

# **COAST, ESTUARY & FLOODPLAIN ADVISORY SUB-COMMITTEE**

**Thursday 27 May 2021**

**Coast, Estuary & Floodplain Advisory  
Sub-Committee Meeting**

Thursday, 27 May 2021

**Items of Business**

<b>Item</b>	<b>Subject</b>	<b>Page</b>
<b>06</b>	<b>COASTAL EROSION PROTECTION MEASURES FOR LAKE CATHIE - OPTIONS ANALYSIS</b>	
	Attachment 1: Lake Cathie Illaroo Road Revetment Wall Report on Community Engagement Outcomes - April 2021 .....	2
	Attachment 2: Hazard Management Options Flowchart.....	53
<b>07</b>	<b>RIVERS ON FIRE AND FLOOD FORUM</b>	
	Attachment : Rivers on Fire & Flood Program April 2021 .....	58

## AGENDA

ORDINARY COUNCIL  
21/04/2021

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Item: 13.06Subject: LAKE CATHIE - ILLAROO ROAD REVETMENT WALL - REPORT  
ON COMMUNITY ENGAGEMENT OUTCOMESPresented by: Development and Environment, Melissa Watkins

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**Alignment with Delivery Program**

4.2.1 Develop and implement coastal, estuary, floodplain, and bushfire management plans.

**RECOMMENDATION****That Council:**

1. Note the submissions and summary of feedback contained in the Illaroo Road Revetment Wall - Engagement Report March 2021.
2. Note that a further report will be brought back to Council outlining the coastal protection options available for Illaroo Road.
3. Request the Chief Executive Officer to write to Leslie Williams Member for Port Macquarie seeking advice regarding any available government funding for coastal protection works at Illaroo Road.

**Executive Summary**

Community engagement for the Illaroo Road Revetment Wall Cost Benefit Analysis (CBA) and Funding Model requirements of the NSW Government Coast & Estuary Grants was carried out between February and April 2021.

The scope of the community consultation was to:

- Inform directly and indirectly impacted property owners of the cost implications of the revetment wall proposal.
- Provide the CBA and Funding model reports for consideration.
- Assess the capacity and willingness to pay of the directly impacted property owners.

The community was engaged with through written materials and community meetings held with directly and indirectly impacted property owners and stakeholders and through one on one discussions. Feedback was gathered through the Have Your Say platform and directly from the interested parties.

The community meetings and feedback submissions contained the following key messages:

- There was a strong rejection of the Beneficiary Pays options from the Funding Model report.
- There is no capacity and willingness to pay by directly impacted residents.

YOUR NATURAL AND  
BUILT ENVIRONMENT

Item 13.06

Page 114

## AGENDA

ORDINARY COUNCIL  
21/04/2021

- Concerns were raised regarding the revetment wall option, including the high cost, inclusion of public amenities in the design, visual impact, loss of beach and potential end effects and erosion at the extremities.

This report provides feedback from the engagement for Council's information.

**Discussion**

The Illaroo Revetment Wall project Cost Benefit Analysis (CBA) and Funding Model works were completed by Marsden Jacob Associates (MJA) in 2020. The reports provided information on financial modelling in line with NSW Department of Planning Infrastructure and Environment (DPIE) requirements, an assessment of eligibility of the range of funding models and options that are currently available, and a recommendation for a preferred funding model under the Coast and Estuary Grants framework.

The CBA and Funding Model were reported to the 12 August 2020 Ordinary Council Meeting where the following resolution was reached:

*RESOLVED: Intemann/Hawkins  
That Council:*

- 1. Note the information provided in this report.*
- 2. Incorporate the Lake Cathie Coastal Zone Management Plan (CZMP) actions into the new Lake Cathie Bonny Hills Coastal Management Program (CMP).*
- 3. Undertake direct engagement and consultation with impacted properties to explain the Revetment Wall options and cost implications and to assess the capacity and their willingness to pay for a Revetment Wall.*
- 4. Following completion of direct engagement and consultation with impacted properties, receive a further report from the Director, Development and Environment detailing the outcomes of this engagement and future recommended steps in this project including details of the proposed community consultation/engagement for the broader community.*

*CARRIED: 7/0*

*FOR: Alley, Dixon, Griffiths, Hawkins, Intemann, Pinson and Turner  
AGAINST: Nil*

In response to items 3 and 4 of the Council resolution the scope of the community consultation was to:

- Inform directly and indirectly impacted property owners of the cost implications of the revetment wall proposal.
- Provide the CBA and Funding model reports for consideration.
- Assess the capacity and willingness to pay of the directly impacted property owners.

The community was informed through the provision of letters, background summary brochures, Frequently Asked Questions sheets and redacted reports (property details and costs attributed to properties removed).

YOUR NATURAL AND  
BUILT ENVIRONMENT

Item 13.06

Page 115



## AGENDA

ORDINARY COUNCIL  
21/04/2021YOUR NATURAL AND  
BUILT ENVIRONMENT

Two community meetings were held with representatives from Council, Marsden Jacob consultants and Department of Planning, Industry and Environment coastal specialist. The first meeting was a private meeting with directly impacted property owners and the second was with a broader community stakeholder group.

Councils Have Your Say webpage was used for the community to access the documentation, meeting bookings, lodgement of submissions and to ask questions relating to the project.

A letter was sent to stakeholders advising the final community meeting initially to be held on the 31st March 2021 was cancelled following community feedback strongly rejecting the findings and recommendations of the CBA and Funding Model reports.

During the formal feedback period Council received 53 submissions from directly impacted property owners and the community. All submissions received from directly impacted owners indicated no capacity or willingness to pay for the wall. 17 submissions were received via the Have Your Say platform. Refer to the Illaroo Road Revetment Wall - Engagement Report - April 2021 (**Attachment 1 - Appendix 1**) for a list of the submissions received and responses.

The community meetings and feedback submissions contained the following key messages:

- There was a strong rejection of the Beneficiary Pays options from the Funding Model report.
- There is no capacity and willingness to pay by directly impacted residents.
- Concerns were raised regarding the revetment wall option, including the high cost, inclusion of public amenities in the design, visual impact, loss of beach and potential end effects and erosion at the extremities.

On 1 April 2021, Council's Coast, Estuary and Floodplain Advisory Sub Committee met to review the Draft Community Engagement Report - April 2021 and provide additional community feedback. The Committee feedback was that the Draft Report was in line with their experiences and community sentiment received on the issue. Some of the community representatives of the Coast, Estuary and Floodplain Advisory Sub Committee expressed their reservation regarding Council's decision to put the beneficiary pays letter, CBA and Funding Model reports to the community.

**Community Engagement**

The Illaroo Road Revetment Wall - Engagement Report April 2021 (**Attachment 1**) provides a summary of the engagement process, community sentiment on the CBA and Funding Model and the beneficiary pays option. The Appendix of the report includes:

- Submissions received and responses
- Community meeting minutes - 18 and 23 February 2021
- Questions and Answers flyer.

A Councillor briefing was held on 14 April 2021 to discuss the engagement feedback and a further briefing is scheduled for 26 May 2021.



Item 13.06

Page 116


**AGENDA****ORDINARY COUNCIL**  
21/04/2021**Planning and Policy Implications**

There are no planning and policy implications in relation to this information report.

**Financial and Economic Implications**

There are no financial and economic implications in relation to this report.

**Attachments**

1.  Illaroo Road Revetment Wall - Engagement Report April 2021

YOUR NATURAL AND  
BUILT ENVIRONMENT

Item 13.06

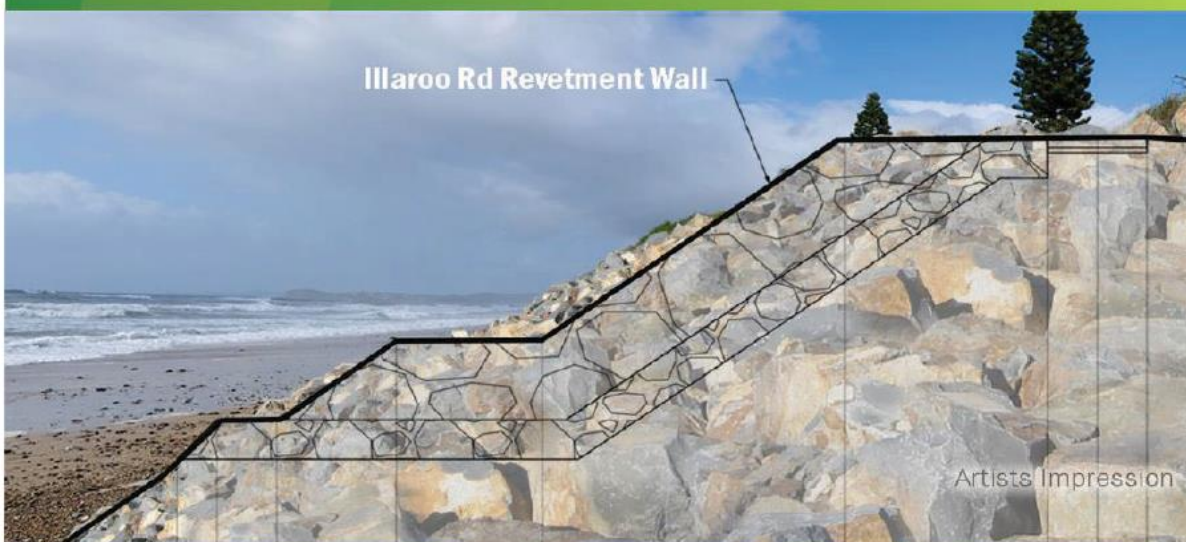
Page 117

PORT MACQUARIE-HASTINGS  
COUNCIL

Illaroo Road Revetment Wall,  
directly impacted residents,  
indirectly impacted residents  
and community stakeholders

## COMMUNITY ENGAGEMENT

April 2021





Project name	Illaroo Road Revetment Wall - Directly impacted residents and Lake Cathie Community		
Project manager	Blayne West		
Consultant	Marsden Jacob Associates (MJA)		
Engagement Officer	Liz Brennan		
Operational Plan #		CM Reference	D2021/084549

#### TABLE OF CONTENTS

1. INTRODUCTION .....	3
1.1. Background .....	3
1.2. Engagement approach .....	4
1.3. Consultation focus .....	5
2. ENGAGEMENT ACTIVITIES, TIMELINES & RESULTS .....	5
2.1. Councillor Briefing - Engagement Process .....	5
2.2. Information Packs to Directly Impacted / Indirectly Impacted Property Owners / Community ...	5
2.3. Community Meeting - Directly Impacted Residents .....	6
2.4. Community Meeting - Indirectly Impacted Residents & Community Stakeholders .....	7
2.5. Coast, Estuary and Flooding Sub Committee .....	8
2.6. Have Your Say .....	8
2.7. Formal/Written Submissions .....	9
2.8. Communications .....	9
3. RESULTS SUMMARY/CONCLUSION .....	10
4. NEXT STEPS .....	11
5. APPENDIX .....	11





## 1. INTRODUCTION

### 1.1. Background

The construction of the Illaroo Road revetment wall cannot proceed until a decision of Council is made regarding the following factors:

1. Identified need with associated timeframe
2. Satisfactory funding arrangements
3. It is included in the Lake Cathie and Bonny Hills Coastal Management Program (CMP) and is prioritised amongst other competing projects.

Council received the Cost Benefit Analysis (CBA) and Funding Model Report from Marsden Jacob Associates (MJA) which outlined the following:

- synthesises and accurately reported cost components based on the results of the Cost Benefit Analysis and associated engineering studies.
- identified and evaluated the strengths and limitations of alternative funding models. The assessment focused on current opportunities and alternative management options and strategies that would either result in a budget neutral outcome or long-term alternative sustainable funding options for Council.
- described the public and private beneficiaries and the extent of the benefits to each beneficiary associated with the preferred option.
- identified funding options and models that could support the development of the revetment and that are founded on the Council's statutory ability to levy fees and charges under relevant state government legislation.
- recommended a preferred funding model, noting that the capacity of beneficiaries to pay apportioned costs must be considered.

The results of the Funding Model provided Council with critical information on important matters such as:

- a) How much the revetment wall will cost
- b) Who is required to contribute
- c) Options for how Council can fund the wall (special rate variations etc.)
- d) How the legislative requirements of the NSW Government legislation and guidelines, i.e. Coastal Management Act (2016) and Coastal Management Manual (2016) (among others) apply to the Coastal Zone Management Program (CZMP).
- e) A list of limited alternative grant funding opportunities for this project (outside the Coast and Estuary Grants Program), and;
- f) That the results of the funding model conflict with the Council resolution from 2013.

The CBA & Funding Model were reported the 12 August 2020 Ordinary Council Meeting where the following resolution was reached:

*RESOLVED: Intemann/Hawkins*

*That Council:*

1. *Note the information provided in this report.*
2. *Incorporate the Lake Cathie Coastal Zone Management Plan (CZMP) actions into the new Lake Cathie Bonny Hills Coastal Management Program (CMP).*
3. *Undertake direct engagement and consultation with impacted properties to explain the Revetment Wall options and cost implications and to assess the capacity and their willingness to pay for a Revetment Wall.*





4. Following completion of direct engagement and consultation with impacted properties, receive a further report from the Director, Development and Environment detailing the outcomes of this engagement and future recommended steps in this project including details of the proposed community consultation/engagement for the broader community.

CARRIED: 7/0

FOR: Alley, Dixon, Griffiths, Hawkins, Intemann, Pinson and Turner

AGAINST: Nil

The engagement process as per items 3 & 4 of the Council resolution (12 August 2020) was to undertake direct engagement and consultation with impacted properties to explain the revetment wall options and cost implications and to assess the capacity and their willingness to pay for a Revetment Wall. The consultation framed the discussion within the context of the ongoing CMP development as the revetment wall proposal will be included as one of the projects in the Lake Cathie chapter of the CMP.

Following completion of direct engagement and consultation with impacted properties, Council will receive a further report from the Director, Development and Environment detailing the outcomes of this engagement and future recommended steps in this project including details of the proposed community consultation/engagement for the broader community.

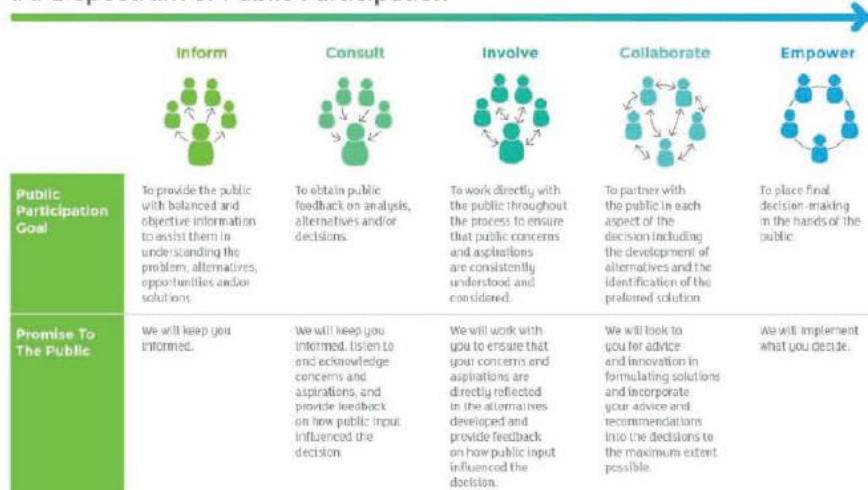
As such, the scope of this initial project is to complete only the direct engagement of impacted properties and key stakeholders (Progress Association, Save Lake Cathie etc.). Upon completion of this work, a report to Council about the engagement outcomes will be provided for the Councillors to decide how to progress coastal protection works at Lake Cathie.

