



Agenda

Council Meeting

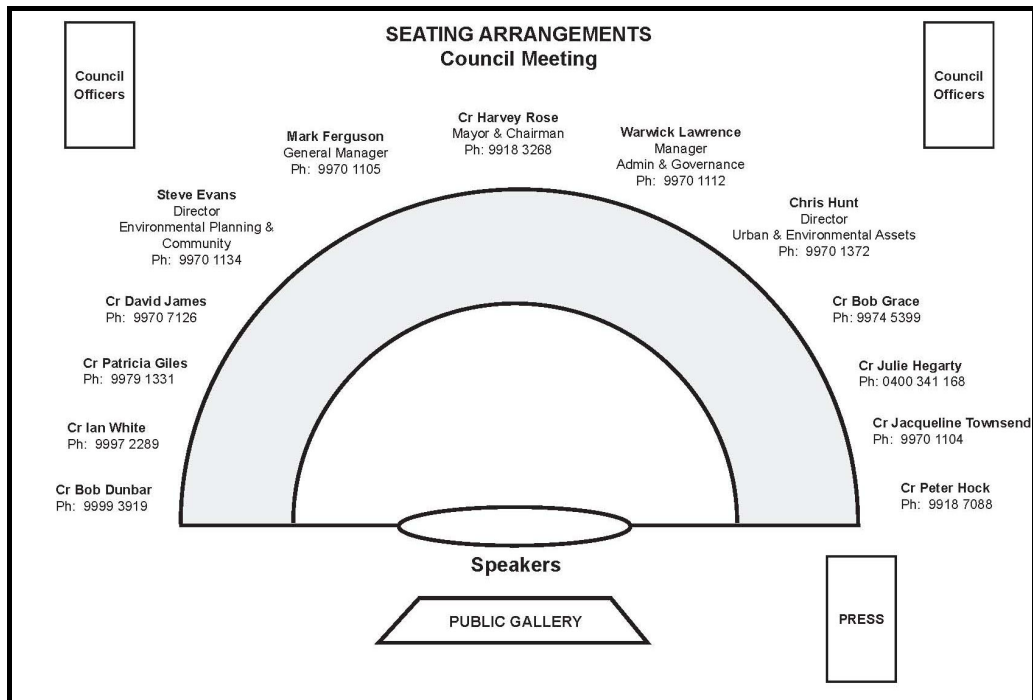
Notice is hereby given that a Council Meeting of Pittwater Council will be held at Mona Vale Memorial Hall on

4 June 2012

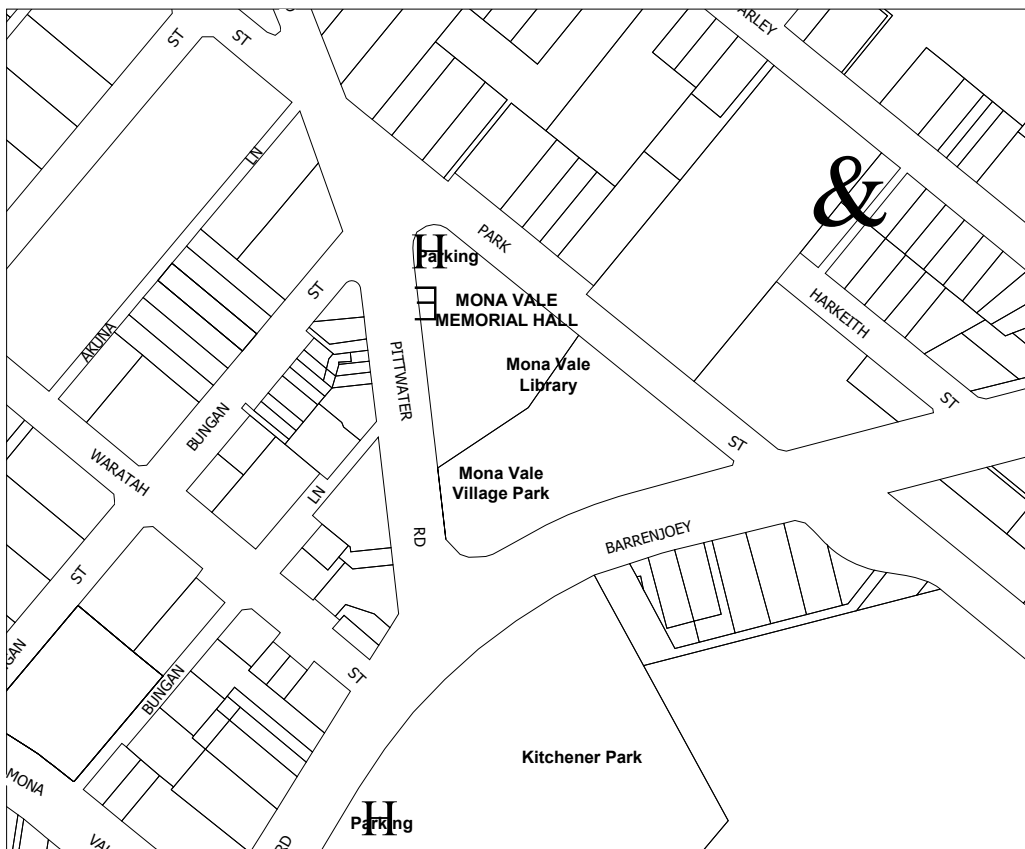
Commencing at 6.30pm for the purpose of considering the items included on the Agenda.

Mark Ferguson
GENERAL MANAGER

Seating Arrangements



Meeting Location



All Pittwater Council's Agenda and Minutes are available on the Pittwater website at www.pittwater.nsw.gov.au

Council Meeting

Acknowledgement of Country

Pittwater Council honours and respects the spirits of the Guringai people.
Council acknowledges their traditional custodianship of the Pittwater area

TABLE OF CONTENTS

Item No	Item	Page No
Council Meeting		
1.0	Apologies	5
2.0	Declarations of Pecuniary and Conflict of Interest including any Political Donations and Gifts	5
3.0	Confirmation of Minutes	6
4.0	Public Addresses	6
5.0	Mayoral Minutes	6
C5.1	Mayoral Minute - Naming of Reserve after Councillor Patricia Giles, OAM	7
6.0	Business by Exception (All items on the Agenda)	8
7.0	Council Meeting Business	8
C7.1	Notice of Motion - Safety & Amenity at Edmund Hock Parade, Avalon Beach.	9
Community, Recreation and Economic Development Committee		
8.0	Community, Recreation and Economic Development Committee Business	10
C8.1	Minutes of the Special Rate Variation Advisory Committee Meeting held 17 April 2012	11
C8.2	Minutes of the Community, Recreation & Economic Development Reference Group Meeting of 2 May 2012	19
Natural Environment Committee		
9.0	Natural Environment Committee Business	30
C9.1	Draft Integrated Water Cycle Management Policy - Public Exhibition	31
C9.2	Pittwater Vegetation Management Plan - Public Exhibition	38

Item No	Item	Page No
C9.3	Ingleside Chase Reserve Draft Bushfire Management Plan - Public Exhibition	41
C9.4	Minutes of the Narrabeen Lagoon Floodplain Risk Management Working Group on 1 March 2012	90
C9.5	Notes of an Informal Meeting of the Natural Environment Reference Group held on 9 May 2012	99
Council Meeting		
10.0	Adoption of Community, Recreation and Economic Development Committee Recommendations	110
11.0	Adoption of Natural Environment Committee Recommendations	110
12.0	Councillor Questions	110

**The Senior Management Team
has approved the inclusion of
all reports in this agenda.**

Council Meeting

1.0 Apologies

Apologies must be received and accepted from absent Members and leave of absence from Council Meeting must be granted.

2.0 Declarations of Pecuniary and Conflict of Interest including any Political Donations and Gifts

Councillors are advised of the following definitions of a "pecuniary" or "conflict" of interest for their assistance:

- * Section 442 of the Local Government Act, 1993 states that a "pecuniary" interest is as follows:

- "(1) **[Pecuniary interest]** A Pecuniary interest is an interest that a person has in a matter because of a reasonable likelihood or expectation of appreciable financial gain or loss to the person or another person with whom the person is associated.*
- (2) **[Remoteness]** A person does not have a pecuniary interest in a matter if the interest is so remote or insignificant that it could not reasonably be regarded as likely to influence any decision the person might make in relation to the matter."*

Councillors should reference the Local Government Act, 1993 for detailed provisions relating to pecuniary interests.

- * Council's Code of Conduct states that a "conflict of interest" exists when you could be influenced, or a reasonable person would perceive that you could be influenced by a personal interest when carrying out your public duty.

Councillors are also reminded of their responsibility to declare any Political donation or Gift in relation to the Local Government & Planning Legislation Amendment (Political Donations) Act 2008.

- * A reportable political donation is a donation of:
 - \$1,000 or more made to or for the benefit of the party, elected member, group or candidate; or
 - \$1,000 or more made by a major political donor to or for the benefit of a party, elected member, group or candidate, or made to the major political donor; or
 - Less than \$1,000 if the aggregated total of the donations made by the entity or person to the same party, elected member, group, candidate or person within the same financial year (ending 30 June) is \$1,000 or more.

3.0 Confirmation of Minutes

“Councillors are advised that when the confirmation of minutes is being considered, the only question that can arise is whether they faithfully record the proceedings at the meeting referred to. A member of a council who votes for the confirmation of the minutes does not thereby make himself a party to the resolutions recorded: **Re Lands Allotment Co (1894) 1 Ch 616, 63 LJ Ch 291.**”

Minutes of the Council Meeting held on 21 May 2012.

4.0 Public Addresses

Statement of Respect

Pittwater Council promotes and strives to achieve a climate of respect for all and endeavours to inspire in our community shared civic pride by valuing and protecting our unique environment, both natural and built, for current and future generations.

The following guidelines apply to any person addressing a Council / Committee meeting in relation to an item on the Council / Committee meeting agenda:

1. *A member of the public may be granted leave to address a meeting of Council or a Committee, where such a request is received by the General Manager no later than 3.00pm on the day of the meeting. This is subject to:*
 - (a) *A maximum of up to four speakers may address on any one item, with a maximum of two speakers in support of the recommendation in the report, and two speakers in opposition.*
 - (b) *A limitation of three minutes is allowed for any one speaker, with no extensions.*
 - (c) *An objector/s to a development application is to speak first with the applicant always being given the right to reply.*

Exceptions to these requirements may apply where:

- (a) *The Meeting specifically requests that a person be interviewed at a meeting.*
 - (b) *The Meeting resolves that a person be heard at the meeting without having given prior notice to the General Manager*
2. *Once a public/resident speaker has completed their submission and responded to any Councillor questions, they are to return to their seat in the public gallery prior to the formal debate commencing.*
3. *No defamatory or slanderous comments will be permitted. Should a resident make such a comment, their address will be immediately terminated by the Chair of the meeting.*
4. *Council's general meeting procedures apply to Public Addresses, in particular, no insults or inferences of improper behaviour in relation to any other person is permitted.*
5. *Residents are not permitted to use Council's audio visual or computer equipment as part of their address. However, photographs, documents etc may be circulated to Councillors as part of their address.*

5.0 Mayoral Minutes

C5.1	Mayoral Minute - Naming of Reserve after Councillor Patricia Giles, OAM
-------------	--

Meeting: Council

Date: 4 June 2012

MAYORAL MINUTE

BACKGROUND

Pittwater Council was officially established as a separate Council in 1992. This followed a concerted campaign for Pittwater to have its own identity and elected Council. Pittwater Council celebrated the 20th Anniversary of this important milestone on 1 May 2012.

Current Councillor and former Mayor and Deputy Mayor Patricia Giles has been and continues to be a staunch advocate for Pittwater to control its own destiny. Cr Giles was a member of the Pittwater Municipality Committee as far back as 1985 and subsequently part of the secessionist movement that pushed for a new Pittwater Council.

At the first Pittwater Council elections in 1992 Cr Giles was elected as a Central Ward Councillor and has diligently and passionately served continuously as a Pittwater councillor for all of its 20 year history. This makes Cr Patricia Giles the longest serving Pittwater councillor. Cr Giles is also Pittwater's longest serving Mayor, a position she held for six and a half years.

Cr Giles has made a lasting difference to Pittwater with notable achievements including:

- The fight to retain and upgrade Mona Vale Hospital.
- The saving of the Warriewood-Ingleside escarpment as public land.
- The creation of a Regional Park at Winnererremy Bay, Mona Vale.
- Upgrades to community centres, village and town centres.
- Improvements to sporting facilities, parks and open spaces.
- Strong advocate and supporter for the vital role that volunteers play in Pittwater.
- Bluet Award for Local Government Excellence.

In recognition of her service to the community, Cr Patricia Giles was awarded the Order of Australia Medal (OAM) in 2006 for her services to Local Government and in particular the Pittwater community.

In 2007 Cr Giles was awarded the Emeritus Award by the Local Government Association and in 2012 Cr Giles was named Pittwater Woman of the Year.

Cr Giles has indicated that she will retire as a councillor in 2012 preceding the Local Government Elections to be held in September this year.

It is considered highly appropriate that Cr Giles be officially recognised for her exceptional service to the Pittwater Community and its Local Government Area as she has and is one of Pittwater's most dedicated advocates.

Motion

That in recognition of the valuable contribution Councillor Patricia Giles, OAM has made to the Pittwater Community Bangalow Reserve at Mona Vale be named after her with a ceremony to be held on site to officially commemorate the naming of the reserve as:

Patricia Giles Reserve
(Bangalow Avenue)

Cr Harvey Rose
Mayor

6.0	Business by Exception (All items on the Agenda)
------------	--

Items that are dealt with by exception are items where the recommendations contained in the reports in the Agenda are adopted without discussion.

7.0	Council Meeting Business
------------	---------------------------------

C7.1	Notice of Motion - Safety & Amenity at Edmund Hock Parade, Avalon Beach.
-------------	---

(Motion submitted by Cr Grace)

Meeting: Council

Date: 4 June 2012

NOTICE OF MOTION

BACKGROUND

The report should consider various matters including inter alia:

- a) making the lane one way
- b) introducing time limits on collecting garbage in the lane for all providers to help mitigate noise
- c) any signs that may help noise and traffic mitigation
- d) movement of trucks into Woolworths landing bay from Edmund Hock lane, forwards and backwards
- e) improving safety and accessibility for egress and ingress for residents and commercial shop keepers.

A number of residents have spoken to me about the noise of trucks collecting garbage early in the morning and also, in relation to the operations of adjoining commercial premises and use of the laneway to leave various goods which spill out onto the lane way itself and also the congregation of people around this area at night, some of which apparently act in an anti-social matter.

Motion

A report be presented to Council within 6 weeks on ways to improve the amenity and safety for residents, lessees and other users of Edmund Hock Avenue, Avalon Beach.

Cr Bob Grace

Community, Recreation and Economic Development Committee

**8.0 Community, Recreation and Economic Development
Committee Business**

C8.1	Minutes of the Special Rate Variation Advisory Committee Meeting held 17 April 2012
-------------	--

Meeting: Community, Recreation & Economic Development Committee

Date: 4 June 2012

STRATEGY: **Recreational Management**
Beach and Coastal Management
Biodiversity
Sustainability and Climate Change
Traffic and Transport
Town & Village
Community Learning
Risk Management

ACTION: Provide Infrastructure renewal

PURPOSE OF REPORT

To present to Council for consideration the Minutes of the meeting of the Special Rate Variation Committee held on 17 April 2012 (refer **Attachment 1**).

1.0 BACKGROUND

To assist the administration and governance of the SRV Community Contract, the Special Rate Variation Advisory Committee has been established to carry out the following functions, as per its Charter:

- To monitor progress of works and the expenditure related to the works program as stated in the Special Rate Variation Community Contract.
- To inform Council about the progress of the works program.

1.2 The Committee consists of the following members:

Councillors:

Cr White
Cr Hegarty
Cr Hock

All other Councillors are free to attend as Observers and to engage in the discussion.

Pittwater Community Representatives:

Ms Roberta Conroy
Mr John Greaves
Ms Karen Lambert
Mr Peter Mayman
Mr James Owen
Ms Brianna Seale

Council Advisors

Mr Chris Hunt, Director, Urban & Environmental Assets
Mr Mark Shaw, Manager, Urban Infrastructure
Mr Les Munn, Manager, Reserves Recreation & Building Services
Ms Pamela Tasker, Minute Secretary

Other Council advisors will attend dependent on the agenda items.

2.0 ISSUES

2.1 SRV4.1 – Current 2011/2012 Works Program – Progress Report

The SRV Committee noted the progress report on the Special Rate Variation Program of Works for 2011/2012 as at 31 March 2012 - see Attachment 1 of the SRV Agenda

Regular progress reports on budget variations to the SRV Works Program are to be provided to Committee Members via an email link to the items as they appear on the Council Meeting Agenda

2.2 SRV4.2 – PowerPoint Presentation of Works Undertaken

The SRV Committee noted the draft Special Rate Variation Works Program 2012/2013 as scheduled in the draft Pittwater Council Delivery Plan 2012/2016 - see Attachment 2 of the SRV Agenda.

The current year SRV Works Program will be reformatted to reflect the Key Directions

2.3 SRV4.3 – Proposed Works Program 2012/2013

The SRV Committee noted the Power Point presentation on the Special Rate Variation Works Program for the period 1 July 2011 to 31 March 2012 - note this presentation has been posted on the Pittwater Web Page

The Committee also commented on the need to bring to the attention of the Community the positive results being achieved through the SRV Program.

3.0 SUSTAINABILITY ASSESSMENT

This report does not require a sustainability assessment.

4.0 EXECUTIVE SUMMARY

- 4.1 To present to Council the minutes of the Special Rate Variation Advisory Committee Meeting held on 17 April 2012.

RECOMMENDATION

1. That the Minutes of the Special Rate Variation Advisory Committee Meeting held on 17 April 2012 be noted.
2. That the SRV Committee Members be provided regular progress reports on budget variations to the SRV Works Program via an email link to the items as they appear on the Council Meeting Agenda
3. That the Council Community Report(s), Web Page and other relevant communication modes be regularly updated as to progress of the SRV Program, including project sheets which outline the community benefits achieved relevant to Key Directions with before and after photos as appropriate

Report prepared by

Chris Hunt
DIRECTOR, URBAN & ENVIRONMENTAL ASSETS

Minutes

Special Rate Variation (SRV) Advisory Committee Meeting

held in the Level 3 Conference Room, 5 Vuko Place, Warriewood
on

17 April 2012

Meeting Commenced at 4.04pm

Attendance:

Councillors:

Cr Hegarty (Chairperson)

The following Pittwater Community Representatives:

Ms Brianna Seale
Ms Karen Lambert
Mr John Greaves
Mr Peter Mayman
Ms Roberta Conroy
Mr James Owen

The following Council Advisors

Mr Chris Hunt, Director, Urban & Environmental Assets
Mr Mark Shaw, Manager, Urban Infrastructure
Mr Les Munn, Manager, Reserves, Recreation & Building Services
Mr Steve Lawler, Principal Officer, Reserves & Recreation
Mr Mark Beharrell, Manager, Natural Environment & Education
Mr Mark Jones, Chief Financial Officer
Ms Pamela Tasker, Minute Secretary

Special Rate Variation Advisory Committee Meeting

TABLE OF CONTENTS

Item No	Item	Page No
1.0	Apologies	
2.0	Declarations of Pecuniary Interest	
3.0	Confirmation of Minutes	
4.0	Committee Business	
SRV4.1	Special Rate Variation - Current 2011/2012 Works Program - Progress Report	
SRV4.3	Special Rate Variation - PowerPoint Presentation of Works Undertaken	
SRV4.2	Special Rate Variation - Proposed Works Program 2012/2013	
5.0	General Business	
6.0	Next Meeting	

1.0 Apologies

COMMITTEE RECOMMENDATION

That apologies be received and accepted from Cr White and Cr Hock and leave of absence be granted from the Special Rate Variation Advisory Committee Meeting held on 17 April 2012.

(Cr Hegarty / Ms Roberta Conroy)

2.0 Declarations of Pecuniary Interest

Cr Hegarty declared a less than significant non-pecuniary interest in Item SRV4.2 – Special Rate Variation – Proposed Works Program 2012/2013. Cr Hegarty remained in the meeting and took part in discussion and voting on this item. The reason provided by Cr Hegarty was:

"Area of Minkara Road was not specified in report."

3.0 Confirmation of Minutes

COMMITTEE RECOMMENDATION

That the Minutes of the SRV Advisory Committee Meeting held on 29 November 2011 be confirmed as a true and accurate record of that meeting.

(Mr Peter Mayman / Mr James Owen)

4.0 Committee Business

SRV4.1 Special Rate Variation - Current 2011/2012 Works Program - Progress Report

COMMITTEE RECOMMENDATION

1. That the progress report on the Special Rate Variation Program of Works be noted.
2. That regular progress reports on budget variations to the Works Program be provided to Committee members.
3. That these updates be provided via an email link to the items as they appear on the Council Meeting Agenda.

(Mr John Greaves / Ms Karen Lambert)

SRV4.3 Special Rate Variation - PowerPoint Presentation of Works Undertaken

COMMITTEE RECOMMENDATION

That the PowerPoint presentation on the Special Rate Variation Works Program for the period 1 July 2011 to 31 March 2012 be noted.

(Mr James Owen / Cr Hegarty)

SRV4.2 Special Rate Variation - Proposed Works Program 2012/2013

COMMITTEE RECOMMENDATION

1. That the draft Special Rate Variation Works Program 2012/2013 as scheduled in the draft Pittwater Council Delivery Plan 2012/2016 be noted.
2. That on incorporation into the Annual Report the current year Works Program and 10 Year Program appears in the new format (relating to Key Directions).

(Mr Peter Mayman / Ms Roberta Conroy)

5.0 General Business

Question:

How flexible is the entire program? Can new initiatives be incorporated and / or initiatives which later prove to be impractical be discontinued?

