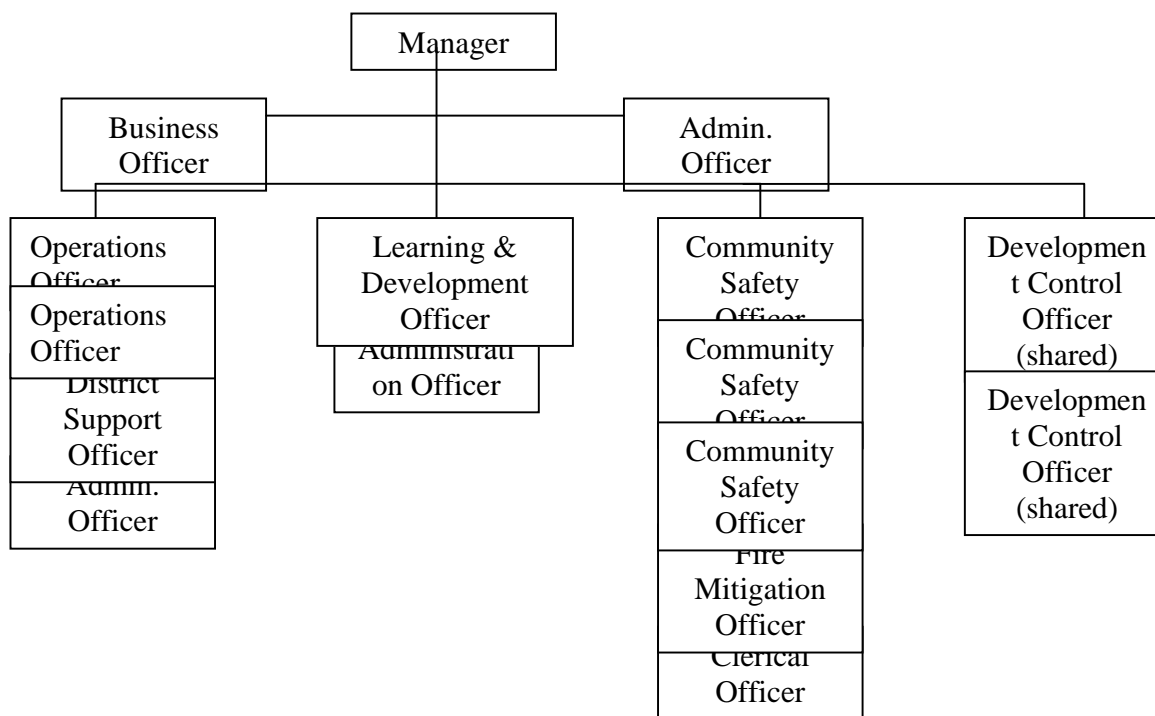
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Signature





# **Annexure 1:- Hornsby / Ku-ring-gai Staff Structure**





**The Council of Hornsby Shire**  
The Council

**The Council of Ku-ring-gai Municipal**  
The Council

**The Commissioner of the NSW Rural Fire Service**  
the Commissioner



## **Rural Fire District Service Agreement Hornsby/Ku-ring-gai**

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**This Agreement made at [insert town where document is signed by last party] on [insert date]**

**Parties**

**The Council of the Shire of Hornsby** of 296 Pacific Highway, Hornsby in the state of New South Wales ("**The Council**")

**The Council of the Municipality of Ku-ring-gai** of 818 Pacific Highway, Gordon in the state of New South Wales ("**The Council**")

(collectively referred to in this Agreement as "**the Councils**").

**The Commissioner of the NSW Rural Fire Service** of 15 Carter Street Lidcombe NSW 2141 ("**The Commissioner**")

## **Recitals**

- A. The parties have agreed to enter into a rural fire district service agreement pursuant to the provisions of section 12A of the *Rural Fires Act 1997* (NSW).
- B. The Councils and the Commissioner have agreed to operate the Districts as a Zone.
- C. The Commissioner has agreed to exercise all of the functions imposed on the Councils by and under the *Rural Fires Act 1997* (NSW) other than those functions specified in Clause 4.2.
- D. The Commissioner has agreed to undertake the day-to-day management of the Service operating in the Zone on behalf of the Councils.
- E. The Councils have agreed to provide certain administrative accounting and maintenance services to the Commissioner and to the Service.
- F. The Councils have agreed to allow the Commissioner and the Service to use the District Equipment.
- G. The Councils have agreed to allow the Commissioner and the Service to use the Premises.
- H. The Councils and the Commissioner have agreed to establish a Liaison Committee.
- I. The Councils have agreed to delegate certain functions, powers and duties to the fire control officer.

## **The parties agree**

---

### **1. Definitions**

In this agreement:

- (a) "**Act**" means the *Rural Fires Act 1997* (NSW) as amended.
- (b) "**delegation**" means the delegation made by the Councils to the ZM, a copy of which is annexed to this Agreement and marked with the letter "A".
- (c) "**Districts**" means the **Hornsby and Ku-ring-gai** rural fire districts.
- (d) "**District Equipment**" means the Fire Fighting Apparatus and the other vehicles and equipment



- (i) owned by the State of New South Wales
- (ii) owned by the Council; or
- (iii) vested in the Council

and used by the Members of the Rural Fire Service operating in the Districts.

- (e) **"Zone Manager"** and 'ZM' means the manager appointed to the Zone by the Commissioner.
- (f) **"Fire Control Officer"** and "FCO" means the manager appointed to the Zone by the Commissioner.
- (g) **"Fire Fighting Apparatus"** means all vehicles, equipment and other things used for or in connection with, the prevention or suppression of fire or the protection of life or property in case of fire, by the Members of the Rural Fire Service operating in the Districts.
- (h) **"Liaison Committee"** means the Liaison Committee established pursuant to clause 9 of this Agreement.
- (i) **"Minister"** means the Minister responsible for the administration of the Act.
- (j) **"Premier"** means the Premier of New South Wales.
- (k) **"Premises"** means the land and buildings or parts of land and buildings specified in Schedule 2.
- (l) **"Members of the Rural Fire Service operating in the Districts"** means the fire control officer for the Districts, the deputy fire control officers for the Districts, the other staff of the Service assigned to the Districts, the group officers and the volunteer rural fighters forming the rural fire brigades and groups of rural fire brigades in the Districts.
- (m) **"RFS"** means the NSW Rural Fire Service established by the Act.
- (n) **"Service Standards"** means the Service Standards issued by the Commissioner pursuant to the provisions of section 13 of the Act.
- (o) **"Term"** means the period specified in clause 3.1 for which this Agreement is to continue.
- (p) **"Zone"** means the area comprising the Districts.
- (q) **"Zone Manager"** means the person appointed as fire control officer for the Districts.

---

## 2. Interpretation

In this Agreement:

- (a) headings are for convenience only and do not affect interpretation; and unless the context indicates a contrary intention;
- (b) words importing the singular include the plural and vice versa, and words denoting a given gender include all other genders;



- (c) the expression “person” includes an individual, the estate of an individual, a body politic, a corporation and a statutory or other authority or association (incorporated or unincorporated);
- (d) references to parties, clauses, sub-clauses, schedules, exhibits or annexures are references to parties, clauses, sub-clauses, schedules, exhibits and annexures to or of this Agreement and a reference to this Agreement includes any schedule, exhibit and annexure;
- (e) references to this Agreement, or any other deed, agreement, instrument or document shall be deemed to include references to this Agreement, or other deed, agreement, instrument or document as amended, novated, supplemented, or replaced from time to time.
- (f) a reference to an agreement includes a representation, undertaking, deed, agreement or legally enforceable order or arrangement or understanding, whether or not in writing;
- (g) a reference to a document includes any written agreement and any certificate or note or other document of any kind;
- (h) references to any person or to any party to this Agreement include that person’s or party’s executors, administrators, successors and permitted assigns;
- (i) where any word or phrase is given a defined meaning any other part of speech or grammatical form in respect of that word or phrase has corresponding meaning;
- (j) where the day on or by which any sum is payable under this Agreement, or any act, matter or thing is to be done is a day other than a Business Day, that sum will be paid and such act, matter or thing will be done on the immediately preceding Business Day;
- (k) where two or more parties to this Agreement make a joint covenant, undertaking, representation or warranty, it will be construed to refer to and bind each of such parties jointly and each of them severally;
- (l) references to payments to any party to this Agreement will be construed to include payments to another person upon the direction of such party;
- (m) all payments to be made pursuant to this Agreement will be made by unendorsed bank cheque or other immediately available funds; and
- (n) reference to any legislation or to any section or provision of any legislation includes any statutory modification or re-enactment or any statutory provision substituted therefore and all ordinances, by-laws, regulations and other statutory documents issued thereunder.

---

### **3. Commencement and Term**

- 3.1 Notwithstanding the date upon which this Agreement is signed the parties agree that the operation of the Agreement will commence on **[insert date]**, and continue until it is terminated pursuant to provisions of clause 14.
- 3.2 This Agreement replaces the Service Level Agreement between the Commissioner and the Councils dated **[insert date of earlier SLA]**.



