

Shoalhaven Natural Resource & Floodplain Management Committee

Meeting Date: Wednesday, 25 July, 2018
Location: Huskisson Community Hall, Huskisson
Time: 4:00pm

Please note: Council's Code of Meeting Practice permits the electronic recording and broadcast of the proceedings of meetings of the Council which are open to the public. Your attendance at this meeting is taken as consent to the possibility that your image and/or voice may be recorded and broadcast to the public.

Agenda

1. **Apologies**
2. **Confirmation of Minutes**
 - Shoalhaven Natural Resource & Floodplain Management Committee - 18 April 2018..... 1
3. **Declarations of Interest**
4. **Reports**
 - SN18.13 Shoalhaven Natural Resources and Floodplain Committee - Resignations - David McCorkell and Ian Stewart..... 12
 - SN18.14 Update: Crown reserve management under the Crown Land Management Act 2016 14
 - SN18.15 Currarong Erosion Remediation Project 20
 - SN18.16 Citizen science for coastal monitoring 36
 - SN18.17 Shoalhaven City Council - Strategic Approach to Managing the Natural Environment 39
 - SN18.18 Shoalhaven Safe Navigation Action Group (SNAG) Dredging Plan - Communications with Staff 47
 - SN18.19 South Mollymook Beach Cost Benefit and Distributional Analysis Study Update 56
5. **General Business**

Membership

Clr White – Chairperson
All Councillors
General Manager or nominee

Community representatives:-

Duncan Marshall
Ian Stewart
Dr Michael Brungs
Dirk Treloar
Annie Boutland
Helen Moody
David Reynolds
Kaye Milsom
Brett Stevenson
Chris Grounds
Mike Clear
Paul Beckett
Robyn Flack
Peter Hanson

Government Agency representatives:-

Jerrinja LALC
Ulladulla LALC
NPWS
SRCMA
OEH
RMS
DPI Fisheries
Local Lands Service
Crown Lands
NSW Office of Water
Jervis Bay Marine Park Authority
SES

Quorum – Three (3) provided that a minimum of one Councillor and two community representatives are present.

Objective

To foster sustainable management of Shoalhaven's natural resources including floodplains, coast and estuaries.

Role of Committee

1. Provide overall guidance for the management of natural resource management including floodplain management, estuary management and coastal zone management in accordance with Federal, State and Local Government Policy and Legislative instruments;
2. Advise Council on natural resource management including floodplain management, estuary management and coastal zone management matters;
3. Formulate agreed vision, goals, objectives, and targets sought from the Natural Resource Management Plans;
4. Facilitate the preparation of Natural Resources Management Plans;

5. Provides input into the identification of management options for Natural Resources Management Plans;
6. Facilitate broad community consultation;
7. Monitor State and Federal Government natural resource management direction and advises Council on appropriate response;
8. Monitor advances in knowledge and science of natural resource management issues (such as sea level rise and climate change) and integrate this knowledge in new Natural Resource Management Plans as well as in the review of existing Plans; and
9. Make recommendations for Council consideration.

MINUTES OF THE SHOALHAVEN NATURAL RESOURCE & FLOODPLAIN MANAGEMENT COMMITTEE

Meeting Date: Wednesday, 18 April 2018
Location: Shoalhaven Entertainment Centre Studio, Bridge Road, Nowra
Time: 4:00pm

The following members were present:

Clr Amanda Findley- Chairperson
Clr John Levett
Clr Patricia White
Ian Stewart
Michael Brungs
Dirk Treloar
Helen Moody
David Reynolds
Chris Grounds
Paul Beckett
Peter Hanson
Robyn Flack
John Bucinskas
John Murtagh
Jason Carson
Duncan Marshall

Others present:

Janis Natt – President, Safe Navigation Action Group
Fran Clements
Alasdair Stratton – Natural Resources & Floodplain Unit Manager
Kelie Clarke – Environmental Services Manager
Coralie Bell – Manager, Tourism
Phil Costello – Director, Planning Environment and Development
Tanvir Ahmed – Floodplain Engineer Project Officer
Mir Abdus Subhan – Floodplain & Stormwater Quality Engineer
Ali Sevenler – Senior Floodplain Engineer

Apologies / Leave of Absence

A Leave of Absence was received for Clr Alldrick. Apologies were received from Annie Boutland, Mike Clear, Kaye Milsom, Brett Stevenson, David Zerafa, Bill McInnes, and Danny Wiecek.