## 1.2. Engagement approach

This engagement project was designed to **inform** the community of the Cost Benefit Analysis and Funding Model reports.

The process was also designed to **consult** - obtain feedback on the reports - and to **involve** the community so that their thoughts and concerns could be understood and considered by Council to inform the next steps in the management of the identified coastal erosion hazard at Lake Cathie.

### IAP2 Spectrum of Public Participation





### 1.3. Consultation focus

The scope of this consultation was to:

- Inform directly and indirectly impacted property owners of the cost implications of the revetment wall proposal.
- Provide the CBA and Funding model reports for consideration.
- Assess the capacity and willingness to pay of the directly impacted property owners.

The community was informed through the provision of letters, background summary brochure, Frequently Asked Questions sheets and redacted reports (property details and costs attributed to properties removed).

Two community meetings were held with representatives from Council, Marsden Jacob consultants and Department of Planning, Industry and Environment coastal specialist. The first meeting was a private meeting with directly impacted property owners only and the second with the broader community.

A third meeting with Marsden Jacobs about the Cost Benefit Analysis and Funding Model reports was cancelled following community feedback strongly rejecting the findings and recommendations of these reports.

## 2. ENGAGEMENT ACTIVITIES, TIMELINES & RESULTS

### 2.1. Councillor Briefing - Engagement Process

Date: Wednesday 3 February

Council staff provided an overview of the proposed engagement process. Information packs were provided to Councillors prior to distribution the following week.

### 2.2. Information Packs to Directly Impacted / Indirectly Impacted Property Owners / Community

Date: Monday 8 February 2021

On 8 February, letters were directly letter-box dropped to 41 directly impacted and 88 indirectly impacted property owners. For out-of-region property owners, these letters were express posted. This letter outlined the background of the revetment wall project, outlined the findings of the reports and the resulting financial impact on the property owner (where applicable).

38 emails were sent to key community stakeholders, including Lake Cathie Council-Community Action Team; Revive Lake Cathie, Coast Estuary and Floodplain Sub-Committee, Lake Cathie Progress Association; and State and Federal Government members.

This letter invited recipients to a range of meetings to learn more and discuss the project.

The letter stated that no decision had been made regarding funding for the revetment wall and Council was determining directly impacted property owners (as determined by the Cost Benefit Analysis and Funding model) 'capacity & willingness' pay as per the findings of the Funding Model.

The information pack included:

- Letter
- Frequently Asked Questions (community and directly impacted property owners - where applicable)
- Project Background Information Brochure.





The Cost Benefit Analysis and Funding Model reports were provided online or at the community meetings. These reports have property owner details and financial costs allocated to individual properties redacted for privacy reasons.

#### Results

Feedback from Directly Impacted Residents, Indirectly Impacted Residents and Community Stakeholders has been received via formal written submissions and meetings.

Council received 53 submissions from property owners and the community. 27 of the 41 potentially directly property owners indicated no capacity or willingness to pay as per the options presented in the Funding Model.

#### Update on Community Consultation

**Date: Thursday 25 March 2021**

Directly and indirectly impacted property owners; and community stakeholders were provided with a letter outlining the upcoming Council meeting, close of submissions and an updated Frequently Asked Questions document which responded to questions raised in submissions, meetings and social media since 8 February 2021.

### 2.3. Community Meeting - Directly Impacted Residents

**Date: Thursday 18 February 2021, Lake Cathie Bowling Club**

Attendees: Directly Impacted Residents, PMHC, Marsden Jacobs Assoc, DPIE.

Facilitator: Denise Wilson, Id Planning

Number of community attendees: 46

A presentation of the coastal erosion hazard and revetment wall project was provided. This was followed by a presentation from Marsden Jacobs on the Cost Benefit Analysis and Funding Model reports. Following these presentations, there was an open forum and Q&A session.

#### RESULTS

##### Capacity & Willingness to Pay

The attendees called for a 'show of hands' which demonstrated unanimous rejection of the 'Beneficiary Pays' - the attendees have no 'willingness or capacity to pay' as per the Funding Model recommendations.





### Cost Benefit Analysis and Funding Model Reports

The Directly Impacted Property Owners rejected the findings of the Cost Benefit Analysis, particularly in relation to the comments made about the road primary purpose provide access and services to private properties.

There was a strong sentiment that Council is the primary beneficiary as the wall would protect the road and assets that lie between the properties and the coastline.

There was discussion from the State Coastal Specialist on the public benefit vs private benefit and how this was incongruent between the Cost Benefit Analysis and Funding Model.

### Revetment Wall

Concerns were raised:

- the high cost of the wall
- the inclusion of public amenities in the costings
- Visual impact of the wall
- Potential beach loss
- Stormwater works delays and ongoing erosion.

There is frustration about the inconsistency of the funding of the Flynns Beach revetment wall. This wall was 50/50 funded by the State Government and Council and at the time, this project did not require a Cost Benefit Analysis and/or Funding Model. This inconsistency is due to State Government policy and guideline changes over time in the coastal management space.

### Other Funding Opportunities

Concerns were raised that Council has not pursued, or was not seeking, other grant funding opportunities.

Please refer to the Appendix for Meeting Minutes, 18 February 2021.

## 2.4. Community Meeting - Indirectly Impacted Residents & Community Stakeholders

Date: Tuesday 23 February 2021, Lake Cathie Bowling Club

Attendees: Directly Impacted Residents, Indirectly Impacted Residents, Community Stakeholders, PMHC, Marsden Jacobs Assoc, DPIE.

Facilitator: Denise Wilson, id Planning

Number of community attendees: 67

A presentation of the coastal erosion hazard and revetment wall project was provided. This was followed by a recorded presentation from Marsden Jacobs on the Cost Benefit Analysis and Funding Model reports. Following these presentations, there was an open forum and Q&A session.

### RESULTS

#### Capacity & Willingness to Pay

There was a strong rejection of the Beneficiary Pay option of the Funding Model for either the Directly Impacted Property Owners and the Lake Cathie community more broadly by all attendees.

Other issues raised: -

- process of notifying property owners
- the high cost of the wall construction
- concern about potential and unknown 'end effects' for coastal erosion
- concern for properties outside the wall protection



- inclusion of public amenities in the costings
- the delay in completing stormwater works
- impact of the wall on Lake Cathie
- the lack of other funding opportunities being investigated
- Lake Cathie Coastal Zone Management Plan ending on 31 December
- Council should be considered the primary beneficiary due to the location of the road, high public use of the road and the property services it provides.

There was discussion from the State Coastal Specialist and local State Member on the public benefit vs private benefit and how this was incongruent between the Cost Benefit Analysis and Funding Model. Please refer to the Appendix for Meeting Minutes.

## 2.5. Coast, Estuary and Flooding Sub Committee

Date: Thursday 1 April 2021

The Engagement Plan was provided to the Coast, Estuary and Flooding Sub-committee for feedback prior to the commencement. No feedback was received.

The draft Engagement Report was provided to the sub-committee on 1 April 2021 for review and feedback to ensure it was reflective of community sentiment and the overall results/conclusions where accurate.

### RESULTS

The Committee feedback included:

- Questioned the local state member and state government's role in the process, including the approval of various stages and the CBA and Funding Model Reports.
- Some of the community representatives on the committee expressed their concern regarding Council's decision to put the beneficiary pays letter, CBA and Funding Model reports to the community.

## 2.6. Have Your Say

<https://haveyoursay.pmhc.nsw.gov.au/illaroo-road>

The Have Your Say page was used for the community to access the documentation, meeting bookings, make submissions and ask questions relating to the project.

The Illaroo Road Revetment Wall engagement projects was listed in the Have Your Say electronic newsletter in March 2021.

Newsletter	Sent to	Opened	Clicked
Have Your Say March 2021	3833	1129	350





17 submissions were received via the Have Your Say platform from the following demographics: -

Location		Age		Gender	
Lake Cathie	13	26-35	1	Female	6
Port Macquarie	2	36-45	1	Male	8
Dunbogan	1	46-55	5	Other	1
Bobs Creek	1	56-65	1	Unknown	2
		Over 65	7		
		Unknown	2		

These submissions have been included in the Formal Written Submissions Table, please refer to the Appendix.

Page Visitation	722
Aware participants (visited the page)	474
Informed participants (downloaded documents)	208
Engaged participants (participated in survey)	18
Document Downloads	318
Lake Cathie Illaroo Road Revetment Wall Funding Model - FINAL Report (Redacted)	127
Lake Cathie Illaroo Road Revetment Wall Cost Benefit Analysis CBA - FINAL Report (Redacted)	99
Illaroo Rd Revetment Wall - Information brochure	48
Illaroo Road Revetment Wall - Frequently Asked Questions (FAQ's)	44

## 2.7. Formal/Written Submissions

All submissions received have been included in the Submissions Summary Table, please refer to the Appendix.

## 2.8. Communications

Council issued a media release on Tuesday 9 February. The key messages were:

- Our focus is to work with the property owner on this important project so that together we can make the best possible decisions based on their interests and concerns
- At this stage we are consulting with the directly impacted properties to see if they have the willingness or capacity to pay for the revetment wall
- At this stage no decision has been made by Council on how the revetment wall will be funded or if and when it would proceed



### 3. RESULTS SUMMARY/CONCLUSION

#### Capacity & Willingness to Pay

The overriding community response indicates there is no "capacity and willingness to pay" as per the Options outlined in the Funding Model Report.

Twenty-seven submissions were received from the 41 directly impacted property owners. All 27 submissions indicated there was no capacity or willingness to pay as per the Funding Model.

Community feedback has indicated an unwillingness to pay for the costs of public amenity inclusions, seating, lighting, etc. by both directly and/or indirectly property owners and/or Lake Cathie community. There is strong sentiment that all public amenity works should be fully funded by Council and/or other levels of government.

One private property owner has indicated limited capacity or willingness to pay. This submission indicated that the cost breakdown should not include any public amenity costs being funded by the private property owners. Also that the project should be reconsidered as a public domain project.

The community wants coastal protection works undertaken at Lake Cathie, they do not support the Cost Benefit Analysis and Funding Model Reports findings or recommendations.

Some feedback is showing that the revetment wall as the preferred option for coastal protection has diminished since community consultation in 2013.

#### Revetment Wall

Community concerns centred around:

- Unknown end effects on the coastline for properties at the extremities of the wall and the unknown potential for increasing erosion at end sites
- Visual impact
- Beach loss
- The inclusion of public amenities (seatings, footpath etc)

Indirectly impacted property owners and community members have raised concerns about possible 'end effects' of the proposed revetment wall and the implications for the coastline and properties at the extremities of the wall.

Other coastal protection options have been suggested and discussed at the community and one-on-one meetings. It would appear that the overwhelming community endorsement of the revetment wall as the preferred option in 2013 has now waned and there may be a willingness to explore short-term and long-term hazard mitigation options through the Coastal Management Plan process in 2021.

#### Road

The community has strongly disagreed with the report findings that the public road exists to serve the properties fronting the road and for the provision of services to the properties.

The community sentiment is that the road benefits the wider community as it is heavily used road by the general public.

Feedback clearly showed that Council should be considered the primary beneficiary of the revetment wall and residents should not be burdened with 80% of construction costs.

#### Overall Conclusion

There is no capacity and willingness to pay based on the Funding Model Report recommendations by directly impacted residents.



There is no community support for the Cost Benefit Analysis or the Funding Model reports' findings or recommendations.

#### 4. NEXT STEPS

A Report will be presented to the 21 April 2021 from Director Development & Environment outlining the findings of the community engagement.

A further Council Report will be presented to the 19 May 2021 Council Meeting outlining a range of options to progress the Illaroo Road revetment wall project and the future management of the coastal erosion hazards in Lake Cathie.

#### 5. APPENDIX

- Submissions Summary Table and responses
- Community Meeting Minutes, 18 & 23 February 2021

External Submissions Summary

Illaroo Road Revetment Wall		Issue
1.	W S & R P Bell	<p>Wall does not include frontage of my property and should not be included in the 41 homes as it will receive no benefit.</p> <p>Does not agree with revetment wall proposal and concerned about beach loss and inability of community to use beach at high tide should the revetment wall be built.</p>
	<b>Response/Comment:</b>	<p>It is understandable that property owners that do not have wall frontage on their property may feel the proposed wall is of no benefit to them. As such, it needs to be confirmed why and how each of the 41 properties impacted in this report has been identified as receiving benefit.</p> <p>Council commissioned a study that identified 41 properties and the assets that service these properties as potentially being impacted by coastal erosion due to storm events and climate change. The identified properties are located within the Coastal Erosion map under the Port Macquarie-Hastings Local Environmental Plan (LEP) 2011. This map shows the properties that are potentially subject to coastal erosion in a 100-year timeframe. Some properties were identified during the coastal hazard study phase which was undertaken in 2008-2009 and updated in later years to account for climate change impacts.</p> <p>Council notes the concern with beach loss.</p>
2.	Tony & Lis Gale	Disagree with Based Benefit Shares and Metres Frontage options.
	<b>Response/Comment:</b>	Noted
3.	T & J Grant	<p>Disagree with Based Benefit Shares and Metres Frontage options.</p> <p>Believe it is a cynical attempt to bypass documented, extensive community support for a government-funded model to preserve a significant community asset.</p> <p>Demonstration of bias shown by PMHC to Port central.</p>
	<b>Response/Comment:</b>	<p>Noted the disagreement with the benefit shares and metre frontage options.</p> <p>Council has discussed funding options and methodologies throughout the project from its inception in 2007. During the consultation phase of the Stage 2 - Coastline Management Study in 2012, there was large support from the community for state and federal governments to pay for the revetment wall. The 2013 resolution of Council when Council adopted the CZMP reflected this public sentiment.</p>



		<p>However, there are rules and guidelines about how funding for projects such as this should occur. Council must follow this process if it wishes to access contributions from other levels of government.</p> <p>It is noted that the NSW Government introduced new legislation and new guidelines on how projects within CZMP's and CMP's can be funded. Whilst the CZMP was adopted before the new guidelines were endorsed, they now apply to this project.</p>
4.	Shirley Fletcher (Email & via HYS)	<p>Disagree with Based Benefit Shares and Metres Frontage options.</p> <p>Not the responsibility of only 41 ratepayers and beneficiary model should be withdrawn. Do not accept arbitrary selection of addresses labelled as direct beneficiaries. Jonathon Dixon Reserve has been excluded when erosion fronting reserve is obvious.</p> <p>McMasters Beach on Central Coast secured State Government grant for revetment wall however, residents here told unlikely grant funding would be found.</p> <p>Residents have clearly indicated an unwillingness and inability to pay.</p>
	<b>Response/ Comment:</b>	<p>Noted the disagreement with the benefit shares and metre frontage options.</p> <p>Council commissioned a study that identified 41 properties and the assets that service these properties as potentially being impacted by coastal erosion due to storm events and climate change. The identified properties are located within the Coastal Erosion map under the Port Macquarie-Hastings Local Environmental Plan (LEP) 2011. This map shows the properties that are potentially subject to coastal erosion in a 100-year timeframe. Some properties were identified during the coastal hazard study phase which was undertaken in 2008-2009 and updated in later years to account for climate change impacts.</p> <p>The Illaroo Rock Revetment wall project is unique because its purpose is to protect mainly private property, the examples cited may have had a stronger public benefit. Funding guidelines associated with the Coast and Estuary Grant program state that any project greater than 1 million dollars will require a detailed cost benefit analysis and funding model. As such, these were undertaken and the result of those findings have been presented to the community.</p>
5.	Sally Drinkwater	<p>CBA is fundamentally flawed in its analysis of benefits of the public assets and should be discarded as road frontage is used by wider community, deleterious impacts to properties at either end of proposed wall have not been considered.</p> <p>Ideas for consideration include:</p>



		<ul style="list-style-type: none"> <li>- Resumption of properties along Illaroo Road that do not have alternative access routes to their properties other than that road, reinforcement of the bank with sand nourishment (and stabilise it with vegetation) and develop the land for public use purposes without impacting the amenity of the beach and not causing negative impacts that may occur at either end of a revetment wall.</li> <li>- Go back to the drawing board and consider the entirety of the coastal strip being impacted by coastal erosion – namely: north from Middle Rock to the entrance to the lagoon and along the frontage of Bundella Avenue. The creation of another "Middle Rock" at the southern headland by either reef, groyne or breakwall will protect against oceanic and climate change impacts on the shore line. It would also protect sand nourishment in front of both roads and likely create an additional tourist attraction by the creation of a surfing break and increase fishing opportunity. It would also correctly qualify for the commitment of some developer contributions as an enhanced amenity for the the use and enjoyment of the community.</li> </ul>
	<b>Response/Comment:</b>	<p>Noted the disagreement with the CBA and funding model benefit shares findings.</p> <p>At this time Council has not made a decision on where to from here. As such, the feedback from this round of community consultation will be taken to Council at the ordinary April Council meeting before any decisions are made regarding funding or the construction of the wall. The suggested ideas will be considered at this time.</p>
6.	Ross Kerr	Based on what happened at Collaroy, Council is responsible for maintaining Illaroo and Bundella. Need to look at precedent set.
	<b>Response/Comment:</b>	The Illaroo Rock Revetment wall project is unique because its purpose is to protect mainly private property, the examples cited may have had a stronger public benefit. Funding guidelines associated with the Coast and Estuary Grant program state that any project greater than 1 million dollars will require a detailed cost benefit analysis and funding model. As such, these were undertaken and the result of those findings have been presented to the community.