Response:

The SRV Program areas and in a number of cases the specific projects formed the basis of Council's submission to IPART to justify the need for the SRV. IPART required sufficient detail as to the program areas, the type of projects, the likely timing, budgets, etc. As such there are a number of pre-requisites and key outcomes associated with the 10 Year Program as captured by our submission and the associated Community Contract. This tends to limit the flexibility however there is some scope. Over a 10 year horizon there may also arise the need to discontinue a project(s) and introduce alternative(s) and this can be accommodated. It is noted that as per the Charter, the purpose of the SRV Committee is:

- *To monitor the progress of works projects and the expenditure related to the works program as stated in the Community Contract.*
- *To inform Council about progress of the works program.*

This does not limit new initiatives in the context of the above parameters being put forward and considered by the SRV Committee, and recommendations being formulated as part of the Minutes to Council for further consideration. We are keen to draw upon the expertise of the Committee members. Other Major Works Programs not associated with the SRV Program may also be able to consider such initiatives.

6.0 Next Meeting

The next meeting of the Special Rate Variation Advisory Committee will be held on 20 November 2012 in the Conference Room on Level 3, 5 Vuko Place Warriewood commencing at 4.00pm.

**THERE BEING NO FURTHER BUSINESS
THE MEETING CONCLUDED AT 5.56PM ON
TUESDAY 17 APRIL 2012**

C8.2 Minutes of the Community, Recreation & Economic Development Reference Group Meeting of 2 May 2012

Meeting: Community, Recreation & Economic Development Committee

Date: 4 June 2012

STRATEGY: Business Management

ACTION: Maintain and Service Council's Range of Committees

PURPOSE OF REPORT

To present to Council for consideration, the Community, Recreation & Economic Development Reference Group Minutes of 2 May 2012 (refer **Attachment 1**).

1.0 BACKGROUND

1.1 The Community, Recreation & Economic Development Reference Group was established by Council to consider matters involving goals and initiatives contained in the key directions of Council's Strategic Plan – Supporting and Connecting our Community and Enhancing our Working and Learning. Reference Points and outcomes from the Reference Group will inform the Delivery Plan process.

1.2 The strategic objectives within the associated key directions are:

- Building Communities
- Recreational Management
- Community Learning
- Economic Development

1.3 To fulfil its role the Community, Recreation & Economic Development Reference Group provides:

- a link between Council and the community which enhances communication about the strategic direction of Council initiatives
- input from Council and the community (historical, social and environmental) when considering possible solutions
- consideration of implications from strategic initiatives and their likely impact on the local community, and
- feedback to Council on behalf of the community

2.0 ISSUES

2.1 Pittwater Open Space, Bushland and Recreation Strategy

The members of the Reference Group provided valuable feedback on the development on the Pittwater Open Space, Bushland and Recreation Strategy.

The meeting resolved that further work would be undertaken by staff on the Goals set out for an new Pittwater Open Space, Bushland and Recreation Strategy and would present these to the next Community Recreation and Economic Development Meeting on 1 August 2012.

2.2 End of Term Report

Staff provided a brief presentation on the development of the End of Term Report. The contribution the Reference Group members have made to further advance the goals set out in the Community Strategic Plan will be acknowledged within the report.

2.3 Review of the Community Strategic Plan

Reference Groups members will be given the opportunity to be involved in the Community Strategic Plan review with a presentation to be given at the meeting in August 2012.

3.0 SUSTAINABILITY ASSESSMENT

3.1 This report does not require a sustainability assessment.

4.0 EXECUTIVE SUMMARY

4.1 Recommendations of the Community, Recreation & Economic Development Reference Group contained in the minutes of the meeting of 2 May 2012 for Council's consideration.

RECOMMENDATION

That the Minutes of the Community, Recreation and Economic Development Reference Group Meeting of 2 May 2012 (**refer Attachment 1**) be noted.

Report prepared by

Steve Evans

DIRECTOR, ENVIRONMENTAL PLANNING & COMMUNITY

Minutes

Community, Recreation & Economic Development Reference Group

held in the Training Room at the Coastal Environment Centre,
Lake Park Road, Narrabeen on

2 May 2012

Commencing at 4.02pm

Attendance:

Cr David James, Chairperson
Cr Ian White

Members

Barrenjoey High School P&C – Mrs Sandra Skelly
Community Care (Northern Beaches) Inc. – Mrs Fiona Winter
Newport Residents Association – Dr Ruth A Fink Latukefu
Newport Residents Association – Mr Hans Hui
Pittwater Community Arts – Ms Lorrie Morgan
Pittwater Community Arts – Ms Bronwyn Hammond
Pittwater Resident Representative – Ms Mischa Moraza
Pittwater Resident Representative – Mr Alan Porter
Pittwater Resident Representative – Mr Les Wingham
Surf Life Saving Northern Beaches – Mr Robert Berry
Sustainability Pittwater – Mr Anthony Robinson

Council Advisors

Mr Steve Evans, Director, Environmental Planning & Community
Mr Les Munn, Manager Reserves, Recreation and Building Services
Ms Jenny Cronan, Special Projects Officer – Reserves Recreation, Landscape
Ms Melinda Hewitt, Social, Community & Economic Development Coordinator
Ms Sherryn McPherson, Administration Officer/Minute Secretary

**COMMUNITY, RECREATION & ECONOMIC DEVELOPMENT
REFERENCE GROUP MEETING**

TABLE OF CONTENTS

Item No	Item	Page No
1.0	Apologies	
2.0	Declarations of Pecuniary Interest	
3.0	Confirmation of Minutes	
4.0	Discussion Topics	
CRED4.1	Pittwater Open Space, Bushland and Recreation Strategy	
CRED4.2	Update on Actions from Reference Groups	
CRED4.3	End of Term Report	
5.0	Emerging Business	
6.0	Next Meeting	

**The Director, Environmental Planning & Community
has approved the inclusion of
all reports in this Minutes.**

1.0 Apologies

1. Apologies were received from:

- Ms Jennie MacKenzie, Clareville & Bilgola Plateau Residents Association
- Mr Steve McInnes, Surf Life Saving Northern Beaches
- Ms Heath Blanshard, Pittwater Community Gardens Association Incorporated
- Mr Paul Purvis, West Pittwater Community Association
- Mr Mark Beharrel, Manager Natural Environment & Education

and leave of absence was granted from the Community, Recreation & Economic Development Reference Group meeting of 2 May 2012.

2. The Reference Group members accepted the apologies.

2.0 Declarations of Pecuniary Interest – Nil

3.0 Confirmation of Minutes

REFERENCE GROUP RECOMMENDATION

That the Minutes of the Community Recreation and Economic Development Reference Group Meeting held on 1 February 2012 be confirmed as a true and accurate record of that meeting taking into account the following addition:

Item CRED4.2 – Development of a New Social Plan

Ms Ruth A Fink Latukefu requested that it be recorded in the Minutes that in Discussion Topic 4 titled Getting around Pittwater, “What are the Challenges?” and requested we add an additional point for; lack of Taxi Services.

(Mr Allan Porter / Mr Hans Hui)

4.0 Discussion Topics

CRED4.1 Pittwater Open Space, Bushland and Recreation Strategy

Proceedings in Brief

Mr Les Munn, Manager Reserves, Recreational and Building Services and Ms Jenny Cronan, Special Projects Officer, Reserves Recreation, Landscape addressed the meeting on this item.

The draft Pittwater Open Space and Recreation Strategy is an important project. The key goal will be to develop strategies that protect and enhance the natural environment while developing a diverse range of recreational opportunities for people of all ages and abilities.

The Pittwater area contains about 589 hectares of open space, including 447 hectares of natural areas of which 303 hectares are bushland. These figures need to be adjusted to include land acquired by Council at Warriewood Escarpment. The parks and reserves that form the open space network are generally categorised into 'district', 'regional' or 'local' parks, depending on their scale and level of use. However, Pittwater has such a fragile natural environment, therefore we will be categorising the open space network into 'landscape settings' including ocean beaches, foreshore reserves and waterways, indoor recreation facilities, bushland, headlands and wetlands, large developed parks, small pocket parks, sportsgrounds, structured sports and recreational area, walking and cycling tracks and village green or space within a shopping centre. We have commenced with sportsgrounds because they require a large amount of land and their management is extremely complex. Sportsfields are well used with nearly 10,000 people belonging to clubs who use the fields. The sports groups have completed a survey and we will be meeting with them on 30 May 2012.

Discussion Points:

Q: Are the above figures / information available in the report tabled at the meeting?

A: No, the figures are not in the report, they will be included in the draft Open Space and Recreation Strategy which is still being developed and will go up to Council once completed for exhibition. Once it has been approved for exhibition, it will be uploaded onto the Council website for review and additional input from the community. In the meantime, a Survey is currently on the website which will assist in gathering data for the plan.

The survey results will provide data on how the community use the open space network and thereby direct where improvements can be made. Once we have collated the survey results, a workshop will be held with all interested members of the community to discuss the results and potential actions. The survey is available from www.pittwater.nsw.gov.au/consultation.

Q: In regards to the statistics for open space and acquisitions and the recreation strategy, is this strictly limited to open space? The Community Recreation and Economic Development Group revolves around supporting and connecting our Community, enhancing our working and learning. Due to the fact that we only have limited time, is this topic relevant for lengthy discussions?

A: In completing the survey we are hoping the community will think beyond traditional sports to include café dining, theatre, photography. The survey does not include shopping, because it is restricted to activities that council can accommodate in parks or reserves. This exercise will also take into consideration the Economic Development and Social Plan as Council is aiming to increase community connectedness, participation and enhancing a range of community facilities and opportunities whilst making use of the environment and available open space within the Pittwater area.

Q: Does Council have the ability to influence or provide input as to what happens within the National Parks?

A: The Pittwater area contains a large amount of bushland which is highly used by our residents. Ku-ring-gai Chase National Park is managed by the National Parks and Wildlife Service (NPWS). Council can discuss matters with the NPWS, but our influence is limited. Council directly manages some small areas of public land on the western foreshores near the residential developments. The Strategy will take the National Park into consideration as well as facilities in neighbouring council areas and private facilities, however we are unable to make any recommendations or actions.

The Reference group broke up into two (2) discussion groups to talk about the Landscape Settings contained in the draft Pittwater Open Space and Recreation Strategy. Various discussion topics were provided to the groups to gather valuable feedback as to why and how this is important to the Community.

Group 1 discussed 5 topics including Coastal Beaches, Foreshore Reserves and Waterways, Indoor Recreation facilities, Bushland headlands and escarpments and Large developed parks. Group 1 provided the following feedback:

Setting	Description	Examples	Values
Coastal Beaches	Coastal beaches including the rock platforms and tidal rock pools.	Mona Vale Beach	<ul style="list-style-type: none">• Free• Passive and active recreation,• Great health and wellbeing.• Encourage intergenerational activities <p>Like to see more seating on beaches.</p>
Foreshore Reserves and Waterways	Pittwater Estuary and Narrabeen Lagoon and the open space network surrounding these waterways. (Note. Narrabeen Lagoon is contained in Warringah Council LGA)	Clareville Beach Reserve	<ul style="list-style-type: none">• Aesthetic values,• Habitat elements• Still water activities such as canoeing windsurfing, fishing etc
Indoor Recreation facilities	Indoor facilities, such as courts and pools, that accommodate indoor sports and recreation activities.	Community Centres, surf clubs	<ul style="list-style-type: none">• Opportunities for social cohesion to build, participation, midnight basketball,• Arts and culture,• After hours opportunities,• All weather facilities
Bushland headlands and escarpments	Open space comprising bushland as defined in Clause 6 of SEPP 19, and open space integral to a hilltop, bluff or headland area.	Mckay Reserve, Mona Vale Headland, Warriewood Wetlands	<ul style="list-style-type: none">• Free, scenic, walkways which breaks up built environment,• Paragliding <p>Like to see more Horse riding trails in the bushland.</p>
Large developed parks	Open space incorporating such elements as landscaped areas, formal gardens, lawns, children's play areas, and open communal open space for the nearby district.	Bangalow Reserve, Mona Vale	<ul style="list-style-type: none">• Community events to occur,• Art and theatre in the park,• Opportunities for social inclusion for mothers group• Encourages community interaction.

Group 2 Discussed 5 topics including Small pocket or neighbourhood parks, Sportsgrounds, Structured Sports and Recreation Area, Walking and Cycling Tracks, Village Green or Space within Shopping Centre. Group 2 provided the following feedback;

Setting	Description	Examples	Values
Small pocket or neighbourhood parks	Open space predominately used as children's playground or as communal open space for the adjacent neighbourhood, and unimproved open space zoned for recreational purposes and capable of future development for recreation purposes	Katrina Reserve, Whitney reserve	<ul style="list-style-type: none"> • Breaks up the continuum of urban development
Sportsgrounds	Open space of predominantly mown grass incorporating an oval, playing field, athletics track, or area of organized sports.	Hitchcock Park, Boondah Reserves	<ul style="list-style-type: none"> • Provision of large areas of green open space • Opportunities for social interaction which is very important for the community • Opportunities for passive activities • Valuable for sportspeople and spectators
Structured sports and recreation area	Basketball, netball, tennis and volleyball courts; bowling greens; golf course; equestrian facilities; skateboard and roller blading facilities; and unleashed dog; exercise areas and includes club rooms, change rooms, equipment, storage, skate park etc.	Mona Vale Tennis Courts	<ul style="list-style-type: none"> • Provision of open space to break up development • Golf clubs cater for a relatively small number of users • Golf clubs provide large attractive landscaped areas, but low ecological values. • Function centres at golf clubs and bowling clubs provide licensed function centres resident use such as weddings and birthdays. (Licensed facilities are limited in Pittwater). • Leases provide revenue to subsidise rates
Walking and cycling tracks	Link areas within and between open spaces, natural areas and recreation facilities.	Bicentennial Coastal Walkway	<ul style="list-style-type: none"> • Passive recreation such as walking bonds people together • Safe activity for broad cross section of communities, particularly families • Could be further improved • Ticks need to be addressed • Pittwater's topography limits cycling opportunities • Multi-use paths require more thought to control cyclists speed / manners
Village green or space within shopping centre	Open space that relates to a shopping centre	Village Park Mona Vale	<ul style="list-style-type: none"> • Casual space for meeting people • Opportunities for passive recreation • Could be used more – e.g. music events, chess boards, outdoor cinema (take deck chairs)

General note

As development increases in Sydney metropolitan areas, it will put more pressure on resources in Pittwater and provide more opportunities for special events.

REFERENCE GROUP RECOMMENDATION

1. That the reference group notes the discussion.
2. That the 6 Goals, Recreation, Environment, Visual Quality, Community Focus, Access and Sustainability to be reworded by Ms Jenny Cronan, Special Projects Officer - Reserves Recreation, Landscape and be brought back to the next Community Recreation and Economic Development Meeting on 1 August 2012.

(Mr Hans Hui / Ms Sandra Skelly)

CRED4.2 Update on Actions from Reference Groups

Proceedings in Brief

Ms Melinda Hewitt, addressed the meeting on this item.

During 2011 and 2012 all reference groups have been addressing prioritised goals within the Key Directions of the 2020 Strategic Plan for which they have been responsible. At each meeting reference groups have identified reference points to be considered by Council. Within the context of these discussions certain actions/initiatives have been identified for consideration and possible incorporation into the Delivery program and Budget 2012-2016. Business Managers were required to review the reference points and identify how these actions may be incorporated under each Strategy in the Delivery Program and Budget for 2012-2016. Where feasible, actions have been included within the current draft Delivery Program and Budget for 2012-2016. The draft Delivery Program and Budget is currently on public exhibition and a report will be provided to Council in June 2012.

An extract of the Draft Delivery Program and Budget 2012 – 2016 was provided to the Reference Group members.

REFERENCE GROUP RECOMMENDATION

- 1 This report provides an update on the process of the Delivery Program and Budget for 2012 - 2016.
- 2 That the information provided in the report be noted.

(Mr Alan Porter / Cr Ian White)

Note:

Please note that in section 1.0 Purpose of Report the paragraph should read:

“To provide an update to reference groups about reference points that have been incorporated into Councils draft Delivery Program and Budget for 2012 – 2016”

CRED4.3 End of Term Report

Proceedings in Brief

Mr Paul Reid, Manager Corporate Strategy and Commercial addressed the meeting on this item.

Discussion Points:

Members were requested to review the End of Term Report and supply comment to the Minute Secretary for consideration. Mr Alan Porter suggested that it would be valuable to include an additional topic of Making Greater Use of the Pittwater Community Assets e.g. recognising surf clubs and acknowledging that places within the area like Avalon Beach was the start of competitive surfing. Utilising our Local Government Areas such as Parks to enhance community connectedness and introducing an annual Pittwater Festival.

REFERENCE GROUP RECOMMENDATION

- 1 Over the last four years Reference Groups have been working in collaboration with Council to contribute to advancing progress towards the Community Strategic Plan Goals. This should be acknowledged and celebrated within the End of Term Report.
- 2 Reference Group members will be given the opportunity to be involved in the Community Strategic Plan review and a presentation will be given at the meeting in August 2012.

(Mr Alan Porter / Ms Fiona Winter)

5.0 Emerging Business

The Reference Group was advised that the Draft Pittwater Economic Development Plan 2012-2016 and the Draft Social Plan 2012 – 2016 will be going up to Council on Monday, 7 May 2012.

6.0 Next Meeting

That the next meeting of the Community, Recreation and Economic Development Reference Group will be held on 1 August 2012 at the Coastal Environment Centre commencing at 4.00pm.

**THERE BEING NO FURTHER BUSINESS
THE MEETING CONCLUDED AT 5.58pm
ON WEDNESDAY, 2 MAY 2012.**

Natural Environment Committee

9.0 Natural Environment Committee Business

C9.1	Draft Integrated Water Cycle Management Policy - Public Exhibition
-------------	---

Meeting: Natural Environment Committee

Date: 4 June 2012

STRATEGY: Water Management

ACTION: Develop and implement an Integrated Water Cycle Management Plan, Water Catchment Plan and Creekline Management Plans, Water Savings Action Plan.

Provide planning, design, investigation and management of water management facilities.

Implement sustainable and integrated water and waste water management practices in all development, environmental planning and development controls.

Develop, review and implement water management policy.

PURPOSE OF REPORT

To place the Draft Integrated Water Cycle Management Policy (refer **Attachment 1**) on public exhibition.

1.0 BACKGROUND

- 1.1 One of the strategic initiatives within Councils 2020 Strategic Plan for Water Management is to 'develop and implement an Integrated Water Cycle Management Plan, Water Catchment Plan and Creekline Management Plan'.

The first step in preparing these plans is ensuring that Council has a policy to work within.

- 1.2 What is Integrated Water Cycle Management?

IWCM is 'a way of managing water (potable water, sewerage, stormwater and groundwater) in which all components of the system are integrated so that water is used optimally. It involved integrating the planning and management of water supply, sewerage and stormwater functions to ensure the water is used optimally for urban development within the catchments and national water quality objectives are met'.

Integrated water cycle management (IWCM) is considered to be overarching and encompassing all facets of Water Sensitive Urban Design. IWCM extends into the catchment-scale and incorporates the planning and management of all potential supply sources linked to an urban environment including surface water, groundwater, recycled waste water and stormwater. The fundamental objective of IWCM is to minimise the impacts of urban development on the water balance and the environment. IWCM also helps to address water scarcity in urban environments by diversifying supply options to include all components of the urban water cycle.

Some key principles which recognises the interrelationships between the human use of water and its role in the environment include:

- Natural cycles – minimising the alteration to natural flow and water quality regimes;
- Sustainable limits – ensuring that the volume of water extracted from a source is sustainable for the community and the environment;
- Demand management – reducing demand by minimising water use and losses, and maximising efficient use and re-use;
- Diversity in new supplies – considering all potential sources of water when new supplies are needed, including reusing water and stormwater, and
- Water quality – managing the water cycle at all phases to preserve water quality for the community and the environment.

2.0 ISSUES

2.1 The draft Integrated Water Cycle Management Policy provides a clear statement on Council's position on the importance of water management to the health, wellbeing, ecological and economic security of Pittwater.

2.2 The objectives of the policy are:

- To acknowledge the integrated nature of all water sources in the Pittwater Local Government Area and its community and environmental value.
- To ensure that water sources are sustainably managed and shared for ecological and community purposes, in an economical manner.
- To minimise the detrimental impacts of land use activities on water sources.
- To raise community and Council awareness about sustainable integrated water management.

2.3 The draft Integrated Water Cycle Management Policy is intended to be applied through enhancing existing Council management practices, and developing programs, partnerships, strategies and actions that improve water use, retention and reuse.

3.0 SUSTAINABILITY ASSESSMENT

3.1 Supporting & Connecting our Community (Social)

The sustainable use of all water sources is a community and council responsibility. Reliable water supply is important for the amenity of our community buildings, sports facilities (good grass cover on ovals) and landscape elements.

3.2 Valuing & Caring for our Natural Environment (Environmental)

Pollution and sediment loads from private and public properties can smother creeks and exacerbate odours and sediment build-up in creeks. By implementing Integrated Water Cycle Management, Council will investigate the various water sources holistically.

3.3 Enhancing our Working & Learning (Economic)

The local economy, in particular sport, leisure, tourism and retail is heavily reliant upon acceptable water quality and reliability of supply. Water is a common thread for a range of commercial and 'non commercial' activities and poor water quality can have a detrimental effect on these associated 'businesses' as well as residents.

3.4 Leading an Effective & Collaborative Council (Governance)

Council and the community have a responsibility to not pollute waterways and a duty of care to use water sustainably. There is legislation, guidelines, reporting and penalties to provide accountability.

3.5 Integrating our Built Environment (Infrastructure)

Infrastructure, in particular water, stormwater and waste-water infrastructure needs to be effectively managed and maintained to reduce the potential for pollution of receiving water bodies.

4.0 EXECUTIVE SUMMARY

4.1 The draft Integrated Water Cycle Management Policy looks at the whole water cycle and how Council can better manage its water resources.

4.2 The draft Integrated Water Cycle Management Policy provides a clear statement on Council's position on the importance of water management to the health, well being, ecological and economic security of Pittwater.

