

Voluntary House Raising/Flood Proofing

- Most houses that are frequently flooded over floor are slab-on-ground and brick, several are 2-storey

Street	Suburb	No. storey	Floor	Wall	1% AEP depth	20% AEP depth	Draft Recommendation	Change in AAD
Harley Rd	Avalon	1	not seen	Cladded	0.12	0.05	Raise/redevelop or wet flood proof	-80%
Riverview Rd	Avalon	1	Slab	Cladded?	0.11	0.06	Redevelop or wet flood proof	-80%
Therry St	Avalon	1	Slab	Brick	0.39	0.28	Dry flood proof	-79%
Therry St	Avalon	2	Slab	Brick	0.44	0.30	Dry flood proof	-73%
Allen Ave	Bilgola Beach	2	Slab	Cladded	0.18	0.15	Dry flood proof	-74%
Hudson Pde	Clareville	2	not seen	Brick	0.34	0.24	Dry flood proof	-64%
Barrenjoey Rd	Palm Beach	1	Slab	Brick	0.32	0.26	Redevelop or wet flood proof	-82%
Iluka Rd	Palm Beach	1	Slab	Cladded	0.15	0.05	Redevelop or wet flood proof	-80%
Waratah Rd	Palm Beach	2	Slab	Brick	0.41	0.27	Redevelop or wet flood proof	-91%



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Voluntary House Raising/Flood Proofing

- Benefit \$1.7M
- Cost \$1.45M (highly dependent on property type)
- BCR 1.2
- Need building survey to confirm floor level, structural integrity and age of otherwise eligible dwellings
- Need site specific investigations to assess appropriate strategies
- Need to canvas views of landowners
- Doubtful that a large scheme across LGA financially viable for Council



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Voluntary House Raising/Flood Proofing

Recommendation:

Prepare a scoping study to further assess the feasibility of establishing a small voluntary house raising/redevelopment/flood proofing scheme (Council)

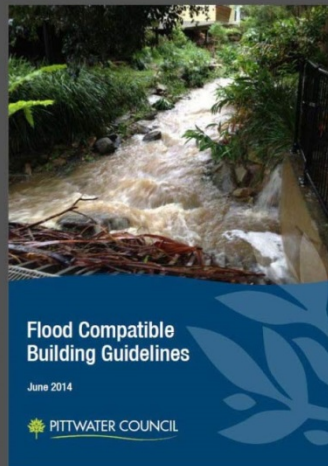


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Flood Proofing Guidelines

Recommendations:

- *Amend Pittwater Council's Flood Compatible Building Guidelines as suggested (Council)*
- *Prepare a one-page, graphic summary of the Guidelines (Council)*



Public Works



Planning Policy Revision

Recommendations:

- *Review and adopt the revised flood risk management provisions of Pittwater DCP 21*

 PITTWATER COUNCIL

Appendix 8

Flood Risk Management Policy
for Development in Pittwater



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Response Modification Measures

Flood Warning System
Emergency Response Planning
Flood Education

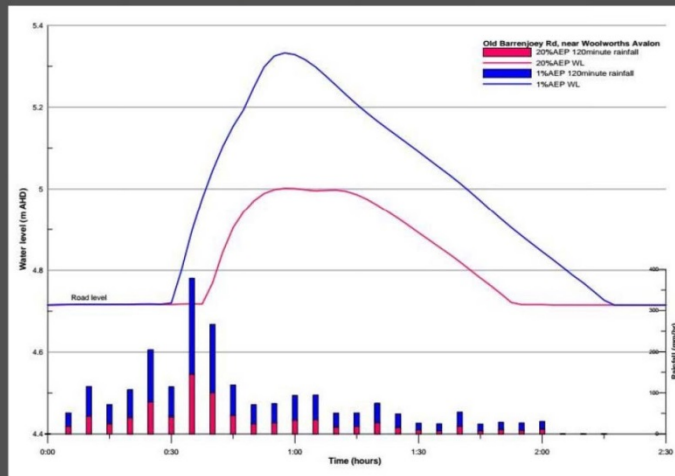


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Flood Warning System

Flood Warning System



Flood Warning System

Recommendations:

- Continue to promote the Northern Beaches Flood Information Network website;
- Alarm the Avalon Golf Course rain gauge so that it issues email/SMS when rain triggers are reached
- Consider installing a second real-time rain gauge in the vicinity of Bilgola Plateau Public School
- Include Avalon Palm Beach Business Chamber Inc. on the recipient list for alerts when rainfall triggers are reached
- Transition towards an opt in system for receiving emails/SMS
- Devise appropriate messages to accompany the rainfall alerts