7.	R & A Secombe	Disagree with Based Benefit Shares and Metres Frontage options.
	<b>Response/Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options.
8.	R & D Dewar	Disagree with Based Benefit Shares and Metres Frontage options.
	<b>Response/Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options.
9.	R & J Burr	Disagree with Based Benefit Shares and Metres Frontage options. Not in a position to pay anything towards revetment wall. Illaroo Rd and the stormwater drain is not our responsibility. Illaroo Rd is only perfect viewing of ocean between Bonny Hills and Port Macquarie and would be tragic to see it neglected.
	<b>Response/Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options.
10.	P Wilson	Disagree with Based Benefit Shares and Metres Frontage options.
	<b>Response/Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options.
11.	NSW SES	Any improvements that Council can make to reduce coastal erosion risk will benefit the current and future community. Encourage Council to pursue site design and stormwater management that minimises any risk to the community.
	<b>Response/Comment:</b>	Noted Council acknowledges the impact of the stormwater issues at Illaroo Road and as such is working to rectify this situation. Construction of the new stormwater system is to begin in July 2021. It was identified as priority action in the Coastal Zone Management Plan for Lake Cathie.
12.	Narelle Kerr	Property does not front the sea and is separated by the road and small reserve. Road is a Council asset and must be maintained by Council. It is Council's responsibility to pay for all of the revetment wall. Council had to pay full cost of restoration of beach in Collaroy.
	<b>Response/Comment:</b>	Council commissioned a study that identified 41 properties and the assets that service these properties as potentially being

		<p>impacted by coastal erosion due to storm events and climate change. The identified properties are located within the Coastal Erosion map under the Port Macquarie-Hastings Local Environmental Plan (LEP) 2011. This map shows the properties that are potentially subject to coastal erosion in a 100-year timeframe. Some properties were identified during the coastal hazard study phase which was undertaken in 2008-2009 and updated in later years to account for climate change impacts.</p> <p>The Illaroo Rock Revetment wall project is unique because its purpose is to protect mainly private property, the examples cited may have had a stronger public benefit. Funding guidelines associated with the Coast and Estuary Grant program state that any project greater than 1 million dollars will require a detailed cost benefit analysis and funding model. As such, these were undertaken and the result of those findings have been presented to the community.</p>
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13.	R P & K L Morison	Disagree with Based Benefit Shares and Metres Frontage options. Do not have a willingness or capacity to pay. Council has an obligation to provide services. Property is not absolute waterfront and only worth a fraction more than CBA costing.
	<b>Response/Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options.
14.	Mardi Van Oirschot	Disagree with Based Benefit Shares and Metres Frontage options. Do not have capacity to pay. Can see benefit of the wall being built however not at the expense and potential debt that household may occur.
	<b>Response/Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options.  Noted the non-capacity to pay and financial hardship this would cause.
15.	M & P Clancy	Disagree with Based Benefit Shares and Metres Frontage options. My local business employs 25 local people and is on verge of bankruptcy due to COVID and this cost would send us broke.
	<b>Response/Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options. Noted the financial hardship this would cause.

16.	J L & J M Sanders & C A & M A Leedham	Disagree with Based Benefit Shares and Metres Frontage options.
	<b>Response/ Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options. Noted
17.	L & L Waine	Disagree with Based Benefit Shares and Metres Frontage options.
	<b>Response/ Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options. Noted
18.	Karen Rees-Pikett	Disagree with Based Benefit Shares and Metres Frontage options.
	<b>Response/ Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options. Noted
19.	Judy Thomas & Lloyd Besant	Disagree with Based Benefit Shares and Metres Frontage options.
	<b>Response/ Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options.
20.	Joy Walker	Rock revetment wall needs to be what property owners and ratepayers want, not something Council thinks is the best option. Would it be more cost effective to construct a concrete wall?
	<b>Response/ Comment:</b>	Noted the consideration that further consultation may be required to ensure the outcome is reflective of the community sentiment.  Feedback from this round of community consultation will be taken to Council at the ordinary April Council meeting before any decisions are made regarding funding or the construction of the wall. Additional options will be presented to the Council at the May ordinary meeting to discuss where to from here.
21.	J & L Wilkinson	Disagree with Based Benefit Shares and Metres Frontage options.
	<b>Response/ Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options.
22.	I Camarsh	Disagree with Based Benefit Shares and Metres Frontage options. Consider payment plan. (via HYS) Wall ends at eastern boundary of my property and has no benefit to me at all. In purple zone which is subjective projections. Do not know how I could pay the amount wanted.
	<b>Response/ Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options.

		Council commissioned a study that identified 41 properties and the assets that service these properties as potentially being impacted by coastal erosion due to storm events and climate change. The identified properties are located within the Coastal Erosion map under the Port Macquarie-Hastings Local Environmental Plan (LEP) 2011. This map shows the properties that are potentially subject to coastal erosion in a 100-year timeframe. Some properties were identified during the coastal hazard study phase which was undertaken in 2008-2009 and updated in later years to account for climate change impacts.
23.	H & H Marchment	Disagree with Based Benefit Shares and Metres Frontage options.
	<b>Response/Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options.
24.	Graham Denton	Everyone who lives in or visits village are all beneficiaries.
	<b>Response/Comment:</b>	Noted
25.	G & J Wright	Disagree with Based Benefit Shares and Metres Frontage options.
	<b>Response/Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options.
26.	G Darcy & J Martin	Disagree with Based Benefit Shares and Metres Frontage options. Council must have realised that residents would not be able to pay the ridiculous amounts asked. Need to look at situation from our point of view.
	<b>Response/Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options.  We empathise with the community that this is a difficult question and it was never Council's intention to create stress or unrest in our community.  Council is following the process as per required by the State Government Coastal Manual guidelines and as such we must obtain direct feedback from those properties that the CBA found would directly benefit from the construction of the wall.  Council cannot obtain this feedback without directly asking the community.  Feedback from this round of community consultation will be taken to Council at the ordinary April Council meeting before any decisions are made regarding funding or the construction of the wall.



27	David Tooby	<p>Support the adopted concept for a rock revetment wall with beach nourishment but do not support the proposed funding model. Not against concept of contributing to wall but must be commensurate with number of factors, including the correct definition/establishment of beneficiaries, relative risk and capacity to pay.</p> <p>Key to determining an equitable funding model is recognition of the affected roads as parts of significant public domain foreshore space that benefits the whole Lake Cathie community and broader PMHC LGA. Many precedents outlined in Section 3.7 of the FM, particularly Collaroy NSW and Toogoom Seawall QLD can be discounted.</p> <p>Flynns Beach Seawall being included as precedent is relevant in that public domain projects are seldom funded by private enterprises or property owners.</p> <p>Consideration must be given to the funding breakdown ie what costs are attributed to protection works and what are attributed to public domain embellishment works.</p> <p>Degree to which residents should contribute is clearly set out in Sensitivity Analysis, which is measured and just.</p> <p>Flexible approach for payments must be thoroughly considered.</p>
	<b>Response Comment :</b>	<p>Noted the disagreement with funding model but also that a flexible approach for payments should be considered. It is also important to note that at this time Council has not made a decision on where to from here.</p> <p>Feedback from this round of community consultation will be taken to Council at the ordinary April Council meeting before any decisions are made regarding funding or the construction of the wall.</p> <p>The Illaroo Rock Revetment wall project is unique in our region because its purpose is to protect mainly private property. The only comparable project to the Illaroo Rock Revetment wall is possibly Stage 1 of the Flynns Beach Seawall project which was undertaken to protect public assets including the surf club and open space reserve. The \$1.5M construction cost for an 80m seawall involved a 50/50 funding split between Council and the NSW Government. This was within the Coastal Management Program grant funding rules that applied at the time the grant funding application was made in 2015.</p> <p>The grant funding rules have since been changed by the NSW Government, meaning the future stages of the Flynns Beach project cannot proceed until Council has completed a Coastal Management Program (CMP) and undertaken a Cost Benefit Analysis and Funding Model, the same as the Illaroo Road revetment wall project.</p> <p>For context as to why this project is seeking community feedback regarding funding also rests with the process Council must follow. In 2013 Council resolved to build the Illaroo revetment wall and to have it funded by the State Government,</p>

		<p>this was a reflection of the public sentiment. At the time Council's resolution was valid and genuinely reflected considerable public support from the community during the consultation phase of the Stage 2 Coastline Management Study.</p> <p>However, CZMPs must be 'certified' by the NSW Government before funding can be made available for any action items. When the CZMP was certified by the NSW Minister for Planning, Rob Stokes in 2016, Council was directed to undertake further investigation into funding options. The certification letter confirmed that Council must follow the principles of the new Coastal Management Manual. Council has prepared a funding model that accords with the principles of this manual, and is where we are now consulting with the community on the results of this work.</p> <p>The cost benefit analysis has taken into consideration the estimated costs of the wall as per the Aurecon report. The costing of the wall does not differentiate between embellishments and non-embellishments.</p> <p>The concept design does include the following amenities:</p> <ul style="list-style-type: none"> <li>• Public access</li> <li>• Shared pathway on the top of the revetment wall</li> <li>• Public seating</li> <li>• Reserve space</li> </ul>
28	Christine Godman	<p>Outrageous suggestion for residents to pay 80% of the costs. Suggest get basics right first which is sorting out environmental issues with the lake system and erosion of the beach. Ridiculous to expect a small group of residents to pay for a wall in area enjoyed by so many.</p>
	<b>Response Comment :</b>	<p>Government funding can only be utilised when grant program guidelines are followed and eligibility criteria are met. For example, the most appropriate grant funding stream available to us to funding the construction of the revetment wall is the Coastal Management Grant Program. Council would not be awarded grant funding if it has not followed the eligibility criteria of this grant program. This general rule applies to all other grant programs too.</p> <p>This work has been done to address the funding requirements of the Coastal Management Act &amp; Coastal Management Manual (2016). Before Council can apply for grant funding, or the NSW Government can provide their funding contribution for the revetment wall, a CBA &amp; Funding Model must be completed. The CBA is used to determine whether a project proceeds, based on the cost vs the benefits. The funding model is used to determine who pays what, based on the apportionment of benefits.</p> <p>A direct beneficiary is a property owner who has been identified as benefiting from the construction of the revetment wall. The wall will provide protection from the coastal erosion and will allow property owners to retain their direct access to services (road, power, water, sewer, etc.).</p>

		The direct beneficiaries as identified by the Marsden and Jacobs report are 41 property owners. Other community members and tourists use the road and beach area but as per the funding model guidelines and funding model report, Council must rely on the information provided by the report when assessing beneficiaries in this instance.
29	B & S Tobin (Form and via HYS)	Disagree with Based Benefit Shares and Metres Frontage options. Do not have capacity to pay at this stage in their life. Believe Illaroo Rd is most used road in Lake Cathie. Money spent of reports over the years could have paid for wall. Lake is widely used by broader community and therefore cost should be spread across the LGA.
	<b>Response Comment</b>	<p>Noted the disagreement with the benefit shares and metre frontage options and the inability to pay at this stage in life.</p> <p>The revetment wall was identified as the primary action item that will protect private and public assets from the threat of coastal erosion from storms or long term sea level changes. The wider estuarine system is not being considered in this discussion.</p> <p>To clarify Government funding can only be utilised when grant program guidelines are followed and eligibility criteria are met. For example, the most appropriate grant funding stream available to us to funding the construction of the revetment wall is the Coastal Management Grant Program. Council would not be awarded grant funding if it has not followed the eligibility criteria of this grant program. This general rule applies to all other grant programs too.</p> <p>This work has been done to address the funding requirements of the Coastal Management Act &amp; Coastal Management Manual (2016). Before Council can apply for grant funding, or the NSW Government can provide their funding contribution for the revetment wall, a CBA &amp; Funding Model must be completed. The CBA is used to determine whether a project proceeds, based on the cost vs the benefits. The funding model is used to determine who pays what, based on the apportionment of benefits.</p> <p>A direct beneficiary is a property owner who has been identified as benefiting from the construction of the revetment wall. The wall will provide protection from the coastal erosion and will allow property owners to retain their direct access to services (road, power, water, sewer, etc.).</p> <p>The direct beneficiaries as identified by the Marsden and Jacobs report are 41 property owners. Other community members and tourists use the road and beach area but as per the funding model guidelines and funding model report, Council must rely on the information provided by the report when assessing beneficiaries in this instance.</p>



30	William Watson	Significant data from similar coastal protection efforts overseas relating to sea walls concentrating wave action at the extremities of such structures. Prudent to protect Council from future litigation in this regard.
	<b>Response Comment</b>	Noted
31	Stephen Hunt & K J Outtrim	Proposal is unjust, unreasonable and unfair and believes there is no will by Council for project to proceed. No evidence within provided reports that suggest affected residents should bear 80% of cost and sensitivity analysis suggests 80% should be met equally between PMHC and & NSW State Govt.
	<b>Response Comment</b>	Council has noted this comment. Detailed information on the cost benefit analysis and funding model reports are contained within the reports and are available online at <a href="https://www.pmhc.nsw.gov.au/Services/Environment/Waterways-and-coastlines/Illaroo-Road-Revetment-Wall">https://www.pmhc.nsw.gov.au/Services/Environment/Waterways-and-coastlines/Illaroo-Road-Revetment-Wall</a>
32	Aaron Frazier	Suggest building wall out of discarded tyres which would cost much less and last longer.
	<b>Response Comment</b>	Noted
33	J E & Y C O'Farrell	Disagree with Based Benefit Shares and Metres Frontage options.
	<b>Response Comment</b>	Noted the disagreement with the benefit shares and metre frontage options.
34	Stuart Bate (via HYS)	Cannot look at CBA and funding model in isolation - environmental and economic impact on Bonny Hills and surrounding beaches needs to also be considered. Need to look at other revetment walls which have been constructed which may save a few properties but may have potentially devastating impacts on other areas.
	<b>Response Comment</b>	Noted
35	Barbara Smith (via HYS)	Suggest include modelling which would give residents the outcome they need for many years
	<b>Response Comment</b>	Noted