RECOMMENDATION

1. That the draft Integrated Water Cycle Management Policy be placed on public exhibition for 28 days with submissions invited from the public.
2. That following the period of public exhibition and consideration of any submissions received, the draft Integrated Water Cycle Management Policy be reported back to Council for further consideration.

Report prepared by
Melanie Schwecke, Project Leader – Water Management

Jennifer Pang
MANAGER, CATCHMENT MANAGEMENT & CLIMATE CHANGE

Council Policy – No Version:	Adopted:	
	Amended	
	Revoked	

TITLE: Integrated Water Cycle Management Policy

STRATEGY: Water Management Strategy

BUSINESS UNIT: Catchment Management and Climate Change

RELEVANT LEGISLATION:

- Ecological Protection and Biodiversity Conservation Act 1999.
- Administration Amendment (Water and Energy) Act 2005
- Catchment Management Authorities Act 2003.
- Environmental Planning and Assessment Act 1979.
- Fisheries Management Act 1994.
- Local Government Act 1993.
- Protection of the Environment Administration Act 1993.
- Sydney Water Act 1994.
- Threatened Species Conservation Act 1995.
- Water Industry Competition Act 2006.
- Water Management Act 2000.
- Water Sharing Plan for the Greater Metropolitan Region Groundwater Sources 2011
- Water Sharing Plan for the Greater Metropolitan Unregulated River Water Sources 2011
- State Environmental Planning Policy (SEPP) No.71 – Coastal Protection

RELATED POLICIES:

- Council Policy – No 164: Sustainability Policy
- Council Policy – No 176: Climate Change Policy
- NSW Groundwater Dependent Ecosystem Policy 2002
- NSW Guidelines for Preparing Coastal Zone Management Plans 2010
- NSW Coastal Policy 1997
- NSW Estuary Management Policy
- NSW Flood Prone Land Policy 2005
- NSW Sea Level Rise Policy 2009
- NSW State Groundwater Quality Protection Policy 1998
- NSW Wetlands Management policy 1996
- Pittwater 21 Development Control Plan

1.0 Objectives

- 1.1 To acknowledge the integrated nature of all water sources in the Pittwater Local Government Area and its community and environmental value.
- 1.2 To ensure that water sources are sustainably managed and shared for ecological and community purposes, in an economical manner.
- 1.3 To minimise the detrimental impacts of land use activities on water sources.
- 1.4 To raise community and Council awareness about sustainable integrated water management.

2.0 Policy Statement

- 2.1 Council recognises the importance of sustainable water management to the health, wellbeing, ecological and economic security of Pittwater Local Government Area and its catchments.
- 2.2 Council encourages the principles of integrated water cycle management in all aspects of planning, design, development and construction, and land use management affecting the Pittwater Local Government Area.
- 2.3 Council also recognises that climate change has the potential to alter the water cycle regime and that the management of water sources will need to adapt to climate change impacts.

3.0 Policy Direction

- 3.1 Council will continue to implement over time a range of integrated water cycle management strategies/plans to:
 - Decrease the use of potable water where sustainable and practical for all non-potable uses;
 - Increase the amount of private and public water reuse and recycling;
 - Ensure water sensitive urban design elements are incorporated within public infrastructure and private development, where sustainable and practical;
 - Improve planning procedures to promote the sustainable use of water;
 - Develop and implement programs that ensure infrastructure is properly designed and maintained with regards to water management;
 - Improve the condition of natural waterways to enhance native biodiversity and improve water quality; and
 - Continue to build knowledge of Pittwater's total water cycle.

4.0 Policy Application

- 4.1 This policy applies to all potential water sources in the water cycle including (but not limited to) groundwater, stormwater, wastewaters, sewage, effluent, flows in creeks and waterways and potable water.
- 4.2 This policy provides the basis for the planning, implementation, maintenance and budgeting for Pittwater Council's approach to water management within prevailing legislative and administrative arrangements. This may be applied through a combination of tools, such as regulatory practices, land use planning, development controls, advocacy, capacity building, collaborative partnerships, education, research, maintenance and work practices, governance and leadership roles.

- 4.3 The policy will be applied by enhancing existing management practices and developing programs, partnerships, strategies and actions that improve water use, retention, and re-use.

For Council this includes the implementation (subject to budgetary constraints) of:

- water savings retrofit program through the Water Savings Action Plan/ Water Efficiency Plan;
- stormwater harvesting projects;
- sustainable groundwater program;
- water sensitive urban design projects;
- natural channel designs for creeks;
- stormwater infrastructure maintenance;
- staff education of integrated water cycle management issues;
- integrated water cycle management in planning controls and requirements;
- water sensitive urban development (WSUD) principles in development controls; and
- continued research into best management practice and the local environment.

For the community this includes:

- ongoing education on integrated water cycle management issues;
- Council assistance programs (technical information on WSUD and water conservation/efficiency);
- enforcement of water management controls; and
- partnerships with other water conservation and reuse programs.

Definitions

Ecologically sustainable development: Ecologically sustainable development is: “Using, conserving and enhancing the community’s resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased”¹.

Groundwater: In the broadest sense, all subsurface water.

Groundwater Dependent Ecosystem: Ecosystems that are dependent on groundwater for their existence and health².

Integrated water cycle management: Integrated Water Cycle Management (IWCM) is “a way of managing water (potable water, sewerage, stormwater, and groundwater) in which all components of the system are integrated so that water is used optimally. It involves integrating the planning and management of water supply, sewerage and stormwater functions to ensure that water is used optimally for urban development within the catchments and national water quality objectives are met”³.

Potable Water: Water supplied for drinking purposes.

Stormwater: Runoff from rainfall events that is conveyed separately from sewerage.

Water sensitive urban design: Integration of urban planning with the management, protection and conservation of the urban water cycle that ensures urban water management is sensitive to natural hydrological and ecological cycles⁴.

Water recycling: Treatment and reuse of water from the sewerage system.

Water reuse: Utilisation of water for domestic or commercial purposes, which would otherwise be discharged to stormwater systems.

References

- ¹ Department of sustainability, Environment, Water, Population and Communities. <http://environment.gov.au/about/esd/index.html> (Accessed December 2010)
- ² National Water Commission (2005), Australian Water Resources 2005_ Glossary and Definitions. <http://www.water.gov.au/Glossary.aspx> (Accessed April 2012)
- ³ Local Government Shires Associations of NSW. <http://www.lgsa.org.au/www/html/336-integrated-water-cycle-management.asp> (Accessed December 2010)
- ⁴ National Water Commission (2007). Institutional and Regulatory Models for Integrated Urban Water Cycle Management – Issues and Scoping paper (February 2007). National Water Commission: Canberra

C9.2 Pittwater Vegetation Management Plan - Public Exhibition

Meeting: Natural Environment Committee

Date: 4 June 2012

STRATEGY: **Biodiversity Management, Vegetation Management**

ACTION: To protect threatened species and habitats
 Complete the local Vegetation Mapping and Management Plan

PURPOSE OF REPORT

To recommend the exhibition of the Draft Pittwater Vegetation Management Plan and advise Council on the progress of the project.

1.0 BACKGROUND

- 1.2 Management actions are provided in the first section of the report and are prioritised and cross-referenced to other sections in the plan. These actions reflect and aim to reduce relevant Key Threatening Processes as per the Threatened Species Conservation Act 1995 which are focused on habitat retention, enhancement of wildlife corridors, fire management, and controlling pests, weeds and invasive species.
- 1.3 Vegetation Community profiles have been included in the appendices of the management plan which profile all vegetation communities known or having the potential to occur in the LGA. These profiles give scientific information as well as details of the population in or near the LGA, and are consistent with profiles used across NSW. These can be included on the Council website for future community education purposes.
- 1.4 The management plan will help meet the objectives of the Vegetation Strategy within the Pittwater Strategic Plan 2020, and specifically aid in habitat management, updating and creating Plans of Management for bushland reserves, identification of vegetation communities at risk and minimising risk elements, conditions for development, community engagement and grant applications.

2.0 ISSUES

2.1 Key elements addressed in the Pittwater Vegetation Management Plan:

The plan provides the following outcomes:

- A literature review of State and CMA databases and previous vegetation studies,
- Update information on relevant legislation and recovery plans,
- Provision and prioritising of vegetation management issues and actions,
- Outline the presence, condition and resilience of endangered or threatened ecological communities and threats to these communities,
- Strategic measures and actions for native vegetation management including bushfire management and ecological burning regimes, as well as restoration objectives and how to monitor restoration,
- An outline of the vegetation survey methodology, desktop data analysis and presentation of vegetation mapping,
- Historical discussion (including pre-1750 vegetation mapping which indicates change over time), and
- Provision of vegetation classifications and horticultural profiles (as appendices and supporting documents).

3.0 SUSTAINABILITY ASSESSMENT

3.1 Supporting & Connecting our Community (Social)

- 3.1.1 This plan provides for the diverse needs of all sectors of the community by increasing the focus on vegetation and habitat conservation. The plan provides many opportunities for volunteering and the emphasis on protection of native vegetation and participation in such activities creates a sense of ownership and belonging for residents and stakeholders.

3.2 Valuing & Caring for our Natural Environment (Environmental)

- 3.2.1 The project provides direction for vegetation management with emphasis on threatened species, conserving locally significant species, identification of key threatening processes, rehabilitation of vegetation communities through management and weed and pest removal, and enhancement of wildlife corridors and reserves.

3.3 Enhancing our Working & Learning (Economic)

- 3.3.1 Actions as proposed in the plan are representative of long term strategies to improve the focus on native vegetation as an educational resource, and can be incorporated into the Coastal Environment Centre's educational programs and other natural environment programs for schools.

3.4 Leading an Effective & Collaborative Council (Governance)

- 3.4.1 The plan provides an effective use of community assets by improving natural area amenity which native vegetation is viewed as a significant aspect of. The recommended refinements as a result of public feedback will improve amenity overall in this regard.

3.5 Integrating our Built Environment (Infrastructure)

- 3.5.1 The Pittwater Vegetation Management Plan is applicable across the entire Pittwater LGA and this includes within urban areas. Management actions and recommendations will align with and provide future direction for the Pittwater LEP, DCP and current and future land release areas.

4.0 EXECUTIVE SUMMARY

4.1 This draft management plan has been prepared to:

- Assist Council in improving the viability of native vegetation in Pittwater and to manage habitat and linkages within the LGA on both public and private land (excluding National Parks and aquatic zones);
- To compliment the recently refined vegetation mapping and to aid in the direct management of vegetation in Council reserves, and to assist in providing direction for the management of vegetation within development on private land;
- Integrate sustainable principles into future management; and
- Comply with legislative changes particularly the *Local Government Act 1993* and the *Threatened Species Conservation Act 1995*.

The full draft Pittwater Vegetation Management Plan can be viewed at: http://www.pittwater.nsw.gov.au/council/documents_on_exhibition.

4.2 This report recommends that Council approve placing the draft Pittwater Vegetation Management Plan on public exhibition for comment.

RECOMMENDATION

1. That the Draft Pittwater Vegetation Management Plan, as tabled at the meeting, be placed on public exhibition for a period of 28 days with submissions received up to 42 days from the date of advertisement.
2. That following the public exhibition period, a further report be presented to Council.

Report prepared by
Matt Hansen – Principal Officer Natural Environment

Mark Beharrell
MANAGER, NATURAL ENVIRONMENT & EDUCATION

C9.3	Ingleside Chase Reserve Draft Bushfire Management Plan - Public Exhibition
-------------	---

Meeting: Natural Environment Committee

Date: 4 June 2012

STRATEGY: Vegetation Management

ACTION: Implement bushfire management for Council's reserves in high priority areas

PURPOSE OF REPORT

To recommend the exhibition of the Draft Bushfire Management Plan for Ingleside Chase Reserve and advise Council on the progress of the project (refer **Attachment 1**).

1.0 BACKGROUND

1.1 This draft Bushfire Management Plan has been prepared to:

- Update the previous plan for the reserve – *Warriewood/Ingleside Escarpment (North) Bushfire Management Plan 2005*, and include new parcels of land acquired at the southern end from the former Heydon Estate and from the Uniting Church;
- Compliment and be used in conjunction with the Ingleside Chase Reserve Plan of Management (adopted December 2010); and
- Comply with government legislation, particularly the *Local Government Act 1993*, *Rural Fires Act 1997* and the *Threatened Species Conservation Act 1995*.

2.0 ISSUES

2.1 The plan identifies works that will be required to lower the risk of wildfire within this reserve through the implementation of sustainable bushfire management practices. This is proposed to be funded from the Environmental Infrastructure Levy. The Rural Fire Service has provided no comment to date despite being consulted.

2.2 Key elements addressed in the Plans of Management

Each plan aims to address the following key objectives:

- Protect persons and property, in and adjacent to the reserve,
- Meet Council's legislative requirements in terms of its public risk liability,
- Minimise the impacts of unplanned wildfires,
- Minimise the spread of bushfires in the reserve,
- Manage fire regimes and hazard reduction activities to avoid impact to flora and fauna species, populations and endangered communities, and
- Protect cultural assets from damage by fire and hazard reduction activities.

3.0 SUSTAINABILITY ASSESSMENT

3.1 Supporting & Connecting our Community (Social)

- 3.1.1 The development of the Ingleside Chase Reserve Bushfire Management Plan is to ensure that people, property and the environment are more fully protected against the dangers that may arise from bushfires. Communication of risks from natural hazards increases community awareness thereby reducing the potential risk to life and property. The proposed management actions to protect people and property as well as the reserve's special features will provide peace-of-mind within the local community around the reserve, which enhances health and well-being.

3.2 Valuing & Caring for our Natural Environment (Environmental)

- 3.2.1 The development of the plan is to ensure that people, property and the environment are more fully protected against the dangers that may arise from bushfires. Understanding how bushfires interact with the natural environment is an integral part of the process.
- 3.2.2 Assessing the predicted impacts of wildfire/bushfire on different vegetation types will allow for future planning of impacts on vegetation communities (particularly endangered ecological communities), threatened species, water quality etc in the reserve.

3.3 Enhancing our Working & Learning (Economic)

- 3.3.1 One of the key outcomes of the NSW Government policies relating to natural hazards is the 'protection of public and private infrastructure and assets'. By ensuring there are adequate management strategies in place to deal with natural hazards such as bushfire, this will reduce future economic impacts across the whole of the Pittwater community.
- 3.3.2 Works as proposed in the plan are representative of long term strategies to protect and improve the use of the reserve's special natural features as an educational resource.

3.4 Leading an Effective & Collaborative Council (Governance)

- 3.4.1 The plan provides effective management of a community asset by consultation with the local community. The recommended refinements as a result of public feedback will improve the protection of assets, that being the reserve and the adjacent properties.
- 3.4.2 The Ingleside Chase Reserve Bushfire Management Plan has been prepared to provide Council with indemnity under Section 733 of the Local Government Act.

3.5 Integrating our Built Environment (Infrastructure)

- 3.5.1 The Ingleside Chase Reserve Bushfire Management Plan incorporates both an update of a previous Bushfire Management Plan and includes newly acquired land. As the area interfaces with residential zones, management actions and recommendations can align with the DCP and Warriewood Valley Land Release Controls and help to protect built assets and property.

4.0 EXECUTIVE SUMMARY

- 4.1 The Bushfire Management Plan for Ingleside Chase Reserve was prepared as an update to the previous Bushfire Management Plan from 2005 and includes new parcels of land recently acquired by Council. The plan identifies works that will be required to lower the risk of wildfire within this reserve through the implementation of sustainable bushfire management practices including appropriate hazard reduction works.

The full Bushfire Management Plan can be viewed at:
http://www.pittwater.nsw.gov.au/council/documents_on_exhibition

- 4.2 This report recommends that Council considers granting approval to exhibit the draft Bushfire Management Plan for Ingleside Chase Reserve.

RECOMMENDATION

1. That the Ingleside Chase Reserve Draft Bushfire Management Plan (refer **Attachment 1**), be placed on public exhibition for a period of 28 days with submissions received up to 42 days from the date of advertisement.
2. That following the public exhibition period, a further report be presented to Council.

Report prepared by
Matt Hansen – Principal Officer Natural Environment

Mark Beharrell
MANAGER, NATURAL ENVIRONMENT & EDUCATION



Ingleside Chase Reserve

Draft Bushfire Management Plan

Prepared by



PITTWATER COUNCIL

DOCUMENT TRACKING

ITEM	DETAIL
Project Name	Ingleside Chase Reserve Bushfire Management Plan
Project Number	11SYDBUS-0021
File location	G:\Synergy\Projects\11SYDBUS\11SYDBUS-0021 Ingleside Chase Reserve BMP\Report
Prepared by	Nathan Kearnes
	Rod Rose
	Alastair Patton
Approved by	Rod Rose
Reviewed by	Nathan Kearnes
Status	Final Draft
Version Number	1
Last saved on	30 April 2012

ACKNOWLEDGEMENTS

This document has been prepared by Eco Logical Australia Pty Ltd with support from Pittwater Council.

Disclaimer

This document may only be used for the purpose for which it was commissioned and in accordance with the contract between Eco Logical Australia Pty Ltd and Pittwater Council. The scope of services was defined in consultation with Pittwater Council, by time and budgetary constraints imposed by the client, and the availability of reports and other data on the subject area. Changes to available information, legislation and schedules are made on an ongoing basis and readers should obtain up to date information.

Eco Logical Australia Pty Ltd accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report and its supporting material by any third party. Information provided is not intended to be a substitute for site specific assessment or legal advice in relation to any matter. Unauthorised use of this report in any form is prohibited.

Contents

Contents	ii
1 INTRODUCTION AND BACKGROUND.....	1
1.1 SCOPE AND OBJECTIVES	1
1.2 LIMITATIONS OF THE PLAN	1
1.3 RESIDUAL RISK	2
2 DESCRIPTION OF THE RESERVE.....	3
2.1 LOCATION	3
2.2 BIODIVERSITY.....	3
2.2.1 Vegetation Communities	3
2.2.1 Flora	3
2.2.2 Fauna	3
2.3 CULTURAL HERITAGE	6
2.4 RECREATIONAL USE AND FACILITIES	6
2.5 EXISTING BUSHFIRE ASSETS AND ADVANTAGES	6
3 BUSHFIRE RISK ANALYSIS	9
3.1 BUSHFIRE HISTORY	9
3.2 BUSHFIRE HAZARD.....	9
3.2.1 Terrain	9
3.2.2 Vegetation and Fuel	9
3.2.3 Potential Fire Intensity.....	10
3.3 ASSETS AT RISK.....	16
3.3.1 Built Assets.....	16
3.3.2 Natural Heritage	16
3.3.3 Cultural heritage	17
3.4 BUSHFIRE RISK ASSESSMENT	17
4 BUSHFIRE RISK MANAGEMENT	22
4.1 FIRE MANAGEMENT UNITS.....	23
4.2 ASSET PROTECTION ZONES	25
4.2.1 Vegetation / Fuel Management Prescription within Asset Protection Zones	26
4.3 STRATEGIC FIRE ADVANTAGE ZONES	26

4.3.1	Proposed Burn Plan	27
4.4	LAND MANAGEMENT ZONES	30
4.5	ACCESS	31
4.6	EDUCATION AND EXTENSION PROGRAMS	31
5	PROTECTION OF ENVIRONMENT AND CULTURAL SITES	33
5.1	FUEL / VEGETATION REDUCTION OPERATIONS	33
5.2	THREATENED SPECIES MANAGEMENT	33
5.3	WEED MANAGEMENT	34
5.4	PROTECTION OF HISTORICAL SITES	35
6	WORK SCHEDULE	36
7	MONITORING, REVIEW AND EVALUATION	40
7.1	MONITORING AND EVALUATION	40
7.2	REVIEW OF THE PLAN	40
	References	41

1 INTRODUCTION AND BACKGROUND

This Bushfire Management Plan (the Plan) was prepared for Pittwater Council under contract by Eco Logical Australia Pty Ltd (ELA). The Plan has been prepared as an update to a previous plan 'Warriewood Ingleside Escarpment Bushfire Management Plan 2005' prepared for the Reserve (for Pittwater Council) by Brian Parry and Associates.

1.1 SCOPE AND OBJECTIVES

The Plan describes the objectives, strategies and activities for bushfire management within Ingleside Chase Reserve (hereafter referred to as the Reserve) for the years 2012 to 2017 (the next 5 years). Further, it provides the framework for continued management beyond 2017.

The Plan addresses both the life and property protection and biodiversity conservation goals of fire management within the Reserve. The Plan also provides guidance on fire prevention and fire suppression.

Seven primary objectives of the Plan have been identified for the Reserve. These are set out below:

1. Protect persons and property, in and adjacent to the Reserve.
2. Meet Council's legislative requirements in terms of its public risk liability.
3. Minimise unplanned (human caused) bushfires.
4. Minimise the spread of bushfires in the Reserve.
5. Manage fire regimes and hazard reduction activities to avoid extinction of species, communities and populations.
6. Protect cultural assets from damage by fire and hazard reduction activities.

1.2 LIMITATIONS OF THE PLAN

The task of establishing appropriate mitigation measures in areas of existing development is often complicated. There are many obstacles to the upgrading of existing developments to achieve construction standards similar to those required for new buildings (AS 3959 Standards Australia 2009). Further, modifying vegetation to the extent required to create an appropriate Asset Protection Zone (APZ) can be limited by significant environmental constraints, such as steep lands with possible geotechnical problems, threatened species, endangered ecological communities and other environmental considerations. Further, the application of such APZs are often divergent from the aims and objectives around biodiversity conservation for such a Reserve.

A limitation of this plan is that bushfire planning guidelines are unable to be strictly applied given existing constraints both on and off the Reserve. A risk based approach was therefore taken for this plan with the identification of provisions that can be applied by which risks from bushfire can be reduced to realistically appropriate and tolerable levels.

