
Natural Environment Committee

10.0 Natural Environment Committee Business

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| C10.1 | Draft Coastal Zone Management Plan for Bilgola Beach and Basin Beach - Public Exhibition |
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Meeting: Natural Environment Committee

Date: 6 July 2015

COMMUNITY STRATEGIC PLAN STRATEGY: Beach & Coastal Management Strategy
Land Use & Development

COMMUNITY STRATEGIC PLAN OBJECTIVE:

- To responsibly manage the risks associated with the coastal environment, including any exacerbated by global warming
- To ensure development responds to hazards and climate change
- To effectively respond to state and regional planning initiatives

DELIVERY PROGRAM ACTION:

- Consider the impacts of climate change and sea level rise and make provisions in Council's policies, strategies and plans
 - Develop, review and implement flood and coastal storm risk studies and plans in accordance with NSW Government guidelines
 - Monitor legislative and regulatory reforms relating to land use planning and respond and advocate on behalf of Council
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1.0 EXECUTIVE SUMMARY

1.1 SUMMARY

- Pittwater Council has engaged a coastal engineering consultancy, Royal HaskoningDHV, to assist in the preparation of a Coastal Zone Management Plan (CZMP) for Bilgola Beach (Bilgola) and Basin Beach (Mona Vale).
- Bilgola Beach and Basin Beach have been designated as authorised locations (coastal hotspots) by the NSW Government and are subject to a Ministerial Direction by the NSW Minister for the Environment to have CZMPs prepared by 30 June 2015.
- The CZMP covers the sandy beach areas of Bilgola Beach and Basin Beach and will guide the development of beachfront properties in the future and provide management direction to help protect the environmental qualities and recreational opportunities afforded by these iconic beach locations.
- The CZMP will also inform other management plans as well as Council's environmental planning provisions and must be considered in the assessment of DAs for any proposed development within the area covered by the CZMP.
- Bilgola Beach and Basin Beach have been subjected to a number of severe erosion events during the past 50 years; however there has been no evidence of shoreline recession at either beach during this period.
- Credible scientific opinion indicates that global mean sea level will continue to rise during the 21st Century. This is likely to cause beaches to recede, placing development at greater risk from coastal hazards and reducing the available width of sandy beaches for public access and recreational activities.
- Council has an obligation to plan for and manage the likely impacts of climate change, especially sea level rise, so that new development is not placed at unacceptable risk of damage from coastal hazards during its design life and future generations may continue to enjoy public beach areas.

- The risk management approach utilised in the Draft Plan defines appropriate setback lines that will enable proposed beachfront development to achieve an acceptable level of risk if constructed on either conventional or deep pile foundations in compliance with the applicable setback.
- If coastal protection works such as seawalls are proposed these will need to be contained wholly within the private property boundary, properly integrated with any existing approved structures and must not cause unacceptable off-site impacts on neighbouring properties or the public beach.
- The Draft Plan must be submitted to the Minister for the Environment for certification. The Minister may seek the advice of the NSW Coastal Panel in this regard. The Coastal Panel may recommend changes or refer the Draft Plan to OEH for further review. OEH will then advise the Minister in respect of the request for certification from Council.
- Once the Minister has certified the Draft Plan, Council will be required to make the plan and have it published in the NSW Government Gazette.

2.0 RECOMMENDATION

1. *That in accordance with the requirements of s55E of the Coastal Protection Act 1979, the draft Coastal Zone Management Plan for Bilgola Beach and Basin Beach be placed on public exhibition for a minimum period of twenty one (21) days.*
 2. *That the public exhibition period commence on Friday 17 July 2015 and conclude on Friday 7 August 2015 with submissions invited from the community.*
 3. *That the draft Coastal Zone Management Plan for Bilgola Beach and Basin Beach, as may be amended following public exhibition, be submitted to the NSW Minister for the Environment for certification under s55G of the Coastal Protection Act 1979.*
 4. *That a further report be provided to Council outlining the outcome of the certification request as well as the process and timeframe for adoption and gazettal of the Coastal Zone Management Plan for Bilgola Beach and Basin Beach, once further advice has been received from the NSW Minister for the Environment.*
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3.0 BACKGROUND

3.1 PURPOSE OF REPORT

To seek the approval of Council to place on public exhibition the draft Coastal Zone Management Plan for Bilgola Beach and Basin Beach (the Draft Plan) in accordance with the statutory requirements of the NSW Government and consistent with the community engagement plan prepared for the project.

3.2 BACKGROUND

Haskoning Australia Pty Ltd, a company of Royal HaskoningDHV, has been engaged to assist Council in preparing a Coastal Zone Management Plan (CZMP) for Bilgola Beach (Bilgola) and Basin Beach (Mona Vale) under Ministerial Direction from the NSW Minister for the Environment.

Both Bilgola Beach and Basin Beach have been declared authorised locations (commonly known as coastal erosion hotspots) by the NSW Government. As a part of his announcement of the Stage Two Coastal Reforms in November 2014, the Minister for the Environment requested that all Councils preparing coastal zone management plans under Ministerial Direction submit their plans for certification by 30 June 2015.

The Minister for the Environment has been advised that while Council will have completed the draft CZMP for Bilgola Beach and Basin Beach by the due date, public exhibition of the document will extend beyond this date and consequently the Draft Plan will be submitted for certification once any necessary amendments have been made following the public consultation phase.

The Draft Plan covers the sandy beach areas of Bilgola Beach and Basin Beach as well as adjacent beachfront residential development and public infrastructure, reserves and recreational facilities.

The NSW Government's Guidelines for preparing Coastal Zone Management Plans stipulate a range of coastal zone management issues that must be addressed by the Draft Plan including risks to public and private built assets, pressures on coastal ecosystems as well as the ongoing community access to and use and enjoyment of public beach areas.

A CZMP for these beaches is intended to guide the development of beachfront properties in the future and to help protect the environmental qualities and recreational opportunities that are so highly valued by the Pittwater community.

The Draft Plan has evaluated different management options in order to identify achievable measures that will enable new development to comply with acceptable risk standards. In order to responsibly discharge Council's duty of care and to address the potential long term impacts of sea level rise, the Draft Plan will also inform the revision of relevant Council planning policies and development controls as well as Council's planning instrument.

3.3 POLICY IMPLICATIONS

Once certified the CZMP will have implications for the following Council management plans, policies and environmental planning provisions, all of which may require review and/or amendment to be consistent with the certified CZMP.

- Bilgola Beach Plan of Management
- Mona Vale Beach Plan of Management
- Pittwater LEP 2014
- Pittwater 21 DCP
- Coastline Risk Management Policy for Development in Pittwater
- Risk Management Policy for Coastal Public Buildings and Assets in Pittwater

3.4 RELATED LEGISLATION

A draft Coastal Zone Management Plan for Bilgola Beach and Basin Beach has been prepared in response to a Ministerial Direction issued under s55B of the *Coastal Protection Act 1979*.