36.	Stewart Cooper (via HYS)	Council largely responsible for erosion at Illaroo Road by not redirecting stormwater and also hold the majority of assets that will be impacted but are attempting to redirect costs to residents.
	<b>Response/Comment:</b>	<p>Council acknowledges the impact of the stormwater issues at Illaroo Road and as such is working to rectify this situation. Construction of the new stormwater system is to begin in July 2021. It was identified as priority action in the Coastal Zone Management Plan for Lake Cathie.</p> <p>The process to undertake the Illaroo stormwater redirection works has included lengthy environmental approvals including contamination remediation and Aboriginal archaeological findings. Council staff have worked to resolve these issues and on-ground works will commence from July 2021.</p> <p>The revetment wall was identified as the primary action item that will protect private and public assets from the threat of coastal erosion from storms or long term sea level changes.</p> <p>A direct beneficiary is a property owner who has been identified as benefiting from the construction of the revetment wall. The wall will provide protection from the coastal erosion and will allow property owners to retain their direct access to services (road, power, water, sewer, etc.).</p> <p>The direct beneficiaries as identified by the Marsden and Jacobs report are 41 property owners. Other community members and tourists use the road and beach area but as per the funding model guidelines and funding model report, Council must rely on the information provided by the report when assessing beneficiaries in this instance.</p>
37.	Alan McIntyre (via HYS)	Strategy needs revamping. LNP should be held to account for matters of applicability and assessment, not Council.
	<b>Response/Comment:</b>	Noted
38.	Brendan Croft (via HYS)	Costs should be solely covered by PMHC and State government. Rates are already higher than they should be and community is being punished due to funds mismanagement by Council.
	<b>Response/Comment:</b>	<p>Council acknowledges the impact of the stormwater issues at Illaroo Road and as such is working to rectify this situation. Construction of the new stormwater system is to begin in July 2021. It was identified as priority action in the Coastal Zone Management Plan for Lake Cathie.</p> <p>The process to undertake the Illaroo stormwater redirection works has included lengthy environmental approvals including contamination remediation and Aboriginal archaeological findings. Council staff have worked to resolve these issues and on-ground works will commence from July 2021.</p>

		<p>The revetment wall was identified as the primary action item that will protect private and public assets from the threat of coastal erosion from storms or long term sea level changes.</p> <p>A direct beneficiary is a property owner who has been identified as benefiting from the construction of the revetment wall. The wall will provide protection from the coastal erosion and will allow property owners to retain their direct access to services (road, power, water, sewer, etc.).</p> <p>The direct beneficiaries as identified by the Marsden and Jacobs report are 41 property owners. Other community members and tourists use the road and beach area but as per the funding model guidelines and funding model report, Council must rely on the information provided by the report when assessing beneficiaries in this instance.</p>
39.	Stuart Wilson (via HYS)	<p>From my research, our property will not be affected by erosion for over 100 years. Something needs to be done for beachfront properties to protect Illaroo Road but absurd to ask residents to pay. Beach, road and access is for the benefit of all residents, tourists and developers and it should be financed the same way that the Port Macquarie breakwall and foreshores have been financed.</p>
	<b>Response/ Comment:</b>	<p>Council commissioned a study that identified 41 properties and the assets that service these properties as potentially being impacted by coastal erosion due to storm events and climate change. The identified properties are located within the Coastal Erosion map under the Port Macquarie-Hastings Local Environmental Plan (LEP) 2011. This map shows the properties that are potentially subject to coastal erosion in a 100-year timeframe. Some properties were identified during the coastal hazard study phase which was undertaken in 2008-2009 and updated in later years to account for climate change impacts.</p> <p>The revetment wall was identified as the primary action item that will protect private and public assets from the threat of coastal erosion from storms or long term sea level changes.</p> <p>A direct beneficiary is a property owner who has been identified as benefiting from the construction of the revetment wall. The wall will provide protection from the coastal erosion and will allow property owners to retain their direct access to services (road, power, water, sewer, etc.).</p> <p>The direct beneficiaries as identified by the Marsden and Jacobs report are 41 property owners. Other community members and tourists use the road and beach area but as per the funding model guidelines and funding model report, Council</p>

		<p>must rely on the information provided by the report when assessing beneficiaries in this instance.</p> <p>The Illaroo Rock Revetment wall project is unique in our region because its purpose is to protect mainly private property. The only comparable project to the Illaroo Rock Revetment wall is possibly Stage 1 of the Flynns Beach Seawall project which was undertaken to protect public assets including the surf club and open space reserve. The \$1.5M construction cost for an 80m seawall involved a 50/50 funding split between Council and the NSW Government. This was within the Coastal Management Program grant funding rules that applied at the time the grant funding application was made in 2015.</p> <p>The grant funding rules have since been changed by the NSW Government, meaning the future stages of the Flynns Beach project cannot proceed until Council has completed a Coastal Management Program (CMP) and undertaken a Cost Benefit Analysis and Funding Model, the same as the Illaroo Road revetment wall project.</p>
40.	Terri Baldi (via HYS)	<p>Options 2A and 2B (Special Rate, beneficiaries only) is very fair with a special rate levied over a 10, 20 or 50-year period and/or if the property is sold then full payment on sell. State and local government contributions of 10% capital costs each year plus annual maintenance costs. Property value will increase, properties kept safe and saleable so a big win for owners. Unfair for all ratepayers to have to bear the costs of a few.</p>
	<b>Response/Comment:</b>	Noted
41.	Mark Ellis	<p>The majority of residents on Illaroo road are unable to pay the requested amount and should not have to pay for council's liability or infrastructure.</p> <p>The short term adaptation of a revetment wall, with construction and ongoing maintenance is too costly and be ineffective over time as it doesn't really address the long term climate risk impacts on the council infrastructure from increased storm surges and erosion.</p> <p>Alternatively, instead of forcing current residents to pay for council's problem, long term strategic land use planning models should be adopted for illaroo properties.</p> <p>The vision and direction of local communities depend on strategic land use planning documents</p>



		<p>that provide for growth and change of our coastal towns in response to climate change impacts.</p> <p>Planning systems can respond but adaptive responses will need to be uniquely devised and appropriate to local professional, economic, environmental, social and cultural realities. Not some cookie cutter approach to erosion forced on the council by the state government.</p> <p>If the council has an alternate plan to an engineering solution, then to fulfil the czmp and new cmp after 2021 they may not necessarily have to implement a financial strategy causing grief and angst to the local community.</p>
	<p><b>Response/Comment:</b></p>	<p>Noted</p> <p>At this time Council has not made a decision on where to from here. As such, the feedback from this round of community consultation will be taken to Council at the ordinary April Council meeting before any decisions are made regarding funding or the construction of the wall. The suggested ideas will be considered at this time.</p>
42.	Graham Denton	<p>Disagree with Based Benefit Shares and Metres Frontage options.</p> <p>Wall should have been constructed when it was passed in 2014 as cost would be much less than now.</p> <p>It would have been actioned by now if in Port Macquarie eg Town Beach and Flynns Beach. Elaborate revetment wall not needed.</p> <p>Council could have used the rock from the upgrade of the Pacific Highway to build a wall.</p> <p>Population of Lake Cathie is about to boom and Council's income will explode so affected residents shouldn't have to pay anything.</p>
	<p><b>Response/Comment:</b></p>	<p>Noted the disagreement with the benefit shares and metre frontage options.</p> <p>Council has had to follow a detailed process based on the NSW state requirements for approval and funding opportunities. It was not an option to build the wall in 2014 due to legislative requirements.</p>

43.	J Denton	Disagree with Based Benefit Shares and Metres Frontage options. Wall is definitely needed for the erosion and all the people who use it daily. A pathway is needed for community as road is dangerous.
	<b>Response/Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options.  Noted request for a wall and a pathway.
44.	Michelle Gunter	Disagree with Based Benefit Shares and Metres Frontage options.
	<b>Response/Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options.
45.	Neil Smith	Disagree with Based Benefit Shares and Metres Frontage options.
	<b>Response/Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options.
46.	J Tyra (Email & via HYS)	Disagree with Based Benefit Shares and Metres Frontage options.  Disappointed with communications and the method Council has used including insensitive letters which has caused panic and fear. Believe Marsden Jacobs were engaged to substantiate claim of 80% benefit to residents. Comparisons with other sea walls are inappropriate and inaccurate.  Cannot understand the difference in funding models for Flynn's Beach wall and Lake Cathie as both used by community and tourists. Council has been aware of deterioration of coastline for many years and should have been addressed prior to now. Cost blowout is staggering.  Unfair that residents are expected to pay majority of cost, and Council and NSW State Government only 10% each, particularly as cost includes items such as stairs, ramp, seating, lighting etc.  Unwilling and do not have capacity to pay. Strong government action is required to necessary to protect widespread coastal erosion.
	<b>Response/Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options.

		<p>Council staff, management and Councillors were aware of the difficult nature of this discussion and the unrest it would cause within the community. Significant discussion and consideration went into the development of the Engagement Plan. The intention of the letters and information provided was for property owners to be able to provide informed feedback for Council regarding the feasibility of the Beneficiaries Pay model to our regional community. This process was also to provide the community with time to consider the information, ask questions and provide feedback.</p> <p>The Illaroo Rock Revetment wall project is unique in our region because its purpose is to protect mainly private property.</p> <p>The Flynn's Beach Seawall project is different since it was undertaken to protect public assets including the surf club and open space reserve. The \$1.5M construction cost for an 80m seawall involved a 50/50 funding split between Council and the NSW Government. This was within the Coastal Management Program grant funding rules that applied at the time. The grant funding application was made in 2015.</p> <p>The grant funding rules have since been changed by the NSW Government, meaning the future stages of the Flynn's Beach project cannot proceed until Council has completed a Coastal Management Program (CMP) and undertaken a Cost Benefit Analysis and Funding Model, the same as the Illaroo Road revetment wall project.</p>
47.	Suzanne Ellis (Email & HYS)	<p>Owners should not have to pay for revetment wall. Revetment walls across our LGA and no other people who benefit from the wall have paid. Everyone in the community including visitors benefit from the beach, lake and foreshores/parks and roads.</p>
	<b>Response/Comment:</b>	<p>Noted disagreement with beneficiary pays principles.</p> <p>The Illaroo Rock Revetment wall project is unique in our region because its purpose is to protect mainly private property.</p> <p>The Flynn's Beach Seawall project is different since it was undertaken to protect public assets including the surf club and open space reserve. The \$1.5M construction cost for an 80m seawall involved a 50/50 funding split between Council and the NSW Government. This was within the Coastal Management Program grant funding rules that applied at the time. The grant funding application was made in 2015.</p>

48.	Fiona Stewart (Email & via HYS)	Not prepared to pay large contribution and request funding be obtained from other sources including Federal, State, Council and government grants. Public road adjoining beach is important infrastructure for residents, holiday makers and surf lifesavers.
	<b>Response/Comment:</b>	Noted
49.	Ron Morrison	Believe Council acquired 20ft of land in 1966 and therefore landowners became adjacent land holders to Council and Government land. Council took over the responsibility for this land and provided sewer and water infrastructure and later provision of telephone and internet servicing and therefore residents have no responsibility for it any longer. 80% benefit to land holders is conjecture and no benefit will be derived from it. Will not pay any money towards any model of funding and believe it should be paid for by all ratepayers of PMHC. Council need to own up to their responsibilities. Illaroo Road/Bundella Ave see great movement from cars, bikes, walkers, prams and buses and for safety of all, there needs to be footpaths which would be beneficial to all.
	<b>Response/Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options.  Noted the request for funding to come from the wider LGA residents.  At this time Council has not made a decision on where to from here. As such, the feedback from this round of community consultation will be taken to Council at the ordinary April Council meeting before any decisions are made regarding funding or the construction of the wall. The suggested ideas will be considered at this time.



50.	Geoff McNeil (via HYS)	<p>Create a Plan for the management of the Lake and the ocean front of Illaroo drive:</p> <ol style="list-style-type: none"> <li>1. The creation of a permanent opening of the Lake to the ocean.</li> <li>2. Review of redirection of stormwater outfalls from Illaroo Drive to the Lake.</li> <li>3. The consideration of initial repairs to Sand dunes and coffee rock caused by existing council stormwater outfalls to the ocean by the installation of Geotextile sandbags at these points.</li> <li>4. Protection of Norfolk Pines at Bundella Ave.</li> <li>5. Design and implementation of the extension of walkways/cycleway along Bundella to the East of the Norfolk Pines, along the oceanfront of Illaroo Drive then on to Middle Rock and Bonny Hills.</li> <li>6. The revisiting of previous Plans of Management and local submissions that have been gathering dust for a lot of years.</li> </ol>
	<b>Response/Comment:</b>	<p>Council has recently adopted the CMP scoping study for the LGA. This study has identified and considered literature and studies that have been completed in past. As such, a number of issues including managing the opening of the lagoon to mitigate for flood control and the ongoing stormwater issues at Illaroo Road are included in the CMP.</p> <p>At this time Council has not made a decision on where to from here. As such, the feedback from this round of community consultation will be taken to Council at the ordinary April Council meeting before any decisions are made regarding funding or the construction of the wall. The suggested ideas will be considered at this time.</p>
51.	Lake Cathie Progress Assn (via HYS)	<p>CBA and funding model fail to take into account heavy use and reliance by all locals and visitors as only true beachside road in village.</p> <p>Funding model shows disrespect to village. 61% of ownership of protected assets by the wall will be public and utility assets and this is minimum contribution Council should be paying.</p> <p>Only option that is viable and affordable is option 3 "Special Rates (\$495) is applied equally to all council ratepayers"</p>
	<b>Response/Comment:</b>	<p>Noted the disagreement with the benefit shares and metre frontage options.</p> <p>At this time Council has not made a decision on where to from here. As such, the feedback from this round of community consultation will be taken to Council at the ordinary April Council meeting before any decisions are made regarding funding or the construction of the wall. The suggested ideas will be considered at this time.</p>

52.	Chelsea Ellis (via HYS)	<p>Unethical. Cannot and should not expect homeowners who pay rates to pay for revetment wall that protects Council assets first. CBA was biased and all options were not provided or fully explored and expects homeowners to pay for extra (lights, footpaths)</p> <p>Funding options should be Council and government responsibilities.</p>
	<b>Response/Comment:</b>	Noted the disagreement with the benefit shares and metre frontage options.
53.	Anthony Gale (via HYS)	<p>Against owner funding of project. Not primary beneficiaries and do not own land affected by land degradation. Council responsible for sand bank erosion due to years of mismanagement and bad handling of stormwater damage. Cost should fall solely on local and state governments.</p>
	<b>Response/Comment:</b>	<p>Noted the disagreement with the benefit shares and metre frontage options.</p> <p>Council acknowledges the impact of the stormwater issues at Illaroo Road and as such is working to rectify this situation. Construction of the new stormwater system is to begin in July 2021. It was identified as priority action in the Coastal Zone Management Plan for Lake Cathie.</p>

**MINUTES**  
**Illaroo Road Revetment Wall Owners Meeting**  
**18/02/2021**

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**PRESENT****Members:**

Chief Executive Officer (Dr Clare Allen)  
Councillor Sharon Griffiths  
Director Development & Environment (Melissa Watkins)  
Natural Resources Manager (Blayne West)  
Technical Projects Officer – Flood (Jesse Dick)  
Group Manager Environment and Regulatory Services (Debbie Archer)  
Group Manager Community (Lucilla Marshall)  
Community Engagement Team Manager (Liz Brennan)

**Guests:**

Director Marsden Jacob Associates (via zoom) (Rod Carr)  
Principal Coastal Specialist, Department of Planning, Industry and Environment (Phil Watson)  
Senior Coast and Estuary Officer, Department of Planning, Industry and Environment (John Schmidt)  
iD Planning Meeting Facilitator (Denise Wilson)

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The meeting opened at 6:10PM.