1.3 RESIDUAL RISK

Residual risk is defined as the bushfire risk that remains after the implementation of bushfire risk reduction measures. It is acknowledged that despite the bushfire protection measures, some bushfire risk to life and property will remain and bushfires will continue to threaten life and property to some extent. It is simply not possible, without major environmental and/or financial impact, to provide complete protection for life and property located in bushfire prone areas. However, as outlined in Section 3 the risk assessment process documented that risk in this instance is generally minor. Given this, and that it is considered good practice, education and extension programs for the neighbouring community are discussed later in the report.

2 DESCRIPTION OF THE RESERVE

2.1 LOCATION

Since the release of the 'Warriewood Ingleside Escarpment Bushfire Management Plan 2005', recent negotiations with the State Government and the Uniting Church have allowed for the incorporation of a further 27 ha of remnant bushland, including the former Heydon Estate, into the Council Owned Ingleside Chase Reserve (the Reserve). With the incorporation of these lands, the Reserve now covers approximately 70 ha of undisturbed natural vegetation and provides a vegetated link from Narrabeen Lagoon, through the Warriewood Wetlands and Irawong Reserve to Ku-ring-gai and Garigal National Parks. The Reserve and the surrounding areas are depicted in Figure 1.

The Reserve is bounded to the east by new residential development of the Warriewood Valley, to the south by the residential area of Elanora Heights, to the west by rural allotments and remnant native vegetation and to the north by Mona Vale Road. Areas to the east of the Reserve are being progressively developed into residential estates in line with the Warriewood Valley Urban Land Release Planning Strategy. Rural areas to the west of the Reserve are part of a longer term strategy for the development of the area.

The northern section of Ingleside Chase Reserve contains the upper catchment of both Narrabeen and Fern Creeks. The upper tributaries of Mullet Creek flow into and combine in the southern half of the Reserve before entering the Warriewood Wetlands to the east.

2.2 BIODIVERSITY

2.2.1 Vegetation Communities

Seven (7) native vegetation communities are recognised to occur in the Reserve (Eco Logical Australia 2010): Hawkesbury Sandstone Woodland, Hawkesbury Sandstone Low Open Woodland, Ingleside Escarpment Wet Sclerophyll Forest, Sandstone Heath, Sandstone Gully Forest, Coachwood Warm Temperate Rainforest and Swamp Sclerophyll Forest as shown in Figure 2.

Only one of the vegetation communities in the Reserve corresponds to an Endangered Ecological Community (EECs) listed under the NSW *Threatened Species Conservation Act 1995* (TSC Act), namely Swamp Sclerophyll Forest. Threats to Swamp Sclerophyll Forest include (DECCW 2010a): 'frequent burning which reduces the diversity of woody plant species'.

2.2.1 Flora

Only two threatened flora species have been recorded within the immediate vicinity (i.e. 1 km) of Ingleside Chase Reserve, namely *Tetradlea glandulosa* (Glandular Pink-bell) and *Grevillea caleyi* (Caley's Grevillea). While suitable habitat for Glandular Pink-bell occurs within the confines of the Reserve, no potential habitat for Caley's Grevillea was identified (ELA 2010). Considering the size and condition of the Reserve, there is potential for other as yet unrecorded threatened species to occur (Eco Logical Australia 2010).

One species on the Rare or Threatened Plants (ROTAP) list, nine species which are considered threatened in northern Sydney (Smith and Smith 2000) and eight species considered locally rare and being of significance in the Pittwater LGA were identified at Ingleside Chase Reserve.

2.2.2 Fauna

A list of significant fauna recorded or expected to occur in Ingleside Chase Reserve is provided in Table 1 (Eco Logical Australia 2010). This list is based on the table provided in the *Warriewood/Ingleside*

Escarpment (North) Plan of Management (Gondwana Consulting 2005), with updates from the NPWS Atlas (DECCW 2010c) and DEWHA Protected Matters Search (DEWHA 2010). A total of twelve mammals, six bats, two frogs, and twelve birds have been recorded or are expected to occur or utilise habitats within the Ingleside Chase Reserve.

Threats to these species include inappropriate fire regimes impacting habitat and prey availability.

Table 1: Significant fauna recorded or expected to occur in Ingleside Chase Reserve

SPECIES	COMMON NAME	LOCALLY SIGNIFICANT	REGIONALLY SIGNIFICANT	THREATENED IN NSW	THREATENED NATIONALLY
Mammals					
<i>Acrobates pygmaeus</i>	Feathertail Glider		X		
<i>Cercartetus nanus</i>	Eastern Pygmy-possum			V	
<i>Dasyurus maculatus</i>	Spotted-tail Quoll			V	V
<i>Dasyurus viverrinus</i>	Eastern Quoll			E	
<i>Isodon obesulus</i>	Southern Brown Bandicoot			E	E
<i>Perameles nasuta</i>	Long-nosed Bandicoot	X	X		
<i>Petaurus breviceps</i>	Sugar Glider	X			
<i>Petaurus norfolcensis</i>	Squirrel Glider			V	
<i>Petaurus norfolcensis</i>	Squirrel Glider (Endangered Population)			E	
<i>Phascolarctos cinereus</i>	Koala			V	
<i>Phascolarctos cinereus</i>	Koala (Endangered Population)			E	
<i>Wallabia bicolor</i>	Swamp Wallaby	X			
Bats					
<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle			V	
<i>Miniopterus schreibersii</i>	Common Bent-wing Bat			V	
<i>Mormopterus norfolkensis</i>	Eastern Freetail Bat			V	
<i>Nyctinomus australis</i>	White-striped Freetail Bat	X			

SPECIES	COMMON NAME	LOCALLY SIGNIFICANT	REGIONALLY SIGNIFICANT	THREATENED IN NSW	THREATENED NATIONALLY
<i>Pteropus poliocephalus</i>	Grey-headed Flying Fox			V	V
<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat			V	
Reptiles					
<i>Demansia psammophis</i>	Yellow-faced Whip Snake	X			
<i>Morelia spilota</i> ssp. <i>spilota</i>	Diamond Python	X			
<i>Phyllurus platurus</i>	Southern Leaf-tailed Gecko	X	X		
<i>Varanus rosenbergi</i>	Heath Monitor	X		V	
Frogs					
<i>Heleioporus australiacus</i>	Giant Burrowing Frog			V	V
<i>Pseudophryne australis</i>	Red-crowned Toadlet			V	
Birds					
<i>Accipiter fasciatus</i>	Brown Goshawk	X			
<i>Calyptorhynchus lathami</i>	Glossy-black Cockatoo			V	
<i>Centropus phasianinus</i>	Pheasant Coucal		X		
<i>Glossopsitta pusilla</i>	Little Lorikeet			V	
<i>Lathamus discolor</i>	Swift Parrot			E	E
<i>Lopholaimus antarcticus</i>	Topknot Pigeon		X		
<i>Ninox connivens</i>	Barking Owl			V	
<i>Ninox strenua</i>	Powerful Owl			V	
<i>Ptilinopus magnificus</i>	Wompoo Fruit-dove			V	
<i>Ptilinopus superbus</i>	Superb Fruit-dove			V	
<i>Tyto novaehollandiae</i>	Masked Owl			V	

SPECIES	COMMON NAME	LOCALLY SIGNIFICANT	REGIONALLY SIGNIFICANT	THREATENED IN NSW	THREATENED NATIONALLY
<i>Xanthomyza phrygia</i>	Regent Honey Eater			E	E, Migratory

Legend:

V = Vulnerable, E = Endangered

2.3 CULTURAL HERITAGE

Ridgelines, such as at Ingleside and the spur down to the coast that provides the current route of Mona Vale Road, originally served as important movement corridors for Aboriginal People (Gondwana Consulting 2005).

An abundance of Aboriginal heritage exists on the escarpment and surrounding land including many rock carvings depicting people and animals, information relating to hunting and water sources. In addition there are paintings in rock overhangs and other signs of the importance of the area to Aboriginal people.

Aboriginal Heritage within the Reserve is largely undocumented and has the potential to be impacted.

2.4 RECREATIONAL USE AND FACILITIES

Recreational activities at Ingleside Chase Reserve currently include walking/running, dog walking, mountain biking, and bird watching. Both mountain biking and dog walking are currently prohibited activities in the Reserve. Council is considering allowing mountain biking subject to approval of a plan for a sustainable bike path and having no environmental impact. These activities are generally confined to the more utilised walking trails through the Reserve, however there are many informal tracks crisscrossing the Reserve.

The existing informal track network provides access from the rural areas of Ingleside through the Reserve to both Mater Maria Catholic College and further south through Irrawong Reserve, the Warriewood Wetlands and ultimately to Warriewood Shopping Centre. There is no formal access to the northern section of the Reserve.

2.5 EXISTING BUSHFIRE ASSETS AND ADVANTAGES

The Reserve can be accessed by vehicles from Mona Vale Road to the north, Wesley Street to the south and Ingleside Road to the west however, access within/through the Reserve itself is only possible by foot.

Water supply hydrants are available along the surrounding public roads and water fill points for both fixed wing and helicopters is available in the local area. Hydrants have not been installed within the Reserve and no other supply of water for fire fighting exists within the Reserve.



Figure 1: Regional Location of the Reserve

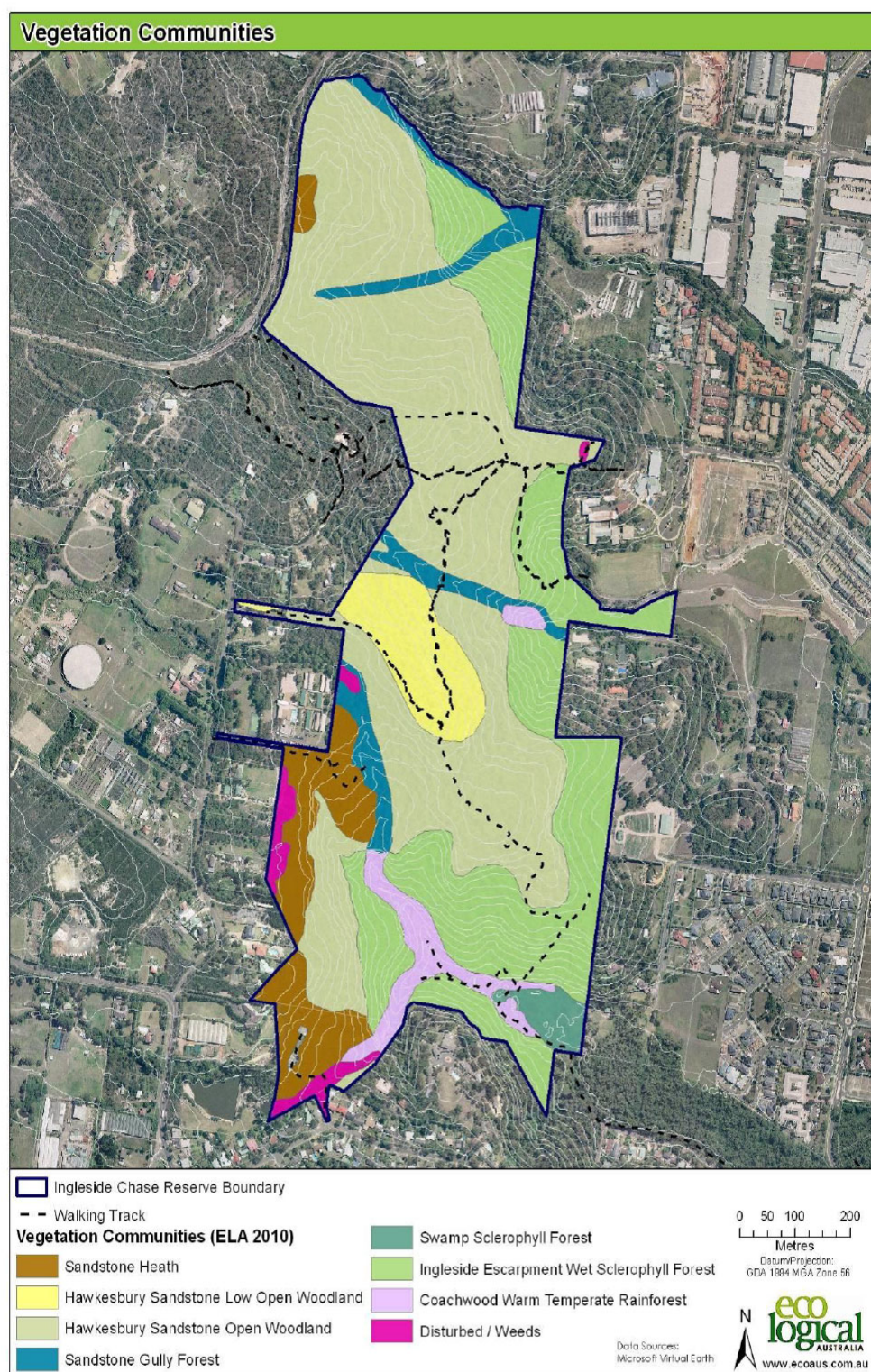


Figure 2: Vegetation Communities (ELA 2010)

© ECO LOGICAL AUSTRALIA PTY LTD

3 BUSHFIRE RISK ANALYSIS

This chapter describes the bushfire risks to the Reserve through an examination of the fire history, a field based analysis of the bushfire hazard, calculation of potential head fire intensity and an analysis of assets at risk.

3.1 BUSHFIRE HISTORY

The entire Ingleside Chase Reserve was burnt by wildfire in 1994, which has resulted in a relatively even age class of vegetation across the Reserve. It is likely that a number of sheltered gullies, particularly those dominated by Coachwood Warm Temperate Rainforest would have escaped the fire due to a number of factors including aspect and moisture. Two hazard reduction burns have been undertaken within the confines of the Reserve by the RFS since 1994. One of these burns was along the boundary of the Uniting Church Conference Centre in the south of the Reserve in 2004. In 2005, a hazard reduction burn was undertaken in the central portion of the Reserve at Ingleside Park. One small wild fire covering only half a hectare occurred in 2003 in the centre of the Reserve. Bushfire history is shown in Figure 3.

3.2 BUSHFIRE HAZARD

3.2.1 Terrain

The steep and variable terrain within and adjoining the Reserve will have a major effect on fire behaviour. This will include the rate and direction of fire spread, fire intensity, spotting distances along with other attributes of fire behaviour. The steepness of a slope, direction of fire spread on the slope, aspect of the slope and changes in slope direction not only strongly affect wildfire behaviour, but also the selection and risk of fire suppression and mitigation strategies.

Slope was assessed across the Reserve using 1m contours (Figure 4). Ingleside Chase Reserve is situated on the Ingleside escarpment which rises steeply from the floor of the Warriewood Valley to a height of over 120m AHD at Ingleside. Ingleside Chase Reserve is relatively steep with average slopes of 40°, however slopes range from less than 10° to over 60° in some areas. The topography of the Reserve is characterised by a series of relatively flat sandstone benches, steep slopes and sandstone cliffs. Cutting through the landscape are a series of steep gullies associated with the northern and southern arms of Mullet Creek in the south and Narrabeen Creek in the north. The predominant aspect is to the east.

3.2.2 Vegetation and Fuel

Generally the fire hazard and the intensity of the fire will increase the more flammable and dense the fuel. Vegetation formations across the site fall into the categories of 'Dry sclerophyll forests', 'Wet sclerophyll forests', 'Forested Wetland' 'Rainforest' and 'Tall Heath' (PBP 2006, from Keith 2004).

Likely climax fuel loads have been estimated across the Reserve based on a brief field based assessment and vegetation community mapping (Figure 6).

3.2.3 Potential Fire Intensity

Potential intensity of a bushfire under extreme weather conditions has been mapped for the Reserve using a Head Fire Intensity (HFI) model (Figure 7). This model uses the following parameters to identify the potential bushfire intensity:

- terrain (slope and aspect);
- fuel (vegetation);
- likely weather scenario and direction of travel (from the North through to South West direction);
- Forest Fire Danger Index (FFDI of 100)

The HFI model calculates potential fire intensity using the McArthur (1962) fire intensity formulae. A model has been provided to display the potential fire intensity under north through to south-westerly winds.

The model of potential fire intensity shows that the greatest intensity is possible on the steeper forested western facing slopes which are limited within the Reserve as the dominant aspect is easterly. Generally, the steep eastern facing slopes are shielded from the north to south-westerly winds and fires on these slopes are potentially of much lower intensity.

It is important to note that the model of potential fire intensity does not provide an indication of ignition risk or the rate of spread of a bushfire.