---

#### **4. Commissioner to exercise Councils' Functions and manage the Zone**

- 4.1 This Agreement is a rural fire district service agreement under section 12A of the Act.
- 4.2 The Commissioner will, in consideration of an annual fee of \$1.00 payable by the Councils:
- (a) exercise, for the Term, all of the functions imposed on the Councils by or under the Act other than those functions specified in
    - (i) sections 7, 12A, 37(3), 60(2), 60(6), 62, 63, 64, 65, 74 (1)(2)(a)&(b), 74C(3), 76, 77, 79, 95, 83(1)(a), 100E (2)(b)&(c), 100G, 100H, 104, 109, 110, 119 (save for sub-section 119 (5), 120 and 126 of the Act; and
    - (ii) Regulations (14(a), and 37 of the Rural Fires regulation (2008)
  - (b) undertake the day to day management of the Service in the Zone.
- 4.3 The Councils will
- (a) deliver a written report to the Commissioner setting out the information specified in sub-sections 74 (1), 74 (2) (a) & 74 (2) (b) of the Act not later than three months after the end of the Financial Year;
  - (b) deliver to the Commissioner any bush fire hazard complaint it receives within 14 days of receipt of the complaint;
  - (c) upon request, provide the RFS with the following datasets for use in undertaking assessments in accordance with the Bush Fire Environmental Assessment Code on behalf of Council:

Data Type	Format
Weeds map	GIS layer if available and hard copy map if available
Heritage sites	GIS layer if available and hard copy map if available

- (d) upon request, provide the RFS with the following data for use in undertaking assessments in accordance with the Bush Fire Environmental Assessment Code on behalf of Councils:
  - (i) property address; and
  - (ii) property ownership

This data must be provided by Councils within 2 working days of a request being made; and
- (e) upon request, provide the RFS with a copy of any consent provisions



imposed by the Council pursuant to clause 2.7 of the Bush Fire Environmental Assessment Code, 2006.

- 4.4 The Councils acknowledges that, in exercising the Councils' functions pursuant to this Agreement the Commissioner may, but is not obliged to, utilise or provide additional equipment or personnel in addition to the District Equipment and the Members of the Rural Fire Service operating in the Zone.

---

## **5. District Equipment**

- 5.1 The Councils agrees that they will, during the Term, make available to and allow the Commissioner and the RFS to use the District Equipment which is owned by, vested in or under the control of the Councils.
- 5.2 The Commissioner agrees that he or she will, during the term of this Agreement, maintain the Districts Equipment on behalf of the Councils in accordance with the applicable Service Standards.
- 5.3 The RFS will maintain a register of the Zone Equipment.

---

## **6. Land and Buildings**

- 6.1 The Councils agree that they will, during the Term, allow the Commissioner and the Service to occupy and use the Premises (being the land and buildings or parts of land and buildings specified in Schedule 1), or such other land and buildings as may be agreed upon in writing between the Councils and the Commissioner, on the following terms and conditions:
- 6.2 Each of the Councils grant in relation to those parts of the Premises over which they have control and the Commissioner accepts a licence to enter and use the Premises during the Term.
- 6.3 The Commissioner has:
- (a) a personal right of occupation of the Premises on the terms specified in this Licence;
  - (b) no tenancy, estate or interest in the land on which the Premises are situated.
- 6.4 The legal right to possession and control over the Premises and the land upon which they are situated remains vested in the respective Council throughout the term of this Licence.
- 6.5 The Councils will:
- (a) not interfere with the Commissioner's use and enjoyment of the Premises during the Term;
  - (b) pay all rates, taxes, electricity, gas, oil and water charges separately metered and charged to the Premises;
  - (c) maintain the Premises in good repair in accordance with paragraph 6.7; and
  - (d) effect and keep current at all times during the continuance of this



Agreement the following insurances:

- (i) building insurance; and
- (ii) public risk insurance in an amount of not less than \$20,000,000.

6.6 The Commissioner will:

- (a) not occupy or use the Premises for any purpose other than the provision of rural fire services and any other purpose incidental thereto, without the prior consent of the respective Council, which shall not be unreasonably withheld or delayed;
- (b) not assign the benefit of this licence or grant any sub-licence;
- (c) keep the Premises clean and tidy and carry out minor repairs and maintenance in accordance with paragraph 6.8;
- (d) comply with all statutes, regulations and ordinances regarding its use of the Premises; and
- (e) not deface or alter the Premises without the consent of the respective Council, such consent not to be unreasonably withheld or delayed.

6.7 The Councils will undertake all painting, maintenance and repairs of the Premises involving:

- (a) the roof and external structure of the Premises;
- (b) any internal or external fittings or fixtures placed by the Councils;
- (c) any work that must be carried out by a licensed trades person, including, but not limited to:
  - (i) electrical repairs and maintenance; and
  - (ii) plumbing repairs and maintenance; and
- (d) maintenance and repair of any air conditioning or heating system.

6.8 The Commissioner will undertake any painting, maintenance and repairs of the Premises involving:

- (a) the ceiling and internal structure of the Premises;
- (b) any internal or external fittings or fixtures placed by the Service; and
- (c) the lawn, garden and grounds surrounding the Premises.

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## **7. Administrative, Accounting and Maintenance Services**

7.1 The Councils will, in consideration of an annual fee of \$1.00 payable by the RFS to the Councils, provide to the Commissioner and the Service the administrative, accounting and maintenance services specified in Schedule 2.

7.2 The Councils or their General Manager will delegate to the ZM the functions, specified in Annexure "A" for the purpose of enabling the ZM to utilise the Councils' administrative, accounting and maintenance services.



- 7.3 The ZM will, in exercising the functions delegated to him or her pursuant to clause 7.2, ensure that they are exercised in accordance with the Councils' policy and procedures.

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## 8. Finance

- 8.1 The Councils will, in consultation with the Commissioner, by no later than 30 September of each year, submit to the Commissioner an estimate of probable expenditure for the Districts for the next financial year ("**the Bid**").
- 8.2 Following consultation with the Councils, the Commissioner will, by no later than 28 February of each year, submit to the Councils:
- (a) a probable allocation of expenditure for the Districts for the next financial year ("**the probable allocation**"); and
  - (b) a probable contribution ("**the probable contribution**") by the Councils to the New South Wales Rural Fire Fighting Fund ("**the Fund**").
- 8.3 In the event that the Commissioner and the Councils cannot agree upon the contribution of the Councils to the Fund within 28 days of the Commissioner delivering the probable allocation and probable contribution to the Councils pursuant to clause 8.2 the parties will ask the Minister to determine the Councils' contribution pursuant to section 110 of the Act.
- 8.4 The Commissioner will, following consultation with the Councils, provide the Councils with a budget forecast of the expenditure for the District for the next four years, commencing on 1 July 2011, then updated annually.
- 8.5 In preparing the budget forecast the Commissioner will consult with the Councils in relation to a range of matters including:
- (a) the Council's capacity to contribute to the Fund; and
  - (b) RFS and government policies with respect to:
    - (i) the replacement of District/Zone Equipment
    - (ii) the District's requirement by reference to Standard of Fire Cover and other policies; and
    - (iii) standards for fire stations and other facilities
- 8.6 The Commissioner will provide to the Councils on 1 July 2011 then update annually, a draft 10 year capital works program for the District identifying projected capital works requirements by reference to RFS and government policies with respect to:
- (a) the replacement of District/Zone Equipment
  - (b) the District's requirements by reference to Standards of Fire Cover and other policies; and
  - (c) standards for fire stations and other facilities
- 8.7 Where the Councils provide funds for the delivery of rural fire services in the Districts



in addition to their statutory contribution to the Fund the ZM will, on behalf of the Commissioner, manage those funds in accordance with any relevant policies or directions of the Councils.

- 8.8 The Councils acknowledges that, in exercising the Council's functions pursuant to this Agreement, the Commissioner:
- (a) has unrestricted access to and may expend, in the Commissioners discretion, the monies received by the Councils from the Fund for the delivery of rural fire services in the Districts; and
  - (b) may, but is not obliged to, expend any monies in addition to those referred to in paragraph (a).
- 8.9 The Council acknowledges that the funding for the expenditure under the Maintenance and Repair sections of the Fund estimates process shall continue to be provided on a reimbursement basis.
- 8.10 The Council will provide the District Manager with a quarterly report of the amount of the RFS budget for the District that has been expended in a format agreed between the Zone Manager and the Council.

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## 9. Liaison Committee

- 9.1 The Liaison Committee will consist of **[insert number i.e. 7]** members as follows:
- (a) one Councillors from each of the Councils appointed by resolution of the Councils;
  - (b) the General Manager of each of the Councils or his or her delegate;
  - (c) one volunteers rural fire fighter from each of the Districts appointed by the local branch of the NSW Rural Fire Service Association Inc ("**the RFSA**"), or, in the absence of a local branch of the RFSA, elected in accordance with the applicable Service Standard;
  - (d) **one** member of the RFS staff assigned to the Zone nominated by the ZM and approved by the Regional Manger for the Zone.
  - (e) The ZM who will be the committee's Executive Officer.
- 9.2 The Commissioner, the Councils and the groups or entities which appoint or elect members of the Liaison Committee pursuant to sub-clauses 9.1(c) and (d) respectively may appoint another person to attend any meeting of the Liaison Committee in the event that the person they have elected pursuant to clause 9.1 is unable, for any reason, to attend that meeting.
- 9.3 The Liaison Committee will:
- (a) monitor and periodically review the performance of this Agreement by the Councils and the Service;
  - (b) review the following documents prepared by the ZM prior to submission to and consideration by the Councils:
    - (i) the annual budget and business plan; and



- (ii) the quarterly financial and performance reports
- 9.4 The procedures for calling meetings and the conduct of business at those meetings shall be determined by the Liaison Committee.
- 9.5 Minutes of each meeting of the Liaison Committee must be circulated to each of the Councils, the members of the Liaison Committee and the Commissioner within 2 weeks of the meeting.
- 9.6 The Liaison Committee is not a committee of the Council or of the Service.