Confirmation of the Minutes

Recommendation

1. That the Minutes of the Shoalhaven Natural Resource & Floodplain Management Committee held on Thursday 23 November 2017 be confirmed.
2. That the Minutes of the Shoalhaven Natural Resource & Floodplain Management Committee held on Monday 22 January 2018 be confirmed.

RESOLVED (By consent)

1. That the Minutes of the Shoalhaven Natural Resource & Floodplain Management Committee held on Thursday 23 November 2017 be confirmed, with the amendment that Clr White had been elected Chairperson of the Committee for that meeting only.
2. That the Minutes of the Shoalhaven Natural Resource & Floodplain Management Committee held on Monday 22 January 2018 be confirmed.

CARRIED

Declarations of Interest

Nil.

PRESENTATIONS

SN18.2 Tourism Discussion - 360 Model

**HPERM Ref:
D18/122503**

Coralie Bell (Manager, Tourism) and Kelie Clarke (Environmental Services Manager) conducted a brief workshop to discuss the environmental indicators for healthy tourism. Coralie described the Destination 360 Model, which aims to measure the sustainability of the tourism industry through indicators of a healthy community, healthy environment and healthy visitor experience, as well as through economic growth. A University of Wollongong research team is looking to work with Shoalhaven Tourism to develop the tools.

Concerns were raised that the committee had not been apprised in advance of the workshop format of this item, so they were not sufficiently prepared. Ian Stewart identified a possible conflict between tourism policy and practices, and visitation impact on the community, including its effect on the creative economy. Coralie clarified that the purpose was to redefine success in tourism policy, and to collate data which will provide leverage for grant funding applications.

Coralie asked attendees to nominate their top three environmental measures that consider should be addressed, drawing on their own experience. A 'hotspot' is not necessarily a place with environmental problems, but where a confluence of different issues is arising in the economy and community. Suggestions included:

- Sussex Inlet – water quality. Paul Beckett added that community respect is important for our local environment to demonstrate to visitors that we value this place and expect them to do so as well.
- Conjola. Coralie is looking at patterns of visitor trips and acknowledged that current consumer behaviour favours short trips.
- Upper reaches of the Shoalhaven River – the environmental impact of activities such as boating and wakeboarding.
- Catchments.

It was recognised that there are deficiencies in infrastructure to support visitors.

Indicators of impact by both locals and visitors included:

- Condition of foreshore vegetation
- Rubbish
- Dogs
- Erosion from boat wash
- Damage to assets – from flood, bushfire, ECLs

Clr White raised the impact of natural disasters such as flooding on tourism – is this something that can be measured? Coralie referred to adaptive management. Following an event like the substantial damage in 2016 to the walking tracks in the Bay & Basin area, for example, Council would seek grant funding.

Robyn Flack reported a very busy tourist season at Shoalhaven Heads. How can demand and supply be managed? Coralie confirmed that visitor information is being collated. The goal is more effective management, not to strangle demand.

Clr Levett proposed the need for a vision of tourism as an objective from which we can work backwards. Having an agreed vision will provide a focus for management.

Ian Stewart said our historical approach to tourism should be discussed as a general conversation first. We know of many examples of tourism having a significant impact on the environment; it does not make sense to be spending so much to attract more visitors when there are already such large numbers. He proposed that some of this budget could be allocated to investigating and managing impact. Coralie clarified that tourism marketing is being strategically aimed at increasing overnight and winter visitations, with the goal of improving economic prospects for sections of the community affected by weak jobs growth. She wishes to make the measurement tool a catalyst for improvement. Optimal procedures have been outlined following earlier meetings and community consultation workshops.