The Draft Plan will be submitted for certification prior to the drafting and completion of the Coastal Management Bill (to replace the existing Coastal Protection Act) and the new Coastal Management Manual that are currently being developed as a part of the NSW Government's Stage Two Coastal Reform process. To the extent of any inconsistencies with the new Coastal Management Act, the new Coastal Management Manual and proposed financial arrangements to be included as a part of the Stage 2 Coastal Reforms the CZMP for Bilgola Beach and Basin Beach may require revision and amendment at a later date.

The Draft Plan has been prepared consistent with the provisions and requirements of the *Coastal Protection Act 1979* (CP Act) and in accordance with the NSW Guidelines for Preparing Coastal Zone Management Plans as well as all relevant statutory coastal zone management guidelines published by the NSW Government.

Other related legislation includes:

- *NSW Coastal Policy (1997)* – An objective of the Policy is to ensure that climate change is recognised and considered in planning and managing the NSW coastal zone.
- Planning Circular PS 14-003 Coastal Hazard Notations on Section 149 Planning Certificates – The Planning Circular aims to ensure that information relating to coastal hazards affecting land is relevant, appropriate and clearly articulated.
- *Local Government Act 1993* – Section 733 of the LG Act provides councils with certain indemnities if coastline hazards are managed in good faith and in accordance with the provisions of a manual relating to the management of the coastline.
- *Environmental Planning and Assessment Act 1979* – Under s79C of the EP&A Act, council must take into consideration the provisions of any coastal zone management plan in the determination of a Development Application.

3.5 FINANCIAL ISSUES

3.5.1 Budget

- A program to develop CZMPs for all Pittwater Beaches has been included under Council's current Delivery Plan and Budget. The project to develop a CZMP for Bilgola Beach and Basin Beach is a part of this program.
- The total project cost of the Draft Plan is \$80,000 (ex GST). The project has been funded on a dollar for dollar contribution basis with Council (\$40,000 Pittwater Council + \$40,000 NSW Government), under a financial assistance grant provided by the NSW Office of Environment & Heritage (OEH).

3.5.2 Resources Implications

- Council is obliged to consider the potential impacts of coastal hazards, including hazards exacerbated by climate change, when developing new infrastructure and managing existing assets and infrastructure in the coastal zone of the Pittwater LGA. Certified CZMPs will inform and guide this process.
- Asset Management Plans prepared by Council will also need to factor in appropriate maintenance, adaptation and renewal provisions to address the likely impacts of coastal hazards exacerbated by climate change, in particular sea level rise, as recommended by the relevant CZMP.

4.0 KEY ISSUES

4.1 CZMP for Bilgola Beach and Basin Beach

- Council has a legal obligation and duty of care to make adequate provisions to plan for the likely impacts of climate change, so that new development is not placed at unacceptable risk of damage from coastal hazards during its design life.
- A major consideration of the Draft Plan is to ensure that future development on beachfront property (including public lands) has an acceptably low risk of damage from coastal erosion and recession whilst enabling the public to continue to access and enjoy public beach areas.
- The Draft Plan determines the level of risk to existing beachfront lands and evaluates the different management options available in order to define achievable measures to enable new development to meet acceptable risk standards.

- Any works proposed to meet the acceptable risk levels defined by the Draft Plan must be wholly undertaken within the boundaries of the affected private property and the costs of such works must be wholly borne by the private landowner. The Draft Plan does not support the use of public land or council funds to provide long term protection from coastal hazards for private beachfront properties.
- The acceptable risk approach has previously been utilised in the development of Council's Geotechnical Risk Management Policy and associated development controls. The Draft Plan will similarly inform the review of the Coastline Risk Management Policy for Development in Pittwater and the preparation of appropriate controls under P21 DCP consistent with the acceptable risk approach.
- In preparing other management plans dealing with these beaches as well as when assessing development applications for beachfront properties, Council will be obliged to consider the specific provisions and recommendations of the gazetted CZMP for Bilgola Beach and Basin Beach.

4.2 Current Risk from Coastal Hazards

- Coastal erosion and recession are the key coastline hazards at these beaches, with coastal inundation from wave run-up also a potential hazard. Coastal erosion and inundation may affect Bilgola Beach and Basin Beach during severe storms under current sea level conditions and coastal recession may begin to have an impact under elevated sea levels likely to occur in the future.
- Erosion is the short term beach cut that occurs over hours/days due to large waves and elevated water levels experienced during major ocean storms. Eroded sand is moved offshore by wave action to form sandbars. Sand then moves back from these sandbars to rebuild the beach over periods of months under more benign conditions.
- Recession is a progressive landward movement of the average long term position of the shoreline over a period of years.
- For the period of the last 50 years, photogrammetric evidence supports the supposition that there has been no long term recession at either Bilgola Beach or Basin Beach. Significant short term erosion events have affected both beaches however, from time to time, during this period.
- Beachfront property at Bilgola has been damaged by coastal erosion and storm processes in the past, most notably in 1974. The rock revetment that was constructed during the 1974 storms was installed as an emergency response to coastal erosion threatening private properties.
- In more recent years, the risk of damage to residential development at Bilgola Beach from coastal erosion has been generally managed by property owners constructing new development on deep pile foundations.
- At Basin Beach there are no known reports of significant damage to development from coastal storms, although emergency rock protective works have been carried out in the past when property has been threatened by coastal erosion, for example after storms in 1974 and 1978.
- The risk of damage to residential development at Basin Beach has largely been managed by residents constructing buried seawalls to protect new development and/or constructing new development on deep pile foundations.

4.3 Future Risks from Coastal Hazards

- Credible scientific opinion accepts that global mean sea level will continue to rise during the 21st century and that the rate of sea level rise will very likely accelerate due to increased ocean warming and loss of mass from glaciers and ice sheets. This is likely to cause beaches to recede (move landward), placing development at greater risk and reducing the width of sandy beaches available for public access and recreational activities.