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## 10. Insurance and Related Covenants

- 10.1 The Councils agree that during the Term they will effect and keep current the following insurances **“the Councils’ Insurances”**:
  - (a) Property damage and public liability insurance in relation to the Premises;
  - (b) Compulsory third party and comprehensive insurance in relation to any motor vehicles which form part of the District Equipment, except where otherwise agreed in writing between the Councils and the Commissioner;
  - (c) property damage and public liability insurance, third party and comprehensive insurance, in relation to all Premises and District Equipment controlled, occupied or managed by the Commissioner or the Service including, but not limited to:
    - (i) fire boats, boat motors, pumps and ancillary marine fire fighting equipment;
    - (ii) wharves, jetties or boat sheds;
    - (iii) radio base stations;
    - (iv) radio transmitting towers;
    - (v) computer paging systems;
    - (vi) pager repeater sites and towers;
    - (vii) fire spotting towers; and
    - (viii) training facilities.
- 10.2 The ZM may authorise the Executive Committee of a rural fire brigade to effect insurance in relation any specified item or items of equipment that have been purchased by the brigade or its members or which have been donated to the brigade.
- 10.3 The Commissioner on behalf of the Service covenants with the Councils that the RFS will, during the Term, in respect of the Councils’ functions under the Act, which the Commissioner has agreed to exercise, effect and keep current the RFS’s indemnity coverage with the NSW Treasury Managed Fund (“the TMF Indemnity”).
- 10.4 Indemnity by the Council:
  - (a) The council agrees to indemnify the Commissioner, the Service, its members and agents from and against all actions, claims, costs, loses, expenses and damages (including the costs of defending or settling any action or claim) in



respect of:

- (i) Loss of, loss of use of, or damage to property of the Service; or
- (ii) Personal injury (including death) or illness to any person or loss of, loss of use of, or damage to any property;

arising out of or by reason any anything deliberately or negligently done or omitted to be done by the Council, the Council's officers or employees.

- (b) The Council's liability to indemnify the Commissioner, the Service, its members and agents is reduced proportionally to the extent that a malicious or negligent act or omission of the Commissioner, the Service, its members and agents (other than of the Council) or a breach of this Agreement by the Commissioner has contributed to the injury, damage or loss.

#### 10.5 Indemnity by the Commissioner and Service:

- (a) The Commissioner and RFS indemnifies the Council and its agents from and against all actions, claims, costs, losses, expenses and damages (including the costs of defending or settling any action or claim) in respect of:

- (i) Loss of, loss of use of, or damage to property of the Council; or
- (ii) Personal injury (including death) or illness to any person or loss of, loss of use of, or damage to any property;

arising out of or by reason any anything deliberately or negligently done or omitted to be done by the Commissioner, the Service or its members.

- (b) The liability of the Commissioner and the Service to indemnify the Council is reduced proportionally to the extent that a malicious or negligent act or omission of the Council or employees or agents (other than of the Commissioner or Service) of the Council or a breach of this Agreement by the Council has contributed to the injury, damage or loss

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## 11. Key Performance Indicators

The Commissioner and the Councils will, in carrying out their obligations under this agreement, endeavour to meet the agreed Key Performance Indicators specified in Schedules 3.

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## 12. Reporting and Review

- 12.1 The Zone Manager will submit a report to the Councils based on the current Zone business plan within 6 weeks of the end of the financial year.
- 12.2 The report will be tabled at the next Liaison Committee meeting.
- 12.3 The Zone Manager will provide the Councils with information that is reasonably required by it to comply with its reporting obligations under the Local Government Act, 1993.
- 12.4 The Council will, within 30 days of the end of the financial year, provide the Zone Manager with a report of the amount expended on maintenance and Repairs during



the preceding financial year in a format agreed between the Zone Manager and the Council.

- 12.5 The Councils will enter data relating to its hazard reduction program into any reporting system in accordance with the policy and procedures specified by the NSW Bush Fire Co-ordinating Committee from time to time.

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### **13. Dispute Resolution**

- 13.1 The parties will use their best endeavours to avoid and resolve any disputes in relation to the performance of their respective obligations under this Agreement.
- 13.2 In the event that the parties are still unable to resolve the matter in dispute the matter in dispute will be referred to the Ministers who will decide the matter. If the Ministers cannot resolve the matter within 21 days, the matter will be resolved by the Premier.

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### **14. Termination**

This Agreement will terminate:

- (a) if any party breaches their obligations under this Agreement and fails to rectify that breach within 21 days of another party giving written notice to the party in default requiring that the breach be rectified;
- (b) immediately upon the revocation of, or failure to renew, the delegation;
- (c) immediately in the event that the Councils or any of them refuse to advance moneys in respect of maintenance of the District Equipment; or
- (d) upon the expiration of six months' notice in writing given by either the Councils or the Commissioner.

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### **15. GST**

- 15.1 The parties acknowledge that the amounts set out in this Agreement as consideration for supplies are calculated without regard to GST.
- 15.2 If any party to this Agreement ("**Supplier**") becomes liable to remit GST in respect of a taxable supply made under or in connection with this Agreement, the person to whom that supply is made ("**Recipient**") shall, in addition to any other consideration, which the Recipient is required to provide to the Supplier in connection with that taxable supply under other provisions of this Agreement, pay to the Supplier the amount of the Supplier's GST liability.
- 15.3 The additional amounts to be paid by the Recipient under paragraph 16.2 will be payable at the same time as the other consideration for that taxable supply is to be provided in accordance with the other provisions of this Agreement.
- 15.4 The Supplier will provide to the Recipient a tax invoice for each taxable supply made under or in connection with this Agreement at or before the time the Recipient is required to provide the consideration for that taxable supply.
- 15.5 The parties will endeavour to minimise the impact of GST on the transactions contemplated by this Agreement and will provide reasonable assistance to one another with regard to the claiming of input tax credits in respect of taxable supplies to which paragraph 16.2 relates.



- 15.6 “GST” and other terms used in this Clause 16 which are defined under the *A New Tax System (Goods and Services Tax ) Act 1999* (Cth) have the meanings provided by that Act. A reference to a party’s liability for GST will include the GST liability of the representative member of any GST group to which that party belongs.

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## **16. Further Assurance**

The parties covenant and agree that each will do all acts and things and execute all deeds and documents and other writings as are from time to time reasonably required for the purposes of or to give effect to this Agreement.

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## **17. Governing Law**

This Agreement will be governed by and construed in accordance with the laws of New South Wales.

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## **18. Waiver**

No waiver of any breach of this Agreement will be held or construed to be a waiver of any other subsequent or antecedent breach of this Agreement.

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## **19. Notices**

- 19.1 All notices, requests, consents, and other documents authorised or required to be given by or under this Agreement will be given in writing and either personally served or sent by facsimile transmission ("**fax**") addressed as follows:

### **The Commissioner**

To: The Commissioner  
Address: 15 Carter Street  
LIDCOMBE NSW 2141  
Fax No.: (02) 9684 1306  
Email Address: **[Insert email address]**

### **The Councils**

To: The General Manager  
**Hornsby Shire Council**  
Address: **296 Pacific Highway, Hornsby NSW 2077**  
Fax No.: **02 98476999**  
To: The General Manager  
**Ku-ring-gai Council**  
Address: **818 Pacific Highway Gordon, NSW 2072**  
Fax No.: **02 94240880**



- 19.2 Notices, requests, consents and other documents ("**Notices**") will be deemed served or given:
- (a) if personally served by being left at the address of the party to whom the Notice is given between the hours of 9.00am and 5.00 pm on any Business Day, then in such case at the time the Notice is so delivered;
  - (b) if sent by fax, then in such case when successfully transmitted during business hours, or if not during business hours, then when business hours next commence.
- 19.3 Any party may change its address for receipt of Notices at any time by giving notice of such change to the other party. Any Notice given under this Agreement may be signed on behalf of any party by the duly authorised representative of that party and will be sent to all parties to this Agreement.

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## **20. Counterparts**

This Agreement may be signed in any number of counterparts and all such counterparts taken together will be deemed to constitute one and the same document.

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## **21. Modification**

This Agreement may not be modified, amended, added to or otherwise varied except by a document in writing signed by each of the parties.

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## **22. Legal Costs**

Each party will bear their own legal costs in relation to this Agreement.

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## **23. Entire Agreement**

This Agreement comprises the entire agreements between the parties and no earlier agreement, understanding or representation, whether oral or in writing, in relation to any matter dealt with in this Agreement will have any effect from the date of this Agreement.