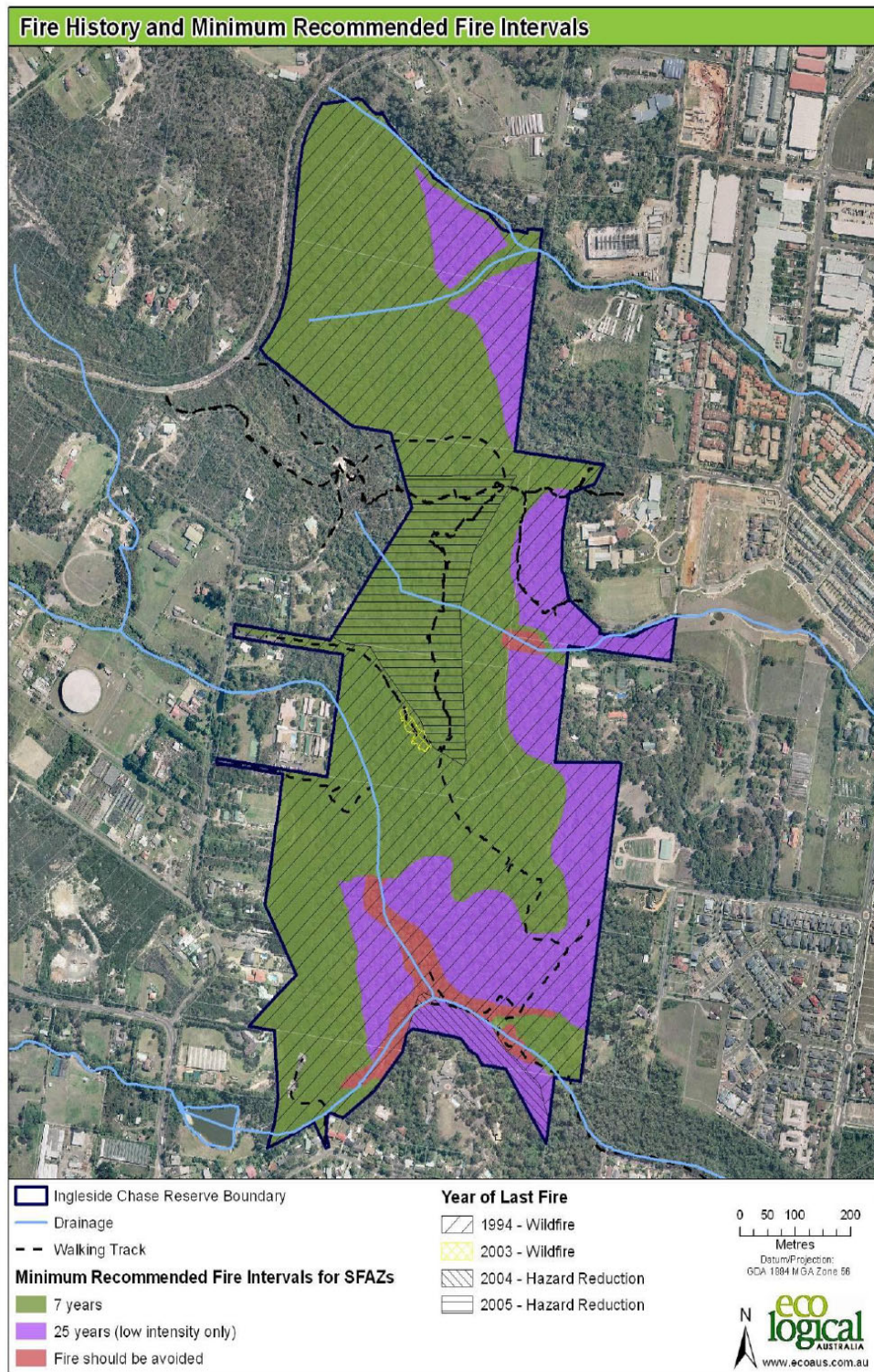


Figure 3: Fire History and minimum burn intervals

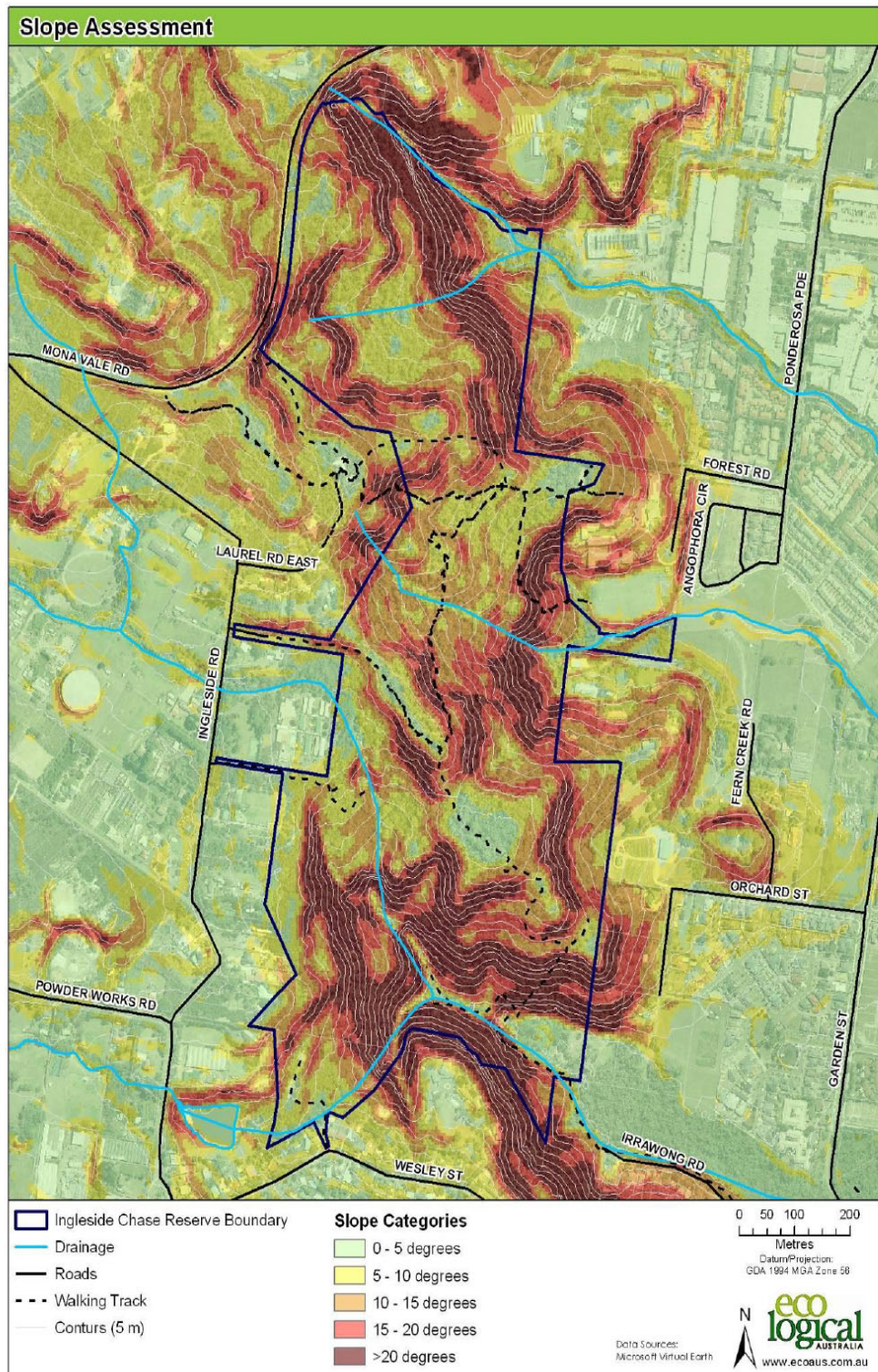


Figure 4: Slope Assessment

© ECO LOGICAL AUSTRALIA PTY LTD

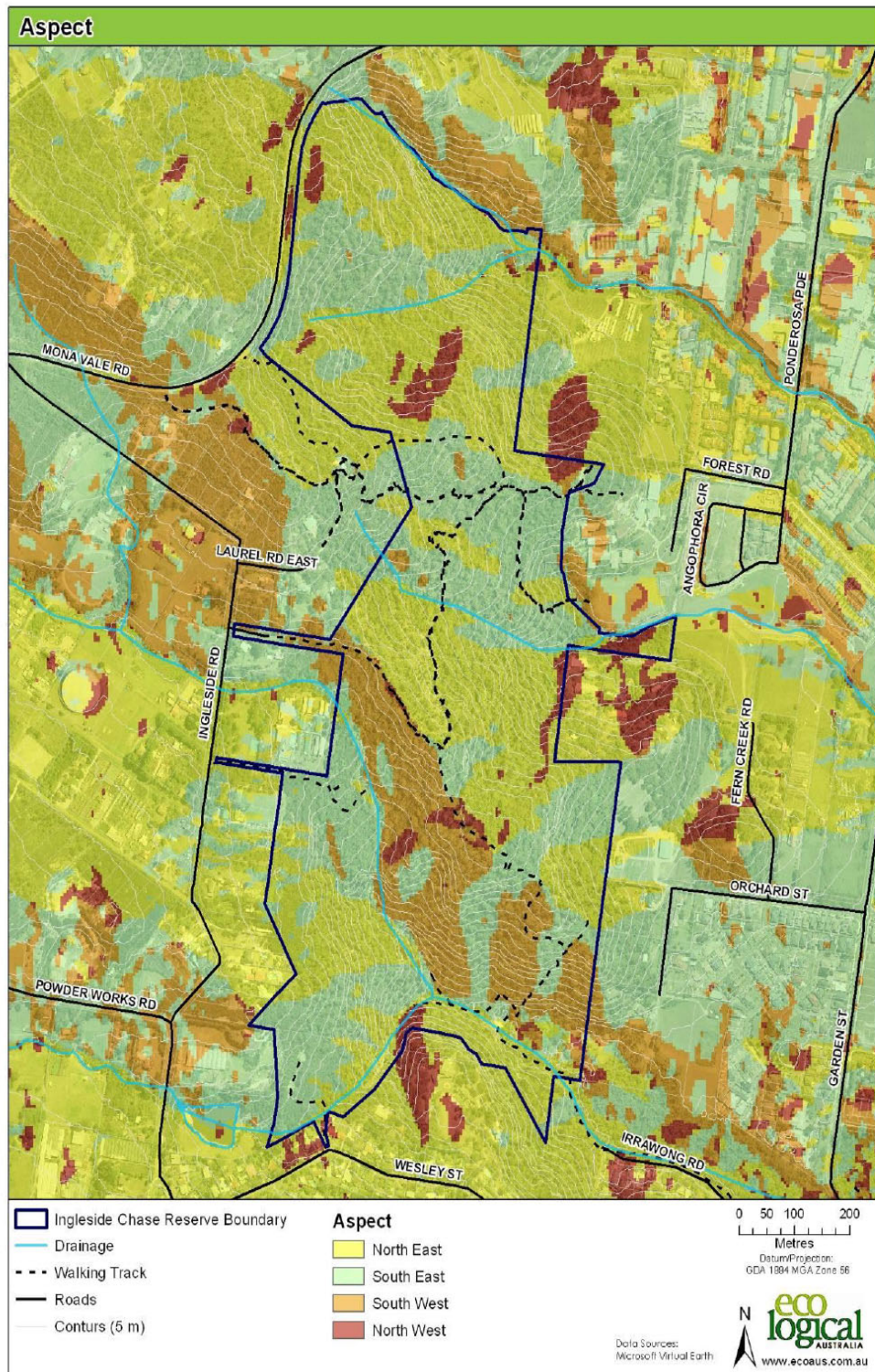


Figure 5: Aspect Assessment

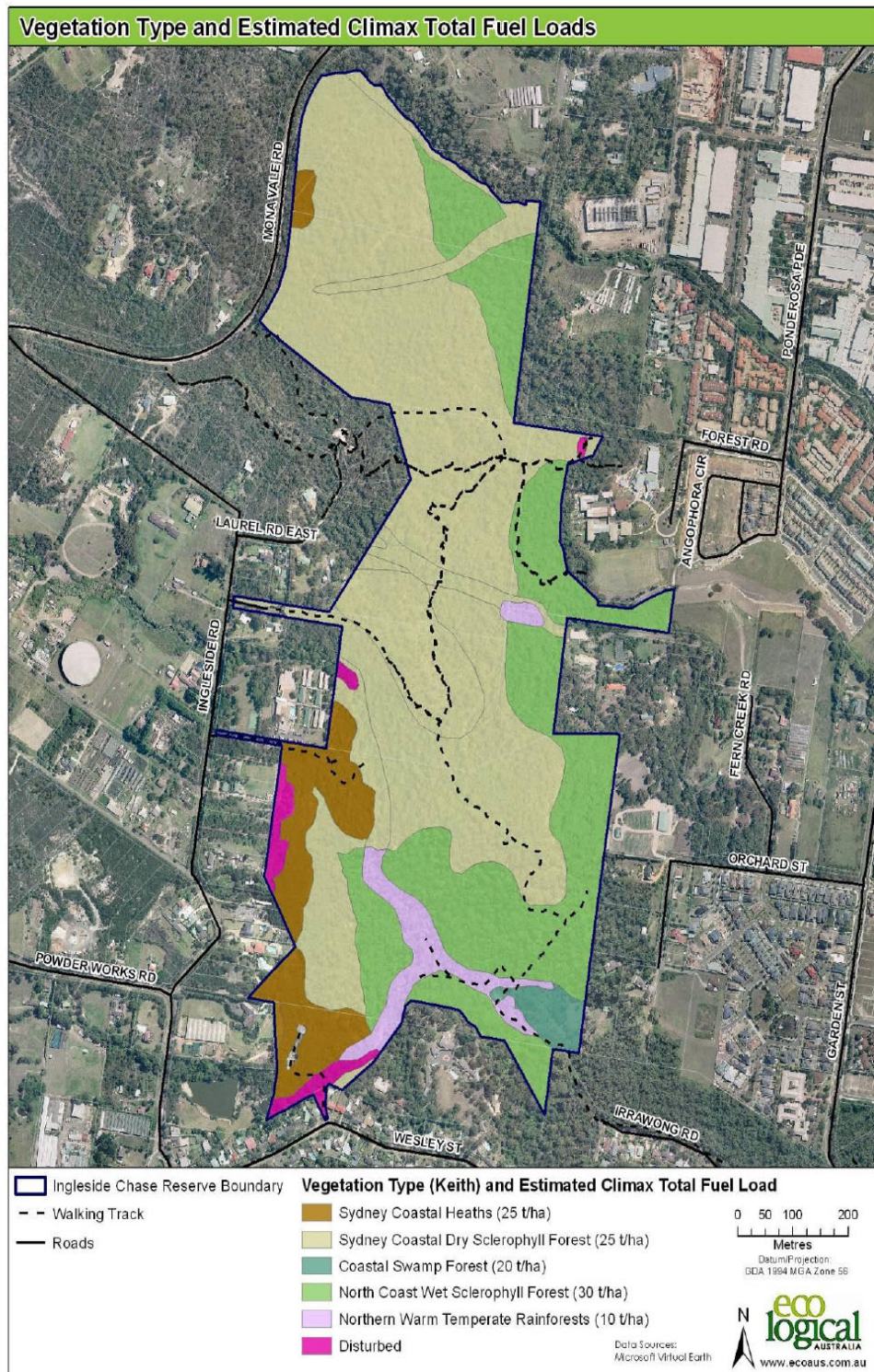


Figure 6: Bushfire Vegetation Formations

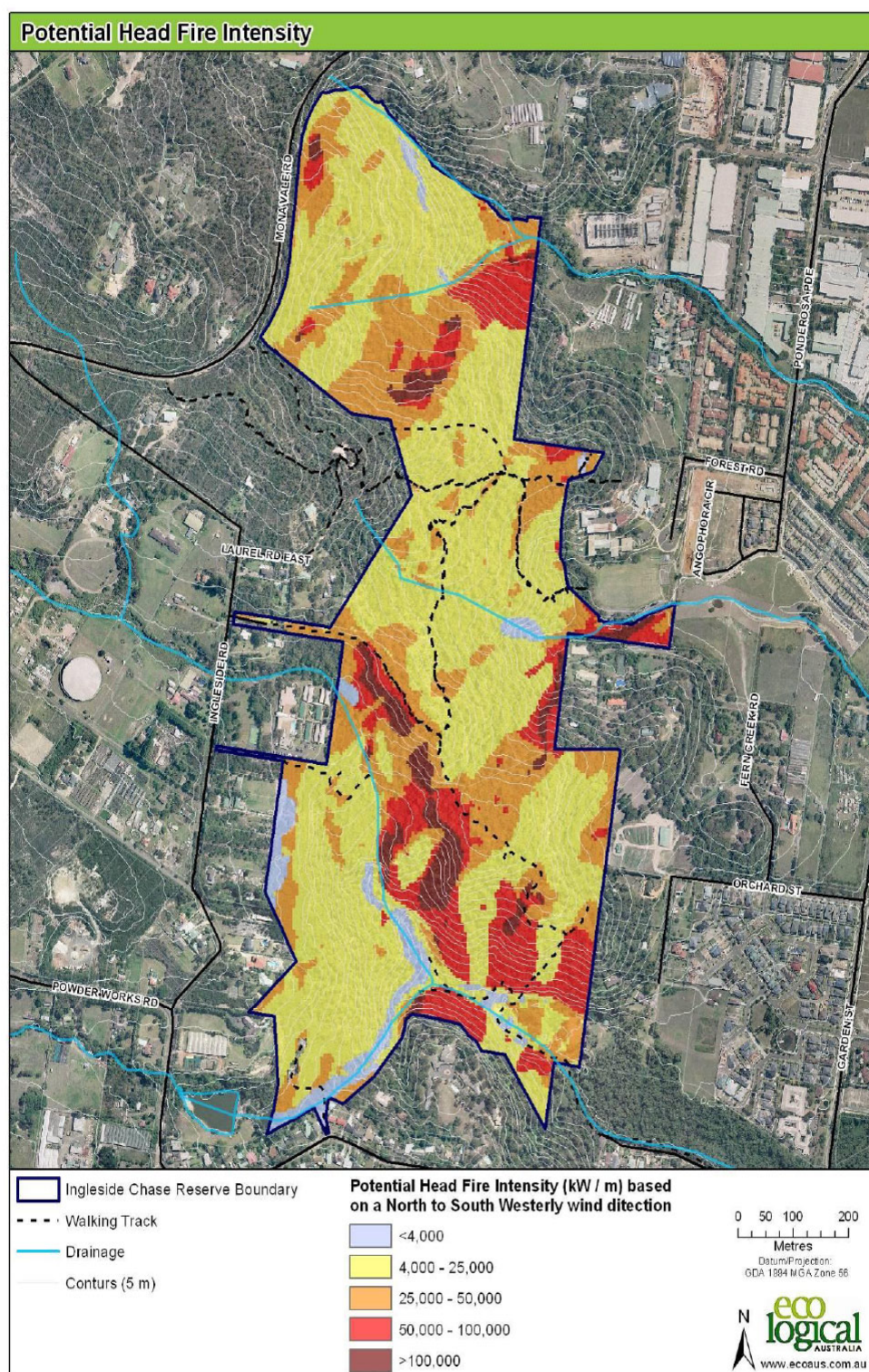


Figure 7: Potential Head Fire Intensity

3.3 ASSETS AT RISK

Bushfire as well as activities for bushfire management and suppression all have the potential to adversely impact built and environmental assets in and around the Reserve. Damage or destruction of these assets may have major economic, social, and environmental consequences.

3.3.1 Built Assets

There are no assets requiring specific bushfire protection located within the Reserve.

Residential and community development surrounds the Reserve, and as such, built assets that are typical for these types of development e.g. dwellings, halls, classrooms, decks and sheds adjoin the Reserve. Some of these structures have little setback from the Reserve and are therefore more vulnerable to the impact of bushfire.

The most obvious threat to built assets is the impact from the elements of bushfire attack, being flame contact, wind, radiant heat, smoke and burning debris. Evidence indicates ember attack is responsible for most bushfire related house fires (NSWRFS 2001 p.41). However strong winds generated by severe bushfires may drive embers into vulnerable areas of a building, preheat and dry fuel ahead of a fire, lift roofing, damage windows, and extend flames along a more horizontal plane closer to building elements. Embers can cause spotting well in advance of a bushfire and provide piloted ignition to building elements. Radiant heat can impair firefighting operations, the health of residents and the integrity of building elements. Flames restrict firefighting operations, provide piloted ignition to building elements and threaten the health of residents and their capacity to evacuate the area (NSW RFS 2001 p.44). Smoke may affect the health of nearby residents, especially the elderly and those with or susceptible to respiratory disorders.

Effective bushfire protection planning should aim to prevent flame contact, reduce radiant heat to below the ignition thresholds for various elements of a building, to minimise the potential for embers to cause ignition, and reduce the effects of smoke on residents and firefighters.

Unfortunately there are some situations where adjoining structural assets have been constructed in the past and are in close proximity to the Reserve and have not been built to withstand the expected level of bushfire attack. These will require some specific mitigation measures.

Of particular concern is a dwelling on Ingleside Road that adjoins the south west boundary of the Reserve, Mater Maria College in the east, the Uniting Church Conference Centre in the south and the Sydney Conference and Training Centre in the west as they are at greatest risk from bushfire having little setback from the bushfire hazard. The bushfire risk management actions in Section 4 aim to mitigate the risk to these vulnerable assets.

3.3.2 Natural Heritage

Natural heritage assets are also at risk from bushfire and bushfire management and this is discussed below.

Fire regimes are the primary determinant of effects of bushfire on natural heritage. A fire regime is determined by fire interval, fire intensity, season of burn and pattern of burning. Each of these four factors combine to determine the effect of an individual bushfire and a sequence of bushfires on the natural environment.

In March 2000, the Scientific Committee, established through the *Threatened Species Conservation (TSC Act) Act 1999*, made a Final Determination to support a proposal to list "High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition" as a Key Threatening Process on Schedule 3 of the Act. The threat of high frequency fire occurs in all fire-prone

habitats in New South Wales, although the likelihood of occurrences of high frequency fire is currently greatest in coastal and tablelands habitats and in urban areas.

One of the main threats to Swamp Sclerophyll Forest is frequent burning which reduces the diversity of woody plant species. Therefore, to conserve this community, fire management within the Reserve must aim to avoid the incidence of high frequency and high intensity fires and ensure that fire is predominantly within regimes that promote biodiversity and the conservation of threatened species and communities (refer to Section 5.2).

Bushfire, bushfire suppression and bushfire management activities also have the potential to exacerbate weed problems. Weed invasion is a threatening process to the Swamp Sclerophyll Forest and a general problem for many of Sydney's urban Reserves. Particular problem species that threaten the biodiversity of the Reserve are, Asparagus Fern, Cobblers Pegs, Panic Veldt grass, Lantana, Large Leaved Privet, Small Leaved Privet, Mickey Mouse Plant, Buffalo Grass and Wandering Jew. These species will respond well to the exposed, nutrient rich, and competition free conditions following fire. Bushfire management activities may allow these and other weeds to penetrate new areas and increase the density of existing infestations. As such, appropriate management before and after fire is required to mitigate this risk. This is discussed later in section 5.

Another potential threat from bushfire is damage resulting from fire suppression activities. This threat includes damage to vegetation and soil through vegetation clearing, the use of heavy vehicles and the creation of new tracks as fire control lines. New tracks have the potential to become vectors for problems associated with access such as weed and pest invasion, erosion and fire ignition. A community engagement strategy would be beneficial to educate residents encroaching into the Reserve under the pretence of bushfire hazard reduction, as this can lead to illegal clearing.

3.3.3 Cultural heritage

There are numerous Aboriginal heritage items within the Reserve. This plan has adopted a precautionary approach and contains measures and guiding principles to protect aboriginal sites within the Reserve. These measures are detailed within Section 5.4 of this report.

There are no known significant non-Aboriginal cultural heritage sites at risk from bushfire within or adjacent to the Reserve.

3.4 BUSHFIRE RISK ASSESSMENT

Based on the analysis provided throughout this chapter and summarised in Table 5, Table 6 to Table 9 assess the risks for bushfire to people, property (infrastructure, assets, private property), environmental assets, and cultural assets. The methodology adopted is that given in AS4360 (SAI Global 2004) whereby a risk classification scheme is developed through qualitative scales of likelihood and of consequence.

This assessment adopts a definition of likelihood based on likelihood of occurrence over the currency of the plan. The scale of likelihood is shown below and is based on AS4360. Values have been allocated to the likelihood descriptors on a scale of 1 to 5 with 1 being extremely rare (extremely unlikely) and 5 being almost certain, as outlined in Table 2 below.

Table 2: Likelihood Description

Likelihood Descriptor	Description
Almost certain (5)	The event is expected to occur in most circumstances during the currency of the plan
Likely (4)	The event will probably occur in most circumstances during the currency of the plan
Possibly (3)	The event might occur at some time over the currency of the plan
Unlikely (2)	The event could occur at some time over the currency of the plan
Rare (1)	The event may occur only in exceptional circumstances

The scale of consequence is shown below. Values have been allocated to the consequence descriptors on a scale of 1 to 5 as outlined in Table 3 below.

Table 3: Consequence Description

Consequence Descriptor	Description
Huge (5)	Death, huge financial loss, irreversible widespread environmental damage
Major (4)	Extensive injury, major financial loss, irreversible local environmental damage
High (3)	Medical treatment, high financial loss, Long-term environmental damage
Medium (2)	First aid, medium financial loss, Short-term environmental damage
Low (1)	No injuries, low financial loss, minor environmental impact

Rating codes and the level of risk were then calculated by multiplying likelihood levels and consequence levels with the rating determined as per the scale outlined in Table 4 below.

Table 4: Risk Rating

Level of risk	Risk rating
0 - 4	Insignificant
5 - 9	Minor
10 - 14	Moderate
15 - 19	Major
20 - 25	Extreme

Table 5 below provides an analysis of the risk factors.

Table 5: Analysis of risk factors

Risk Factor	Analysis of the risk factor
1. The likelihood of human and natural fire ignitions, as influenced by time, space and demographics.	Natural ignitions originating within the Reserve are unlikely. Historically the Reserve has been ignited from wildfires approaching from the west under extreme fire weather conditions. Human induced ignitions are known to be relatively more frequent at the urban / bushland interface, and are possible within the Reserve.
2. The potential spread and severity of a bushfire, as determined by fuel, topography and weather conditions.	The majority of surrounding built assets are situated upslope from the hazard. The Reserve is mostly shielded from strong north-westerly winds. The easterly aspect of the Reserve has contributed to the growth of more mesic vegetation communities. The slopes on average are steep. The vegetation formations are considered to provide high fuel loads.
3. The proximity of assets vulnerable to bushfire and likely bushfire paths.	Residential dwellings and other built structures directly adjoin the Reserve. Although the majority of these assets have some set back from the Reserve boundary and most backyards are managed appropriately, in a fuel reduced state. Further, there is a low density of vulnerable assets in the east and south of the reserve (expected fire path). The Endangered Ecological Community <i>Swamp Sclerophyll Forest</i> covers part of the Reserve. Inappropriate fire regimes may threaten this community.
4. The vulnerability of assets, or their capacity to cope with, and recover from bushfire.	Dwellings may not have been constructed in accordance with AS 3959 - <i>Construction of Buildings in Bushfire Prone Areas</i> . Fire may impact threatened communities and exacerbate weed and pest invasion.

The risk assessments presented in Table 6, Table 7, Table 8 and Table 9 indicate that, over the currency of the plan, threats to life, property, heritage and environmental attributes of the Reserve are a minor risk and will require appropriate risk management.