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Emergency Response Planning



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Emergency Response Planning

Recommendation:

- Prepare a Pittwater Local Flood Plan:
 - recognising the limits to evacuation;
 - identifying evacuation shelters that people in the Avalon commercial district could access at short notice;
 - using the flood intelligence contained in this study;
 - identifying hotspots requiring attention (NSW SES)



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Emergency Response Planning

Recommendation:

- Encourage and assist key floodplain exposures to prepare and update their own flood emergency plans (NSW SES, Council)

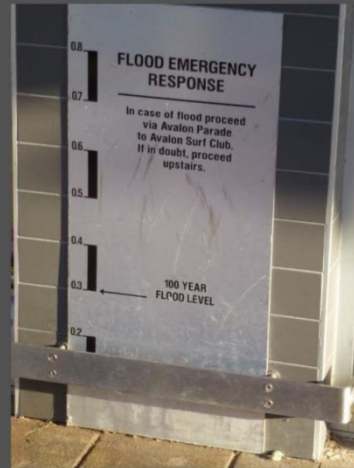


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Flood Education

Northern Beaches Flood & Coastal Storm Education Strategy



Flood Education

Required Messages:

- Floods are a genuine hazard within the study area and that effort should be made to prepare for flooding
- Bigger and faster-rising floods than have been experienced previously will one day occur
- 'Don't let your business go under'
- 'Never drive, ride or walk through floodwater' because...
- Floodwaters and play don't mix because...



Flood Education

Recommendations:

- *Develop a library or mobile display using historical flood photos, modelled flood extents and appropriate messaging;*



Image: 1976 flood event

Source: Avalon Beach Historical Society



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Flood Education

Recommendations:

- *Develop an accessible flood emergency plan template suitable for use by Avalon Beach businesses;*

EASTWOOD COMMERCIAL DISTRICT
SITE FLOOD EMERGENCY RESPONSE PLAN

INSERT NAME OF BUSINESS
Insert Type of Business (e.g. restaurant, video hire)
Insert Address of Business
Insert Phone Number of Business

Eastwood has a history of severe flash flooding. This photo was taken in the November 1984 flood. A damaging flood also occurred in February 2016.
Flooding is both costly and dangerous.
The purpose of this template is to help you plan for flooding, to reduce damage and increase safety.

DISCLAIMER
This flood emergency response plan template is intended for use by small flood-prone businesses in Eastwood, NSW, Australia. It has been prepared by Council consulting to the City of Ryde. The Council and Council makes no representation as to the accuracy or authority of the content of the plan, nor do they accept any liability to any person for the information or advice (or the use of such information or advice) which is provided in the plan or incorporated into it by reference.

INSERT NAME OF BUSINESS Site Flood Emergency Response Plan
last updated: April 2015



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Flood Education

Recommendations:

- *Hold a Business FloodSafe Breakfast in conjunction with Avalon Palm Beach Business Chamber Inc.;*



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Flood Education

Recommendations:

- *Conduct 'meet-the-street' type events for residents at Pittwater Palms retirements village and at south Elaine Ave;*



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Flood Education

Recommendations:

- *Engage with students at Barrenjoey High School to help them understand flood behaviour near the school and to promote safe responses, including not to play in flooded creeks and drains;*



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Flood Education

Recommendations:

Install signage

- *indicating entrances to evacuation shelters in Avalon commercial district;*
- *in flood prone carparks in Avalon commercial centre and Bilgola Beach;*
- *flood depth indicators at ~four low-points on Barrenjoey Rd;*
- *in any detention basins where flooding could pond to dangerous depths.*



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Recommended Options

Description	Capital Cost
Catalpa Reserve detention basin	\$0.7M
Toongarri Reserve detention basin	\$1.75M
Consider strategic rezoning to convert high risk areas to open space	n/a
Voluntary house raising/redevelopment/flood proofing scoping study	\$15K
Amend Flood Compatible Building Guidelines and prepare 1-page summary	\$10K
Review and adopt revised flood risk management controls in DCP	Staff costs
Flood warning system initiatives (one new rain gauge, two gauges alarmed)	\$20K
Prepare Pittwater Local Flood Plan	Staff costs
Encourage/assist key floodplain exposures to prepare flood emergency plans	Staff costs
Flood education initiatives (display, plan template, breakfast, meet-the-street x2, Barrenjoey High School outreach, signage)	\$80K