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## **24. Severability**

In the event that part of all of any clause of this Agreement is held to be illegal or unenforceable it will be severed from this Agreement and it will not effect the continued operation of the remaining provisions of this Agreement.



**Signed** as an agreement.

**The Council of the Shire of Hornsby by its  
duly constituted Attorney ROBERT JOHN  
BALL pursuant to Power of Attorney Book  
No. 4218 Registered No. 500**

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General Manager

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Witness

**The Common Seal of [Insert name of  
Council]** was affixed in pursuance of a  
resolution passed by the Council on the  
day of  
200x in the presence of:

---

Mayor

---

General Manager

**Signed by  
Shane Fitzsimmons AFSM,  
Commissioner,  
NSW Rural Fire Service**  
in the presence of:

---

Signature

---

Signature of Witness

---

Name of Witness in full



(i)      **Annexure A**

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**Instrument of Delegation**

I, **[insert name of General Manager]**, General Manager of **[insert name of Council]** pursuant to Section 378(1) of the Local Government Act 1993, (NSW), **HEREBY DELEGATE** to the Fire Control Officer **[Council to insert the appropriate wording to give effect to the delegations to the Fire Control Officer to enable the Fire Control Officer to exercise all financial and administrative functions as defined in the Agreement]**. Such delegation to take effect from **[insert date]** and to continue until **[insert date]**.

**Signed** by **[insert name of General Manager]** this                      day of  
in the presence of:

---

Signature

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Signature of Witness

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Name of Witness in full



# Instrument of Delegation

I, **[insert name of General Manager]**, General Manager of **[insert name of Council]** pursuant to Section 378(1) of the Local Government Act 1993, (NSW), **HEREBY DELEGATE** to the Fire Control Officer **[Council to insert the appropriate wording to give effect to the delegations to the Fire Control Officer to enable the Fire Control Officer to exercise all financial and administrative functions as defined in the Agreement]**. Such delegation to take effect from **[insert date]** and to continue until **[insert date]**.

Signed by **[insert name of General Manager]** this \_\_\_\_\_ day of \_\_\_\_\_  
in the presence of:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Signature of Witness

\_\_\_\_\_  
Name of Witness in full





## **SCHEDULE 1**

<b>PREMISES OCCUPIED BY THE RFS.</b>			
<b>Description</b>	<b>Address</b>	<b>Registered Proprietor (Owner)</b>	<b>Title Particulars (Lot &amp; Plan, Volume &amp; Folio or Folio Identified)</b>
Arcadia Fire Station.	Arcadia Park Arcadia Road, Arcadia	Hornsby Shire Council	Lot 76, DP752048
Berowra Fire Station	7 High Street Berowra	Crown Land c/o Hornsby Shire Council	Lot 344, DP752026
Berowra Waters Fire Station	Kirkpatrick Way Berowra Waters	Hornsby shire Council	Lot 470, DP40000
Brooklyn Fire Station	122 Brooklyn Road Brooklyn	Hornsby Shire Council	Lot 2, DP358297
Canoelands Fire Station	2 Canoelands Road Canoelands	Crown Land c/o Hornsby Shire Council	Part of Lot 104, DP752029
Cherrybrook Fire Station	Cnr Macquarie Drive & Shepherds Drive Cherrybrook	Hornsby Shire Council	Lot 3, DP738083
Cowan Fire Station	View Street Cowan	Hornsby Shire Council	Lot 99978, DP42000
Dangar Island Fire Station	Neotsfield Avenue Dangar Island	Hornsby Shire Council	
Dural Fire Station	Quarry Road Dural	Crown Land c/o Hornsby Shire Council	Lot 1116, DP822289
Galston Fire Station	Cnr Mid Dural Road and Johnson Road Galston	Hornsby Shire Council	Lot 5, DP712235



Hornsby Fire Station	143 Galston Rd Hornsby Heights	Crown Land c/o Hornsby Shire Council	Lot 1103, DP48317
Hornsby Heights Fire Station	143 Galston Rd Hornsby Heights	Crown Land c/o Hornsby Shire Council	Lot 1075, DP752053
Milsons Passage Fire Station	Milsons Passage	Hornsby Shire Council	
Mt Ku-ring-gai Fire Station	Banyula Place Mt Ku-ring-gai	Crown Land c/o Hornsby Shire Council	Lot 1098, DP46999
Muogamarra Fire Station	Glendale Road Cowan	Dept. of Land & Housing Corp.	Lot 447, DP752026
Westleigh Fire Station	Warrigal Road Westleigh	Hornsby Shire Council	Lot 68, DP752053
Catering Station	143 Galston Rd Hornsby Heights	Crown Land c/o Hornsby Shire Council	Lot 1103, DP48317
Westleigh Training Centre	Warrigal Road Westleigh	Hornsby Shire Council	Lot 68, DP752053
Berowra Fire Spotting Tower	Pacific Highway Cowan	Hornsby Shire Council	Lot 100, DP1104687
Galston Fire Spotting Tower	Crosslands Road Galston	National Parks and Wildlife Service	
Fire Control Centre	1049 Pacific Highway Cowan	Hornsby Shire Council	Lot 100, DP1104687
Ku-ring-gai Fire Station	Golden Jubilee Field Esk Street Wahroonga	Crown Land	R91141 GG 56 19/5/98





## **SCHEDULE 2**

<b>COUNCIL SERVICES PROVIDED TO THE RFS</b>			
<b>CATEGORY</b>	<b>SERVICES PROVIDED</b>	<b>BY WHOM</b>	<b>BY WHEN</b>
<b>FINANCIAL SERVICES</b>			
<b>Purchasing</b>	(a) Provide access to councils buy on line purchasing system	Hornsby Shire Council	Ongoing
<b>Accounts Receivable</b>	(a) Provide accounts payable facilities for items and services not included in RFS purchasing systems.	Hornsby and Kuring-gai Councils	Ongoing
<b>Accounts</b>	(a) Provide appropriate debtor facilities for amounts owing in relation to brigade services and purchases	Hornsby Shire Council	Ongoing
	(b) Maintain council creditor accounts for plant, equipment and services	Hornsby Shire Council	Ongoing
	(c) Provide monthly budget reports and reviews	Hornsby Shire Council	Ongoing
<b>Petty Cash</b>	(a) Access to Councils Petty Cash program	Hornsby Shire Council	Ongoing
<b>Other</b>			



## COUNCIL SERVICES PROVIDED TO THE RFS

<b>MAINTENANCE SERVICES</b>			
<b>Council maintenance on plant &amp; Equipment</b>	(a) Provide the resources of council workshop and staff for maintenance and servicing all vehicles, vessels and ancillary equipment including pumps, generators and chainsaws.	Hornsby and Kuring-gai Councils	Ongoing
	(b) Develop an annual works plan for all plant and access to database to record all works	Hornsby and Kuring-gai Councils	Ongoing
	(c) Arrange and complete annual RTA inspections for all vehicles and vessels.	Hornsby and Kuring-gai Councils	Ongoing
	(d) Provide after hours emergency call out services for RFS vehicles to the best of Council staffing resources.	Hornsby Council	Ongoing
<b>Council maintenance for fixed assets</b>	(a) Provide cleaning services to Fire Control Centre	Hornsby Shire Council	Ongoing
	(b) Provide garden and lawn maintenance services to Fire Control Centre and Training Centre through FCC Council budget	Hornsby Shire Council	Ongoing
	(c) Provide arborist advice to all facilities in Schedule 1 as required	Hornsby and Kuring-gai Councils	Ongoing
	(d) Provide security systems and monitoring to all facilities listed in Schedule 1.	Hornsby and Kuring-gai Councils	Ongoing
	(e) Provide and Maintain driveway's at all facilities listed in schedule 1.	Hornsby and Kuring-gai Councils	Ongoing
	(f) Arrange for OH&S inspection and rectification of faults of all facilities listed in Schedule 1	Hornsby and Kuring-gai Councils	Annually
	(g) Arrange for and complete pest	Hornsby and Ku-	Annually



	control measures for all facilities listed in Schedule 1	ring-gai Councils	
	(h) Provide support for the maintenance and upgrading of fixed radio sites	Hornsby and Kuring-gai Councils	Annually
<b>IT SERVICES</b>			
<b>Provision of IT Support</b>	(a) Update photocopiers as required to Fire Control Centre, 1 copier each council	Hornsby and Kuring-gai Councils	Ongoing
	(b) Provide support for the servicing and upgrading of telephone systems at Fire Control Centre	Hornsby Council	Ongoing
	(c) Provide support for the servicing and upgrading of voice recorder systems at Fire Control Centre	Hornsby and Kuring-gai Councils	Ongoing
	(d) Provide support for the servicing and upgrading of paging system	Hornsby and Kuring-gai Councils	Ongoing
	(e) Provide support for the servicing and upgrading of remote weather stations	Hornsby and Kuring-gai Councils	Ongoing
<b>Access to Council data</b>	(a) Provide access for District Manager to council emails and contacts	Hornsby Council	Ongoing
	(b) Provide data and on line access to all council databases. i.e. accounting, EDM, Land Information, Geographical	Hornsby and Kuring-gai Councils	Ongoing
<b>ENVIRONMENTAL SERVICES</b>			
<b>Provision of environmental advice/technical advice on environmental issues</b>	(a) Provide council staff to assist with development and updating of BFRMP	Hornsby and Kuring-gai Councils	Ongoing