Table 6: Bushfire Risk Assessment - Life

Vulnerability Criteria	Consequence (A)	Likelihood (B)	Level of risk (A x B)	Rating
Populated area where the combination of threat and vulnerability expose a community to a significant likelihood of fatalities and major injuries.	5	1	5	Minor
Less likely to be fatalities or major injuries due to the presence of attributes which afford some protection.	4	2	8	Minor

Vulnerability Criteria	Consequence (A)	Likelihood (B)	Level of risk (A x B)	Rating
Loss of life or major injury highly unlikely. Medical/hospital treatment may be required.	3	3	9	Minor
Minor injuries only - first aid treatment. No major injuries or fatalities likely.	2	4	8	Minor
No injuries or fatalities likely.	1	5	5	Minor

Table 7: Bushfire Risk Assessment - Property (infrastructure, assets and private property)

Vulnerability Criteria	Consequence (A)	Likelihood (B)	Level of risk (A x B)	Rating
Extensive and widespread loss of property. Major impact across a large part of the community and region. Long term external assistance required to recover.	4	1	4	Insignificant
Localised damage to property. Short-term external assistance required to recover.	3	2	6	Minor
Short-term damage to individual assets. No external assistance required to recover.	2	3	6	Minor
Inconsequential or no damage to property. Little or no disruptions to the community.	1	4	4	Insignificant

Table 8: Bushfire Risk Assessment - Environment

Vulnerability Criteria	Consequence (A)	Likelihood (B)	Level of risk (A x B)	Rating
Local extinctions of native species.	4	1	4	Insignificant
Irreversible damage to the environment.	4	2	8	Minor
Long-term damage to the environment over a landscape scale.	3	3	9	Minor
Short-term, localised damage to the environment.	2	4	8	Minor
Minor impact on the environment.	1	5	5	Minor

Table 9: Bushfire Risk Assessment - Cultural sites

Vulnerability Criteria	Consequence (A)	Likelihood (B)	Level of risk (A x B)	Rating
Loss and/or irreversible damage to sites or objects of national, state or regional significance.	5	1	5	Minor
Extensive damage to sites or objects of national, state, regional or local significance requiring major external assistance.	4	1	4	Insignificant
Short-term damage to individual objects. Short term external assistance required to repair.	3	2	6	Minor
Short-term, localised damage to a small number of sites, objects and the cultural landscape.	2	2	4	Insignificant
Minor impact on sites or items which are repairable with little to no external assistance.	1	3	3	Insignificant

4 BUSHFIRE RISK MANAGEMENT

Bushfire risk management should aim to reduce both the likelihood and consequences of bushfires. Broad strategies to achieve this aim are summarised in Table 10 and detailed in the following subsections.

Implementation of these strategies provides an effective way of minimising the risk to natural assets within the Reserve and residential areas adjoining the Reserve. However as no development in a bushfire prone area can be guaranteed to be entirely safe from bushfires, providing an acceptable level of protection and a tolerable residual risk, is to some extent a compromise between the level of threat, inconvenience, dangers, ability or practicality of implementation and costs (financial and environmental) involved in providing the protection. To create this balance and minimise adverse impacts on the Reserve, a 'joint responsibility' for fire protection is seen as essential between Council, the Rural Fire Service and local residents. This can be facilitated by proposed bushfire extension programs (Section 4.6) and development controls.

Table 10: Bushfire risk reduction strategies and actions

Strategy	Actions
Avoid the risk	<ul style="list-style-type: none"> ▪ building and development controls and prohibiting certain developments where appropriate.
Reduce the hazard	<ul style="list-style-type: none"> ▪ reduce the level of fuel available to burn in a bushfire. ▪ manual clearing of bushfire fuels and provision of asset protection zones.
Reduce unplanned ignition	<ul style="list-style-type: none"> ▪ local bushfire education and extension programs. ▪ communications regarding Total Fire Ban days and burn permits.
Reduce vulnerability	<ul style="list-style-type: none"> ▪ establishment and maintenance of Asset Protection Zones for the protection of built assets in and around the Reserve. ▪ development and implementation of cooperative and complimentary fire management strategies with neighbours and adjoining residences.
Understand and accept residual risk	<ul style="list-style-type: none"> ▪ manage with early detection and fire suppression operations. ▪ maintenance of existing access routes to facilitate suppression of fires.

4.1 FIRE MANAGEMENT UNITS

Management zones are based on the location of assets, topography, landuse and potential bushfire hazard (Section 3 above) and risk (Section 4 above). Management zones are separated into the following three categories based on the Bushfire Environmental Assessment Code (BEAC) (NSW RFS 2006) and the Warringah Pittwater Bushfire Risk Management Plan (WPBFMC 2010):

- Asset Protection Zone (APZ)
- Strategic Fire Advantage Zone (SFMZ)
- Land Management Zone (LMAZ)

Zones have been identified and mapped across the Reserve to provide a planning framework upon which the protection of life, property and the environment can be improved. These zones are shown in Figure 3 and described in Sections 4.2, 4.3 and 4.4 below.

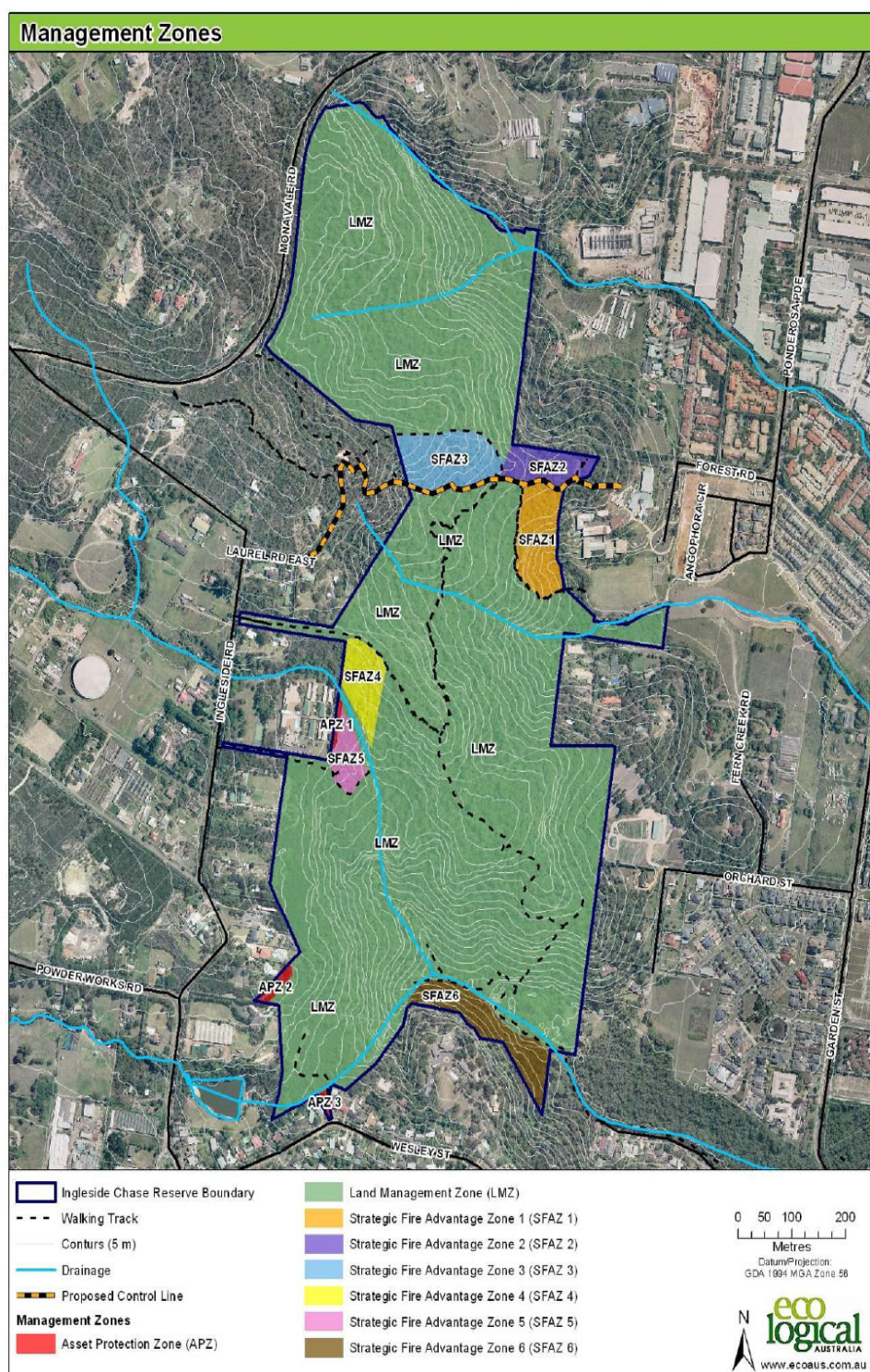


Figure 8: Management Zones

© ECO LOGICAL AUSTRALIA PTY LTD

4.2 ASSET PROTECTION ZONES

An Asset Protection Zone (APZ) is a buffer area between a bushfire hazard and an asset which minimises the impact of fire on that asset. The APZ should be maintained so that bushfire fuels are minimised. Table 11 below describes the intended aim, specifications and management of APZs within the Reserve.

Table 11: Asset Protection Zone

Asset Protection Zone Details	
Aim	<ul style="list-style-type: none"> To minimise bush fire impacts on assets 'at risk' To provide a fuel reduced zone around the asset in question to protect from direct flame attack. To enable the safe use of Direct Attack suppression strategies within the zone.
Specifications	<ul style="list-style-type: none"> Fuel reduced area through sensitive manual techniques (see Section 4.2.1 below).
Management	<ul style="list-style-type: none"> No vegetation removal or thinning allowed without Environmental Impact Assessment and authorisation. Flagging tape (or an alternative method of demarcation) to be used to mark the limit of APZ before any works are undertaken. Only Council approved contractors to undertake APZ management works on the Reserve.

The threat from flame contact and radiant heat to property, assets and thereby persons in and adjacent to the Reserve can be significantly reduced by the continued maintenance of APZs at the three (on-Reserve) locations displayed within Figure 8. These already cleared APZs include:

- A 20m APZ around an existing dwelling on Ingleside Road;
- A 20m APZ around the Sydney Conference and Training Centre; and
- An already cleared APZ between two properties at the Reserve entrance off Wesley Street.

APZ dimensions have been determined with consideration of:

- the Bush Fire Environmental Assessment Code (NSW RFS 2006),
- a field based assessment of bushfire hazard affecting neighbours of the Reserve,
- the existing setback, and
- adjusted to suit the bushfire threat and risk to the assets.

4.2.1 Vegetation / Fuel Management Prescription within Asset Protection Zones

The following guidelines are intended for APZ maintenance within the Reserve. However, the guidelines provide principles that should also be encouraged on adjoining private property.

- Existing larger trees (at least 200 mm in diameter measured at chest height) can remain within the APZ provided that;
- No part of their crown occurs within 5 m of any building (significant habitat trees can remain 2 m out from the building line);
- Canopies are discontinuous, i.e., canopies are separated by at least 2 m;
- They are smoothed barked species or, if rough barked, are maintained free of hanging bark and other ladder fuels;
- Low branches holding fine fuel (i.e. leaves and twigs of <6mm in diameter) are pruned to 2 m from the ground;
- Trees are to be hand-removed leaving stumps cut at ground level and where accessible, stumps are to be 'ground' to just below soil level. Stumps of all species that have the capability of resprouting are to be treated with an appropriate herbicide immediately after the cut is made;
- Smaller trees (i.e. less than 200 mm in diameter), shrubs, fallen trees and tree-limbs and stumps are to be removed and continuously suppressed;
- All shrubs and tree saplings are to be removed off-site or mulched, but all native grasses within the Reserve are to remain in-situ wherever possible; and
- A minimal ground fuel is to be maintained to include either mown grass or rock of less than 4 tonnes per hectare of fine fuel (i.e. material of <6 mm in diameter).

4.3 STRATEGIC FIRE ADVANTAGE ZONES

Table 12 below describes the intended aim, specifications and management of the SFAZs within the Reserve.

Table 12: Strategic Fire Management Zones

Strategic Fire Advantage Zone Details	
Aim	<ul style="list-style-type: none"> • To provide a strategic fuel reduced zone around the key 'at risk' areas. • To provide strategic areas of fire protection advantage which will reduce the speed and intensity of bush fires, and reduce the potential for spot fire development. • To aid containment of wildfires to existing management boundaries.

	<ul style="list-style-type: none"> To improve the likelihood and safe use of Parallel Attack suppression strategies within the zone and/or Indirect Attack (back burning) in high to very high fire weather conditions within the zone.
Specifications	<ul style="list-style-type: none"> Fuel managed area through implement of hazard reduction burns.
Management	<ul style="list-style-type: none"> Suppress all fires. Long term weed suppression. Hazard reduction burns at intervals of 5-10 years.

4.3.1 Proposed Burn Plan

The fuel loads within designated SFAZs will be managed through low intensity hazard reduction burns to be undertaken in collaboration with the RFS. A proposed burn plan has been developed based on an assessment of the recommended fire intervals for SFAZs (Table 15), fire history (Figure 3) and the previous interval between burns (Figure 9). The proposed burn plan is shown in Table 13 below.

Table 13: Proposed SFAZ Burn Plan

Proposed Burn Year	SFAZ Number	Comments
2012	1	This burn should be contained between the Mata Maria College in the east, the proposed control line in the north and the walking track in the south and west.
2013	3	This burn should be contained between the proposed control line in the south and the informal bike track in the north. If possible the burn should extend off-Reserve into the property to the west (through collaboration with the land owner).
2014	2	This burn should extend approximately 100m to the north of the proposed control line. If possible the burn should extend off-Reserve into the property to the east (through collaboration with the land owner).
2015	5	This burn should be contained between the Sydney Conference and Training Centre, the walking track to the south and the creekline to the north east. Care should be taken to not extend the burn into the riparian zone.
2016	6	This burn should extend to the north from the Uniting Church Conference Centre. Care should be taken not to burn into the rainforest vegetation at the base of the gully.
2017	4	This burn should be contained between the walking track to the north and the creekline to the south. A hand tool control line will need to be constructed along the western boundary of the burn to contain it's eastern extent. Care should be taken to not extend the burn into the riparian zone.

SFAZs 2 and 3 have been strategically located to provide fuel reduced strips that will work in conjunction with a proposed control line running east-west through the Reserve (Figure 8). The remaining SFAZs have been located in proximity to specific 'at risk' assets.

Wherever possible, fire regimes within the SFAZs are within the accepted biodiversity thresholds for each vegetation community as shown in Table 15. Notable exceptions are SFAZ 1 and SFAZ 6 which are within Wet Sclerophyll Forest where a burn interval of 5-10 years is well below the recommended burn interval for this community of 25 years. The proposal to manage as SFAZ these two areas of Wet Sclerophyll Forest at intervals below the guideline for biodiversity conservation allows larger parts of the Reserve to be burned less frequently and will strategically locate the best life and property protection strategies to where they will be effective under the widest range of fire attack scenarios. From a regional perspective, the impacts of low intensity fire at a frequency below the lower threshold guidelines restricted to a small area of the Wet Sclerophyll Forest are not considered significant. A long term change to the composition of the understorey species within the Wet Sclerophyll Forest is likely to occur, however no change to the overstorey species composition is likely to result.

We note that the burn strategy we have recommended is not consistent with the RFS Warringah Pittwater Bushfire Risk Management Plan (2010), where the entire Reserve was assigned as SFAZ, thus giving potential justification to burn the entire Reserve regularly. The following justifies the zoning proposed:

- Maximised life and property protection and conservation of biodiversity cannot be achieved by widespread regular burning. The Reserve is not large enough and does not have sufficient and appropriate control lines to establish the fine grain mosaic burn pattern that is required to effectively reduce risk to neighbours at the same time as keeping fire intervals within biodiversity thresholds; and
- As the above strategy is not feasible, the next best strategy to maximize the conservation of biodiversity within the Reserve is to restrict some impacts from fire management works to small areas so that the remainder of the Reserve is not under pressure to be regularly burned and older fire age classes can be maintained and higher value and fire sensitive communities can be better protected.

Based on our assessments and given the above, we believe that the approach recommended is appropriate for the Reserve and adequate to mitigate the identified risks whilst minimising biodiversity impacts (and thus being consistent with the Plan of Management (ELA 2010) for the majority of the Reserve).

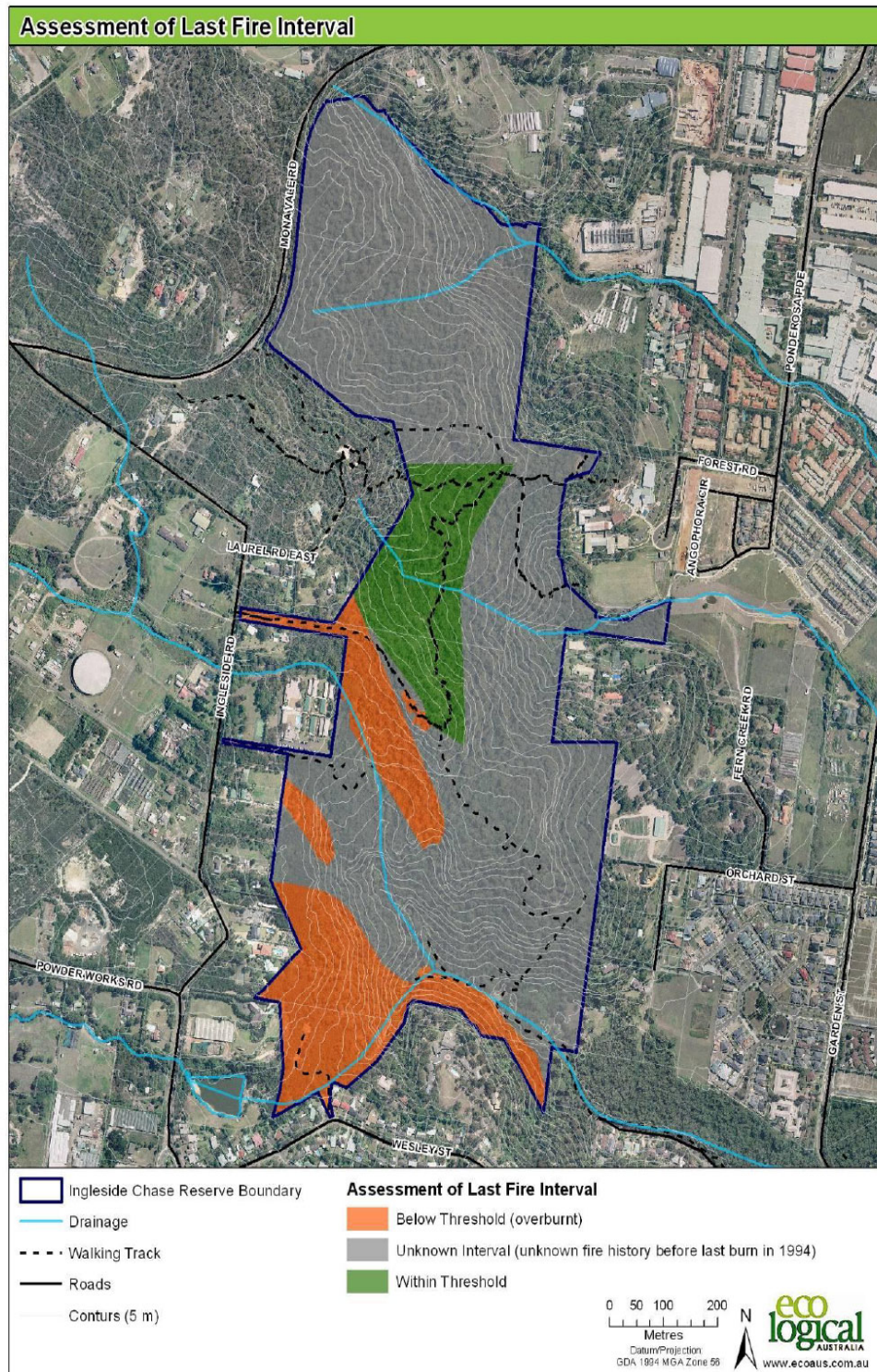


Figure 9: Fire interval before last burn

4.4 LAND MANAGEMENT ZONES

Table 14 below describes the intended aim, specifications and management of LMZs within the Reserve.

Table 14: Land Management Zones

Land Management Zones	
Aim	<ul style="list-style-type: none"> To manage land primarily for conservation.
Specifications	<ul style="list-style-type: none"> Area managed primarily for environmental purposes.
Management	<ul style="list-style-type: none"> Management in line with Ingleside Chase Reserve Plan of Management (ELA 2010). Prescribed fire to be implemented for the purposes of ecological burns above minimum recommended fire interval.

No specific burns have been proposed within the LMZ for the life of this plan as all communities are below the maximum threshold and recent burns (and proposed burns within the SFAZs) have created a satisfactory mosaic of age classes. The following guidelines for the management of biodiversity should be considered:

- The fire regime for each vegetation community should be maintained within biodiversity thresholds (shown in Table 15), as far as is possible.
- In areas that have not experienced fire for a period that exceeds the biodiversity thresholds (in the future), use of fire will be considered. Any burn is to involve only a portion of the vegetation community to ensure that a mosaic of different age groups is created. Mosaic burning is an approach that involves using patches of small, low-intensity fires to control fuel levels in the vegetation understorey, over varying intervals of time. This achieves a variety of life stages for flora and fauna habitat. The mosaic approach to burning also allows for fauna in the area to take refuge and escape fire. It is recognised that this may mean that some vegetation communities may extend beyond their biodiversity thresholds temporarily.
- If fire frequency becomes high in the future, and the biodiversity thresholds are likely to have been exceeded, fire will be excluded.
- Some activities involved in the control of wildfire may have an adverse effect on biodiversity. Examples include use of heavy machinery to construct control lines, or use of fire retardant chemicals. This potential damage should be avoided wherever possible, using guidelines provided in the BEAC and in Section 5 below.
- In riparian areas, mechanical work must be excluded from all vegetation adjacent to a water body as defined in the BEAC.