Clr Findley clarified that Tourism is asking this meeting to identify two or three representative issues so that ultimately grant funding can be secured to help manage the problems. The Committee however wants to know first what these are. She identified a difficulty with the terminology used by the respective sides. In summary, she advised that we have catchment management plans across the Shoalhaven, which can be broken down into pieces for our environmental management; Coralie is seeking to identify similar pieces for environmental tourism management.

Clr Findley acknowledged those members of the Committee who had not had an opportunity to speak, but drew the discussion to a close. She recommended that the Committee take away today's deliberations and return for a further discussion, which she will facilitate.

Comments for Tourism are to be sent by email to AllGovernance@shoalhaven.nsw.gov.au.

RESOLVED (By consent)

That:

1. The Tourism Manager circulate to this Committee the briefing notes and feedback to date on environmental issues.
2. NRM members are to consider the impact points between tourism and the environment and how they relate to hotspots and top issues, and in their considerations to send them to Coralie in writing at AllGovernance@shoalhaven.nsw.gov.au.
3. That a further workshop be conducted with those interested members of the Committee.

CARRIED

REPORTS

**SN18.3 Safe Navigation Action Group (SNAG) - Sussex Inlet
Dredging Plan 2017****HPERM Ref:
D18/13156**

Janis Natt, President of the Safe Navigation Action Group (SNAG), was present as an observer.

Clr White noted that SNAG had been unaware of this agenda item until the previous Saturday, and suggested that further discussion with the group and Council staff is needed in order to make a deputation to this committee. Following discussion the Committee resolved to arrange an opportunity for this engagement and bring the item back to a subsequent meeting.

Paul Beckett expressed that the dredging plan does not just address channel optimisation but is about much more. He was concerned that staff had missed opportunities for community consultation. He said that Council has permitted the bulldozers to go through the dunes for an 'eco camp' at the expense of the natural environment and wildlife.

Clr Findley asked the Committee for permission for Janis Natt to speak, which was granted.

Janis Natt described the very emotive situation that was being faced. The plan had been developed by a committee of five, who had met every fortnight for six months. Great care had been taken by Paul Beckett and the SNAG team to look at as many environmental issues as possible. Their foremost concern was for the safety of people using the waterway; safety factors had been reduced by the narrowing of the channel. For example, one of the dunes needing repair has high voltage power lines on it.

Phil Costello assured SNAG of the recognition of their work, and that the representation of this report to the Committee is in recognition of it. He clarified that accepting the report for information at this stage is not intended to sideline it.

John Bucinkas (OEH) noted that since the Coastal Reforms were finalised there has been a State government direction on the management framework for estuaries. The issues being discussed should be addressed in the Coastal Management Framework – OEH will require Council to deal with this in the Coastal Management Program. He added the Coastal Management Act requires Councils to consider community feedback.

Recommendation

That the Shoalhaven Natural Resources and Floodplain Management Committee receive the report on the Safe Navigation Action Group's Sussex Inlet Dredging Plan 2017 for information.

RECOMMENDATION (Clr White / Paul Beckett)

That:

1. The Committee receive the report on the Safe Navigation Action Group's Sussex Inlet Dredging Plan 2017 for information.
2. Further engagement between Council staff and SNAG take place.
3. Following the consultation between SNAG and SCC, that a further report be brought back to this Committee.
4. The Committee notes that any future dredging program needs to be strategically considered within Council's coastal management program.

CARRIED

SN18.4 Update on the review of the draft 2012 Coastal Zone Management Plan

**HPERM Ref:
D18/73442**

Kelie Clarke presented a progress briefing on the Shoalhaven Coastal Management Plan (CZMP). Council had resolved in 2017 to update the CZMP, pursue certification and engage a Project Officer for this project. At that stage the government did not certify the plan. Council authorised updating in November, and this work is now ongoing. Certification is necessary to be eligible to apply for grant funding for major coastal projects.