## COUNCIL SERVICES PROVIDED TO THE RFS

COUNCIL SERVICES PROVIDED TO THE RFS			
<b>ADMINISTRATIVE SERVICES</b>			
Access to secretarial services	(a) Printing Services within Council		
	(b) Provide contact point and information dissemination for fire hazard complaints, permits and queries.	Hornsby and Ku-ring-gai Councils	Ongoing
Access to council office equipment	(a) Provide equipment as required to FCC during emergencies	Hornsby and Ku-ring-gai Councils	Ongoing
Document Management	(a) Provide registration, sorting and delivering of relevant documents and correspondence, including designated collection point within records department	Hornsby Council	Ongoing
<b>OTHER SERVICES</b>			
Provision of council plant.	(a) Provide access to use council supplied and maintained utility on Dangar Island	Hornsby Shire Council	Ongoing
	(b) Provide 24hr plant, materials and staff for rectification of council roads after incidents	Hornsby and Ku-ring-gai Councils	Ongoing
Provision of Stores facilities.	(a) Access to Hornsby Shire Council Store for sundry items	Hornsby Shire Council	As required



Provision of Garbage and Sewerage Services	(a) Provide Garbage collection services to all facilities in Schedule 1	Hornsby and Ku-ring-gai Councils	Ongoing
	(b) Provide sewerage collection services at sites not serviced by mains sewerage system	Hornsby and Ku-ring-gai Councils	Ongoing
Provision of refuelling systems	(a) Provide fuel cards for all RFS vehicles	Hornsby and Ku-ring-gai Councils	Ongoing
	(b) Provide access to local service stations accounts where fuel cards not pertinent	Hornsby Shire Council	Ongoing
	(c) Provide fuel truck to supply fuel to static locations	Hornsby Shire Council	Ongoing
Provision of Mobile Phones	(a) Provide mobile phones and accounts for all staff in line with RFS policies and procedures	Hornsby Shire Council	Ongoing
Provision of Emergency Support	(a) Supply administrative, financial, technical, human and plant support during incidents and emergencies	Hornsby and Ku-ring-gai Councils	Ongoing
Provision of Public Education Assistance	(a) Provide corporate communication support to promote fire awareness to the community	Hornsby and Ku-ring-gai Councils	Ongoing
Provide Welfare, Recognition and Support	(a) Provide catering support for volunteers at all authorised service events within FCC Council budget	Hornsby Council	Ongoing
	(b) Provide recognition of volunteer contribution through awards functions and dinners	Hornsby Council	Ongoing
	(c) Provide training facilities at Westleigh training centre	Hornsby and Ku-ring-gai Councils	Ongoing
	(d) Provide funding to meet costs of medical reports for volunteers as	Hornsby and Ku-ring-gai Councils	Ongoing



	required		
Capital Project Management	Provide project management to identified capital projects	Hornsby and Ku-ring-gai Councils	Ongoing





## **SERVICE DELIVERY MODEL**

District/Team/Zone Business Planning

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## **PROPOSED SERVICE AGREEMENT – SCHEDULE 3**

Review Submitted by:.....

Position: .....

Review Received by:.....

Position: .....



**RESOLUTION OF ORDINARY MEETING OF COUNCIL**

**13 OCTOBER 2009**

209 **Representation on Community Committees/Organisations**

File: S02355

For Council to make appointments to community committees/organisations for 2009/2010.

**Resolved:**

- A That Council make appointments to community committees/organisations and nominate the following representatives:

**The Ku-ring-gai Police and Community Safety Committee**

Councillor Cheryl Szatow

**CARRIED UNANIMOUSLY**

**Ku-ring-gai Meals on Wheels**

The Mayor, Councillor Ian Cross

Alternate: Councillor Elise Keays

**CARRIED UNANIMOUSLY**

**Eryldene Trust**

Councillor Jennifer Anderson

Alternate: Councillor Cheryl Szatow

**CARRIED UNANIMOUSLY**

**Hornsby/Ku-ring-gai Bushfire Management Committee**

Councillor Elise Keays

Alternate: Councillor Elaine Malicki

**CARRIED UNANIMOUSLY**

**Metropolitan Public Libraries Association**

Councillor Jennifer Anderson

**CARRIED UNANIMOUSLY**



**Rural Fire Service District Liaison Committee**

Councillor Elaine Malicki

**CARRIED UNANIMOUSLY**

**Northern Sydney Regional Organisation of Councils (NSROC)**

Mayor, Councillor Ian Cross (automatic appointment)

Councillor Steven Holland

Alternate: Councillor Duncan McDonald

**CARRIED UNANIMOUSLY**

**Ku-ring-gai Youth Development Service Inc Management Committee**

Councillor Jennifer Anderson

**CARRIED UNANIMOUSLY**

**Rosedale Road Steering Committee**

Councillor Elaine Malicki

Councillor Cheryl Szatow

**CARRIED UNANIMOUSLY**

**KOPWA (Ku-ring-gai Old Peoples Welfare Association)**

Councillor Elise Keays

**CARRIED UNANIMOUSLY**

- B That the community committees/organisations be informed of Council's representatives.

**CARRIED UNANIMOUSLY**



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## **FUNDING REQUEST FROM TURRAMURRA ROTARY FOR GRAFFITI REMOVAL**

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### **EXECUTIVE SUMMARY**

**PURPOSE OF REPORT:**

For Council to consider a request from Turramurra Rotary Club for additional funding to assist their graffiti removal program in the Turramurra area.

**BACKGROUND:**

At Council's meeting of 2 December 2008, Council considered a report to provide an additional \$4,000 for ongoing support of graffiti removal in the Turramurra area.

**COMMENTS:**

To continue with the operation, Turramurra Rotary has requested an additional \$4000. There is the same level of support provided by Dulux Paints/Turramurra Hardware and Kennards Self Storage Thornleigh to keep the project operational.

**RECOMMENDATION:**

That approval is given to provide additional funding of \$4000 for the ongoing support of graffiti removal in the Turramurra area.



## PURPOSE OF REPORT

For Council to consider a request from Turramurra Rotary Club for additional funding to assist their graffiti removal program in the Turramurra area.

## BACKGROUND

This project has now been operating very successfully for the last two and a half years.

Late in 2007, Ku-ring-gal Council provided a water-blaster plus \$1000 to enable Turramurra Rotary to commence its graffiti removal project in January 2008 within the Turramurra area.

Following a successful six (6) months trial, Ku-ring-gai Council approved a further \$4000 in December 2008 to meet on-going expenses to enable the graffiti removal project to continue. Since then Turramurra Rotary has:

- continued to operate its graffiti removal project as a community service;
- promoted the project to 34 other Rotary Clubs resulting in:
  - Lindfield Rotary commencing similar operations in late 2009,
  - Roseville Chase Rotary starting up their operations in April 2010,
  - St. Ives Rotary and Ku-ring-gal Rotary (Gordon/Pymble) currently showing renewed interest to separately take up the project,
  - many other clubs outside Ku-ring-gai showing interest or commencing the project in their own areas.

The support of Ku-ring-gai Council was recognized in State Parliament late last year by Jonathan O'Dea, Local Member for Davidson, as shown in the following extract from *Hansard*:

*"Quickly removing graffiti is a very effective method as it denies offenders the thrill and kudos they receive from committing the offence. This is a key part of the Ku-ring-gal Council graffiti policy. I acknowledge the work that Rotary does in the Ku-ring-gai area in relation to graffiti removal. Under the leadership of Roger Norman, Turramurra Rotary established a graffiti removal project to clean up existing graffiti on both private and public property and to promptly remove new graffiti. This project is now expanding to Lindfield Rotary and other clubs. I acknowledge also the role of the Dulux paint company in sponsoring paint supply, and the role of the Don Wormald in helping arrange the sponsorship."*

## COMMENTS

The Turramurra Rotary group have been successfully undertaking the removal of graffiti in the Turramurra area for over two and a half years and due to the extent of graffiti and costs involved they are seeking additional funding from Council to continue the operation.



**Item 16**

**FY00271  
10 June 2010**

Turramurra Rotary is now working with St Ives Rotary to assist with the removal of graffiti in the St Ives area and have recently assisted Council with a fence at Kanoona Avenue, St Ives.

The ongoing support of volunteer groups for this purpose is considered to be cost effective and the work carried out to date has been well received by the community. Attached is a copy of the letter from the Turramurra Rotary group regarding the request for additional funding and provides information on the extent of the work carried out to date.

Council resolved in December 2008 by allocating a further \$4,000 to continue the support for the graffiti removal and consequently ongoing support for the Turramurra Rotary group is considered necessary to help maintain the project.

In future, all the Rotary Groups will consider funding assistance through the Community Grants process.

## **CONSULTATION**

Consultation has taken place with the Turramurra Rotary group on the costs associated with the removal of graffiti in the Turramurra town centres and, as indicated in their letter, have expanded the graffiti removal process to other Rotary groups.

## **FINANCIAL CONSIDERATIONS**

Previous funding was provided from the Business Centres program. However, in this case, funding can be provided from the recurrent budget for building maintenance as sufficient funds are available.