- In the long term, as sea level rise accelerates, the only way to maintain sandy beaches will be through beach nourishment programs that import sand from sources outside of the affected beach compartment. The most abundant and economically viable source of appropriate sand for this purpose is available and could be obtained from sediment deposits offshore from the Sydney Region in waters generally deeper than 30 metres.
- As the NSW Government does not currently permit the extraction of offshore sand deposits for any purpose, the Draft Plan recommends that beach nourishment continue to be discussed and investigated as a potential future option for maintaining and conserving public beach areas.
- The risk management approach utilised in the Draft Plan defines appropriate setback lines that will enable beachfront development, proposed to be constructed utilising either conventional or deep pile foundations, to achieve an acceptable level of risk of damage from coastal processes.
- Coastal protection works such as seawalls and terminal revetments may also be considered to protect land and development as long as the proposed works are entirely within the lot boundary of a property and do not cause unacceptable end effects or other off-site impacts on neighbouring properties and public lands.
- Seawalls will generally need to be integrated with any adjoining approved structures so as to mitigate adverse end effects. In these circumstances Council will also be obliged to apply the relevant provisions of s55M of the Coastal Protection Act 1979 to ensure that arrangements are in place for the ongoing maintenance of the proposed structure and to manage any future off-site impacts caused by the structure.
- The Draft Plan recommends a reduced design life of 60 years for new development at the affected beaches. This timeframe is in keeping with industry accepted structural and economic design lives for residential structures. The lesser design life (compared to the 100 years stipulated in Council's existing coastal development policy) reduces the level of uncertainty inherent in longer term sea level rise projections thereby enabling a more accurate estimation of risk levels for affected properties.

4.4 Public Exhibition and Community Engagement

Once the Draft Plan has been approved by Council for public exhibition, the following community engagement activities will be undertaken to disseminate information and provide opportunities for community consultation and feedback:

- Public exhibition of the Draft Plan will be notified by Public Notice in the Manly Daily and will be conducted for a period of at least twenty one (21) days in accordance with s55E of the *Coastal Protection Act 1979* and the requirements of the relevant statutory guidelines;
- Copies of the Draft Plan and information sheets will be available for viewing at the Mona Vale and Avalon Customer Service Centres as well as on Council's website;
- Exhibition of the Draft Plan and notification of the details of the community information meeting will also be advertised on the Community Notice Board in the Manly Daily;
- On-line information including an electronic copy of the Draft Plan will be provided on Council's website. A link will be provided to an on-line comment form to enable the public to electronically provide feedback to the project team;
- A community information meeting will be conducted during which the consultant will present the technical aspects of the Draft Plan and interested stakeholders will have an opportunity to raise issues of specific interest or concern; and
- All affected property owners will be directly contacted by letter, at the commencement of the exhibition period, to advise them as to how they may take advantage of the available community engagement and feedback opportunities proposed.

4.5 Actions Following the Public Exhibition Period

- All submissions received during the exhibition period will be considered and if required the Draft Plan will be amended as necessary consistent with the provisions of the statutory guidelines.
- The amended Draft Plan will be submitted to the Minister for the Environment for certification in accordance with s55G (1) of the Coastal Protection Act 1979. It is likely that the Minister will refer the draft plan to the NSW Coastal Panel for advice as per s55G (3) of the CP Act.
- The NSW Coastal Panel may recommend changes to the Draft Plan or refer the Draft Plan to OEH. OEH will assess the Draft Plan against the minimum requirements of the CP Act and the Guidelines for Preparing Coastal Zone Management Plans. Advice will then be provided to the Minister in relation to the request for certification from Council.
- Once the Minister has certified the Draft Plan, Council is required to make the Plan and have it published in the NSW Government Gazette.
- Council would then need to commence a program of amending and updating the relevant policies, development controls and management documents to be consistent with the certified CZMP for Bilgola Beach and Basin Beach.
- Once the Stage 2 Coastal Management Reforms have been completed by the NSW Government and the new Coastal Management Act and NSW Coastal Management Manual are in force, Council should commence the preparation of coastal zone management plans for the remaining Pittwater open coast beaches.

5.0 ATTACHMENTS / TABLED DOCUMENTS

Tabled: Draft Coastal Zone Management Plan for Bilgola Beach and Basin Beach (May 2015)

6.0 SUSTAINABILITY ASSESSMENT

6.1 GOVERNANCE & RISK

6.1.1 Community Engagement

- A community engagement strategy was included into the consultancy brief for the project and funded under the project budget. A community engagement plan has been prepared and a précis of the main community engagement actions proposed has been included under the 'Key Issues' section of this report.
- Consultation with affected stakeholders and interested members of the public is already underway and ongoing and has included information mail-outs to affected property owners, stakeholder feedback to the project consultant, a community information workshop and a presentation of the project to a meeting of the Natural Environment Reference Group.

6.1.2 Risk Management

- The Draft Plan will be submitted to the Minister for the Environment for certification. The Minister is likely to refer the Draft Plan to the NSW Coastal Panel for advice. The NSW Coastal Panel may recommend changes to the Draft Plan. OEH may also assess the draft plan against the requirements of the *Coastal Protection Act 1979*. Any amendments necessary or any additional consultation required as a consequence could increase the total project cost.
- Once gazetted, the CZMP will help to manage the identified risks associated with coastal hazards, including those hazards likely to be exacerbated by climate change. The document will also inform other planning and management responsibilities that Council is obliged by statute to discharge or administer.

6.2 ENVIRONMENT

6.2.1 Environmental Impact

- The CZMP will also recommend management actions to help conserve the ecological and amenity values of the subject beach locations.

6.2.2 Mitigation Measures

- A major requirement of the CZMP is to identify the potential impacts of climate change, in particular sea level rise, on the built and natural environments and determine appropriate actions to manage the risks associated with natural hazards that may be exacerbated by these impacts.

6.3 SOCIAL

6.3.1 Address Community Need & Aspirations

- Amendments to the Coastline Risk Management Policy for Development in Pittwater and associated development controls in Pittwater 21 DCP made in response to the new information provided by the certified CZMP will help to reduce the vulnerability of new development to coastal hazards.
- Once adopted by Council the CZMP will also inform disclosures on s149 Planning Certificates as to whether land in the subject beach locations has a current or future exposure to coastal hazards.
- Greater awareness and a better understanding by the community of the risks associated with coastal hazards, particularly those exacerbated by climate change impacts will also stem from the CZMP and its recommendations.

6.3.2 Strengthening local community

- Once all relevant plans and policies have been amended consistent with the recommendations of the CZMP, the risks associated with coastal hazards are more likely to be reduced to an acceptable level for the design life of new development at the subject locations.
- As a consequence, the resilience of the affected communities to sea level rise and increases in storm intensity is likely to be enhanced and the potential for social disruption following storm and erosion events is likely to be reduced.
- Only by preparing appropriate strategies to manage current and future risks associated with natural coastal hazards will it be possible for landowners to continue developing affected coastal lands in the short to medium term.

6.4 ECONOMIC

6.4.1 Economic Development

- By ensuring that adequate planning and management provisions are in place to address the risks associated with natural hazards, especially those likely to be exacerbated by climate change, governments can reduce uncertainty surrounding the development potential of affected coastal properties and thereby increase opportunities for development investment whilst it remains feasible and reasonable to do so.