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Implications of Climate Change

Adopted climate change scenario

- 0.9m sea level rise
- 30% increase in design rainfall for 1% AEP



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Implications of Climate Change

Number of dwellings and business premises/public sector buildings flooded over floor depth in 1% AEP event

Depth over (below) floor in 1% AEP event	Existing Conditions	
	Residential	Non-residential
0.0-0.1m	115	1
0.1-0.3m	84	1
0.3-0.5m	18	1
0.5-1.0m	2	1
>1.0m	0	1
TOTAL flooded over floor	219	5



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Implications of Climate Change

Flood Modification

- Flood modification options still provide benefit but to a reduced extent
- Designs should allow for allowance of adaptation

Property modification

- Climate change would increase the BCR

Response Modification

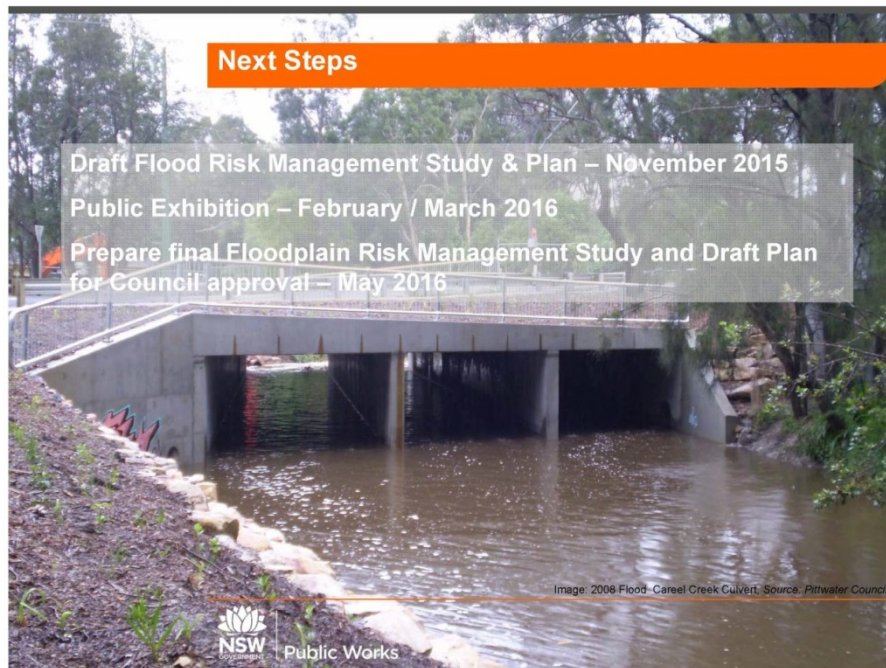
- Climate change would increase the BCR

Needs to be reviewed in the future



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C10.6 Minutes of the Natural Environment Reference Group Meeting held on 11 November 2015

Meeting: Natural Environment Committee

Date: 7 December 2015

COMMUNITY STRATEGIC PLAN STRATEGY: Corporate Management

COMMUNITY STRATEGIC PLAN OBJECTIVE:

- To provide leadership through ethical, accountable and legislative decision-making processes
- To ensure local democratic representation
- To engage proactively with the community in a way that is consistent, appropriate and effective

DELIVERY PROGRAM ACTION:

- Maintain and Service Council's Range of Committees
-

1.0 EXECUTIVE SUMMARY

1.1 SUMMARY

The 11 November 2015 Meeting considered the following discussion topics:

- Boomerang Bags Avalon
 - Waste Management Operations & Education Update
 - Pittwater Community Gardens Update
 - Cannes Reserve Flying-fox Maintenance
 - Discussion Points Survey Results
-

2.0 RECOMMENDATION

1. That Council note the Minutes of the Natural Environment Reference Group Meeting held on 11 November 2015 that relate to the discussion on:

- *Boomerang Bags Avalon*
- *Waste Management Operations & Education Update*
- *Pittwater Community Gardens Update*
- *Cannes Reserve Flying-fox Maintenance*
- *Discussion Points Survey Results*

2. The Group further addressed the following issues under Emerging Business:

- *Wood Smoke Update*
- *Sydney Water – Wastewater Notices on Beaches*
- *Tree Preservation Strategy Across Pittwater*

3.0 BACKGROUND

3.1 PURPOSE

To present to Council for consideration, Minutes of the Natural Environment Reference Group Meeting held on 11 November 2015 (refer **Attachment 1**).