## **CONSULTATION WITH OTHER COUNCIL DEPARTMENTS**

Consultation has taken place with Council's Corporate Department with regard to the availability of funds.

## **SUMMARY**

Council previously considered a request from Turramurra Rotary for funding assistance to help clean up graffiti on private property within the Turramurra Town Centre. Support was provided with the supply of a water spray unit and \$1000 seed funding with an additional \$4,000 for the ongoing project operation. The group has been operating for two and a half years and has undertaken a significant amount of work for the community.

To continue with the operation, Turramurra Rotary has requested an additional \$4000 as the group has provided part of its own funding to keep the project operational. Funding for the ongoing support for the Turramurra Rotary group can be made available through the Community Grants projects.



## RECOMMENDATION

- A. That approval is given to provide additional funding of \$4000 for the ongoing support of graffiti removal in the Turrumurra area.
- B. That funding be provided from the recurrent budget for building maintenance.

Greg Piconi  
**Director Operations**

**Attachments: Letter from Turrumurra Rotary - 2010/095149**



# Rotary Club of Turramurra

Incorporated

P.O. Box 77, Turramurra, NSW, Australia 2074

District 9680



**FOR ATTENTION: DIRECTOR OF OPERATIONS, GREG PICONI**

**SUBMISSION TO KU-RING-GAI COUNCIL – REQUEST FOR FURTHER CARRY-ON FUNDS TO TURRAMURRA ROTARY FOR THE GRAFFITI REMOVAL PROJECT**

**1. PURPOSE OF PAPER:**

To request Ku-ring-gai Council to provide further carry-on funds of \$4,000 to Turramurra Rotary for the graffiti removal project.

**2. REASON FOR REQUEST:**

Despite continued generous support from Dulux, Kennards Self Storage (Thornleigh) and Turramurra Hardware, this project continues to experience on-going expenses for:

- two types of graffiti removal solutions
- a wide variety of miscellaneous materials and equipment.

While donations are still being received, income from this source is minor. Certainly it does not support the level of expenditure needed to maintain the current level of activity required to eradicate or at least minimize graffiti in the Turramurra area.

**3. BACKGROUND UPDATE:**

This project has now been operating very successfully for the last two and a half years. Late in 2007 Ku-ring-gai Council provided a water-blaster plus \$1000 to enable Turramurra Rotary to commence its graffiti removal project in January 2008 within the Turramurra area. Following a successful six months trial, Ku-ring-gai Council then approved a further \$4000 in December 2008 to meet on-going expenses to enable the graffiti removal project to continue. Since then Turramurra Rotary has:

- Continued to operate its graffiti removal project as a community service so the whole suburb is now virtually graffiti free
- In the last 12 months, promoted the project to 34 other Rotary Clubs resulting in -
  - Lindfield Rotary commencing similar operations in late 2009
  - Roseville Chase Rotary starting up their operations in April 2010
  - St. Ives Rotary and Ku-ring-gai Rotary (Gordon/Pymble) currently showing renewed interest to separately take up the project
  - many other clubs outside Ku-ring-gai showing interest or commencing the project in their own areas.



'TURRAMURRA': AN ABORIGINAL WORD FOR 'HIGH HILL', WAS THE NAME GIVEN TO THE NEWLY ESTABLISHED RAILWAY STATION IN 1890.



The project is now well known in Turrumurra especially within the local business community with many favourable comments being made. In addition many local residents have also expressed their gratitude.

Indeed the support of Ku-ring-gai Council was recognized in State Parliament late last year by Jonathan O'Dea, Local Member for Davidson, as shown in the following extract from Hansard:

*"Quickly removing graffiti is a very effective method as it denies offenders the thrill and kudos they receive from committing the offence. This is a key part of the Ku-ring-gai Council graffiti policy. I acknowledge the work that Rotary does in the Ku-ring-gai area in relation to graffiti removal. Under the leadership of Roger Norman, Turrumurra Rotary established a graffiti removal project to clean up existing graffiti on both private and public property and to promptly remove new graffiti. This project is now expanding to Lindfield Rotary and other clubs. I acknowledge also the role of the Dulux paint company in sponsoring paint supply, and the role of the Don Wormald in helping arrange the sponsorship."*

4. AMOUNT REQUESTED:

The \$4000 carry-on funds currently requested is needed for the 2010/2011 financial year. Previous funds provided by Council have now been fully expended and the graffiti removal project is in urgent need of further monies.

Estimates based on work undertaken to date are shown on the attached page based on the assumption of the same level of support continuing from Ku-ring-gai Council, Dulux Paints/Turrumurra Hardware and Kennards Self-Storage Thornleigh.

5. WORK UNDERTAKEN TO DATE:

A summary (as provided previously to Council) showing the amount of graffiti removed each quarter is also attached.

6. FUTURE INTENTIONS:

Turrumurra Rotary will continue to

- remove graffiti in the Turrumurra area
- encourage other Rotary Clubs in Ku-ring-gai to take-up the project.

7. FINAL SUMMARY AND COMMENT:

Turrumurra Rotary is now seeking from Council \$4,000 for carry-on purposes till 30 June 2011. Your urgent assistance would be much appreciated.

Brian Plain  
President, Rotary Club of Turrumurra  
26 May 2010



ROTARY CLUB OF TURRAMURRA – GRAFFITI REMOVAL PROJECT  
BUDGET ESTIMATES FOR 2010/2011

These figures have been estimated from current usage

1. GRAFFITI REMOVAL SOLUTIONS

(Provided at a favourable rate with free delivery)

- |                                    |        |        |
|------------------------------------|--------|--------|
| • For porous surfaces eg brickwork | \$1700 |        |
| • For metal surfaces               | \$800  | \$2500 |

2. REPLACEMENT OF MISC MATERIALS

For example: paint brushes, roller sleeves, gloves, petrol/oil, brushes, face shields, additional overalls, signage etc	\$1300
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3. Costs associated with promoting to other Rotary Clubs	\$200
--	-------

TOTAL	\$4,000
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In preparing these estimates it is assumed that the current sponsors will continue the same level of support in the future viz

- KMC - maintenance of water-blaster
- Dulux/Turramurra Hardware – supply of all necessary paint
- Kennards Self-Storage Thornleigh – provision of secured storage space for equipment and material with 24 hour access.



QUARTER ENDING 31 MARCH 2010

[illegible]



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## **NOTICE OF MOTION**

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### **EXTENSION OF COUNCIL'S SMOKE FREE POLICY**

#### **Notice of Motion from Councillor Cheryl Szatow dated 4 June 2010**

To protect the safety and amenity of our community and to extend the Council Resolution Minute Number 512 of Ordinary Meeting of Council, 19 October 2004 which delineated certain areas in Ku-ring-gai as smoke-free zones.

I move:

That a report be prepared on implementing a ban on smoking in the following areas:

- smoking in all Council owned buildings and within 10 metres of Council owned or managed buildings and gardens including balconies or covered areas of those buildings and gardens.
- a ban in all alfresco dining areas on public land.
- a ban on smoking in all covered bus shelters and taxi ranks.

### **RECOMMENDATION**

That the above Notice of Motion as printed be adopted.

Cr Cheryl Szatow  
**Councillor for Gordon Ward**

**Attachments:**        **Background information to be circulated separately**



## Background information

OMC 22 June 2010

### Extension of Council's Smoke Free Policy

1. Ku-ring-gai Briefing Smoke Free outdoor Areas (see attachment) trim no. 2010/113690
2. Council Resolution of 19 October 2004 re Smoke Free Zones trim no. 442429

In line with the above resolution, signs in public places were duly amended to include this prohibited activity."

3. Manly Council Flyer – trim no. 2010/113702
4. Starbucks snuffing out smoking outdoors - Appeal-Democrat June 4, 2010  
Article:

"Beginning June 7th all California Starbucks will implement a non-smoking policy that will apply to their patios as well as all outdoor areas of the store.

A tall non-fat caramel macchiato with extra foam, please. Just hold the smoke.

Starting Monday, Starbucks customers are welcome to sit outside and sip a while — as long as they don't light up. The international coffee giant is extending its ban on indoor smoking to outdoor patios and dining areas in California.

The change was prompted by an increasing number of communities that have enacted smoking prohibitions in outdoor dining areas. Mid-Valley smokers say they are disappointed by the rule but understand its purpose.

Brian Roberts, 33, was enjoying a cigarette with his Venti coffee Wednesday while reading a paperback at the Marysville Starbucks. He's not thrilled with the new rule, but said it was to be expected.

"It's nothing new in California," the Marysville resident said. "You go down to the East Bay and Pleasanton and you can't smoke anywhere outside."

But the rule might spur a slight decline in business, he said.

The patio is popular place to linger, as customers can consume caffeine and cigarettes while they read, chat or do business, he said. Cut off from their nicotine, they might not stick around to refuel.

"People have a right to breathe clean air," he said. "But we have a right to smoke, too."

Roberts hasn't yet decided if he's going to push the boundaries by keeping his lighting up at least 10 feet from the doorway, or just give in and abide. Either way, the rule will not impact his pack-a-day habit, or his Starbucks patronization, he said.



As a smoker, Andrea Navarrot, 48, tries to be respectful and keep her habit out of smell's reach. But the ban is probably a good idea for those that are not so courteous, she said.

"You walk out the door, who wants to smell smoke?" she said.