Report prepared by
Paul Hardie – Principal Officer – Coast & Estuary

Jennifer Pang
MANAGER, CATCHMENT MANAGEMENT & CLIMATE CHANGE

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| C10.2 | Minutes of the Avalon to Palm Beach Floodplain Risk Management Study & Plan Working Group Meeting held on 4 June 2015 |
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Meeting: Natural Environment Committee

Date: 6 July 2015

COMMUNITY STRATEGIC PLAN STRATEGY: Disaster, Emergency & Risk Management

COMMUNITY STRATEGIC PLAN OBJECTIVE:

- To promote a well-informed community and that the Council knows how to effectively respond to disaster and emergency situations before during and after
- To work effectively with all emergency and utility agencies to improve emergency response
- To adhere to best practice risk management principles to facilitate more effective decision-making
- To increase community awareness on effective risk management
- To incorporate risk management in all business activities
- To plan for risks due to natural and manmade hazards

DELIVERY PROGRAM ACTION:

- Develop and implement programs to increase resilience to flood and coastal storms
 - Develop, review and implement flood and coastal storm risk studies and plans in accordance with NSW Government guidelines
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1.0 EXECUTIVE SUMMARY

1.1 SUMMARY

1. The working Group has been formed to provide advice in the preparation of the Avalon to Palm Beach Floodplain Risk Management Study and Plan.
 2. The Draft Working Paper 2 has been completed for the Flood Risk Management Study and Plan.
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2.0 RECOMMENDATION

That the information provided in the report be noted

3.0 BACKGROUND

3.1 PURPOSE

To consider the draft minutes of the Avalon to Palm Beach Floodplain Risk Management Study & Plan (FRMS&P) Working Group meeting held at the Avalon Annexe on 04 June 2015 (refer **Attachment 1**).

3.2 BACKGROUND

The Avalon to Palm Beach Floodplain Risk Management Study and Plan (FRMS&P) Working Group is a forum that assists Pittwater Council in the preparation, development and implementation of floodplain management plans for all flood prone properties between Bilgola Beach to the South and Palm Beach in the North. The Working Group is administered by Pittwater Council.

The formation of the Floodplain Working group by Council is the first formal step in the Floodplain Management Process, as outlines in the NSW Governments Floodplain Development Manual.

The primary function of this working group is to be an advisory body to Council on matters concerning the development, implementation and review of the Avalon to Palm Beach Floodplain Risk Management Study and Plan. The working group meetings provide a forum for the discussions between Council staff, local residents, interested groups and government authorities on technical, social, economic, environmental and cultural issues.

3.3 POLICY IMPLICATIONS

- Nil

3.4 RELATED LEGISLATION

NSW Government Flood Prone Land Policy and Floodplain Development Manual (2005).

3.5 FINANCIAL ISSUES

3.5.3 Budget

- Nil

3.5.4 Resources Implications

- Nil

4.0 KEY ISSUES

Pittwater Council is continuing the next stages of the Floodplain Management Process with the Avalon to Palm Beach Floodplain Risk Management Study and Plan to identify possible flood mitigation and management options for the study area.

The study area covers the suburbs of Bilgola Beach, Bilgola Plateau, Clareville, Avalon Beach, Whale Beach and Palm Beach. This floodplain Risk Management Study and Plan will follow on from the 2013 Careel Creek Catchment Flood Study (WMA Water) and the 2013 Overland Flow Mapping and Flood Study (Cardno) for the study area.

NSW Public Works (Manly Hydraulics Laboratory), a company specialising in flooding and floodplain risk management, is currently undertaking the study.

Under the NSW Government Flood Prone Land Policy, management of flood prone land is primarily the responsibility of councils. The Floodplain Management Process that councils follow in order to identify, understand and manage flood risk is outlined below:

- The Flood Study (completed) defines the nature and extent of the flood problem.
- The Floodplain Risk Management Study (current stage) assesses management options with respect to existing and proposed development.
- The Floodplain Risk management Plan (current stage) provides Council with a management plan for the floodplain, and is often undertaken in conjunction with the Floodplain Risk Management Study.

- Implementation of the Plan involves enacting the recommendations of the Floodplain Risk Management Plan to mitigate flood risks to life and property.

Community consultation is an important component of the Avalon to Palm Beach Floodplain Risk Management Study and Plan. The local knowledge of residents and business operators personal experiences of flooding are an important source of information.

There are a number of ways Council is engaging with the owners of flood prone land in the study area:

- Through an online questionnaire. The questionnaire greatly assists in collating people's knowledge and experience about previous flooding history and existing flood problem areas.
- A Community Working Group has been formed from self-nominated community representations.
- A website has been established to keep the community informed on the study progress.

Avalon to Palm Beach FRMS&P Update – A verbal update by MHL (NSW Public Works) was provided on the progress of the Floodplain Risk Management Study and Plan

5.0 ATTACHMENTS / TABLED DOCUMENTS

Attachment 1: Draft Minutes of the Avalon to Palm Beach Floodplain Risk Management Study & Plan Working Group Meeting on 04 June 2015

6.0 SUSTAINABILITY ASSESSMENT

A sustainability Assessment is not required for Minutes of Meetings

Report prepared by
Melanie Schwecke, A/Principal Officer – Floodplain Management

Jennifer Pang
MANAGER, CATCHMENT MANAGEMENT & CLIMATE CHANGE



DRAFT Minutes

Avalon to Palm Beach Floodplain Risk Management Study and Plan Working Group

Held in Avalon Annexe, Avalon Recreation Centre,
Old Barrenjoey Road on

04 June 2015

Meeting commenced at 4:10 pm

| AVALON TO PALM BEACH FLOODPLAIN RISK MANAGEMENT STUDY AND PLAN COMMUNITY WORKING GROUP | |
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| Established | 5 May 2014 |
| Function | To enable community participation during the preparation of the Avalon to Palm Beach Floodplain Risk Management Study and Plan in accordance with the NSW Government's Floodplain Development Manual (2005). |
| Composition/Membership for each Community Working Group: Notes: Tenure of membership of community representatives is up to the completion of the Floodplain Risk Management Study & Plan. | One (1) Councillor (who shall be Chairperson of Community Working Group) plus one (1) alternative councillor. All Councillors are invited to attend. Up to five (5) community representatives who reside or work within the flood-affected areas identified by the Careel Creek Catchment Flood Study (WMAwater, July 2013) or the Pittwater Overland Flow Mapping and Flood Study (Cardno, October 2013). Up to four (4) stakeholder representatives including: <ul style="list-style-type: none"> Up to three (3) representatives from Pittwater community groups, subject to the group's inclusion on Councils "Register of Community Groups"; Local industry representatives; Interested observers are invited to attend. |
| Advisors: | State Government representatives as required, including: <ul style="list-style-type: none"> Office of Environment and Heritage State Emergency Service (representing State Headquarters, Region Controller and Local Controller) Department of Primary Industries (Catchments & Lands) Sydney Water Department of Planning & Infrastructure. |
| Council Officers: | Manager, Catchment Management and Climate Change (or nominee) Manager, Urban Infrastructure (or nominee) |
| Quorum: | Five (5) members provided one is a Councillor, two Community representatives and one NSW Government representative. |
| Reporting Procedures: | To be reported to Council as required. |
| Responsible Business Unit: | Catchment Management and Climate Change |
| Meetings: | At least twice during the preparation of the Floodplain Risk Management Study & Plan. |
| Council Members Appointed: | Cr McTaggart (delegate) Cr Grace (alternative delegate) |