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**01 ACKNOWLEDGEMENT OF COUNTRY**

The Acknowledgement of Country was delivered by Dr. Clare Allen

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**01 APOLOGIES**

Mayor Peta Pinson  
Deputy Mayor Lisa Intemann  
Councillor Geoff Hawkins

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**023 CODE OF CONDUCT**

Meeting conduct, process, safety and requirements delivered by Denise Wilson

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**MINUTES**  
**Illaroo Road Revetment Wall Owners Meeting**  
**18/02/2021**

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**04 FIRST PRESENTATION AND QUESTIONS**

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Jesse Dick delivered a presentation explaining the history of the project from 2007 to present date.

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**4.1 QUESTIONS**

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**Speaker 1:**

Why is this our (owners) problem and not yours? What is the real story?

**Melissa Watkins in Response:**

There are communities or members of the community or properties in this case that directly benefit from a revetment wall. In this particular case, we followed a funding model, which is a distribution analysis that looks at how we actually break up that funding.

**Speaker 2:**

What other projects in Port Macquarie has this cost benefit analysis been used for recently?

**Melissa Watkins in Response:**

The funding model that we are applying here is unique to this particular issue. It is based on a funding split between Government and the community and all the affected properties and Council.

**Speaker 3:**

Is this situation under the Coastal Protection Service Charge Guidelines?

**Jesse Dick in Response:**

No. They cover maintenance of the structure once built, not the actual construction.

**Speaker 3:**

2.2 of those guidelines states that Council cannot levy a CPSC to construct coastal protection works. My interpretation of that is just what it says - Council cannot charge rate payers for this sort of installation. Are we or aren't we under those guidelines?

**Jesse Dick in Response:**

That guideline doesn't apply to the construct. That's saying we can't apply that guideline to construct under that process.

**Denise Wilson in Clarification:**

Is it because this is about construction of a new item and not about maintenance that that guideline doesn't apply to this situation?

**Jesse Dick in Response:**

Correct.

*Phil Watson spoke to the State Government's role in this process so far and other locations that are similar and have nexus to the Lake Cathie project.*



**MINUTES**  
**Illaroo Road Revetment Wall Owners Meeting**  
**18/02/2021****Speaker 4:**

Jesse, have you looked along the paths of other funding or are we the first stage in this process?

**Jesse Dick in Response:**

No, we have looked at other funding options and in the report they have looked at the Building Better Region Scheme and the National Stronger Fund Scheme, and there's a few options out there for us to go down. Applications could be made at any time, it's just more likely that you won't be successful in funding.

**Speaker 4:**

Is there a chance it could be successful?

**Jesse Dick in Response:**

It is possible.

**06 SECOND PRESENTATION AND QUESTIONS**

Rod Carr delivered a presentation explaining the Funding Model and the Cost Benefit Analysis.

**6.1 QUESTIONS****Denise Wilson - Question From Zoom:**

Can you explain, Jesse, where in the other coastal zones like Byron, has this funding model been applied?

**Jesse Dick in Response:**

As far as I'm aware, this process has been adopted at Collaroy-Narrabeen. So on the second last, I think, slide from my presentation you'll see their funding split of the 80, 10, 10. So \$13.4 million attributed to residents and the Government State and local split \$1.5 million each, so Collaroy- Narrabeen.

**Speaker 5:**

The Northern beaches properties, as far as I'm aware, is that they're private beaches, so they're right onto the beach, where we have a road between our properties and the beach. So I don't know how you can compare the two types of properties?

**Phil Watson in Response:**

With the type of analysis that Rod's done here, Lake Cathie where that was done, at Collaroy-Narrabeen. I think it indicated that the private benefit was somewhere of the order of about 98 or 99% and a small percentage to Council because of people would have a road behind it. That may have been impacted within 50 years, and no state assets here. So what the government had agreed, and that's the same for every location, is that for where there is a private benefit, we will contribute a maximum of 10% if that's matched by Council and the residual 80% will be paid by the property owners. In the case of what's been talked about here, there's actually potentially a 61% public benefit here. So that gets taken straight off the top, okay? And the Government would be willing to co-fund that with Council upfront. And then we would apply that 80/10/10 rule

**MINUTES**  
**Illaroo Road Revetment Wall Owners Meeting**  
**18/02/2021**

to the private beneficiary component that sits behind it. So I know these are quite complex things and each jurisdiction is very different, but there would be a direct benefit here. The 61% is something that the Government would take straight off the top rather than naught percent at Collaroy-Narrabeen.

*David Tooby addressed the room as a Directly Impacted owner and Urban Designer, and stated he believed property owners should contribute something, but not what has been asked. Mr Tooby discussed his view of wall's costings and said the cost should be broken down to just the cost of the wall without embellishments, then what percentage of that cost is attributed to the protection of houses. Mr Tooby said that a facilitated community workshop should be used to develop options that are acceptable to the community.*

**Speaker 6:**

The figures are 2 years old already so how can you ask us to come up with that and won't the cost change by the time funding is found?

**Rod Carr in Response:**

The results of our analysis are based on figures that were provided to us from analysis that was done a couple of years ago. It is all reported in 2019 dollars, which is the purpose of the NPV. I can't really comment on whether the cost of this development will have increased or decreased between times.

**Speaker 7:**

Rod, could you talk more about the special rate mechanism and have we exhausted every other grant funding possibility?

**Denise Wilson in Direction:**

I'll go to the grant funding part of that questions first then to Rod

**Jesse Dick in Response:**

No, we followed the one set up for these projects. So Coast and Estuary grants go in under the Coast Estuary Grant Program. You can follow that one, but there's many others that we could use that we haven't yet.

**Blayne West in Response:**

There is one grant funding that we have applied to as well. It's called the BLERF funding, Bushland Local Economic Recovery Fund, that doesn't get announced until June. We will follow every opportunity, as Jesse has said, and we've gone for the most effective one so far.

**Denise Wilson in Direction:**

Then the first part of your question was, Rod, could you please explain about the special rate levy?

**Rod Carr in Response:**

As part of this project, we looked at the two key mechanisms that applied in this circumstance. One was looking at an upfront payment from direct beneficiaries, which would basically see funds received at commencement of the project. Whereas the alternative that we talk about under Options Two and Three are variations of application of the Special Rate, which is under section 495 of the Local Government Act. And that's a part of the Act that talks about the powers that Council has around the making and levying of Special Rates. And that Special Rates can be used for or towards the meeting of costs of any works, services, facilities, or activities provided or undertaken by the Council. So it's a broader mechanism from a rate base perspective.

**MINUTES**  
**Illaroo Road Revetment Wall Owners Meeting**  
**18/02/2021****Melissa Watkins in Response:**

There's a couple of options that are available in terms of the special rate levy. The first two, as included in Rod's presentation, was that it could be based on the benefit shares and economic modeling, or based on the meters of frontage or, and that would only apply to the directly impacted properties. Or we could apply a special rate to the entire local government area, so it would be we'd spread the cost across the entire rate base.

**Speaker 7:**

And have you looked at that?

**Melissa Watkins in Response:**

That's part of what was considered here. So at this stage, we're going through a process again, as we said, we're asking the questions before we go to the next step. We will look at other options, just like Blayne was saying in terms of funding and other grant funding.

**Speaker 8:**

So can I just ask Council the situation of using \$495 for levying us, where else has that happened in our Council region? Has that happened to Flynn's Beach because of what's happened there? Where else have you used that theory to levy a rate?

**Jesse Dick in Response:**

So, so the last time that was used was in 2011, 2012, when Council applied a Special Rate Variation to the whole LGA. You may recall that process, but basically we went to IPART and said that we wished to undertake all these capital works. So road resealing was the predominant output of that special rate variation. So we wanted to re-seal and re-sheet a whole bunch of roads, couldn't do that within the rate revenue that we were receiving at the time. So we applied for a Special Rate Variation under section 495. And I think the average rate costs across all 30,000 rate payers went up by a magnitude of dollars, like 10 bucks or something like that, I think across the LGA. It still applies.

**Lucilla Marshall in Response:**

We also did that again in 2016, and it became embedded across the rate base back in 2016, so we did this process a number of times. There's also levies on the canals, I understand.

**Speaker 8 in Follow Up:**

So those two rate ones that you did, benefited the entire community, and the entire community were actually to pay those rates. But in this situation you're asking for a specific community to pay for something that's actually going to benefit the wider community.

**Melissa Watkins in Response:**

We've also had Special Rate Variations for very specific projects or works by Council. And that includes dredging of canals and the maintenance of canals. There's also a special rate that applies to the CBD at Port Macquarie, where a certain number of properties within the CBD contribute to the enhancement of the CBD.

**Speaker 9:**

Where did the funding come from to upgrade the breakwall walkway and all the beautification of that and the Flynn's Beach one that was done recently?

**Jesse Dick in Response:**

I believe the Breakwall footpath widening was a 5 million dollar announcement from our Local Member. And I think Crown Land might be managing that Breakwall widening.



**MINUTES**  
***Illaroo Road Revetment Wall Owners Meeting***  
**18/02/2021**

Flynns Beach was 2015. So prior to this, this, and this. And the rules were different at that time, so Council was able to actually apply for, if you've sent funding for that work without having to do a cost benefit analysis or a funding model. So we took the opportunity at the time to put that in, we successfully obtained 50% grant funds for a \$1.5 million dollar wall from State Government under the coastal management program. But all of this stuff has come in since, and if we wanted to fund the rest of that wall, we'd have to go through this process again, because the new regulations apply now.

**Speaker 9 in Follow Up:**

So who would fund it now?

**Jesse Dick in Response:**

Likely to still come from the same management programs, albeit we'd have a whole new set of boxes to tick. And it may not be the most appropriate grant funding program at the time. We might chase the funds via different grant programs that are more favorable for Council.

**Speaker 10:**

As a group of Councillors that represent our community, you all understood that we're all going to get a letter, that outlined the payment, that we were required to pay, so you all understand that's what we received?

**Blayne West in Response:**

Can I clarify the statement, sir? Can I clarify the statement that said required to pay?

That's why we're not understanding. You're not required to pay anything.

**Speaker 10 in Follow Up:**

Do you understand what you are asking people to do? And do you understand the stress that it has caused?

**Melissa Watkins in Response:**

So we certainly understand what we were doing. Just to clarify, first of all though, we're staff, we're not Councillors. You have a Councillor here, but we're just trying to give you the facts. The purpose of this evening is to make sure you have the information that you need to provide Council with the feedback that we then take back to the Council, the elected representatives, with your feedback. That is the sole purpose for us being here. We are not locking you into paying anything at this point. No decision has been made. That is a future decision of the Council.

**Speaker 11:**

Let's say you've got a no, where do we go from here? How much is it going to be if you put it across the community, whether it be Port Macquarie's Hasting Council community or New South Wales, what's going to cost a household 10 bucks?

**Blayne West in Response:**

We don't have a figure, and I appreciate the difficulty in it. I do, I absolutely do, we empathise with this. We would like to extend that, we all know that. The steps within it is to say, to go to the willingness and capacity, and we're hearing a very clear message. The next step is to, following this direct engagement, and we needed to have the very hard conversation, was to go back to our elected officials and to let them know if there was willingness and capacity to pay, and then take the next step in that conversation. Which there was a number of scenarios. Do you go down a special rate variation? Does that effect the property owners? Does that affect the Cathie community? Did you go to the LGA?



**MINUTES**  
**Illaroo Road Revetment Wall Owners Meeting**  
**18/02/2021**

That is the next scenario and questions. The feedback, as David has given is also excellent feedback in the sense of different scenarios that Council could look at, but that was the idea of the CBA and the Funding Model, was to come and to gather perspectives, ideas, willingness, and capacity. And to go back to that conversation. At the same time, I do stress, we are applying when those grants come that are applicable for us to put into and like I said, we haven't heard, we won't hear until June.

*A show of hands was called for to show those in the room who do not have willingness or capacity to pay the money in their letters. It is recorded that everyone in the room raised their hand.*

**Speaker 12:**

My question is to Rod, from Marsden Jacob. How much did your report cost?

**Denise Wilson in Direction:**

I think the person to direct that question to is Council, rather than Rod.

**Jesse Dick in Response:**

Their funding model was 50/50 funded by the State Government and Council so that the project was about \$40,000 in total. And the Cost Benefit Analysis was fully funded by the State Government. So, about \$20,000 - \$25,000 all up for these reports from ratepayers.

**Speaker 13:**

What are you going to do if you adopt this and we can't pay? Are you going to take our houses?

**Melissa Watkins in Response:**

I just want to reiterate; we're not leaning towards any option at this stage. We just, you know, I apologise if that's how it sounds, but all we've got is the facts in front of us, of where we've arrived at. And we're trying to engage with the community to say, what are your thoughts on, on where we've arrived? And that gives us direction and to go back to the Council. So we haven't made a decision. The Council hasn't made a decision, we've simply done the work and asking your view. The next part of that process, if we were going to do anything, it would be another series of engagements in information, consultations with people that are affected. And indeed, that's not the intent of what we're here for. So, it's not to hurt the community, it's to ask. And, I appreciate what I've heard here tonight, but it is about getting your feedback. That's what we're here for. We're not here to hurt you. We're not here to damage you. We're not here to scare you. We're here to get your feedback.

**Speaker 14:**

I don't understand really how this can't be a priority project or you're not sure where it's going to sit. It just sounds like this is all coming to a head because we need to sort this out by the 31st of this year when the CZMP expires, but we've had five years to act on it since 2016. I'm not sure why this hasn't been done now, but why is this not a priority or why hasn't it been for the past five years?

**Dr. Clare Allen in Response:**

First of all, we have to find funding. So it is a big ticket item. So when it goes to a certain value, then basically that has to be popped back to Council. And that hasn't been put, to say, put in the full \$10 million towards this project at this point in time. It's been source funding, find the funding, but then if that doesn't come forward, then it has to go through

**MINUTES**  
**Illaroo Road Revetment Wall Owners Meeting**  
**18/02/2021**

a process back to Council to make that decision. That's where your elected representatives will speak for you in terms of those projects. If it becomes one of those projects where we somehow can get some additional funding or we have to put the full funding in, we have to look at our, basically our reserves and we have to make some decisions and follow some financial prudence around that.

**Blayne West in Response:**

As Jesse has explained, the funding model has taken time that the changes to guidelines have taken time. Unfortunately, these just simply take time for these studies. Now, the CZMP, yes, expires on the 31st of this year, there is a CMP. So that is where we are going with the Coastal Management Program. And the CMP is already a resolution of Council that the actions under the CZMP, which is the Illaroo revetment wall will come under the CMP. So this will not fall away. This, all of the work that has been done, the decisions that have been made, it doesn't go away on the 31st. It is a Coastal Plan that we have to follow.

When you look at the entirety of the holistic system, you have to understand that not everything can be done at once. Things will take funding, different things or different priorities at different times, and those decisions have to be made.