When a young woman lit up near Lori Lewis at Starbucks on Wednesday, she wasn't bothered with annoyance or temptation, but in seeing someone start the same path she did so long ago. She smoked for 30 years before quitting 10 months ago.

She leaned over to tell the woman about her experience and encouraged her to consider quitting.

"Smoke is so harmful to people," Lewis said. "They don't realize, and it's addictive."

Live Oak resident Courtney Williams works at the Togo's next door to the Starbucks on Colusa Avenue. She spends all her breaks at one of the tables outside the coffee shop, stealing a quick smoke or two before she goes back to work.

Even though it means she'll need to find a new smoking spot, she doesn't mind the new rule, she said.

"I think businesses or any place anyone owns has the right to say no smoking," she said. "I don't believe I have the right to smoke anywhere."

With Mother Nature hinting this week at the summer weather to come, Yuba City residents Bill and Roberta Fox are looking forward to afternoons on Starbucks patios with good books and icy drinks.

They were relieved to learn the cigarette smoke that had marred previous experiences should no longer be a problem.

"A lot of times we have to get up and go home because she has asthma," Bill Fox said of his wife. "And I know people have their rights, but my mother died of second-hand smoke." "

Cr Cheryl Szatow





# Smoke-free outdoor areas: Good for the community.

Andy Mark

Heart Foundation NSW

Jo Bramma

Manly Council



Local Government  
Association of NSW





***..the solution to many of today's medical problems will not be found in the research laboratories of our hospitals, but in our parliaments. For the prospective patient, the answer may not be cure by incision at the operating table, but prevention by decision at the Cabinet table.***

**Sir George Young, UK Parliamentary Undersecretary of Health, World Conference on Smoking and Health, Stockholm 1979**



# Rationale for Smoke-free Outdoor Public Spaces

- Majority of population non-smokers
- Workplaces should be smoke-free
- Increasing awareness of dangers and dislike of exposure to secondhand smoke
- Increasing research on outdoor smoke exposure
- Parents more protective of children's health
- Community demand for smoke-free outdoor areas
- De-normalisation of smoking. "We don't smoke here."
- Improved Community Amenity



# Smoke-free Outdoor Public Areas

- Smoke-free Outdoor Areas covers specific outdoor places that the public utilises.
- Council owned or controlled land.
- Policy endorsed by council with Signage under Section 632 (1) and (2e) of NSW Local Government Act.
- Smoke-free Outdoor Areas may include:
  - Within 10m of all children's playgrounds**
  - On all playing fields, sporting grounds and facilities**
  - At all events run or sponsored by council**
  - In alfresco dining areas on public land**



# Smoke-free Outdoor Public Areas

Smoke-free Outdoor Areas may also include:

- Beaches
- In Council's pedestrian malls and plazas
- Within 10m of council owned or managed buildings
- In all bushland, parks and reserves
- Within all covered bus stops and taxi ranks
- Within council car parks

Additionally councils may consider introducing policy on footpaths at Hospital entrances.



Council	Play grounds	Sport ing Fields	Alfresco	Beaches	Parks Reserves	Pools	Bus Shelters	Within 10m of Council Buildings	Council events
Hornsby	X	X		X	X		X	X	X
Ku-ring-gai	X	X			X	2010			2010
Lane Cove	X	X	X		X	X			X
Manly	X	X	X	X	X	X	X	X	X
Mosman	X	X	X	X	X	X	X	X	X
Nth Sydney									
Warringah	X	X	X	X			X	X	X
Willoughby	C	C	C		C	C	C	C	C



# Research on second-hand tobacco smoke

- **Barnoya and Glantz. 2005.** Cardiovascular effects of secondhand smoke: Nearly as large as smoking. Secondhand smoke increases the risk of CHD by approx 30%
- **Richiardi et al. 2009.** Cardiovascular benefits of smoking regulations: The effect of decreased exposure to passive smoking. Smoking regulations can cause immediate and relevant decreases in AMI through the prevention of exposure to passive smoking
- **Klepis et al. 2007.** Real-time measurement of outdoor tobacco smoke particles. During periods of active smoking, peak and average OTS levels near smokers rivaled indoor tobacco smoke concentrations



# Research on second-hand tobacco smoke (cont.)

- **Cameron et al. 2009 Secondhand smoke exposure (PM2.5) in outdoor dining areas and its correlates.** Individuals in outdoor dining venues where smokers are present can be exposed to substantial SHS levels
- **ACOSH. 2009. Secondhand smoke in cafes, pubs and cars.** Smoking even in outdoor venues can significantly increase airborne PM-2.5 levels.
- **Thomson et al. 2008. Should smoking in outside public spaces be banned? Yes.** Authors argue that society has an ethical duty to minimise the risk of children becoming nicotine dependent smokers. With a reasonable step banning smoking in selected outdoor areas frequented by children, thereby de-normalising smoking.



# Strong Public Support for Smoke-free Outdoor Areas

- The Cancer Council NSW 2006 Survey
  - 92% support smoke-free children's playgrounds
  - 85% support smoke-free around building entrances
  - 80% support smoke-free sporting areas
  - 69% support smoke-free alfresco.
- Australian News Limited online 2007 Survey
  - 83% wanted smoke-free alfresco
  - 79% Smoke-free parks with playgrounds
  - 74% smoke-free beaches



# Survey Methods

Telephone survey of 152 Local councils in NSW

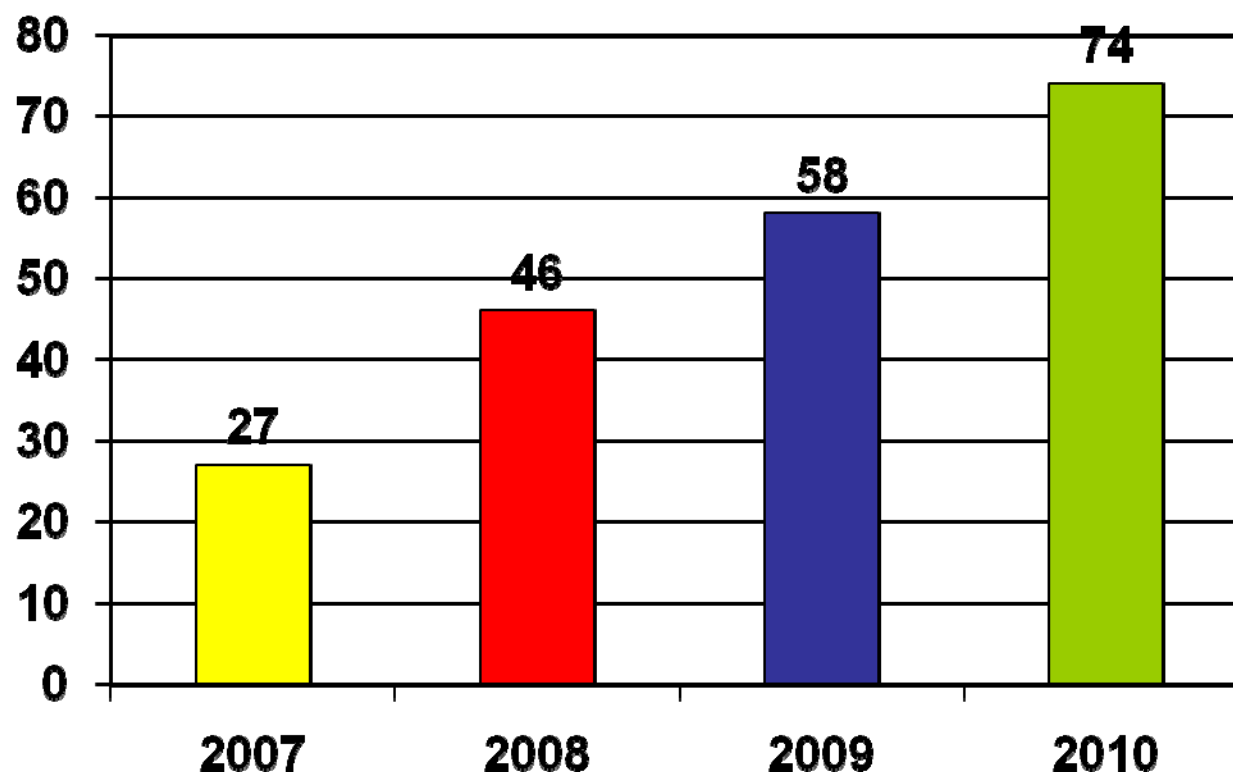
- 2007 :97% response rate.
- 2008 :93% response rate.

Complemented by an Internet search of all NSW Councils to determine existence of policy.