3.2 BACKGROUND

The Natural Environment Reference Group has a primary role of assisting the Pittwater 2025 Strategic Plan by critically analysing and reviewing the Strategic Goals aligned to the Pittwater Natural Environment and providing Reference Points for further consideration by Council.

The Natural Environment Reference Group has a specific focus on Key Direction 2 – Valuing and caring for our Natural Environment with the primary aims to:

- Reduce our ecological footprint
- Protect our bushland and biodiversity
- Improve the health of our beaches and waterways.

As per the Charter of the Natural Environment Reference Group (Reporting Procedures):

Minutes of meetings to be reported to the Natural Environment Committee of Council for consideration.

3.3 POLICY IMPLICATIONS

Nil.

3.4 RELATED LEGISLATION

Nil

3.5 FINANCIAL ISSUES

Budget & Resources Implications

Reference points arising from Reference Groups are considered by Council as part of the Delivery Plan process

4.0 KEY ISSUES

4.1 Boomerang Bags Avalon is a not-for-profit community initiative providing an innovative alternative to plastic bags.

4.2 Waste Management Operations and Education Update addressed the members questions concerning general clean up collections, Kimbriki recycling initiatives, abandoned dinghies and off shore waste collection issues.

4.3 The presentation on Community Gardens updated members on the establishment of the Woolcott Reserve Community Garden at Newport and resulted in the following reference point in relation to the establishment of a Mona Vale Community Garden Group:

- *Mona Vale Residents Association to liaise re further supporting the Mona Vale Community Garden Group.*

4.4 The update on flying-fox management at Cannes Reserve addressed the ongoing issues associated with Council's efforts to disburse the large colony of flying-foxes at Avalon.

- 4.5 A recent survey across reference groups identified the three top priorities across the three key strategic directions for future discussion.
-

5.0 ATTACHMENTS

Attachment 1 – Minutes of the Natural Environment Reference Group Meeting held on 11 November 2015.

6.0 SUSTAINABILITY ASSESSMENT

A sustainability assessment is not required for Minutes of Meetings.

Report prepared by

Mark Ferguson
GENERAL MANAGER



NATURAL ENVIRONMENT REFERENCE GROUP

MINUTES

11 November 2015

Commencing at 4.02pm

M J Ferguson
General Manager



WWW.PITTWATER.NSW.GOV.AU

ATTENDANCE

Members of the Committee:

Cr Ian White, Chairperson

Community Representatives:

Ms Wendy Attrill, Clareville and Bilgola Plateau Residents Association

Ms Brita Benjamin, Pittwater Community Gardens

Ms Roberta Conroy, Bayview–Church Point Residents Association

Mr Andrew Ginns, Pittwater Resident Representative

Ms Susie Kennedy, Palm Beach & Whale Beach Association

Ms Sharon Kinnison, Scotland Island Residents Association

Ms Karen Lambert, West Pittwater Community Association

Ms Margaret Makin, Pittwater Resident Representative

Mr Dave Murray, Mona Vale Residents Association

Mr Martin Porter, Surfrider Foundation

Mr Anthony Robinson, Sustainability Pittwater

Mr William Thomson, Newport Residents Association

Council Advisors:

Mr Mark Ferguson, General Manager

Ms Robina Bramich, Principal Environmental Health Officer, Environmental Compliance & Waste

Mr Matt Hansen, Principal Officer, Natural Environment & Education

Ms Jenny Cronan, Landscape Architect, Reserves and Recreation

Mr David Bremner, Community Engagement Officer

Ms Pamela Tasker, Minute Secretary / Administration Officer

Invitees and Observers:

Ms Laurel Wood, Boomerang Bags Avalon

Ms Kirsty Gyles, Boomerang Bags Avalon

Ms Tanya Leishman, Education Officer, Environmental Compliance & Waste

Natural Environment Reference Group Meeting

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NE4.2	Waste Management Operations & Education Update	
NE4.3	Pittwater Community Gardens Update	
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NE4.5	Discussion Points Survey Results	
5.0	Emerging Business	
5.1	Dunes Damage Survey Update	
5.2	Wood Smoke Update	
5.3	Sydney Water – Wastewater Notices on Beaches	
5.4	Tree Preservation Strategy Across Pittwater	
6.0	Next Meeting	

1.0 Apologies

Notes:

1. Apologies were received from Cr Alex McTaggart (Chairperson), Mr James De Vitt (Radio Northern Beaches), Ms Gloria Carroll (Manly Warringah Pittwater Historical Society) and Ms Virginia Leitch (West Pittwater Community Association).
2. The members accepted the apologies.
3. Cr White attended the meeting as alternative Chairperson.
4. Ms Karen Lambert attended as the alternative delegate on behalf of the West Pittwater Community Association.
5. Ms Laurel Wood and Ms Kirsty Gyles attended on behalf of Boomerang Bags Avalon.