**Speaker 15:**

I just thought I'd like to ask just Jesse a question. You said that in your presentation that \$900,000 being allocated for the stormwater. What hasn't it been used? Why are we waiting so long to see that go now?

**Jesse Dick in Response:**

So the storm water project, will aim to rectify that localised sort of beach lowering and scour there from storm water coming onto the beach. So in the photos, in the slides, you can see there that we couldn't nourish the whole beach because we had to nourish around the stormwater outlets to let the storm water go. So, that's a 50/50 funded project under this grant program. But because it's less than a \$1 million, again, we don't have to do with CBA. We don't have to do a funding model. We can just log into an application for 50% finally have be done. So, yeah, it'll definitely help.

**Blayne West in Summary:**

Just really quickly one to reiterate this, where to from here, because I really, really want to reiterate no decision has been made. So tonight's meeting was for the Directly Impacted property owners. Next Tuesday's meeting is for the Directly and Indirectly Impacted property owners and the Key Community Stakeholders.

Excellent idea if you want to zoom in to keep the numbers down to the room, and then we are holding one-on-one meetings opportunity for people to ask more questions on the phone, in person with Council staff, and then on the 31st, we will hold another community meeting with Rod or a representative from Marsden Jacobs. If you would like, if you have more questions and want to come back, that's dependent on interests that will hold that meeting.

And then on the 12th of April or well before then, I think you might have already made your mind up. Everyone has been given a feedback form in their letters. Please let us know willingness and capacity. Then, at that point, the staff will be taking a full report with comments and submissions back to Council on the Wednesday, 19th May and Council can then make the decision.

**MINUTES**  
***Illaroo Road Revetment Wall Owners Meeting***  
**18/02/2021**

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*Denise Wilson closed the meeting, outlining other meeting opportunities for Directly Impacted Residents and the submission closing date of 12 April 2021. Denise Wilson reiterated that no decision had been made by Council and thanked participants for their attendance.*

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The meeting closed at 7:51PM.

**MINUTES**  
**Illaroo Road Revetment Wall Community Meeting**  
**23/02/2021**

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**PRESENT****Members:**

Chief Executive Officer (Dr Clare Allen)  
Mayor Peta Pinson - Via Zoom  
Councillor Sharon Griffiths  
Councillor Geoff Hawkins - Via Zoom  
Director Development & Environment (Melissa Watkins)  
Natural Resources Manager (Blayne West)  
Technical Projects Officer – Flood (Jesse Dick)  
Group Manager Environment and Regulatory Services (Debbie Archer)  
Group Manager Community (Lucilla Marshall)  
Engagement Team Manager (Liz Brennan)

**Guests:**

Principal Coastal Specialist, Department of Planning, Industry and Environment (Phil Watson)  
Senior Coast and Estuary Officer, Department of Planning, Industry and Environment (John Schmidt)  
iD Planning Meeting Facilitator (Denise Wilson)

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The meeting opened at 5:45PM.

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**01 ACKNOWLEDGEMENT OF COUNTRY**

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The Acknowledgement of Country was delivered by Denise Wilson

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**01 APOLOGIES**

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Deputy Mayor Lisa Intemann  
Rod Carr, Marsden Jacob Associates

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**023 CODE OF CONDUCT**

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Meeting conduct, process, safety and requirements delivered by Denise Wilson

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**MINUTES**  
**Illaroo Road Revetment Wall Community Meeting**  
**23/02/2021**

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**04 Dr Clare Allen Address**

Dr. Clare Allen addressed the room welcoming the Mayor and Councillors in Zoom and Leslie Williams.

Dr. Clare Allen explained the process of the revetment wall funding and the purpose of the meeting and where Council would go from here.

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**05 First Presentation and Questions**

Blayne West and Jesse Dick delivered a presentation explaining the history of the project from 2007 to present date.

Blayne West spoke to the funding model and the CBA and their role in the process of seeking funding.

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**5.1 QUESTIONS****Vern Warner (Lake Cathie Progress Association President):**

Why were we not given a copy of the costings and the individual costings and the breakdown of the costings so we can tie it back to this document to try and work out what we're getting and what you want us to pay for?

**Blayne West in Response:**

This is a privacy issue. We can provide to you the total fund, but we've seen that it was inappropriate from Council to provide individual costings associated with the wall. Directly impacted residents have the right to know that information, and we didn't feel that it was ours to provide.

**Vern Warner in Follow Up:**

Leave out all the bells and whistles and what's the cost of just the wall and what's the effect on the affected residents?

**Blayne West in Response:**

Basically, the quick answer to that is in the CBA itself and in the Funding Model, that's where it's determined the beneficiary pays, and understandable though, that there is the embellishments, as people have called them. That would have to be taken on notice to understand what costs is associated with that and if there was a different option for a revetment wall from an engineering perspective.

*Written response to be provided with regards to Vern Warner's second question.*

*Denise Wilson deferred David Tooby's question until after Rod Carr's presentation was played as it was directly related to the funding model.*

**Sue East:**

I just wanted to ask the Council if they have any idea what damage this revetment wall may cause the lake estuary system? Has this proposed rock wall been tested at any facilities? And where is the detail of the testing's?

**MINUTES**  
***Illaroo Road Revetment Wall Community Meeting***  
**23/02/2021****Jesse Dick in Response:**

In terms of the modeling of the impact of the structure, it hasn't been tested specifically on the opening and closing regime of the lake system. It's purely been looked at from a structural point of view and the design criteria where what storm can it handle, what protection can it offer, and over what duration. The impact of the actual revetment structure on the opening and closing cycle, the sand movement and build up around the lake mouth and the open coast has not been tested.

**Sue East in Follow Up:**

Has this sort of situation occurred elsewhere in New South Wales?

**Jesse Dick in Response:**

Potentially, but I'm not aware of any that would be closely, that you could fundamentally say is similar to Lake Cathie.

**Phil Watson in Response:**

There are some examples statewide where we have the sort of situations that you're talking about. Brooms Head is one that sort of springs to mind immediately where you've got a very significant rock revetment in front of all of the caravan park and the foreshore area immediately to the south of Lake Cakora. And then you've got private properties to the north that are unprotected. So that's just one nearby example where that exists, and that rock revetment doesn't have any impact on the opening and closing of Lake Cakora. Not to say that it won't have any impact on the opening and closing of Lake Cathie here, but it's a very, very different system.

**Speaker 1:**

To follow on to Sue's question, where they've got the revetment wall finishing at the end of Illaroo Road has any effect on what's going to happen to Bundella Avenue? What are you going to do downstream to us?

**Jesse Dick in Response:**

So the wall has been returned around the primary coastline to try and mitigate end effects to a degree. So at the end of any revetment wall structure or solid structure and an open coastline, correct me if I'm wrong, Phil, but you do get end effects. So you will get localized erosion at each end of your structure, so you end up chasing it.

**Speaker 1 in Follow Up:**

Exactly. So you do. You spend all this money, and then what? You've got to extend it, so then we get hit next?

**Phil Watson in Response:**

Jesse explained. I mean, there are end effects for many of these structures. The further you go into an estuary system like that, the lower the impacts because you're moving away from the open coast. But no question, you would have to look at those sorts of things. You would probably want to model them and make sure that you're not continuing to chase erosion as a result of the end effect there.

**Speaker 2:**

Jesse mentioned that there's work now going to be happening on the stormwater drain, but I did hear that actually that work was approved and funded several years ago. Why not use the funding when you've had it to improve that situation? Why just until everything gets worse before you actually use the funding you do have?

**MINUTES**  
**Illaroo Road Revetment Wall Community Meeting**  
**23/02/2021****Jesse Dick in Response:**

To answer the first part, that's a 50/50 funding split for a project that totals about \$920,000. So a vastly different sum of money in total. But we were able to apply for a 50/50 share because the project was less than a million dollars under the grant program. We could just provide our matching 50%. And that project has been delayed for a couple of reasons. The dumped asbestos is one, it's dumped over the bank there on Crown Land, and stormwater project did trigger off us having to assess it and look at it. That project is an interim measure, so it is noted that it will provide some benefit to the beach condition and the sand build up there. But it is an interim measure pending construction of the revetment wall.

**Blayne West in Clarification:**

There are certain pathways and environmental things, legislation that occurs. And one of the issues that had come up during the work was the Aboriginal Archeological Study that got triggered. That meant that Council had to do a study for the Aboriginal Archeological Study and then a number of stages in that before the approvals could be attained. So at times delays seem like something that is frustrating from the community perspective. It's because we are triggering different pathways and requirements that need to be done. So that gives you a little clarity. It wasn't because we stopped or didn't think it was important. It was because there were other licenses and approvals that needed to be obtained.

**Speaker 3:**

If you put this revetment wall in, could it cause a problem down the road for us on Chepana Street as well?

**Jesse Dick in Response:**

As we raised before, the end effect issue at the southern end of the wall is similar to the issue at the end of any wall structure, locally you'll have accelerated erosion. So no real sort of knowledge on exactly where the limit of that impact might be. But in terms of the length of Chepana Street, it's a long street so that section of coastline down to middle rock is about a kilometre.

**Speaker 4:**

Is this process being rushed to meet the deadline of the CZMP becoming obsolete in December 2021? How long is this going to take, before you actually have real answers to these things?

**Blayne West in Response:**

The CZMP is not a driver for pushing this through or rushing. The actions within the CZMP have already been resolved by Council to roll into the CMP, which is the Coastal Management Program going forward. The second part of the question is in how long this will take is strongly dependent upon how the consultation goes, where the funding opportunities exist, if there are more grants that come available. Until the funding is resolved or Council resolves to make a decision on funding, if there's no grants or community isn't able to pay and has no capacity to, then a decision will be made. It's not probably appropriate for me to be able to state that point.

**Speaker 5:**

So in front of the houses impacted on Illaroo as well as Bundella Avenue is a Council road. What value do you guys put on your public road?



**MINUTES**  
**Illaroo Road Revetment Wall Community Meeting**  
**23/02/2021****Blayne West in Response:**

So that will come up in the MJA presentation, which is next, so I don't need to defer an answer to your question, but that is discussed in length under the funding model.

*Denise Wilson gave an introduction to who Marsden Jacob Associates are and who was speaking over the presentation (Rod Carr).*

**06 SECOND PRESENTATION AND QUESTIONS**

Rod Carr's pre-recorded presentation of the Cost Benefit Analysis and Funding Model Reports was played in the room and over Zoom.

**6.1 QUESTIONS****Speaker 5:**

What's the value of the road that everybody uses? It's the second-most widely-used public road in Lake Cathie and the people who own the property along there, it's not beachfront property. There is a public road that needs to be maintained in front of that.

**Jesse Dick in Response:**

There's certainly a value to road and that came out in the asset ownership split, so the 60:40 split. So the 60% benefit is attributed to Council in terms of the road, the power, water, storm water, all of those assets. So we attributed that benefit. So let's say 60% of that road or 60% of the cost of this protection is attributed to us.

*Denise Wilson directed back to David Tooby for his earlier question to be heard.*

David Tooby spoke to the understanding of the funding model split and raises what may be an equitable solution, sensitivity analysis (pg37).

**David Tooby:**

Which of those models do you think is equitable?

**Melissa Watkins in Response:**

Essentially that is what we're here to determine. Our view on what's equitable and what's not equitable, is not the question here. We're going with the expert advice that we've received to ask you the question as to what you would like to see us do. It's not about my opinion, it's not about our opinion. It's about what it is you would like to see in this space. And if you say no, and you give us that feedback, then that's, as we explained earlier, where we go back around the loop and we come up with different alternatives. But at this stage we have one design that Council has adopted, and that's the design we showed you.

**Phil Watson in Response:**

Certainly there is a demonstrated 61% public benefit there and a 39% private benefit. The one thing that concerns me is that what we've seen is an interpretation put on top of that by the consultant. He's entitled to a professional opinion. He's drawn a judgment that he sees that there's very little public benefit in having a road there essentially. Now, that's



**MINUTES**  
**Illaroo Road Revetment Wall Community Meeting**  
**23/02/2021**

not a position that we would agree to at this stage from the State Government. That is a consultant's professional opinion. And the way in which the report's being done clearly demonstrates that there's a 61% public benefit on the asset side of things. So, I think the State Government would be quite happy to contribute in terms of its funding model, along the lines of the 61%. The lady here in the front here, is absolutely correct. I mean, you've got a consultant that's done the best work that they can and provided a professional opinion. But they may not be close enough to understanding how heavily utilised the road is, and how much more of a public asset it contributes.

**Leslie Williams Addressed the Meeting:**

I will just really reiterate what Phil has said. And that is that the document from Marsden Jacob is very clear that 61% is public asset. Every one of us who lives in Lake Cathie, like I have for nearly 25 years, knows that I use that road pretty well every morning as many other people do. So, my view is that the 61% should absolutely be the starting point. And I guess I'm as disappointed as many people are, speaking from a resident's perspective, that we have got to a discussion about one option only. One option only. When we know very well, that a whole myriad of ways that this could be funded outside the coastal and estuary managements funding scheme, a whole range of options. And we've seen that across the board. I guess my only comment to Council would be that, in your own fact sheet you already know the answer to this question. That people don't have the capacity to pay and nor a willingness. And you went to iterate that in your fact sheet. So, let's move on to the next part and let's get this funding model sorted out before it's too late by the end of this year.

**Sue East:**

I'd really like to congratulate Jesse and Blayne for what they've done with this today. You're working within the guidelines that you have to do. So thank you for the hard work and effort you've put in. The Council have received approximately, in Area 14, \$330 million for Area 14, as it's been developed by development contributions. Why isn't part of this money being spent in our area?

**Melissa Watkins in Response:**

In terms of developer contributions, developer contributions have to be collected for a very specific purpose. And revetment walls and ocean works and protection measures, we don't have a current contribution plan for that. So, the developments that are occurring in this region and this area, are collecting it to support the growth of the area by collecting funds to go back into providing open spaces and recreation facilities for this area. The item has to actually be in the plan itself and it's not.

**Speaker 6:**

One question is around the cost and why that was done the way it was. And the other one is the hurdle rate that's used.

**Jesse Dick in Response:**

The actual wall project you see now, has morphed over the years in actually going through the process of undertaking a detailed concept design. We put that wall out, various options of the seawall in 2015. I was looking at vertical seawalls, stepped seawalls and that sort of thing. And as we went out for consultation, there were high level costs that were released with that. But the actual wall structure itself is based on feedback from the community when we went out with that proposal.

**MINUTES**  
**Illaroo Road Revetment Wall Community Meeting**  
**23/02/2021**

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We got submissions that said, we would like, if you're going to do a wall, include all of these other things. And that is a genuine project to roll out with that level of investment, commensurate with the loss of the beach directly in front of a wall. We know that wall and that area is highly used by the public. So their costs include a wall that also accounts for the use of the area. So, seating, lighting, that sort of thing. And we never go to direct constructions excluded because it's about 10% of the total cost. When you're including a \$10 million wall, even if you remove 10% of the cost and you want to take the analysis that was done, you're still talking very big figures

*Denise Wilson advised the hurdle rate question would need to be addressed by Rod Carr.*

**Speaker 7:**

In the directly affected owners fact sheet it states 60% benefit attributed to Council is transferred to property owners. So their 40% benefit as therefore cost, increases to 100%. We're getting all these percentages thrown at us, 61% here, 39% there. How does it all revert back to the direct beneficiaries getting 100%?

**Denise Wilson:**

*This question will require a written response.*

**Speaker 8:**

Is Council staff aware of the traffic count numbers that were done by the residents, and also by Council's own counting method? Are they aware of the amount of the numbers of the traffic that goes along Illaroo Road?