- Prescribed burning is not permitted in vegetation adjacent to a water body (i.e. the riparian buffer zone) within 5 m, and should be excluded from rainforest vegetation.

4.5 ACCESS

During a bushfire it is likely that the RFS will access the Reserve from the existing access points on Ingleside Road to the west, Wesley Street to the south or through private property surrounding the Reserve. Access is currently limited within the Reserve. The steep topography prohibits vehicle access. Some formal walking tracks and an informal bike track provide access on foot and there are numerous informal walking/bike tracks. It is however noted that utilisation of this foot access is likely to be limited to preventative actions such as the application of prescribed fire or mopping up low intensity wildfire rather than use during high intensity wildfire events.

A control line has been proposed running east to west across the Reserve and this should be marked and maintained as a priority. This Plan does not recommend the establishment of any additional access tracks or trails.

4.6 EDUCATION AND EXTENSION PROGRAMS

The establishment and maintenance of APZs and SFAZs as proposed in this Plan provides a significant improvement in the protection of community assets adjoining the Reserve. Despite these works, assets within adjoining lands cannot be totally protected without complimentary bushfire protection activities off-Reserve. It is recommended that education/extension programs by Pittwater Council and the RFS be conducted to facilitate this process.

The objective of extension programs is to effectively share the fire management responsibility amongst the neighbouring residents and local community by providing information, raising awareness and improving their fire management capabilities. Readiness and awareness of the community is vital to ensure the safety of people and the preparation of their dwellings and assets. To achieve this objective, it is recommended that Pittwater Council implement the following initiatives:

- All bushfire management works undertaken within the Reserve should be advertised to neighbours and to relevant stakeholder groups.
- Support community groups who have an interest in the Reserve. Community based groups offer an effective means to raise awareness of fire related issues and encourage public cooperation and participation in fuel management practices.
- In conjunction with local RFS, undertake advertising and other community-awareness campaigns aimed at reducing the frequency of bushfires, increasing asset protection, and providing safe bushfire response behaviour.
- Use signs within the Reserve, leaflets, displays and other available interpretative media to disseminate fire related messages.

Council should liaise with RFS to investigate opportunities currently available to encouraging private/personal ownership of fire management whilst also promoting appreciation of the community's natural and cultural resources provided by this Reserve (e.g. FireWise).

5 PROTECTION OF ENVIRONMENT AND CULTURAL SITES

The Plan has identified operational guidelines, to reduce impacts on the environment which are to be followed when carrying out the activities identified in the Plan. These operational guidelines are detailed in the following subsections.

5.1 FUEL / VEGETATION REDUCTION OPERATIONS

During the establishment and maintenance of APZs within the Reserve, the following tree and vegetation clearing and management operations should be followed to protect soils, landscape features, and conservation values:

- Scrub cutters and hand tools are the most satisfactory equipment for hazard reduction operations. Only this type of minimum impact equipment should be used.
- Threatened flora species or endangered ecological communities under the TSC Act or EPBC Act must not be removed or damaged (Section 5.2). In order to minimise the risk of damage to these species or communities, surrounding vegetation is to be removed by hand only.
- The use of bulldozers or other track type machinery should not be permitted.
- Cut vegetative material (with the exception of noxious and environmental weeds) and ground fuel, leaves, bark, twigs, grass tussocks *etc.* may be mulched and spread to help prevent weed invasion and soil erosion.
- Removal by hand is permissible on all slopes while mowing will not be undertaken on slopes greater than 15°.

5.2 THREATENED SPECIES MANAGEMENT

Identified threats to Swamp Sclerophyll Forest include: Frequent burning which reduces the diversity of woody plant species; Clearing of native vegetation; Alteration to the natural flow regimes of rivers, streams, floodplains and wetlands; Invasion of native plant communities by exotic perennial grasses; Predation, habitat destruction, competition and disease transmission by feral pigs; Anthropogenic climate change; and Removal of dead wood and dead trees (NSW Scientific Committee 2011). This plan mitigates the impact on this community through proposing weed control works after fire management activities and wildfire (Section 5.3), not recommending frequent burns and not proposing the creation of access tracks.

To ensure protection of this vegetation community the following should therefore be applied:

- Fire management within the Reserve must avoid the incidence of high frequency and high intensity fires within this community.
- Future prescribed burns should only be undertaken in accordance with the recommended fire intervals for that vegetation type (Table 15 below).

Table 15: Recommended Fire Intervals for Vegetation within the Reserve (WPBFMC 2010)

Vegetation Formation	Minimum SFAZ Threshold	Minimum LMZ Threshold	Maximum Threshold	Notes
Shrubby Dry Sclerophyll Forest (shrub subformation)	7	10	30	Occasional intervals greater than 25 years may be desirable.
Wet Sclerophyll Forest (shrubby subformation)	25	30	60	Crown fires should be avoided in the lower end of the interval range.
Forested Wetlands	7	10	35	Some intervals greater than 20 years may be desirable.
Heathlands	7	10	30	Occasional intervals greater than 20 years may be desirable.
Rainforest	NA	NA	NA	Fire should be avoided

5.3 WEED MANAGEMENT

Where fuel/vegetation reduction and access construction and maintenance works occur, all vehicles and machinery likely to disturb the soil should be cleaned prior to, during and after these activities to reduce the spread of weeds.

As bushfires may exacerbate weed infestations, it is recommended that weed control occurs within 6 months of any bushfire. Table 16 outlines safeguards to reduce the spread of weeds during fire management activities.

Table 16: Safeguards when carrying out fire management activities in sites containing exotic plant species

Potential impact	Possible safeguards (or ameliorative measures) to mitigate the impact
Exotic seeds introduced on machinery and boots during fire management activities	<ul style="list-style-type: none"> wash down all vehicles and machinery likely to disturb the soil prior to, during and after prescribed burning or trail maintenance activities. Vehicles and machinery regularly used in wildfire suppression should be thoroughly cleaned on a regular basis. carry out weed management following the fire management activities.
Weed distribution and abundance increased as a result of fire management activities	<ul style="list-style-type: none"> carry out weed control following the fire management activities. avoid movement through weed infested areas. wash down all vehicles and machinery that are likely to disturb the soil during prescribed burning or trail maintenance activities.
Environmental conditions that favour the expansion of exotic species are created by fire regimes	<ul style="list-style-type: none"> minimise size of burn areas by slashing or other (non-fire) fuel reduction. delay burning if burning at the proposed time will exceed fire interval threshold. whenever possible, avoid scorching the overstorey canopy during prescribed burning.

5.4 PROTECTION OF HISTORICAL SITES

To reduce the potential impact on unknown Aboriginal sites, the following operational guidelines should apply during fire suppression operations, APZ works, and access trail construction and maintenance works:

- In the event of fire management activities disturbing or damaging an unknown site, the NSW Office of Environment and Heritage (OEH) and the NSW Heritage Office must be informed;
- In the event of an unrecorded site being found during fire suppression operations, action should be taken to avoid damage to the site and it must be reported to the incident controller;
- All post-fire reports are to consider the effects of the fire on Aboriginal sites and where necessary recommend ameliorative action;
- Where known, sites are to be protected with appropriate protection structures (e.g. strong temporary fences and bold signage) during vegetation removal and fire trail maintenance operations, and
- As vegetation cover is reduced and the possibility of finding sites is increased, post-bushfire inspections and surveys may be considered relevant.

6 WORK SCHEDULE

Tables 18, 19, 20 and 21 summarise the works required to achieve the bushfire management objectives of the plan. This should be read in conjunction with the Management Zone map (Figure 8). The fire management activities identified here are to be implemented in accordance with any additional requirements of any environmental impact statement and the environmental protection safeguards detailed in Section 5.

Actions are given priority using the rating system in Table 17 below. This system is based on an effort/impact ratio where preventative actions that occur regardless of the Plan and/or are inexpensive to implement are given a higher priority rating and actions that require a considerable injection of funds without immediate impacts are rated much lower.

Table 17: Action Priority Rating System

Priority	Meaning	Reason
very high (1)	Critical action	Actions prevent the occurrence of fires and/or prevent the creation of additional risk.
high (2)	Must be done	Actions aim to protect significant tangible assets from bushfire (e.g. buildings, relics, threatened species).
medium (3)	Should be done	Actions that facilitate the suppression of bushfires.
low (4)	To be undertaken when other actions are complete	Actions aim to extend bushfire management to adjoining lands to increase protection of neighbouring properties.

Table 18: Summary of fire management actions –Asset Protection Zones (Figure 8)

Zone Ref.	ID	Actions	Priority	2012-2017
Entire Management Unit		Use suppression and fuel reduction methods that reduce the potential impact on the natural and cultural environment of the Reserve (Section 5).	2	✓
		Investigate complaints regarding fuel loads within the Reserve.	3	✓
	1	Maintain existing 20 m APZ – currently mown grass.	1	✓
2		Maintain existing 20 m APZ – currently sparse canopy trees with fuel reduced understory.	1	✓
3		Maintain existing APZ – currently mown grass	1	✓

Table 19: Summary of fire management actions –Strategic Fire Advantage Zones (Figure 8)

Zone Ref.	ID	Actions	Priority	2012	2013	2014	2015	2016	2017
Entire Management Unit		Extensive weed removal and long term control.	2	✓	✓	✓	✓	✓	✓
SFAZ 1		Conduct HR burn between the Mata Maria College in the east, the proposed control line in the north and the walking track in the south and west.	1	✓					
SFAZ 2		Conduct HR burn to approximately 100m to the north of the proposed control line. If possible the burn should extend into the property to the east.	1					✓	
SFAZ 3		Conduct HR burn between the proposed control line in the south and the informal bike track in the north. If possible the burn should extend into the property to the west.	1			✓			
SFAZ 4		Conduct HR burn between the walking track to the north and the creekline to the south. A hand tool control line will need to be constructed along the western boundary of the burn.	1						✓
SFAZ 5		Conduct HR burn between the Sydney Conference and Training Centre, the walking track to the south and the creekline to the north east.	1		✓				
SFAZ 6		Conduct HR burn to extend down to the north from the Uniting Church Conference Centre. Care should be taken not to burn into the rainforest vegetation at the base of the gully.	1				✓		

Table 20: Summary of fire management actions –Land Management Zone (Figure 8)

Zone Ref.	ID	Actions	Priority	2012	2013	2014	2015	2016	2017
Entire Management Unit		Use suppression methods that reduce the potential impact on environment and cultural values (refer Section 5).	2	✓	✓	✓	✓	✓	✓
		Conduct post-fire pest and weed control operations.	1	6 months after bushfire or prescribed burn					
		In cooperation with RFS and Police investigate and collect data on ignition source and location.	1	✓	✓	✓	✓	✓	✓
		Conduct post-fire surveys to assess the impacts on threatened species and EECs.	2	Within 6 months after bushfire or prescribed burn					
		All fires (both wildfires and prescribed burns) should be recorded and a detailed map of the fire perimeter produced. The map should be stored on Council's GIS system to enable analysis of fire frequency across the study area and the effects on biodiversity.	2	✓	✓	✓	✓	✓	✓
		Increase Police or Council Ranger presence if Reserve is subject to frequent arson events.	1	✓	✓	✓	✓	✓	✓
		Facilitate the protection of unknown Aboriginal and historical sites (Section 5.4).	2	✓	✓	✓	✓	✓	✓

Table 21: Summary of fire management actions – Surrounding properties

Zone Ref.	ID	Actions	Priority	2012-2017
Entire Management Unit		Undertake pre-bushfire season education and extension programs focussing on arson reduction and bushfire preparedness programs (refer to Section 4.6).	2	✓
		Investigate bushfire hazard complaints and undertake appropriate actions.	3	✓
		Increase police or Council Ranger presence if Reserve is subject to frequent arson events.	1	✓

7 MONITORING, REVIEW AND EVALUATION

All strategies and plans must have mechanisms that show that progress is being made in dealing with the problem or it is successfully completing the prescribed actions. It is also necessary to determine the effectiveness of the plan and efficiency of individual actions.

7.1 MONITORING AND EVALUATION

Monitoring should occur at both the management level and a biodiversity level. Monitoring at the biodiversity level, however, usually involves analysis of environmental stress and response of indicator species (e.g. threatened species), biotic composition, life history studies, and distress syndromes (e.g. the effect of fire or lack of fire). This level of monitoring is not considered necessary due to the lack of baseline data and the amount of resources it usually takes to undertake this work. Monitoring for management purposes should therefore be carried out to ensure that the actions listed in Table 18 to 21 are being carried out and the objectives are being achieved.

Monitoring and evaluation against the actions and timeframes outlined in the Work Schedule (Section 6) is an effective way to monitor the implementation of the plan.

7.2 REVIEW OF THE PLAN

A complete evaluation, review and updating of the plan should occur after five years. The review should;

- consider whether the plan has achieved the objectives set out in Section 1.1,
- reassess the strategies and environmental safeguards in light of current research and management best practice, and
- reassess the strategies taking into account of legislative changes, financial constraints, social philosophies, improvements in bushfire protection and suppression, and changes in vegetation.

Annual reviews of the plan may be done when preparing annual works programs. Small changes to the actions and strategies may occur within the plan without formally discussing the changes with the Rural Fire Service and the NSW Fire Brigades. Matters that require a more significant variation should be discussed with the Rural Fire Service and the NSW Fire Brigades and any affected stakeholders.

References

Brian Parry & Associates (2005) *Warriewood Ingleside Escarpment Bushfire Management Plan for Pittwater Council*.

DECCW (2010) *NSW National Parks and Wildlife Atlas of NSW Wildlife*. [online]
<http://wildlifeatlas.nationalparks.nsw.gov.au/wildlifeatlas/watlas.jsp>. Department of Environment, Climate Change and Water, Hurstville.

DEWHA (2010) *Protected Matters Search Tool*. [online]
<http://www.environment.gov.au/erin/ert/epbc/index.html>. Department of the Environment, Water, Heritage and the Arts, Canberra.

Eco Logical Australia (2010) *Ingleside Chase Reserve Plan of Management*. Report prepared for Pittwater Council

Gondwana Consulting (2005) *Warriewood/Ingleside Escarpment (North) Plan of Management*. Report prepared for Pittwater Council.

NSW Rural Fire Service (NSWRFS) (2001) *Planning for Bushfire Protection: A guide for Councils, Planners, Developers and Home Owners*

NSW Rural Fire Service (NSWRFS) (2006) *Bush Fire Environmental Assessment Code for New South Wales*

NSW Scientific Committee (2011) *Swamp sclerophyll forest on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions - endangered ecological listing. Final determination DEC (NSW), Sydney*.

SAI Global (2004) *AS4360: Risk management - Principles and guidelines*.

Warringah Pittwater Bush Fire Management Committee (WPBFMC) (2010) *Bush Fire Risk Management Plan*. Adopted by the Bush Fire Coordinating Committee, Minute No. 24/2008.

HEAD OFFICE

Suite 4, Level 1
2-4 Merton Street
Sutherland NSW 2232
T 02 8536 8600
F 02 9542 5622

SYDNEY

Level 6
299 Sussex Street
Sydney NSW 2000
T 02 8536 8650
F 02 9264 0717

ST GEORGES BASIN

8/128 Island Point Road
St Georges Basin NSW 2540
T 02 4443 5555
F 02 4443 6655

CANBERRA

Level 2
11 London Circuit
Canberra ACT 2601
T 02 6103 0145
F 02 6103 0148

NEWCASTLE

Suite 17, Level 4
19 Bolton Street
Newcastle NSW 2300
T 02 4910 0125
F 02 4910 0126

NAROOMA

5/20 Canty Street
Narooma NSW 2546
T 02 4476 1151
F 02 4476 1161

COFFS HARBOUR

35 Orlando Street
Coffs Harbour Jetty NSW 2450
T 02 6651 5484
F 02 6651 6890

ARMIDALE

92 Taylor Street
Armidale NSW 2350
T 02 8081 2681
F 02 6772 1279

MUDGEES

Unit 1, Level 1
79 Market Street
Mudgee NSW 2850
T 02 4302 1230
F 02 6372 9230

PERTH

Suite 1 & 2
49 Ord Street
West Perth WA 6005
T 08 9227 1070
F 08 9322 1358

WOLLONGONG

Suite 204, Level 2
62 Moore Street
Austinmer NSW 2515
T 02 4201 2200
F 02 4268 4361

GOSFORD

Suite 5, Baker One
1-5 Baker Street
Gosford NSW 2250
T 02 4302 1220
F 02 4322 2897

C9.4	Minutes of the Narrabeen Lagoon Floodplain Risk Management Working Group on 1 March 2012
-------------	---

Meeting: Natural Environment Committee

Date: 4 June 2012

STRATEGY: Risk Management Co-ordination

ACTION: Develop and implement a program to undertake natural hazard risk management studies in accordance with Risk Management Guidelines
Provide an appropriate set of development controls relating to mitigation and management of risks and hazards

PURPOSE OF REPORT

To consider the Minutes of the Narrabeen Lagoon Floodplain Risk Management Working Group (NLFRMWG) meeting held at Warringah Council on 1 March 2012 (refer **Attachment 1**).

1.0 BACKGROUND

- 1.1 The NLFRMWG is a forum that assists Warringah and Pittwater Councils in the preparation, development and implementation of floodplain management plans for the Narrabeen Lagoon catchment. The Working Group is administered on a rotational basis with Warringah Council and Pittwater Council. The administration of the meetings is with Warringah Council during 2012.

2.0 ISSUES

- 2.1 **Narrabeen Lagoon Flood Study** – A presentation on the progress of the Narrabeen Lagoon Flood Study was provided at the meeting. The presentation focused on work undertaken in Stage 3: Hydraulic Modelling, detailing the inputs to the hydraulic model.

The remaining stages of the project remain on track with Stage 4: Climate Change assessment to be completed in August 2012 and the draft Flood Study to be completed in October 2012.

- 2.2 **Narrabeen Lagoon Flood Mitigation (Entrance Clearance)** – The 2011 entrance clearance operation has been completed and a presentation on the project was provided by the Cardno who were the Project Manager for the works. The clearance works finished ahead of schedule and removed 36,000m³ of sand that replenished four beach sites along Collaroy-Narrabeen.

- 2.3 **Floodplain Risk Management Strategy – Managing Flood Emergency Response Planning of Development in the Lower Narrabeen Lagoon Floodplain** – The Pittwater Council report about the strategy was mentioned to inform the Working Group of its presence. The report provides background information and an draft interim policy for Pittwater Council to manage the issues of flood isolation and the cumulative impacts of intensifying developments in the lower Narrabeen Lagoon floodplain (North Narrabeen).

3.0 SUSTAINABILITY ASSESSMENT

This report does not require a sustainability assessment.

4.0 EXECUTIVE SUMMARY

- 4.1 The anticipated date for completion of the Narrabeen Lagoon Flood Study remains on track for March 2013 with the draft Flood Study report to be completed in October 2012.
 - 4.2 The Narrabeen Lagoon entrance clearance operation undertaken in 2011 has been completed with 36,000m³ of sand removed.
 - 4.3 The Working Group was made aware of a Pittwater Council report relating to “Floodplain Risk Management Strategy – Managing Flood Emergency Response Planning of Development in the Lower Narrabeen Lagoon Floodplain”, which was prepared to manage the risk to life from flood isolation on the lower Narrabeen Lagoon floodplain, specifically at North Narrabeen.
-

RECOMMENDATION

That the information provided in the report be noted.

Report prepared by

Jennifer Pang
MANAGER, CATCHMENT MANAGEMENT & CLIMATE CHANGE

Minutes

Narrabeen Lagoon Floodplain Risk Management Working Group

Notice is hereby given that a Narrabeen Lagoon Floodplain Risk Management Working Group meeting was held in the

Flannel Flower Room, Warringah Council, Civic Centre, Dee Why on

1 March 2012

Commencing at 5:00pm for the purpose of considering the items included on the Agenda.

Todd Dickinson
Group Manager Natural Environment

Narrabeen Lagoon Floodplain Risk Management Working Group

Established:	17 January 2011						
Function:	An advisory body to Warringah and Pittwater Councils in the development, implementation and review of the Narrabeen Lagoon Flood Study, Floodplain Risk Management Study and Floodplain Risk Management Plan.						
Administration:	This Working Group is administered jointly between Pittwater Council and Warringah Council on the basis of a 12 month cycle.						
Composition / Membership as at establishment:	<p>Voting:</p> <ul style="list-style-type: none"> Pittwater Council – Mayor (or delegation) Two (2) Pittwater Councillors Warringah Council – Mayor (or delegation) Two (2) Warringah Councillors Four (4) Citizen Members: <ul style="list-style-type: none"> Two (2) Pittwater residents Two (2) Warringah residents <p>Non Voting:</p> <ul style="list-style-type: none"> State Government Representatives including: <ul style="list-style-type: none"> Department of Environment, Climate Change and Water Department of Planning Industry and Investment NSW (including Fisheries) Land & Property Management Authority NSW National Parks & Wildlife Service Sydney Maritime State Emergency Service Sydney Academy of Sport & Recreation Sydney Metropolitan Catchment Management Authority Sydney Water Corporation Stakeholder Representatives including: <ul style="list-style-type: none"> Environmental groups Local industry representatives Flood affected residents Recreational groups 						
Quorum:	Four (4) members of the Working Group including at least one (1) Councillor from Pittwater and one (1) Councillor from Warringah Council are present, two (2) Citizen and/or Stakeholder representatives (including at least one (1) citizen member from each Warringah and Pittwater LGA).						
Reporting Procedures:	Minutes reported to Council for consideration.						
Responsible Business Unit:	Natural Environment						
Meetings	Meetings are held as required – quarterly at 5:00pm on Thursday evenings.						
Council Members Appointed:	<table> <tr> <td>Cr Rose (Pittwater)</td><td>Cr Harris (Warringah)</td></tr> <tr> <td>Cr James (Pittwater)</td><td>Cr Ray (Warringah)</td></tr> <tr> <td>Cr Townsend (Pittwater)</td><td>Cr Falinski (Warringah)</td></tr> </table>	Cr Rose (Pittwater)	Cr Harris (Warringah)	Cr James (Pittwater)	Cr Ray (Warringah)	Cr Townsend (Pittwater)	Cr Falinski (Warringah)
Cr Rose (Pittwater)	Cr Harris (Warringah)						
Cr James (Pittwater)	Cr Ray (Warringah)						
Cr Townsend (Pittwater)	Cr Falinski (Warringah)						

NARRABEEN LAGOON FLOODPLAIN RISK MANAGEMENT WORKING GROUP

Members of the Working Group*¹ namely

Warringah Council Members

Cr Conny Harris
Cr Michelle Ray
Cr Jason Falinski

Pittwater Council Members

Cr Harvey Rose
Cr David James
Cr Jacqui Townsend

Citizen Representatives

Mr David Loomes (Warringah)
Mr Spiro Daher (Pittwater)
Dr Paul Hackney (Warringah)
Mr Richard Steven (Pittwater)

Stakeholder Representatives

Mr Tony Carr (Friends of Narrabeen Lagoon
Catchment Inc)
Mrs Joy Gough (Narrabeen Lakes Sailing Club)
Mr Phillip Oswald (Pittwater Floodplain)

State Government Representatives

NSW Office of Environment and Heritage (OEH)
NSW Department of Planning & Infrastructure
NSW National Parks & Wildlife Service
NSW Department of Primary Industries (Fisheries)
NSW Department of Primary Industries (Catchments and Lands)
Sydney Water
Sydney Academy of Sport and Recreation
Sydney Metropolitan Catchment Management Authority
NSW Roads and Maritime Services
State Emergency Service Sydney Northern Region

And the following Council Advisors

Deputy General Manager Environment (Warringah)
Director Urban and Environmental Assets (Pittwater)

are requested to be in attendance.