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 12 August 2015, copies of which were distributed to all Reference Group Members, be endorsed as a true and accurate record of that meeting.

(Mr Martin Porter / Mr Bill Thomson)

4.0 Discussion Topics

NE4.1 Boomerang Bags

Proceedings in Brief

Ms Laurel Wood and Ms Kirsty Gyles of Boomerang Bags Avalon addressed the meeting on this item. Boomerang Bags is a not-for-profit organisation providing an innovative alternative to plastic bags in a way that connects and engages with local communities, fosters sustainable behaviour, raises awareness and reduces waste while creating a sense of purpose and community ownership. Dedicated volunteers, schools and community groups around Australia get together to create thousands of re-useable Boomerang Bags using recycled materials.

More information (including how to volunteer) is available via the website link:

<http://boomerangbags.org/>

DISCUSSION POINTS:

- Boomerang Bags Avalon is supported by the Surfrider Foundation and Living Ocean as plastic bags clog the waterways and suffocate marine life. Support has also been received from the Avalon Chamber of Commerce, Macquarie University and local businesses such as Bunnings.
- Pittwater Council has provided substantial ongoing support, including financial assistance via grants money, advertising and publicity, promotional opportunities through local markets and car boot sales, and the use of a room in the Avalon Recreation Centre which the group use as a workshop.
- Representatives from Boomerang Bags recently presented to The Hon. Rob Stokes (Member for Pittwater and Minister for Planning). A Private Members Statement delivered to the NSW Parliament on 5 August 2015 by Mr Stokes is at **Appendix 1**.
- Local Government cannot ban the use of plastic bags in their LGA as it needs to be state legislation. A bill calling for a ban on plastic shopping bags was recently defeated in the NSW State Parliament.
- In Darwin all stores charge 40c per bag which has resulted in almost everyone taking their own reusable cloth bag.

Q: Has Boomerang Bags made any progress on Woolworths Avalon changing over from plastic bags in the fruit and vegetable section?

A: We have made some progress in that Woolworths Avalon have now committed to having cardboard boxes available for shoppers. Meaningful change will only be brought about through the Avalon community pushing their local stores to adopt more sustainable practices. Hopefully education programs and a growing awareness of sustainability issues will lead to an increase in community activism.

- A number of alternative products for the storage of fruit and vegetables were discussed, including some good products identified on line and the white laundry bags which are available in the laundry aisle of any supermarket.
- Boomerang Bags could consider manufacturing similar bags in future for sale at a small charge, perhaps just enough to cover costs and fund other initiatives.

- Excess packaging on food and other commodities is unnecessary and creates a huge environmental problem.
- Companies or organisations often have surplus promotional bags left over after events. It was suggested that it may be worth approaching local businesses to donate surplus stock.
- Barrenjoey High School will hopefully take on the Boomerang Bags initiative as part of its Design & Technology curriculum next year.
- The concept of Boomerang Bags is slowly spreading down the peninsula. Hopefully other villages in Pittwater and across the Northern Beaches will see results in Avalon and want to replicate the experience in their own town centre.
- Members agreed this was an excellent example of sustainability. The concept involves not just recycling old material, but the constant reuse through washing and returning the bags to the store.
- Ms Wood and Ms Gyles stressed the tremendous personal satisfaction gained by the Boomerang Bags volunteers:
 - working together with the community
 - the creative process involved in sewing the bags
 - reducing the number of plastic bags in the environment

Note:

The Chair and members thanked Ms Wood and Ms Gyles for their presentation.

NE4.2 Waste Management Operations and Education Update

Proceedings in Brief

Ms Robina Bramich, Principal Environmental Health Officer, addressed the meeting on this item. A copy of the PowerPoint presentation has been provided at **Appendix 2** for the information of members.