**Jesse Dick in Response:**

Yes. There was a survey commissioned by, I think it might've been the coastal residents group back in 2011, 2012, that was submitted. So, that demonstrated there was a high level of foot traffic.

**Speaker 9:**

You're asking people to put money into this of their own savings, what if it doesn't work?

*Question was not answered.*

**Speaker 10:**

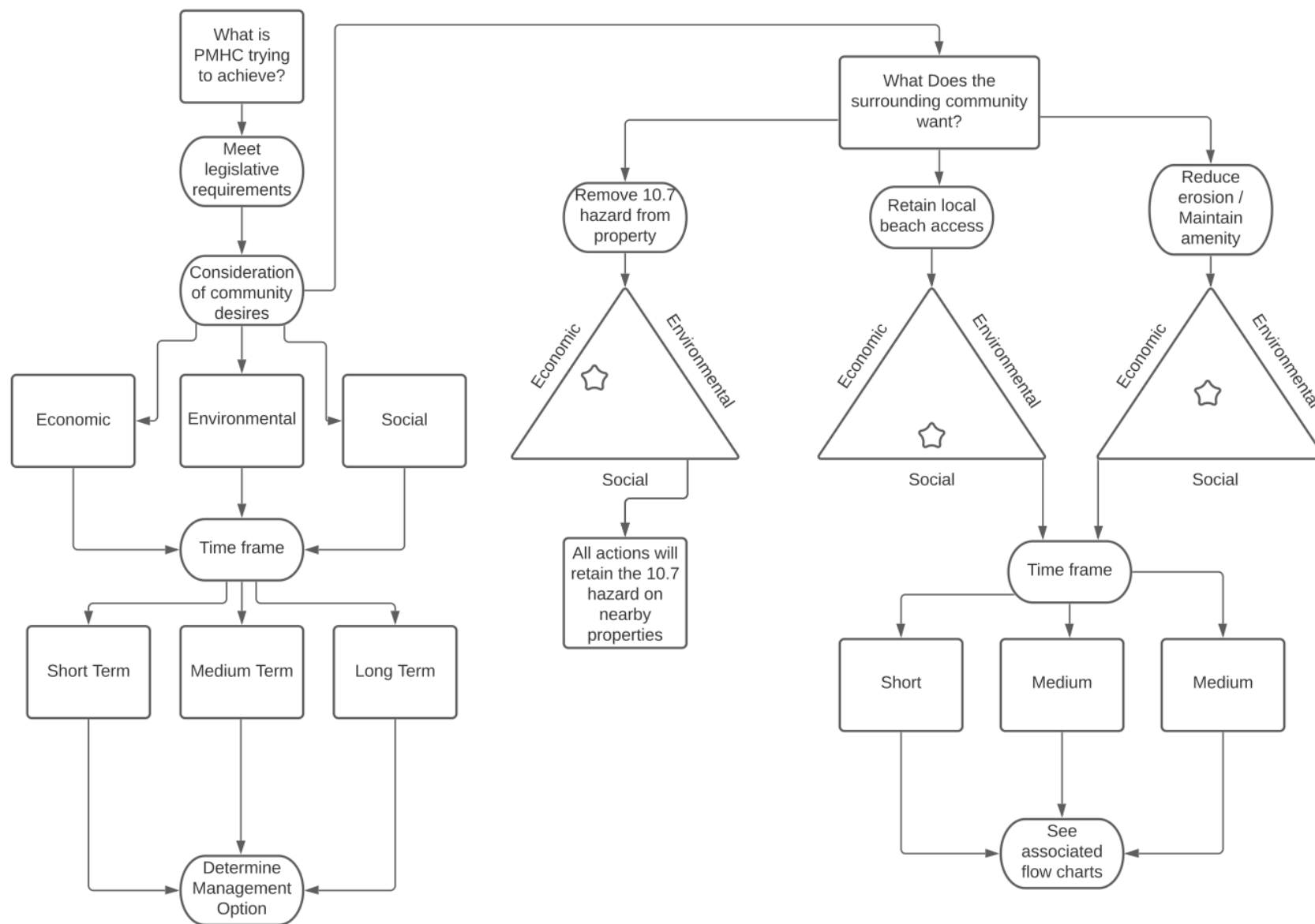
I am confused about the results of the distributional analysis over a 50 year period. It says there (pg. 19 Economic Analysis) that option two would result in private property owners with \$1.9 million and Council with \$5 million. I'm assuming that's the benefit analysis over that 50 year period. So, I just wonder why have these things in your report and then ignore them and expect some residents to pay up to \$1 million when a whole resident benefit over that 50 year period is only \$1.9million.

**Denise Wilson in Response:**

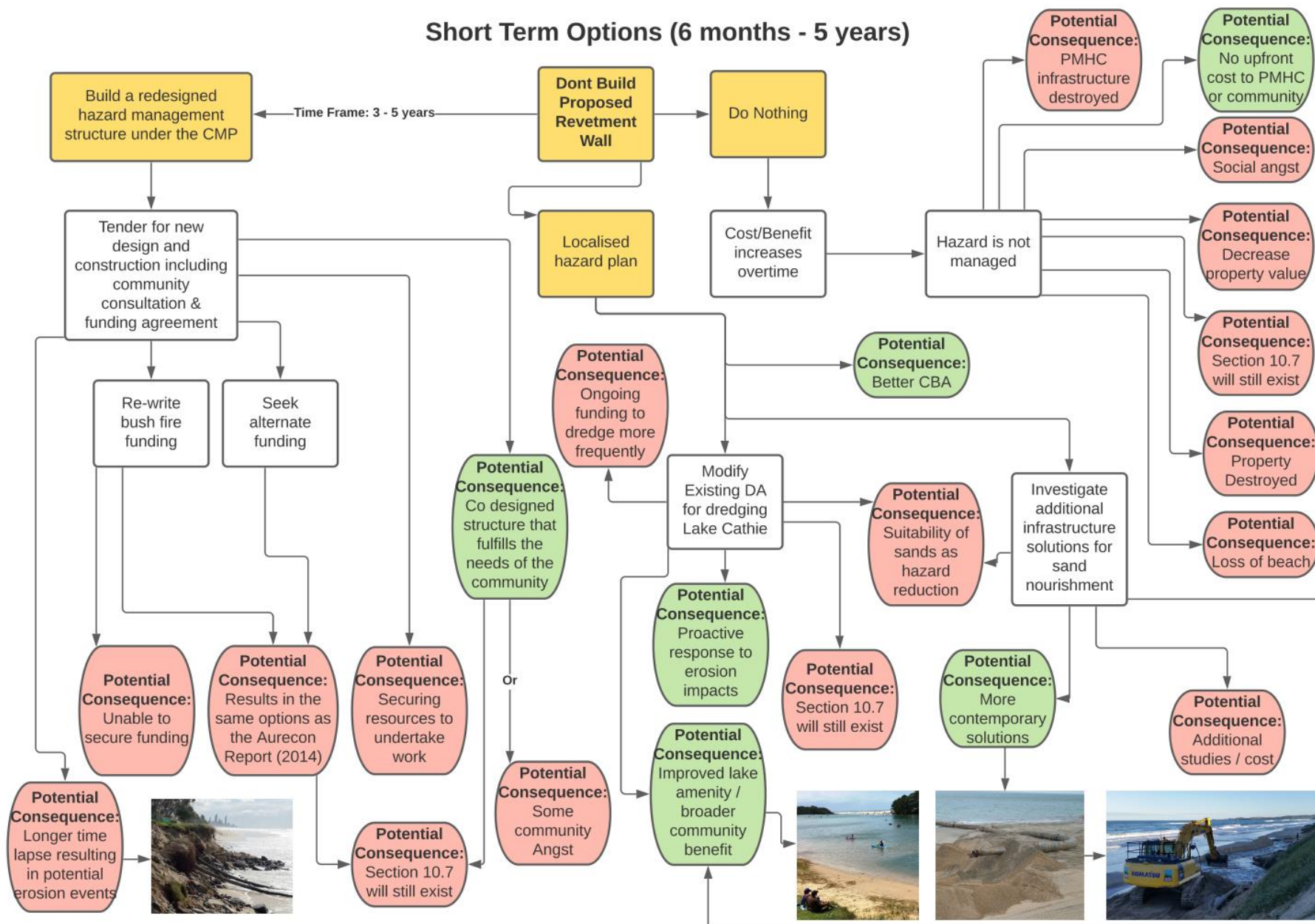
*We will get a written response to your question.*

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The meeting closed at 7:00PM.

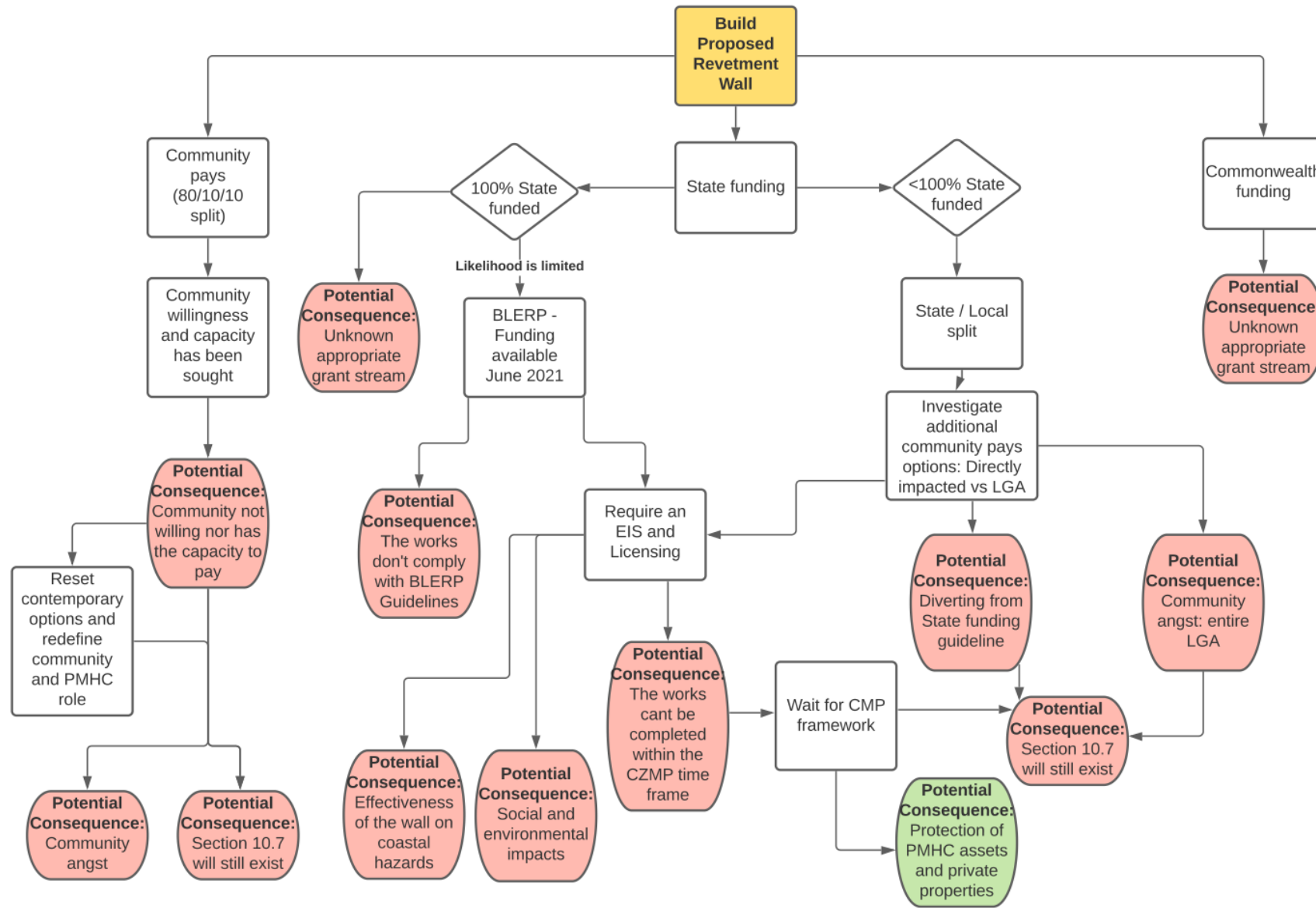


## Short Term Options (6 months - 5 years)

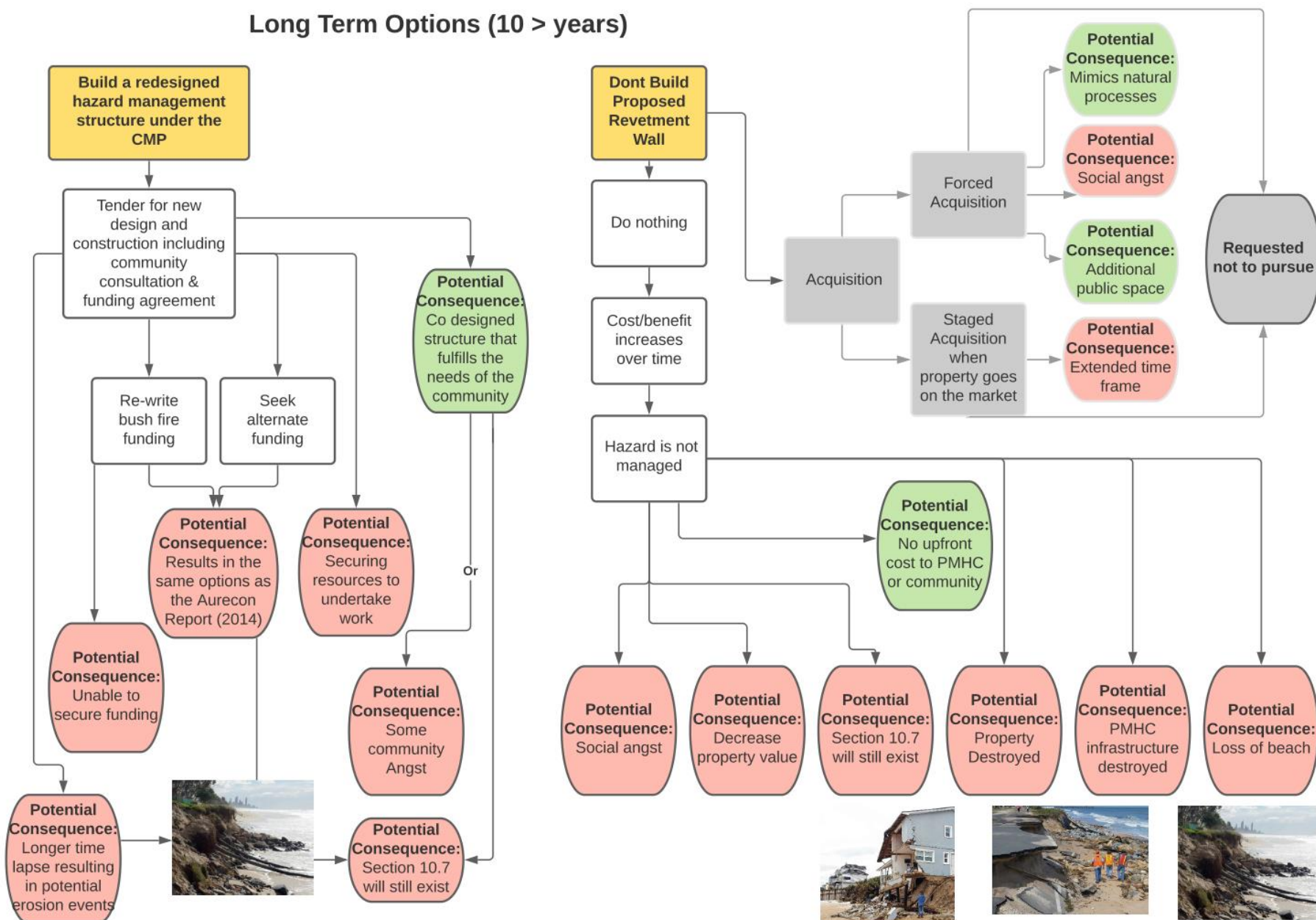




## Medium Term Option (3 - 10 years)



## Long Term Options (10 &gt; years)



Impacts	Option				
	Build Revetment Wall	Localised hazard plan	Redesign a hazard management structure under CMP	Do nothing	Property Acquisition
<b>Environmental</b>					
Retain dune system	-3	3	0	-3	-3
Structural end effects	-3	3	0	3	3
Biodiversity	-3	0	0	3	3
<b>Social</b>					
Access to beach	-3	0	0	3	3
Safety to beach users	0	0	0	0	0
Safety to residents	3	3	0	-3	3
Availability of infrastructure	3	3	0	-3	0
Lake Cathie Recreational Amenity	0	3	0	0	0
Visual Amenity	-3	3	0	3	3
<b>Economic</b>					
Property price	0	0	0	-3	0
Remove 10.7 Hazard	-3	-3	-3	-3	0
Capital cost	-3	0	0	3	-3
Maintenance cost	0	-3	0	-3	0
Intergenerational equity	0	0	0	-3	-3
<b>Score</b>	-15	12	-3	-6	12