Six months were given to complete the review, hold a public exhibition, allow for adoption by Council and assessment by OEH, then achieve certification. In recent months, staff have revised the structure and content of the plan, including sections dealing with community consultation, citywide strategies and local area action plans, and sought additional technical review.

The next steps will be:

11 May: place the draft CZMP on the Council hub.

15 May: report to Strategy & Assets Committee.

21 May to 15 June: Public Exhibition – also to be sent to consultative groups.

10 July :Briefing on submissions if required.

24 July : Report finalised CZMP plus details of submissions to Strategy & Assets Committee.

26 July: Refer adopted CZMP to OEH for Minister’s certification.

Kelie and the team are seeking support from the Committee in getting the CZMP through to certification. The meeting commended Kelie and the staff but acknowledged the tight timeframe they face. John Buciskas confirmed that OEH need three to four months to approve the plan once it has been provided to the Minister. If the CZMP is not certified by October, Council will lose its eligibility for the next round of the Coastal Grants Program.

Clr Findley was concerned that if Council does not have its plan with the OEH by end of July that opportunities for funding may be missed. Council staff have prepared numerous versions of the plan and she feels the government has let them down with this deadline. John clarified the timeframes had been set out in the 2016 legislation.

Among other coastal councils, Wollongong and Shellharbour have been through this process.

Grant funding for natural disaster response is not contingent on an action being in the plan, but other actions do have to be in the plan. This is a new rule.

Kelie stated that risk assessments had been carried out in 2004, and most actions are directed towards mitigating those risks.

Recommendation (Item to be determined under delegated authority)

That Council receive the update report on the revision of the Shoalhaven Coastal Zone Management Plan (CZMP) 2018 for information.

RESOLVED (By consent)

That Council receive the update report on the revision of the Shoalhaven Coastal Zone Management Plan (CZMP) 2018 for information.

CARRIED

SN18.5 Citizen Science - Utilising Technology to Monitor the Coast

HPERM Ref: D18/80832

Alasdair Stratton reported that Council staff had been given information by Mike Clear about Photomon, a photograph database app developed by the WA Northern Agricultural Catchments Council. It provides a way of collecting photos from citizens on changing dynamics in the environment. There is the opportunity take up a three-month free trial, collate the information, see how well it is received, test its ease of use, and if it meets our needs to potentially bring it inhouse.

Ian Stewart noted there is a similar app already, Nature Mapper, which has considerable support in the region. It is similarly citizen science based, trialled and tested. It was confirmed that Council staff have investigated Nature Mapper and are interested in using it, but for different purposes.

We could monitor the changes over time to an entrance using the app – Photomon is specifically designed for these kinds of applications. Regarding whether it is live, offering realtime collection of data, or collated, we know the photo are collated in the database, but not sure if live. One of its main attractions is the ability to overlay photos in transparency to see changes.

Chris Grounds said there is a huge amount of databases and apps databases reporting information about the environment. Birdlife Australia has an app, for example, and the Atlas of Living Australia. OEH have their own database.

Helen Moody suggested avoiding the term ‘citizen science’, which is a buzzword to attract children, and may not represent the more specific users who would be involved in a monitoring project. It was confirmed we will approach those with a special interest, rather than any person providing data.

Recommendation

That:

1. Council endorse the opportunity to engage in a citizen science project by taking up the three-month free trial offered for the Photomon App;
2. Council seek an expression of interest through the Shoalhaven Natural Resources & Floodplain Management Committee, Council Consultative Bodies and Shoalhaven Bushcare Groups for volunteers to be involved in the citizen science project via the Photomon App; and
3. A further report be provided to the Shoalhaven Natural Resources & Floodplain Committee and Council on the outcomes of the trial in order to determine whether to proceed with a full subscription for future coastal monitoring.

RECOMMENDATION (By consent)

That:

1. Council endorse the opportunity to engage in a citizen science project by taking up the three-month free trial offered for the Photomon App;
2. Council seek an expression of interest through the Shoalhaven Natural Resources & Floodplain Management Committee, Community Consultative Bodies and Shoalhaven Bushcare Groups for volunteers to be involved in the citizen science project via the Photomon App; and
3. A further report be provided to the Shoalhaven Natural Resources & Floodplain Committee and Council on the outcomes of the trial in order to determine whether to proceed with a full subscription for future coastal monitoring.