- 2009 :100% response rate.
- 2010: 100% response rate



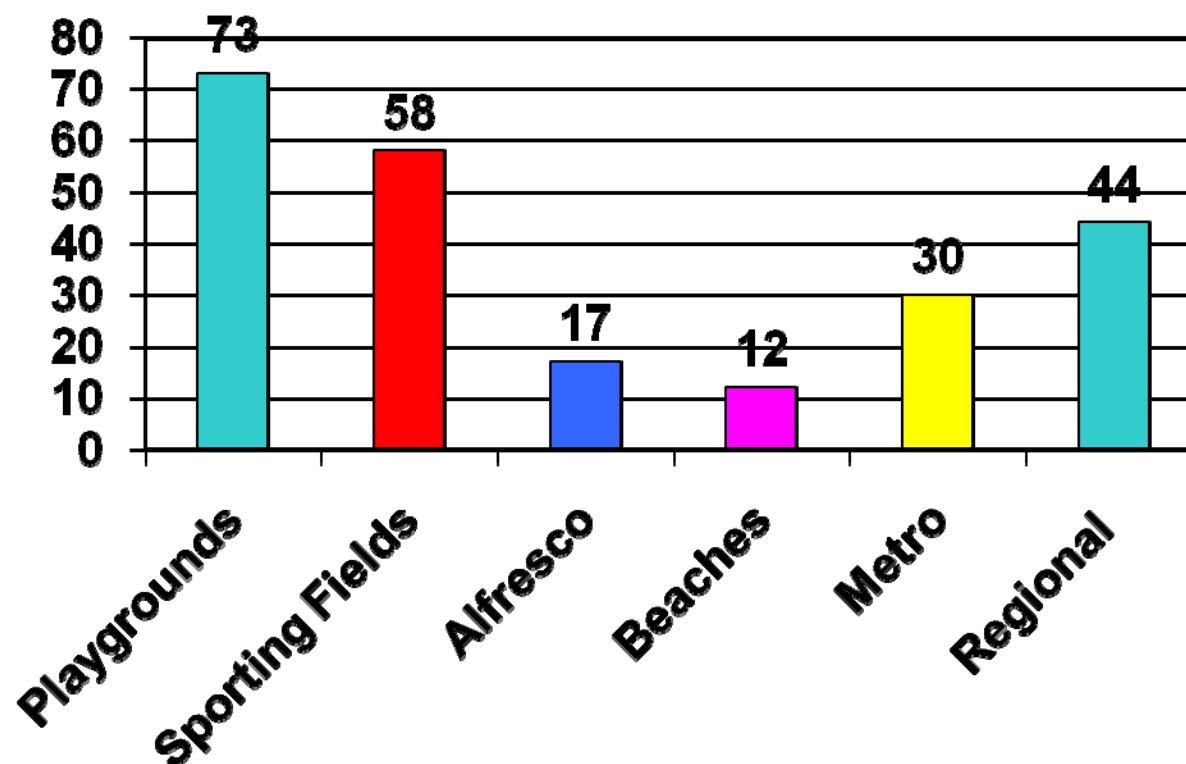
# Baseline and Follow up Surveys of NSW Councils with Smokefree Outdoor Areas Policy (n=152)





# 2010 Survey Results (152)

## Councils with Smoke-free Policy by category





# Manly Council Alfresco Survey

- **36 / 40 businesses completed survey**
- **Experience Implementing Smoke-free alfresco?**
- **How do customers feel?**
- **What effect has smoking had on business?**



# Council Concerns

- Lack of resources (Staff and finances)
- Enforcement
- Community opposition
- Business opposition
- Lack of Councillor and/or council staff support or interest



# **Port Stephens Council case study.**

- **Policy Introduced with Staged implementation:**
  - Dec 2008 within 10m of Playgrounds and within 10m of Council Buildings.
  - 1<sup>st</sup> July 2009 expanded to Playing Fields, Sporting Fields, Leisure Centres, Facilities and Pools.
  - Jan 2010 Beaches, Parks, Reserves. Alfresco Dining.
- **Public Backlash on comprehensive smoke-free policy ???**



# Cigarette Litter

- Estimated 18 billion cigarettes smoked per year with non-biodegradable butts
- Estimated 7 billion thrown onto ground
- Single largest item collected in cleanup days
- Pollution of urban areas, waterways, parks, bushland
- Health threat to humans (especially children), pets, land and aquatic wildlife
- Increased risk of fire from smouldering butts.



# Recommendations re Butt Free Australia

- Don't enter partnerships with, or engage with BFA at any level
  - Encourage councils to avoid or discontinue involvement with BFA
  - Suggest real “evidence-based” measures – such as adoption of smoke-free areas policies:
- “One thing is certain.....: when cigarette consumption decreases as a result of reduced prevalence of smoking, butt waste decreases.”**  
Novotny et al, *Int. J. Environ. Res. Public Health* 2009, 6, 1691-1705; doi:10.3390/ijerph6051691



# Summary

- Smoke-free Outdoor Areas enjoy good public support
- There is a growing body of evidence on the level of tobacco smoke in outdoor areas
- Smoke-free Outdoor Areas can improve the quality of people's lives and prevent tobacco related deaths.
- Increase in the number of Councils introducing policy
- Resource Kit well received and has assisted Councils to introduce policy
- Alfresco operators report ease of implementation and positive response from customers
- Staged approach to introducing policy allows Councils to gauge community response
- Tobacco Companies and BLT will oppose Smoke-free Policy



# Questions?

**For further information:**

**•Andy Mark - Heart Foundation**

**[Andy.Mark@heartfoundation.org.au](mailto:Andy.Mark@heartfoundation.org.au)**

**02 4232 0130**

**•Jo Brama – Manly Council**

**[jo.brama@manly.nsw.gov.au](mailto:jo.brama@manly.nsw.gov.au)**

**9976 1757**



## RESOLUTION OF ORDINARY MEETING OF COUNCIL

19 OCTOBER 2004

512

### Report On Banning Smoking At Sporting Venues

File: S03433

To respond to Councillor Malicki's Notice of Motion dated, 31 May 2004, "that a report come to Council as soon as possible outlining steps that Council could take to ban smoking at sporting venues and in public places".

#### Resolved:

(Moved: Councillors Malicki/Innes)

- A. That Council support a ban on smoking within 10 metres of all children's play areas under Council's care.
- B. That Council support a ban on smoking at all Council playing fields, sporting grounds, and West Pymble Pool and that all future leases and hirings will reflect this policy.
- C. That staff prepare a report on implementation of these bans.
- D. That Council require that all events run or sponsored by Council be smoke free.
- E. That Council place the matter on the NSROC agenda for discussion and comment and identification of future consistent approaches to this issue across the Northern Suburbs region.

*For the Resolution: Councillors Andrew, Bennett, Cross, Hall, Innes,  
Malicki and Shelley*

*Against the Resolution: The Mayor, Councillor A Ryan, Councillors Ebbeck,  
Lane*

*The above Resolution was subject to an Amendment which was LOST. The Lost Amendment was:*

*(Moved: Councillors Cross/Ebbeck)*

*That Council:*

- A. *Outline in principle support for a ban of smoking across all areas under Council's care and control.*



- B. Supports efforts by individual sporting clubs and associations to implement a voluntary code which bans smoking at their respective locations.*
- C. Raises the issue for discussion at the Parks Sport and Recreation Group.*
- D. Requires events that are run or sponsored (including events enjoying fee waivers or discounts) to be smoke free.*
- E. Places the matter on the NSROC agenda for discussion, comment and identification of future consistent approaches to this issue across the Northern Suburbs region.*



*So that our community can be  
cleaner, healthier and happier.*



## *Cleaner. Healthier. Happier*

Manly Council has initiated Smoke Free Zones to make Manly a better place to live and a better place to visit. Now other progressive Councils are following our lead to make local communities cleaner, healthier and happier places to be.

For further information contact:

Manly Council

PO Box 82

Manly NSW 1655

Phone: 02 9976 1500 Fax: 02 9976 1400

Email: [manly@smokefreecouncils.com.au](mailto:manly@smokefreecouncils.com.au)

Web: [www.smokefreecouncils.com.au](http://www.smokefreecouncils.com.au)



## *Why is Manly going Smoke Free?*







## Smoke Free space: Better for everyone

Smoking – even so-called ‘passive smoking’ – significantly impacts our health with dozens of cancer-causing chemicals. For children, exposure to tobacco smoke increases the likelihood of SIDS, asthma and ear and chest infections. For adults, sustained exposure to this smoke increases the chances of developing heart disease and lung cancer.

Cigarette butts present a major litter issue on our beaches and in our public areas. They take decades to break down, badly affect marine animals and birds and are very difficult to clean from our beaches.

Manly's environment is priceless to its residents and attracts visitors and tourists to our area and our local businesses. Help us protect Manly for everyone.



## Our right to a healthy environment

Manly is a beautiful place with its sandy beaches, Norfolk Pines and public open space. Each year tens of thousands of tourists come to Manly to enjoy the things that we enjoy every day. Making a trip to the beach, going for a walk, having something to eat or taking the children to sport is about getting fresh air and living life to the full.

Residents of Manly and everyone who visits have the right to a clean, healthy environment. To preserve this right for the community, Manly Council has made its beaches and some public space areas smoke free. This means everyone can breathe cleaner air and enjoy a healthier environment.

## Smoke Free starts here

From 1 December 2004 smoking will no longer be acceptable in the following areas:

- All harbour and ocean beaches
- Within 10 metres of all Council owned children's play areas
- On and around all Council sporting grounds and playing fields
- Within 10 metres of all Council properties
- At all alfresco dining areas on Council land.
- At all Council events.

### Penalties

Please observe and respect the Smoke Free Zones as Manly Council will fine offenders \$110 per offence if necessary.

### Signage

As a reminder of the law, the following signage will indicate a Smoke Free Zone.