	Score
Positive	3
Neutral	0
Negative	-3



RiverForum

# Rivers on Fire & Flood

The Journey to Resilience

## PROGRAM

Port Macquarie | 20-21 April 2021







## Welcome to Rivers on Fire & Flood

**This third event in the Rivers on Fire series recognizes the trials and tribulations experienced around the globe over the last year. Not only were communities and the environment impacted by fire, but also a worldwide pandemic and devastating floods. The theme of 'A Journey to Resilience' recognizes the urgent need to build the capacity of our rivers and communities to recover from disturbances, such as these recent events, and return to a healthy state. The road to resilience can be a complex journey with the interdependence of environmental, social, and economic outcomes.**

In March 2020, the International RiverFoundation (IRF) partnered with Charles Sturt University (CSU) to hold the inaugural Rivers on Fire forum. Within days of announcing the event, Covid-19 impacted us all in ways we could never have foreshadowed. The event was converted to an online version and was a great success. It brought together experts from government, industry, science and community together to raise awareness and create a call for action to address the effects of fire on waterways and their surrounding communities.

The home of this *RiverForum*, Port Macquarie, was one of the hardest hit regions by both the bushfires in 2020 and more recently, by the March floods. We have extended the theme of the forum from Rivers on Fire to Rivers on Fire & Flood. We are also equally as excited to be able to offer the event in a hybrid format – the new normal, so that the knowledge can be shared globally.

Rivers on Fire & Flood promises a diverse range of speakers that will bring together people from all sectors from around the world to build relationships, share ideas and inspire others. We encourage you to mingle, network and exchange ideas throughout the event, during the breaks and of course at the networking session. Rivers on Fire & Flood is more than just a meeting of great minds and sharing knowledge – it is also about celebrating our passion for giving our rivers a voice and the great work we do to achieve healthy and resilient rivers.

We would like to sincerely thank all our partners who have supported us to bring this event to you, with a special mention to our Gold Partners: Charles Sturt University and Port Macquarie Hastings Council for their invaluable support. Without our partners this event would not happen. On behalf of the IRF Board and staff we hope you all enjoy Rivers on Fire & Flood and use the time to learn and share new ideas, become inspired, and create new friendships.



**Dr Eva Abal**  
CEO, IRF



**Jacqui Atique**  
Programs & Partnerships Manager, IRF  
RoFF Program Coordinator

The International RiverFoundation acknowledges the Traditional Custodians of the lands where we gather for the Rivers on Fire and Flood Forum. We pay our respects to their Elders past, present and emerging and recognise their continuing connection to land, waters and culture.



## KEYNOTE

**Dr Alexandra Knight and Dr Jessica Tout-Lyon**

*Environmental Scientists  
Institute for Land, Water and Society,  
Charles Sturt University, Port Macquarie*

**Day 1 ( 20 April ) | 10:40****From the Mountains to the Sea – through drought, fire & flood on the Mid North Coast of NSW, Australia.**

In March 2021 we lived through a disastrous 1-in-100 year flood event when up to 75 % of the median annual rainfall fell in 7 days on the Mid North Coast of New South Wales (NSW), Australia. We observed and experienced devastation to our communities, and to the ecological processes and functions that support us. In the previous 18 months, the most widespread, driest, and warmest drought on record in the region culminated in a 5-month long bushfire that spread on an unprecedented scale, engulfing south-eastern Australia, including our rivers. Relief arrived in the form of rain, resulting in two smaller floods, transporting ash, sediment and debris into rivers, some of which flowed for the first time in years. We draw on our lived experience of consecutive disasters and response, together with our previous research focusing on processes involved in coral bleaching and amphibian decline, to reflect on the complex interactions of multiple disturbances on river systems. Finally, we make suggestions that may improve socio-ecological responses and recovery.

## KEYNOTE

**Dr Rebecca Flitcroft**

*Co-chair of the Freshwater Specialist Group for the World Commission on Protected Areas (WCPA) with the International Union for the Conservation of Nature (IUCN)*

**Day 1 ( 20 April ) | 11:25****Can we protect water quality from wildfire?**

High severity fires are an important driver of forest dynamics. In western Oregon and Washington, USA, up until 2020, most of the region had not had major fires in over 100 years. These fires were a reminder to local water providers and forest management organizations that wildfire is an unavoidable natural process that will occur in this area that has the potential to renew our ecosystems while simultaneously threatening municipal water supplies. Our research seeks to better understand fire history in these regions, and to work closely with local municipal water providers to develop geospatial datasets that can help identify areas in their watersheds that are most vulnerable to wildfire effects that can affect water quality.



## Featured Speakers

### KEYNOTE

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**Professor Stuart Khan**

*Professor of Civil and Environmental Engineering  
University of New South Wales, Australia*

**Day 2 ( 21 April ) | 9:05**

**Environmentally resilient drinking water management: Lessons from an Australian "Black Summer"**

Over much of 2019 and into 2020, Australia experienced its worst ever fire season, causing extensive damage to widespread forest and woodland regions. Accordingly, the summer of 2019-2020 has come to be known as the Australian 'Black Summer'. Information regarding the experiences of Australian drinking water managers during and following the black summer fires has been collected and analysed. From this, a series of recommendations have been developed for improving the environmental resilience of drinking water management in Australia. A summary of the experiences and the recommendations produced will be highlighted in this presentation.



**Dr Tapas Biswas**

*Senior Research Scientist, CSIRO Land and Water*

**Day 1 ( 20 April ) | 14:00**

**Fire, rain, flood and mud in the mighty Murray**

Bushfires of 2019-2020 burned almost half (~ 47%) of agricultural and forested land in the upper Murray River catchment. Storm activity and rainfall following the fires discharged huge volumes of sediment into the rivers, eventually resulting in localised fish kills and widespread deterioration of water quality.

### KEYNOTE

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**Dr Stuart Blanch**

*Senior Manager, Forest Policy, WWF-Australia*

**Day 1 ( 20 April ) | 16:00**

**From catastrophic bushfires come catalysing actions and innovation**

WWF is supporting diverse partner organisations engaged in landscape restoration following the 2019/20 bushfires through its 5-year \$300M Regenerate Australia program. Projects being scoped or undertaken by partners covering conservation science, Indigenous cultural fire management, platypus conservation, koala habitat restoration, policy advocacy to protect unburnt forests, and drone seeding and surveys.



**Professor Ross Thompson**

*Director, Centre for Applied Water Science  
University of Canberra, Australia*

**Day 1 ( 20 April ) | 13:00**

**Fire and water don't mix: time for a conversation on australia's water catchments**

There is no doubt that with respect to water supplies we will need to diversify sources, both through the use of desalination and the inevitable shift to stormwater and wastewater harvesting and treatment for potable use. From a biodiversity perspective, there will need to be urgent efforts to manage non-fire stressors such as weeds and invasive animals to take pressure off recovering catchments and increase their resilience to future fire.

**Cassie Price***OzFish's national Director of Habitat Programs***Day 1 ( 20 April ) | 13:30****Fisher Driven Bushfire Recovery for Threatened Fish**

After receiving a number of calls from distressed fishers after the 2019/2020 fire season alerting us to the devastation of the impact on waterways throughout Victoria, NSW and Queensland, OzFish teamed up with Landcare Australia to help the community reverse some of the worst damage. With funding support from the Australian Government through their Wildlife and Habitat Bushfire Recovery Program, and OzFish's major partner, BCF – Boating, Camping, Fishing, we set out in late 2020 to support the recovery of waterways.

**Luke Pearce***Fisheries Manager, Greater Murray Region - Aquatic Ecosystems Unit, NSW Department of Primary Industries Fisheries***Day 2 ( 21 April ) | 9:45****Macca's on Fire (Bushfire impacts on Macquarie Perch in Mannus Creek)**

Mannus Creek a tributary of the upper Murray river holds one of only 4 remaining population of Macquarie perch in NSW and the only remaining population within the NSW Murray. The entire range of this population was fiercely burnt, closely followed by severe storms that turned the Mannus Creek and the Murray River into a flowing river of black porridge, with subsequent fish kills following. A small number of Macquarie were rescued, what is the fate of these fish, the fate of the population and the species more generally.

**Dr Luiz G. M. Silva***Senior Scientist, Institute for Environmental Engineering, ETH-Zürich, Switzerland***Day 1 ( 20 April ) | 14:30****Can fires threaten aquatic biota? The toll of the 2019-20 Australia's bushfires on the aquatic biota**

Fire is a component that has been shaping terrestrial ecosystems across the globe for millennia. However, our understanding of how these events affect the structure and resilience of aquatic ecosystems is still limited. Based on historical observations from previous megafires, negative effects of the 2019-2020 bushfires in aquatic ecosystems were expected. In this talk I will present the results from a rapid assessment of mortality events across 43 catchments in South-eastern Australia that affected the aquatic biota. A total of 27 species of freshwater and estuarine fish, as well as four species of crustaceans, have been reported from 15 waterways across New South Wales and Victoria.

**Professor Scott Johnston***Faculty of Science and Engineering  
Southern Cross University***Day 2 ( 21 April ) | 10:15****River sediment, nutrient and trace element dynamics following catastrophic bushfires on Australia's east coast**

The Macleay River catchment on the east coast of Australia was burnt extensively during the 2019/202 bushfire season. Here, we present water quality data collected over 3.5 years before, and 6 months after the fires, capturing the onset of major rainfall and the critical first-flush period.



# PROGRAM

AEST	Tuesday 20 April 2021
9:45	Morning Tea and Registration
10:15	<b>Opening</b> 1. Acknowledgement to Country by Aunty Rhonda 2. Welcome by Dr Eva Abal, International RiverFoundation 3. Welcome by Mayor Peta Pinson, Port Macquarie Hastings Council 4. Welcome by Associate Professor Andrew Hall, Charles Sturt University
10:40	<b>Keynote:</b> Dr Jessica Tout-Lyon & Dr Alexandra Knight, Charles Sturt University <i>From the mountains to the sea – through drought, fire and flood on the Mid-North coast, NSW, Australia</i>
11:25	<b>Keynote:</b> Dr Rebecca Flitcroft, United States Forest Service <i>Can we protect water quality from wildfire?</i>
12:10	Lunch
13:00	<b>Prof Ross Thompson</b> , University of Canberra <i>Fire and water don't mix: time for a conversation on Australia's water catchments</i>
13:30	<b>Cassie Price</b> , OzFish <i>Fisher-driven bushfire recovery for threatened fish</i>
14:00	<b>Dr Tapas Biswas</b> , CSIRO <i>Fire, rain, flood and mud in the mighty Murray</i>
14:30	<b>Prof Luiz DaSilva</b> , ETH Zurich <i>Can fires threaten aquatic biota? The toll of the 2019-20 Australia's bushfires on the aquatic biota</i>
15:00	Afternoon Tea
15:30	<b>Jack Grant</b> , Environmental Projects Officer (Coast and Estuary), PMHC <i>On ground restoration projects post fire &amp; flood in the coastal catchments of Port Macquarie</i>
16:00	<b>Keynote:</b> Dr Stuart Blanch, WWF <i>From catastrophic bushfires come catalysing actions and innovation</i>
17:00	Networking Cocktail Function
AEST	Wednesday 21 April 2021
8:30	Barista Coffee on Arrival
9:00	<b>Welcome back</b>
9:05	<b>Keynote:</b> Prof Stuart Khan, University of NSW <i>Environmentally resilient drinking water management: Lessons from an Australian "Black Summer"</i>
9:45	<b>Luke Pearce</b> , NSW DPI Fisheries <i>Macca's on Fire (Bushfire impacts on Macquarie Perch in Mannus Creek) – a year on</i>
10:15	<b>Prof Scott Johnston</b> , Southern Cross Geoscience <i>River sediment, nutrient and trace element dynamics following catastrophic bushfires on Australia's east coast</i>
10:45	Morning Tea
11:15	<b>Closing address:</b> Dr. Clare Allen, CEO, Port Macquarie Hastings Council <i>Port Macquarie's Resilience Journey - Fire &amp; Flood</i>
11:45	Event Synthesis and Outcomes
12:00	Close



**Charles Sturt  
University**

**Charles Sturt University, Australia's largest regional university, champions research that helps communities flourish and shape the world we live in. Our four research centres and three faculties collaborate with businesses and the community to find new ways to produce impactful research outcomes that create a world worth living in. We have a strong applied and collaborative research profile that naturally invites partnership.**

Our well-established partnerships with federal, state and local government departments and agencies, and other tertiary institutions together with our combined strengths in biophysical, social and economic research enables us to address local, regional, national and global issues.

As Australia's most experienced online university, we also deliver flexible study options and opportunities to be mentored in higher degree research by world class researchers.

The Institute for Land, Water and Society (ILWS) is a multi and trans-disciplinary Research Centre at Charles Sturt University, and our researchers are involved in individual, collaborative and commissioned work around Australia and the world. Research is undertaken within four thematic (not mutually exclusive) areas:

- Biodiversity Conservation
- Environmental Water
- Rural and Regional Communities
- Sustainable Development (International)

Our water research includes wetland inventory and assessment, ecological indicators, ecology of aquatic biota, ecosystem response to dam and fishway management, aquatic chemistry, adaptive management and riverine ecosystem process. Social, cultural and institutional arrangements for river and wetland management feature prominently in outcomes of our research.



**PORT MACQUARIE  
HASTINGS COUNCIL**

**Port Macquarie Hastings Council takes seriously it's stewardship of our local environment. Surrounded by pristine forests and waterways we understand our community lives here because of our natural spaces.**

We are responsible for ensuring that the quality of our rivers, beaches and our drinking water reflects the clean environment it comes from.

We also have a responsibility to our community to ensure we seek their opinions, that we identify our issues and co-design our solutions and future together.

Our resilience is built upon our connected community; between people and between the places that make up our region. While we love the myriad of beautiful destinations in our area, we believe the roads and bridges on the journey should be safe and just as enjoyable.

Each of the primary townships have unique characteristics and all are linked by the stunning waterways of the Camden Haven, Hastings, and Wilson Rivers.