DISCUSSION POINTS:

General Clean Up Collection:

- Q:** The general cleanup was a good recycling opportunity for both householders and others such as scrap metal or used furniture collectors. Now residents don't want useable surplus goods crushed in a truck or going to landfill so hang on to it. Hasn't the new service for large goods collection reduced opportunities for recycling and some cottage industry?
- A:** Council is continuing trying to promote alternatives to the general clean up collections. Goods can be dropped off at the reuse centre at Kimbriki Resource Recovery Centre, our Waste Education Team organise car boot sales at regular intervals plus Council promotes garage sales and donations to charity shops. Council is continuing to promote other innovate ways to recycle rather than stockpiling or sending to landfill. There were risks associated with scavenging for the public, for Council and for the environment.

- Q:** Aren't the risks still present? I've noticed goods put out for collection that have sat on the road reserve well after the regular collection date and they do attract other rubbish.
- A:** It could be that the general clean up items are not always booked in. We do ask people to phone for collection and to place the items out the night before to discourage stockpiling. If a resident does have a missed collection they can lodge a service complaint with Council and this will be managed with the contractor.
- Q:** Can residents pay for more than the permitted two hard waste collections per calendar year?
- A:** No it isn't possible to order a third service and pay for it at present. Collection is subject to our negotiated contract with the waste services provider. And it was only two general cleanups previously so the current service is comparable.
- Q:** Doesn't doing it this way work out more expensive than the two general clean ups?
- A:** Council considered the financial aspects of the service prior to implementing the new service and the costs were not prohibitive as they were considered with a whole of contract extension.

Kimbriki Resource Recovery Centre:

Some members commented that Kimbriki doesn't recycle everything.

Responses:

- If you have an issue with Kimbriki it should be reported to them for consideration on ways to improve service.
- If you present at the landfill area to drop off your load you may miss the opportunity to recycle. If you present to the reuse shop or drop off at the designated recycle areas the goods will be recycled.
- Kimbriki has received a grant which will enable them to have staffed dedicated areas within the next year or so where it is intended that a load is sorted for recycling immediately.
- Kimbriki is trying to reduce landfill wherever possible so is constantly looking at more recycling options.

- Q:** How many other LGAs have adopted the same system of booked collections of hard goods?
- A:** At present it is a bit of both. Certainly some councils are still doing general cleanups, but the booking system appears to be evolving and gaining in favour.
- Q:** Some cities overseas have staffed satellite recycling depots where people can drop off their recycling locally rather than having to take them to the tip. Has that been considered here?
- A:** SHOROC identified and considered this as another recycling option however there were so many issues such as the availability of land, operating facilities, permanent staffing, security and illegal dumping. Even though there are benefits it has been determined that Kimbriki is the sole practicable site for this area.

Abandoned Dinghies:

- Q:** What happens with abandoned dinghies?
- A:** Any dinghies identified as derelict, abandoned or illegally stored may be impounded by Council and owners can reclaim them. Council's Reserves and Recreation business unit auction unclaimed dinghies.

Public Wharves - Skip Bins:

Council has now installed the smaller public wharf skip bins and they are working much better than the old larger bins. The storage capacity has remained the same but the smaller bins are easier for residents to use.

Q: Is it possible to provide additional services at the offshore public wharves over Christmas and New Year?

A: Council has an additional Wednesday service over the entire summer holiday period.

National Recycling Week 9-15 November:

Customer Service Centres are accepting used batteries and mobile phones for recycling during National Recycling Week. Free worm farms or compost bins are being offered in return.

Note:

Ms Conroy left the meeting at 4.55pm.

NE4.2 Community Garden – Woolcott Reserve Newport

Proceedings in Brief

Ms Jenny Cronan, Landscape Architect, addressed the meeting on this item. A copy of the PowerPoint presentation is attached at **Appendix 3**.

Woolcott Reserve Community Garden:

The team has looked at several different community gardens across Sydney in researching the best design and practice for Woolcott Reserve.

Completed Housekeeping:

- A committee and office bearers have been elected.
- Membership and Annual Subscription forms and rates have been prepared.
- Incorporated Association and Constitution established (Peninsula Community Gardens Inc.)
- Risk factors addressed: soil testing and identification of underground services.
- Bank account, budgets and insurances established.
- Licence agreement with Council for the use of Woolcott Reserve signed.

Garden design:

- Developed a garden bed layout plan
- Plan includes future infrastructure such as water tanks and a shed.
- Considering vertical gardens to maximise sunlight.
- Considering native beehives.
- Setting up recycle sections with compost bins and worm farms.
- Asking the local community to donate vegetable scraps.
- Offering worm castings in exchange.
- Recycling an abandoned dinghy (beyond repair) as a garden bed with herbs to share with the neighbours.