Members of the Working Group namely

Pittwater Council Members

Cr Alex McTaggart (Chairperson)

Cr Bob Grace (Delegate)

Citizen Representatives

Roger Alsop

Allen Telling

Stuart Davidson

Vince Nicholson

Stakeholder Representatives

John Warburton (Palm Beach – Whale Beach Residents Association)

Stephen Branch (Avalon Beach Village Chamber of Commerce inc)

Kerry Mc Ewan (Barrenjoey High School)

Spiro Daher (Narrabeen Lagoon Floodplain Risk Management Working Group Member)

State Government Representatives

NSW Office of Environment and Heritage (OEH)

State Emergency Service – Warringah/Pittwater Unit

State Emergency Service – Sydney Northern Region

Sydney Water

Roads and Maritime Services

and the following Council Advisors

Manager, Catchment Management and Climate Change

Principal Officer – Floodplain Management

are requested to be in attendance.

Copies to:

Director – Urban & Environment Assets – Chris Hunt

A/Manager – Urban Infrastructure – Paul Reid

Risk Officer – Marnie VanDyk

EA to General Manager - Fiona Garrity

EA to Mayor and Councillors – Kim Reading

All other Councillors are free to attend as Observers, and are invited to do so and to engage in discussion

Attendance:

Pittwater Council Members

Cr Alex McTaggart (Chair)

Citizen Representatives & Stakeholder Representatives

Roger Alsop
Allen Telling
Vince Nicholson

Spiro Daher
Stephen Branch

State Government Representatives

Greg Davis (Office of Environment and Heritage)
Wayne Lyne (NSW SES – Warringah/Pittwater Unit)
Lynn Larri (NSW SES – Warringah/Pittwater Unit)
Daniel Cunningham (Sydney Water)

And the following Council Advisors

Dr Melanie Schwecke (A/Principal Officer – Floodplain Management)
Melanie Thomas (Climate Change Adaptation Officer)

In attendance

Bronson McPherson – Consultant – MHL/ NSW Public Works
Leon Collins – Consultant – MHL/ NSW Public Works
Stephen Yeo (Flood Risk Management Specialist – sub-consultant for NSW Public Works)

1.0 APOLOGIES

John Warburton (Palm Beach – Whale Beach Residents Association)
Allison Flaxman – NSW SES (Sydney Northern Region)
Jennifer Pang (Manager Catchment Management and Climate Change)

2.0 DECLARATION OF PECUNIARY AND CONFLICTS OF INTEREST

NIL

3.0 CONFIRMATION OF MINUTES OF PREVIOUS MEETING

Confirmation of the minutes from the working group meeting held on the 05 March 2015:

Moved by Vince Nicholson

Seconded by Greg Davis

4.0 MATTERS ARISING FROM PREVIOUS MEETING

NIL

5.0 COMMITTEE BUSINESS

NSW – East Coast Storms and Floods (20 April 2015) disaster declared event

Wayne Lyne, Controller of the Warringah/Pittwater SES Unit provided an update on the storm event. In 2014, the Warringah/Pittwater SES Unit received 765 calls for assistance for the whole year. Since 20 April, the Warringah/Pittwater SES Unit had around 1100 jobs in two weeks with additional jobs in the region undertaken by contractors. There were 122 teams of volunteers working in the region with assistance provided from the Rural Fire Service (RFS); and SES teams from Manly, Oberon, Albury, Hornsby, North Sydney, the Australian Capital Territory (ACT) and Victoria.

Cr Alex McTaggart asked if there were any callouts related to flooding. Wayne Lyne responded that there were a few jobs that had been recorded as flooding where stormwater had run down the hill and into the house.

5.1 AVALON TO PALM BEACH FRMS&P

A verbal update along with presentation was given by Bronson McPherson and Leon Collins (MHL – NSW Public Works) and Stephen Yeo. This presentation is provided in Attachment 1.

A number of questions were asked by working group members in relation to the study. Cr Alex McTaggart queried whether the modification of channels was more efficient versus meandering creeklines with vegetation? The consultants noted that smoother channels are more efficient but the water quality of a meandering creek with vegetation at the estuary is better.

Emergency management issues were discussed in relation to modifying response with warning times and the ability of the community to prepare and respond to an event important. Flood warning systems were also discussed.

WORKING GROUP RECOMMENDATION

- The working group note the information presented by MHL – NSW Public Works.

6.0 GENERAL BUSINESS

Cr Alex McTaggart raised the issue of the impact of notation on property values. Stephen Yeo replied that buyers may request the information in regards to purchasing a potential property but research undertaken by Macquarie University found that this was not a final deciding factor on the purchase of the property. Studies have also found that riverfront properties in Brisbane actually attract a premium associated with the amenity value attributed to a waterfront property versus one of those that are set back. Initially Brisbane properties experienced a reduction in price at house sales but this was short lived and property values have bounced back. Stephen Yeo noted that the research summarised on the influence of flooding on property value in Australia was from riverine flooding but that there was an example from California on flash flooding.

Sydney Water is funding a research project that is evaluating the impact of waterway health in relation to house sale price. The aim is to gain economic valuation of river health and the research finding will be presented at the River Symposium being held in Brisbane in September this year.

6.0 NEXT MEETING

The Chair thanked everyone for their participation in this very effective forum and requested that the next meeting be scheduled for 03 September 2015 from 4pm to 6pm at Avalon Recreation Centre – Avalon Annexe (Old Avalon Scout Hall)

There being no further business the meeting concluded at 5.55pm.