Copies to:

Mayor Warringah Council – Cr Michael Regan
Group Manager Natural Environment (Warringah Council) – Mr Todd Dickinson
Floodplain Management Officer (Warringah Council) – Ms Debbi Millener
Floodplain Management Officer (Warringah Council) – Ms Valerie Tulk
Environmental Strategy Manager (Warringah Council) – Mr Adrian Turnbull
Manager – Catchment Management & Climate Change (Pittwater Council) – Ms Jennifer Pang
Principal Officer – Floodplain Management (Pittwater Council) – XXX

All other Councillors are free to attend as Observers and are invited to do so and to engage in discussion, but not in voting in any matter before the committee.

Attendance:

Warringah Council Members

Cr Dr Conny Harris

¹ The name “Narrabeen Lagoon Floodplain Risk Management Working Group” was adopted by Pittwater council on 2 August 2010. The name “Narrabeen Lagoon Floodplain Risk Management Community Committee” was adopted by Warringah Council on 24 August 2010. As a result, the term “community committee” is interchanged with “working group for Warringah Council’s administrative purposes.”

Pittwater Council Members

Cr Jacqui Townsend

Cr David James (arrived during presentation of Item 4.2)

Cr Harvey Rose (left during question time for Item 4.2)

Citizen Representatives & Stakeholder Representatives

Mr David Loomes (Warringah)

Mr Paul Hackney (Warringah)

Dr Spiro Daher (Pittwater)

State Government Representatives

Mr Wayne Lyne (State Emergency Service Sydney Northern Region)

Mr Greg Davis (Office of Environment and Heritage)

And the following Council Advisors

Todd Dickinson (Warringah)

Adrian Turnbull (Warringah)

Daylan Cameron (Warringah)

Debbi Millener (Warringah)

Jennifer Pang (Pittwater)

Louise Collier – Consultant – Cardno (left meeting at 5:44pm following completion Item 4.2)

1.0 APOLOGIES

WORKING GROUP RECOMMENDATIONS

That apologies be received and accepted from:

- Mr Philip Oswald (Stakeholder Representative)
- Cr Michelle Ray
- Marcel Green - NSW Department of Primary Industries (Fisheries)
- Norm Nikolich - Sydney Water
- Brendan Barrett - Sydney Academy of Sport and Recreation
- Hendrik Clasie (for Steven Black) - RMS
- David Chambers - NSW State Emergency Service
- Joy Gough – Stakeholder Representative

Note:

Mr Wayne Lyne attended the meeting on behalf of David Chambers State Emergency Service Sydney Northern Region.

2.0 DECLARATION OF PECUNIARY INTEREST

It was noted that the second point in agenda should read:

[Remoteness] A person does not have a pecuniary interest in a matter if the interest is so remote or insignificant that it could not reasonably be regarded as likely to influence any decision the person might make in relation to the matter."

No conflict of interest was registered.

3.0 CONFIRMATION OF MINUTES

Confirmation of the Minutes of the Narrabeen Floodplain Risk Management Working Group dated 1 December 2011. The minutes of this meeting were endorsed by Warringah Council at the Council meeting of 14 February 2012.

It was noted that Item 5.0 General Business listed the incorrect Councillor name and should be changed to reflect that it was Cr Dr Conny Harris that had invited Committee members to attend the viewing of the documentary "Bag It".

Recommendation from Working Group			
That the minutes be accepted with the above change.			
Moved:	Cr Harvey Rose	Seconded:	Mr David Loomes
Nil	For:	All	
	Against:		

4.0 COMMITTEE BUSINESS

There was a procedural motion to move Item 4.2 ahead of 4.1

Moved:	Cr Jacqui Townsend	Seconded:	Cr Dr Conny Harris
---------------	--------------------	------------------	--------------------

4.2 Narrabeen Lagoon Flood Mitigation (Entrance Clearance)

Submitted by Warringah Council

Proceedings in brief:

Daylan Cameron (Warringah) introduced Louise Collier from Cardno who gave a presentation following the successful completion of this project. See Attachment 1 for presentation.

General discussion took place following this presentation and Ms Collier was thanked for her presence at this meeting.

Working Group Recommendation			
That the Working Group note the information contained in the presentation.			
Moved:	Cr Jacqui Townsend	Seconded:	Cr David James
Voted:	For:	All	
	Against:	Nil	

4.1 Narrabeen Lagoon Flood Study

Submitted by Warringah Council

Proceedings in brief:

Debbi Millener, Floodplain Management Officer (Warringah Council) addressed the meeting on this item.

Presentation given on Stage 3 of the Flood Study which was on track to be completed in April 2012 – see Attachment 2. A number of questions were raised such as whether Stage 3 considered climate change such as a 30% increase in rainfall intensity due to predictions of climate change and Ms Millener advised these would be covered in Stage 4. Cr James also asked whether the consultants were utilising the inshore wave heights from the 1990 flood study. Council staff advised that this information would be considered.

Cr James requested that his disappointment be noted regarding the progress of the Flood Study and that climate change is not being considered in Stage 3. Cr Dr Harris advised Cr James and Committee members that the Flood Study was progressing on time.

Recommendation from Working Group			
That the information presented be noted.			
Moved:	Mr David Loomes	Seconded:	Cr Jacqui Townsend
Voted:	For:	All	
	Against:	Nil	

5.0 GENERAL BUSINESS

5.1 Report to Pittwater Council

Ms Pang advised there was a report being considered by Pittwater Council on Monday 5 March that might be of interest to Committee members, that being, Floodplain Risk Management Strategy – Managing Flood Emergency Response Planning of Development in the Lower Narrabeen Lagoon Floodplain. The purpose of the report is to provide Pittwater Council with an update of the emerging flood risk management issues of flood isolation and the cumulative flood impacts of intensifying developments in the lower Narrabeen Lagoon floodplain and to establish an interim policy to consider development proposals - see Attachment 3.

Recommendation from Working Group			
That the information be noted.			
Moved:	Cr Dr Conny Harris	Seconded:	Mr Spiro Daher
Voted:	For:	All	
	Against:	Nil	

5.2 Change in Warringah Staffing

Mr Todd Dickinson took the opportunity to announce that Ms Debbi Millener has resigned from Warringah Council and was moving to Pittwater Council as their Principal Officer – Floodplain Management. Ms Millener was thanked for her work with Warringah and congratulated for her move to Pittwater.

6.0 NEXT MEETING

The next meeting of the Narrabeen Floodplain Risk Management Working Group is scheduled for 7 June 2012.

The subsequent meeting is scheduled for 6 September but due to Council elections being held in September Council will go into Caretaker mode 3 or 4 weeks prior to then which will affect whether this meeting is held. The Committee may wish to change the schedule of the meeting or leave it as is.

Recommendation from Working Group			
Decision regarding subsequent meeting be decided at 7 June meeting.			
Moved:	Cr Dr Conny Harris	Seconded:	Mr Spiro Daher
Voted:	For:		
	Against:		

There being no further business the meeting concluded at 6.06pm on Thursday 1 March 2012.

C9.5	Notes of an Informal Meeting of the Natural Environment Reference Group held on 9 May 2012
-------------	---

Meeting: Natural Environment Committee

Date: 4 June 2012

STRATEGY: Business Management

ACTION: Maintain and Service Council's Range of Committees

PURPOSE OF REPORT

To present to Council for consideration, the Natural Environment Reference Group Minutes of 9 May 2012 (**see Attachment 1**).

1.0 BACKGROUND

1.1 The Natural Environment Reference Group has a primary role of assisting the Pittwater 2020 Strategic Plan process by critically analysing and reviewing the Strategic Goals aligned to the Pittwater Natural Environment and providing Reference Points for further consideration by Council.

1.2 The Natural Environment Reference Group has previously established a priority order to eventually consider each of the aligned Strategic Goals. The attached Minutes relate to Discussion Papers on

- ***End of Term Report***
- ***Update on Actions Arising from Reference Groups to be incorporated into the Delivery Program and Budget for 2012-2016***
- ***Coastal Zone Planning and Management in Pittwater – Update***

1.3 It should be noted that the Natural Environment Reference Group Meeting held on 9 May 2012 did not have a quorum. With the concurrence of the members present the meeting was still held and deemed to be an informal meeting. Minutes of the meeting were taken including reference points and recommendations and these are provided for Council's subsequent consideration in that context.

2.0 ISSUES

2.1 NE4.1 – End of Term Report

It was noted that the End of Term Report for the 4 year term of the current elected Council is being compiled.

2.2 NE4.2 - Update on Actions Arising from Reference Groups to be incorporated into the Delivery Program and Budget for 2012-2016

An overview of the Reference Points arising from Reference Groups was provided along with an outline of how these are considered in the Delivery Program and Budget

2.3 NE4.3 – Coastal Zone Planning and Management in Pittwater – Update

A well researched presentation on coastal (risk) management issues, including an update of recent and emerging coastal legislation was provided. The impacts of climate change and sea level rise was also highlighted. The Reference Group indicated its appreciation of the presentation and opportunity to discuss a range of coastal issues and as a result is better informed of the complexities of coastal (risk) management.

3.0 SUSTAINABILITY ASSESSMENT

This report does not require a sustainability assessment.

4.0 EXECUTIVE SUMMARY

- 4.1 It should be noted that the Natural Environment Reference Group Meeting held on 9 May 2012 did not have a quorum. With the concurrence of the members present the meeting was still held and deemed to be an informal meeting. Minutes of the meeting were taken including reference points and recommendations and these are provided for Council's subsequent consideration in that context.
-

RECOMMENDATION

That the Notes of the Information Meeting of the Natural Environment Reference Group held on 9 May 2012 that relate to the Discussion Papers on:

- **End of Term Report**
- **Update on Actions Arising from Reference Groups to be incorporated into the Delivery Program and Budget for 2012-2016**
- **Coastal Zone Planning and Management in Pittwater – Update**

and the Actions and Progress to date, along with further initiatives and reference points to strengthen these initiatives be noted and this information be taken into consideration as part of Council's Strategic Plan and Management Plan processes.

Report prepared by

Chris Hunt
DIRECTOR – URBAN & ENVIRONMENTAL ASSETS

Notes of an Informal Meeting of the Natural Environment Reference Group

held in the Training Room at the Coastal Environment Centre,
Lake Park Road, North Narrabeen on

9 May 2012

Commencing at 4.10pm

Attendance:

Mr Chris Hunt, Director, Urban & Environmental Assets (Chairperson)

Members:

Ms Gloria Carroll, Manly Warringah and Pittwater Historical Society
Ms Roberta Conroy, Pittwater Resident Representative
Mr Cecil Ellis, Pittwater Resident Representative
Ms Frances Holdaway, Careel Bay, Pittwater Protection Association
Mr Hans Hui, Newport Residents Association
Ms Marita Macrae, Avalon Preservation Trust / Pittwater Natural Heritage Association
Ms Margaret Makin, Bayview–Church Point Residents Association
Mr Martin Porter, Surfrider Foundation
Mr Roger Treagus, Pittwater Resident Representative
Mr John Waring, Clareville and Bilgola Residents Association
Mr Robert Williams, Pittwater Resident Representative
Ms Susan Young, Newport Residents Association

Council Officers:

Mr Mark Beharrell, Manager, Natural Environment & Education
Ms Jennifer Pang, Manager, Catchment Management & Climate Change
Mr Paul Reid, Manager, Corporate Strategy & Commercial
Ms Pamela Tasker, Administration Officer/Minute Secretary

Observers:

Ms Sharon Kinnison, Scotland Island Residents Association
Mr Graeme Jessup, Sustainability Pittwater

Natural Environment Reference Group Meeting
--

TABLE OF CONTENTS

Item No	Item	Page No
1.0	Apologies	
2.0	Declarations of Pecuniary Interest / Non-Pecuniary Conflict of Interest	
3.0	Confirmation of Minutes	
4.0	Discussion Topics	
NE4.1	End of Term Report	
NE4.2	Update on Actions Arising from Reference Groups to be incorporated into the Delivery Program and Budget for 2012-2016	
NE4.3	Coastal Zone Planning and Management in Pittwater - Update	
5.0	Emerging Issues	
5.1	Sustainability Pittwater	
5.2	Draft Pittwater Vegetation Management Plan	
5.3	Asparagus Fern Out Day	
5.4	Stormwater Issues and Water Testing	
6.0	Next Meeting	

1.0 Apologies

Notes:

1. Apologies were received from

- Cr Peter Hock, Chairperson
- Mr Alan Yuille, West Pittwater Community Association
- Mr David Williams, Bayview–Church Point Residents Association
- Mr Trevor Holman, Palm Beach Whale Beach Association

and leave of absence was granted from the Natural Environment Reference Group Meeting held on 9 May 2012.

2. The Reference Group members accepted the apologies.
3. As stipulated in the Charter of the Natural Environment Reference Group, the presence of a majority of members and at least one (1) Councillor is necessary to form a quorum. As there was no Councillor present, the meeting was declared informal and proceeded on that basis.
4. In the absence of Cr Peter Hock, Mr Chris Hunt (Director, Urban and Environmental Assets) assumed the Chair.

2.0 Declarations of Pecuniary Interest / Non-Pecuniary Conflict of Interest

Nil.

3.0 Confirmation of Minutes

REFERENCE GROUP RECOMMENDATION

That the Minutes of the Natural Environment Reference Group Meeting held on 8 February 2012 be confirmed as a true and accurate record of that meeting taking into account the following additions and amendments:

1. **Item NE4.2 - Bush Fire Risk Management in the Pittwater LGA**

Ms Roberta Conroy requested that it be noted that she tabled the research paper: *Land Management Practices Associated with House Loss in Wildfires (Gibbons, Bradstock et al, Jan 2012)*.

Copies of this paper were circulated to members with the Minutes of the meeting held on 8 February 2012.

2. **Item 5.1 – Key Direction 5 – Traffic and Transport**

At its Meeting on 5 March 2012 following consideration of Item C9.2 – *Minutes of the Natural Environment Reference Group Meeting held on 8 February 2012*, Council resolved (in part) as follows:

- "2. *That the Minutes of the Natural Environment Reference Group Meeting be amended to include Mr Beharrell's written response to Councillors in relation to Item 5.1.*"

This was in reference to an email exchange between Cr Townsend and Mr Beharrell. A copy of the amended Minutes were circulated to members on 8 March 2012. The Council Resolution, Report to Council and Amended Minutes were attached to the Agenda at Appendix 1.

3. **Item 5.4 – Clean Up Pittwater Day**

Mr David Williams has requested that dot point 1:

- *Follow up on the established of a Clean Up Pittwater Day **to coincide with** Clean Up Australia Day*

Be amended to read:

- *Follow up on the established of a Clean Up Pittwater Day **in addition to** Clean Up Australia Day*

(Mr John Waring / Ms Margaret Makin)

4.0 Discussion Topics

NE4.1 End of Term Report

Proceedings in Brief

Mr Paul Reid, Manager – Corporate Strategy & Commercial, addressed the meeting on this item.

REFERENCE GROUP RECOMMENDATION

1. That the information contained in the End of Term Report be noted.
2. That Mr Reid be thanked for his presentation.
3. That Reference Group members be invited to provide any additional comment on reference points contained within the report.

(Mr John Waring / Mr Roger Treagus)

REFERENCE POINTS:

- ***Members to email reference point comments to Council within next 2 weeks if possible. The email address is as follows:***

jane_mulroney@pittwater.nsw.gov.au

NE4.2 Update on Actions Arising from Reference Groups to be incorporated into the Delivery Program and Budget for 2012-2016

Proceedings in Brief

Mr Paul Reid addressed the meeting on this item.

REFERENCE GROUP RECOMMENDATION

1. That the information contained in the Report be noted.
2. That Mr Reid be thanked for his presentation.

(Ms Roberta Conroy / Ms Margaret Makin)

Discussion Points:

- The public meeting to discuss Pittwater's 2012-2013 draft delivery program and budget has changed. The meeting will now be held at the Banksia Room, Nelson Heather Centre, Jacksons Road Warriewood from 7pm on Monday 14 May. Members were advised of this change of date by email on 3 May 2012.

- The extra funding provided by the SRV will not be available until the 2012-2013 year. The current Delivery Program is being funded by EILA. More projects will be possible when the extra funding kicks in at the end of this financial year.
- Another advantage of the extra funding being provided through the SRV is a potential increase in grants. Grants programs rely on the recipient matching the funds provided by the grants, so Council needs the extra funding to attract those grants.
- It was stressed that the Delivery Plan and Budget is still a draft document and will not be finalised until 30 June. There will be further refinements during the interim period.

REFERENCE POINTS:

- ***The Pittwater Climate Change Risk Assessment has been endorsed by Council for submission to the NSW Office of Environment and Heritage. The report to Council and the tabled document is available on the Pittwater Council website and the link (see below) will be emailed to members for their information:***

http://www.pittwater.nsw.gov.au/council/meetings/council_meetings/council_meetings/2012/may/7_may_2012_-_council_cred_ne

NE4.3 Coastal Zone Planning and Management in Pittwater - Update

Proceedings in Brief

Mr Paul Hardie, Principal Officer – Coast & Estuary, addressed the meeting on this item. Mr Hardie provided a PowerPoint presentation to members and a copy of this presentation is enclosed.

REFERENCE GROUP RECOMMENDATION

1. That the information contained in the Report be noted.
2. That Mr Hardie be thanked for the presentation.

(Mr John Waring / Mr Hans Hui)

Discussion Points:

Q: How much financial liability / compensation will Council commit to property owners at risk in the event of SLR?

A: Council is currently planning for SLR – identifying vulnerable properties and utilising the NSW Government's SLR planning benchmarks to develop coastal risk management plans, to apply appropriate development controls to affected properties and to inform affected landowners of the implications of SLR on the future development of their properties. The planning process is difficult due to the high degree of uncertainty inherent in climate change and sea level rise projections. The State Government has indicated that it will not compensate landowners for losses or damages associated with climate change and local councils may face considerable expense if the costs associated with erosion and flood damage to approved development is determined by the courts to be a Council liability.

A broad ranging discussion followed the presentation covering topics including sea level rise, coastal protection measures, state government policy and legislation, environmental planning requirements as well as private vs public interests in the development and use of the coastal zone.

An interesting documentary produced by David Suzuki – The Sea Doesn't Stop Here Anymore – was recommended to the Group as it shows the long term effects of sea walls on coastal environments.

Q: If you are in an area prone to inundation or coastal erosion the property value is affected. Will this be reflected in rates reductions?

A: Ironically, the property market tends to demonstrate the exact opposite, whereby the closer the property is to the ocean and the greater the risk from natural hazards, the greater the market value of the property. This is because waterfront properties are in limited supply, in strong demand and highly sought after. Rates are calculated in part on land valuation and waterfront land remains highly valued at this stage.

REFERENCE POINTS:

- ***Mr Hardie to advise of the dates of the upcoming public exhibition of the Pittwater Beaches Coastal Hazard Definition and Vulnerability Study (once draft study is reported to Council).***

5.0 Emerging Issues

5.1 Sustainability Pittwater

Mr Graeme Jessup provided a short presentation encouraging further community participation in Sustainability Pittwater. Sustainability Pittwater offers a forum to discuss ideas with likeminded residents and to participate in the formulation of proposals to be present to Council at community Reference Group meetings. For further information phone 0419 495 178 or email graemejessup@optusnet.com.au.

5.2 Draft Pittwater Vegetation Management Plan

Mr Chris Hunt provided a copy of this document to members.

5.3 Asparagus Fern Out Day

Ms Marita McCrae advised members that the Pittwater Natural Heritage Association would be attacking the asparagus fern on Barrenjoey Dunes Palm Beach next Saturday, 12 May – 8.30am to 1.00pm. Phone 02 9918 3368, 0439 409 202 or email pnhainfo@gmail.com for further information.

5.4 Stormwater Issues and Water Testing

Further discussion on those items identified under Emerging Issues at the meeting of 8 February 2012 were deferred until the next meeting of the Natural Environment Reference Group.

6.0 Next Meeting

The next meeting of the Natural Environment Reference Group is scheduled to be held at 4.00pm on Wednesday, 8 August, 2012.

**There being no further business
the meeting concluded at 6.05pm
on Wednesday, 9 May, 2012.**

Council Meeting

10.0 Adoption of Community, Recreation and Economic Development Committee Recommendations

11.0 Adoption of Natural Environment Committee Recommendations

12.0 Councillor Questions