ATTACHMENT 1

22/06/2015



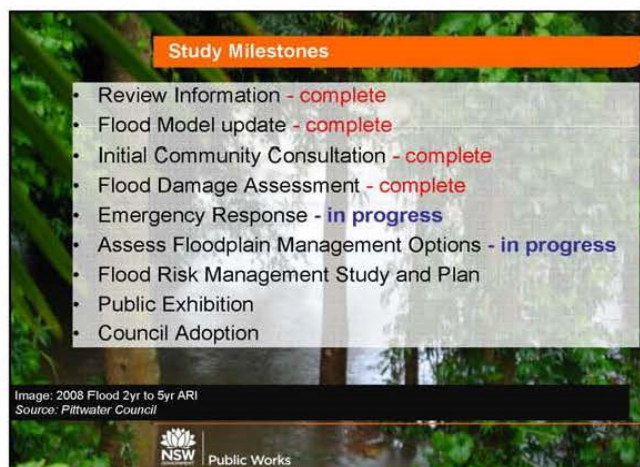
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A division of the Department of Finance & Services

Avalon to Palm Beach Floodplain Risk Management Study and Plan Working Group

Bronson McPherson – Project Manager
Leon Collins – Modeller
Stephen Yeo – FRM specialist
Drew Bewsher – Technical advisor

4 June 2015



Study Milestones

- Review Information - **complete**
- Flood Model update - **complete**
- Initial Community Consultation - **complete**
- Flood Damage Assessment - **complete**
- Emergency Response - **in progress**
- Assess Floodplain Management Options - **in progress**
- Flood Risk Management Study and Plan
- Public Exhibition
- Council Adoption

Image: 2008 Flood 2yr to 5yr ARI
Source: Pittwater Council

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1

Overview of Presentation

- Recent Flooding
- Floodplain Management process
- Defining the flood problem
 - Flood Behaviour
 - Flood Damages
- Identification of potential management options
- Impact of Flood Affection on Property Values
- Next Steps



Image 308 Brook Camp Creek, Savage, Pittsburg County



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April 2015 East Coast Low – local flooding

Suburb smashed up by storm



A tree destroys a car and trades in Wakamatsu Rd, Newport



The Outlook: Illinois March



Delirata ES.org Movement



Plateau Rd, Bilgola Beach.



Avon business centre.

DOWNED TREES AND POWER OUTAGES STRIKE

David Bennett

ONE of the suburbs firmly in the path of the destructive weather has been Bilgola

Locals have reported the falling of numerous trees and the subsequent power

Source: *Manly Daily*, 23 Apr 2015

DOWNED TREE
"There's nothing we can do," employees and local resi-

On Tuesday there was basically one way in and one way out of Bilgoda Plateau.

ily, 23 Apr 2015

hashes. I don't know what people were thinking walking

Hilgda Physiotherapy
Rita Kluge did not exercise
the power being returned to

"There is certainly a feeling of helplessness," she

terday was very scary." She said a large tree

blocking Lower Plains, but that there was a way to get to the top of the tower.

Upon trying to get into the office on Tuesday she was instructed by police to

also, and pockets of the
also business centre
also underwater and
businesses were fierce

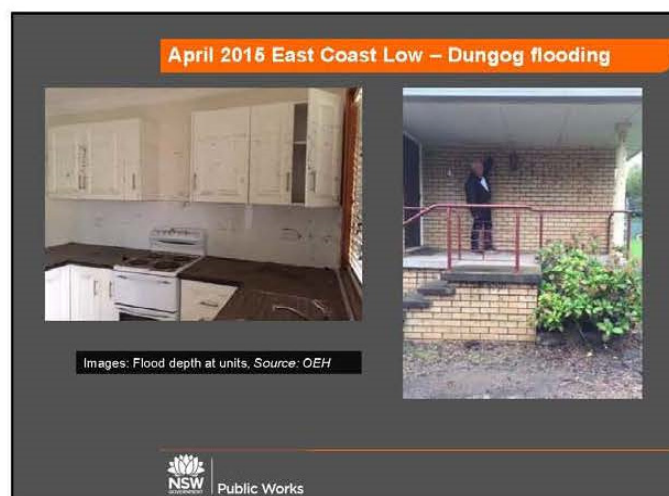
power out of our office about 8am," she said.

²And there was yellow police tape at the front of the building - it was like a cordon.

...the camaraderie that
...and developed between
...other business owners
...to their Bilgola Placemakers club.

"There is definitely bonding together," she says. "And a number of people are making long-term plans."

flow of the time
social media have been a
setting up their places
those locals who might





March 1977 – local flooding



- Water ankle deep in stores
- \$1m damage to carpets, wallpaper, stock
- Water several feet deep in houses in Elaine Avenue
- Water a metre deep in Barrenjoey Road

Source: Manly Daily, 3 Mar 1977

Aim of Floodplain Risk Management

- Reduce the social and financial costs from the risks associated with occupying the floodplain
- Increase the sustainable benefits of using the floodplain
- Improve and maintain flood plain ecosystems dependent on flood inundation

Source: Floodplain Development Manual



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Defining the flood problem


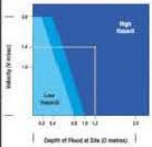
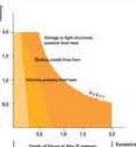
- Hydraulic flood hazard
- Building inundation
- Flood damages
- Sensitive uses
- Road hazard

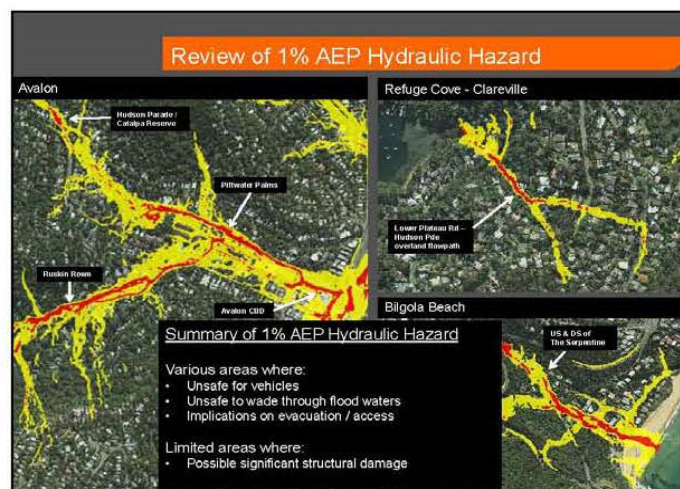
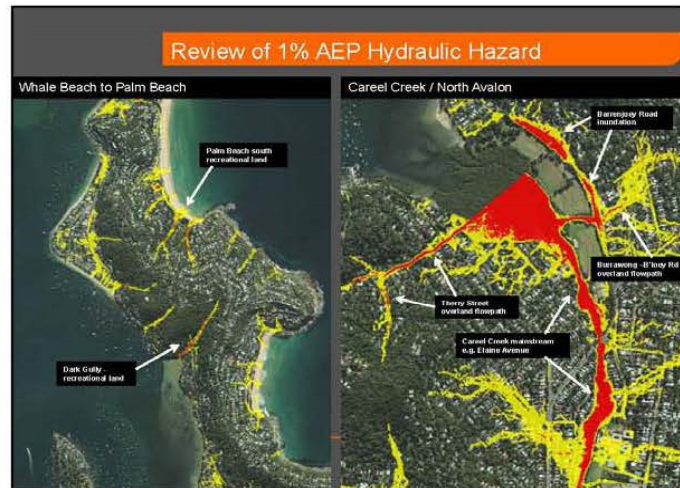





Review of 1% AEP (100 yr ARI) Hydraulic Hazard

- Governed by flood depth and velocity relationships (NSW Floodplain Development Manual 2005)
- Consideration in assessing management options
- **High hazard** — possible danger to personal safety; evacuation by trucks difficult; able-bodied adults would have difficulty in wading to safety; potential for significant structural damage to buildings.
- **Low hazard** — should it be necessary, trucks could evacuate people and their possessions; able-bodied adults would have little difficulty in wading to safety.



Damages Assessment – What and why

- One of the primary objectives of floodplain risk management in NSW is to reduce potential flood damage and personal danger in existing developed areas
- A damage assessment is a way to quantify flood damages



Image: 1976 flood event
Source: Avalon Beach Historical Society




Image: 2008 flood event
Source: J. Cahill & W. Murphy

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Damages Assessment

Flood modelling >>> flood depths



Floor level inspection

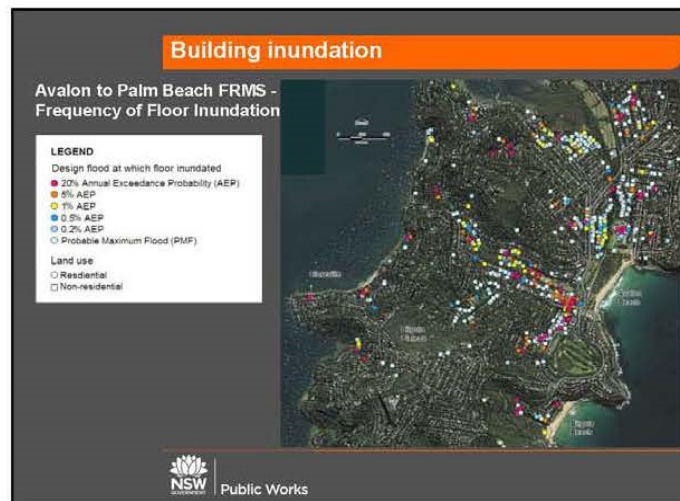
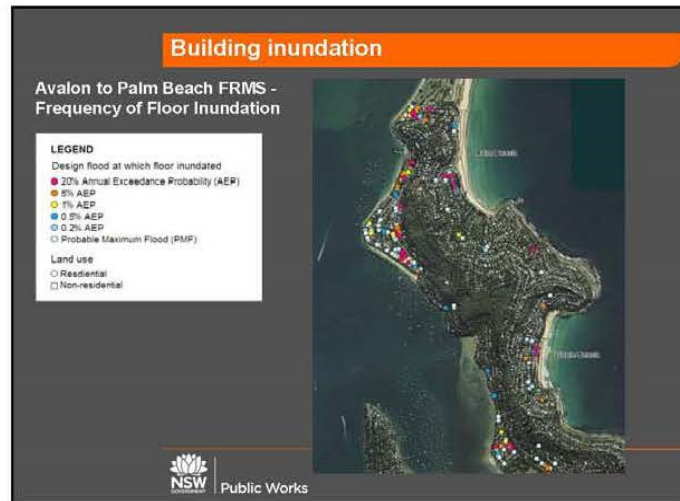


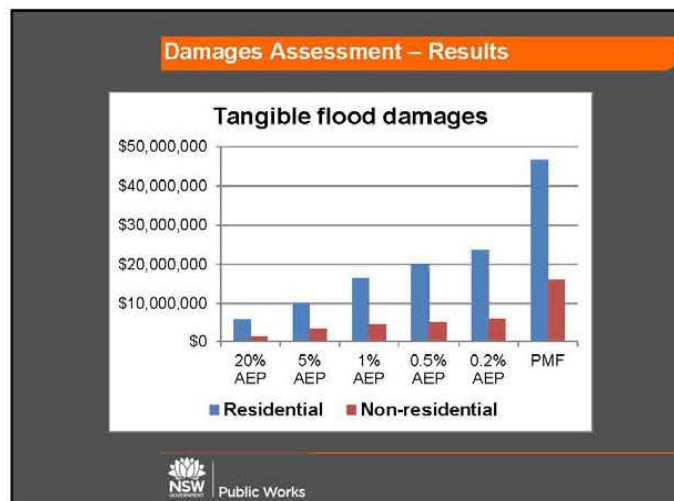
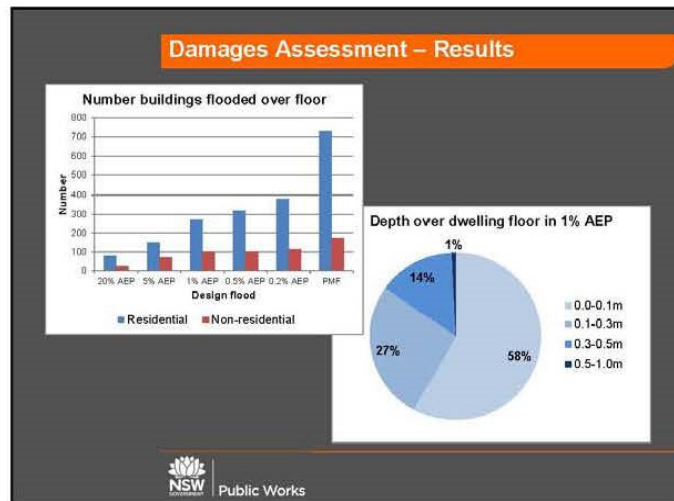
Calculate the depth of above floor flooding within each property for each AEP event

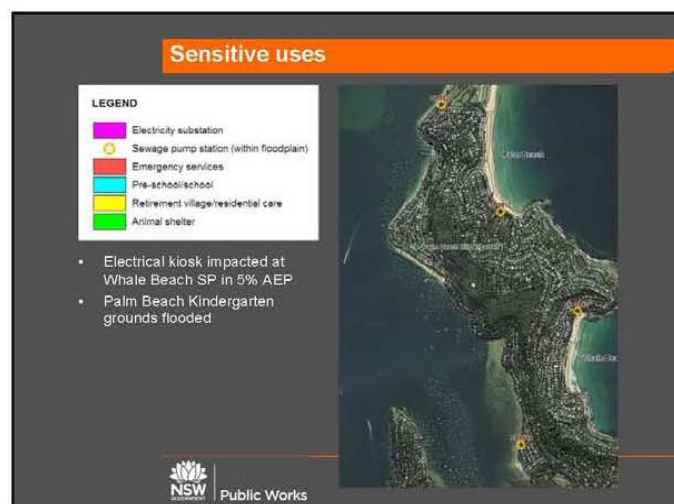
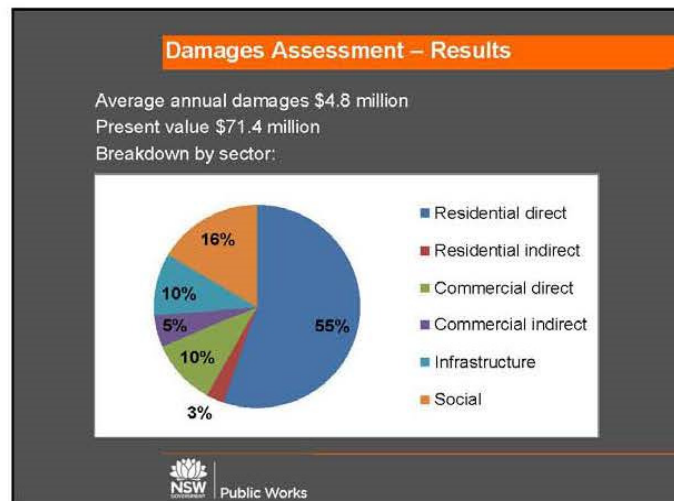


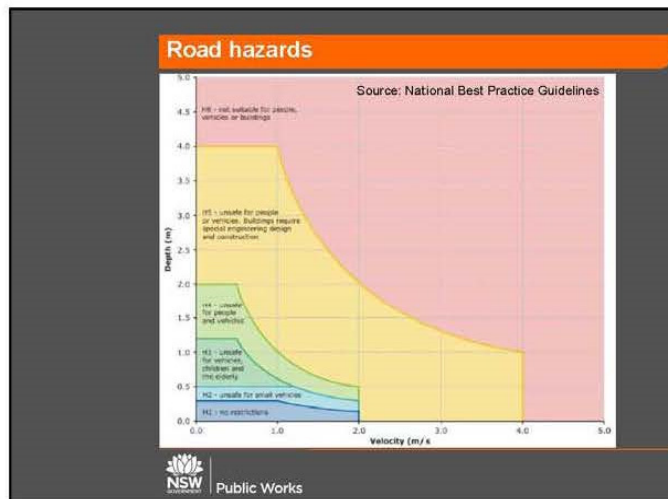
Image: 2008 Flood, Daniel Keogh, Touareg, Pittwater Council

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Floodplain Risk Management Options

Modify the flood:

- retention basins
- formalising floodways or overland flow paths
- modifications to watercourse crossings
- debris control structures
- modifications to channels
- levees
- riparian and sedimentation management plans



Image: 2018 Photo Credit: NSW Public Works


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Floodplain Risk Management Options

Modify Property:

- voluntary house purchase and/or house raising schemes
- flood-proofing measures
- building and development controls
- provision of guidelines for infill development for low-lying areas




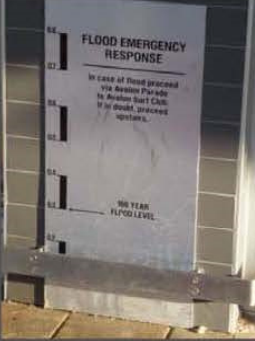
Image: 1976 flood event
Source: Avalon Beach Historical Society



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Floodplain Risk Management Options

Modify People's Response:

- flood warning systems
- emergency flood plans
- improvements to access/evacuation routes
- promoting community flood awareness and readiness



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Management Option Assessment Process

- Identification of all potential management options – **current stage**
- Preliminary assessment of options
- Identification of 10 preferred management options
- Detailed assessment of options
 - Multi-criteria (benefit/cost etc.)
- Recommendations and prioritization > FRM Plan




Image: 1976 flood event
Source: Avalon Beach Historical Society



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Identification of Preliminary Options

Identification of potential management options through:


- Community input
 - Community survey
 - Working Group
- Pittwater Council recommendations
- Public Works team engineering judgement considering:
 - 1% AEP flood hazard (i.e. high hazard areas given priority)
 - Potential for over floor flooding (particularly in smaller events)
 - Flood Damages
 - Existing drainage capacity
 - Flow behaviour and availability of open space for storage
 - Evacuation issues
- Recommendations from previous study (Careel Creek FRM Plan 2002)





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Identification of Flood Modification Options

Whale Beach to Palm Beach




- Options appear very limited due to nature of flooding and topography
 - Flow from high steep areas concentrating at bottom of slope and flooding low flat areas
 - No opportunity for flow retention upslope
 - Little opportunity for drainage upgrades due to low hydraulic gradient to Pittwater
- Any suggestions?


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Identification of Flood Modification Options


Avalon, Bilgola, Clareville



Various options including

- Detention basins
- Drainage upgrades
- Vegetation and sedimentation management
- Debris control structures


All options are preliminary only and may not warrant detailed investigation


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Detailed Assessment of Floodplain Management Options

The following information will be examined for all options using a matrix:

- Impact on flood behaviour
- Impacts on the number of properties flooded
- Technical feasibility
- Costs
- Economic merit
- Financial feasibility
- Environmental and ecological benefits
- Impacts on SES
- Long-term performance
- Likely design life
- Legislative and permissibility approvals required.



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Effect of flood affectation on property values

- Flood risk information is increasingly available from Govt and via insurance premiums
- Theory says that rational buyer would use this to shape their offer, resulting in discount for flood-prone property
- Recent literature review found scant evidence to support theory:
 - 70% studies show discount for flood-prone land compared to flood-free
 - 30% studies show premium – aspect/views/water frontage drive value
 - Actual flooding often causes short-lived discount of 5-10%
 - Disclosure doesn't necessarily cause fall in value or growth rate
 - Is the flood risk information disclosure mandatory, transparent and timely?
- Many factors affect property market including local demand/supply

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Next Steps

- Flood emergency planning – June / July 2015
- Flood mitigation options – September 2015
- Flood Risk Management study – November 2015
- Flood Risk Management Plan – January 2016
- Public Exhibition – February / March 2016
- Prepare final Floodplain Risk Management Study and Draft Plan for Council approval – May 2016

Image: 2008 Flood, Canal Creek Culvert, Source: Pittwater Council

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Council Meeting

**11.0 Adoption of Connecting Communities Committee
Recommendations**

**12.0 Adoption of Natural Environment Committee
Recommendations**