CARRIED

SN18.6 Update on the Review of the Lake Tabourie Entrance Management Policy**HPERM Ref:
D18/89903**

Ali Sevenler reported that Council is reviewing the policy. The first stage of community consultation has been done – the options are in the report. The feedback was found to be equally distributed across the options. Staff are now measuring the options and arriving at a cost benefit analysis. There were no strong community requests for specific items. We will determine what is practical that can be implemented now, and the consultant is modelling the options in a consultation document. There is to be a second round community consultation in the next couple of months.

Recommendation (Item to be determined under delegated authority)

That Committee receive the report on the review of the Lake Tabourie Entrance Management Policy for information.

RESOLVED (By consent)

That Committee receive the report on the review of the Lake Tabourie Entrance Management Policy for information

CARRIED

SN18.7 Update on the Shoalhaven River Levee Flood Damage Restoration 2017 Project**HPERM Ref:
D18/92311**

Mir Abdus Subhan provided a brief update on flood damage. Council had recently engaged the NSW Soil Conservation Service to repair the Shoalhaven River Levee. Previously, Public Works Advisory had been engaged to project manage the Shoalhaven River Levee Flood Damage Restoration 2017 Project on behalf of Council.

It is expected that the contractor will mobilise their machinery from next week for a completion in September 2018. Currently they have submitted preliminary documents and are about to start stockpiling materials. They will repair levee defects at Terara and Comerong Island in this stage, with Numbaa levee defects being addressed at the second stage.

Council received NDRRA grant funding for the flood damage sustained in August 2015. Council then submitted a revised NDRRA claim for the August 2015 flood and a fresh claim for the June 2016 flood. Council will also partially contribute to the project. NDRRA is a joint initiative of the Federal Government and NSW State Government.

Recommendation (Item to be determined under delegated authority)

That the Committee receive the report for information.

RESOLVED (By consent)

That the Committee receive the report for information.

CARRIED

SN18.8 South Mollymook Beach Cost Benefit Distribution Analysis (CBA) Coastal Hazard Assessment

HPERM Ref: D18/102646

Alasdair Stratton provided a presentation which outlined the South Mollymook Beach Cost Benefit and Distribution Analysis. The rock seawall was constructed in 1993, and sustained damage over time and particularly in 2016. A hazard survey in 2006 had confirmed that the southern section of Mollymook was a high-risk coastal hazard. Mollymook is also an 'erosion hotspot'. Various options have been considered, and following community consultation Council commissioned a report on foreshore stabilisation at South Mollymook Beach. Funding of \$50,000 was matched by Council to undertake a Cost Benefit Analysis and coastal hazard distribution analysis. Conducting a Cost Benefit Analysis is now a requirement of the OEH. The aim is to improve our understanding of the economic implications of various management options, and to assist decisions on future cost sharing arrangements and funding.

Current work involves emergency works to protect the failing rock wall. The hill is stable. It was confirmed the bedrock lies approximately 1.5m below the mean water mark.

Clr Findley said it will be interesting to see the cost sharing arrangements for this work.

This issue highlights the importance of maintaining awareness of the 'next storm' – increasing or need for environmental monitoring and to and protect assets. There is also the factor of private individuals deciding to locate themselves directly on the coast.

Recommendation (Item to be determined under delegated authority)

That Council receive the South Mollymook foreshore protection structure, Cost Benefit Analysis (CBA) "initial findings report" for information.

RESOLVED (By consent)

That Council receive the South Mollymook foreshore protection structure, Cost Benefit Analysis (CBA) "initial findings report" for information.

CARRIED

ADDENDUM REPORTS

SN18.9 Technical peer review of the River Road Foreshore Shoalhaven Heads: Assessment of the Coastal Management Options Report by MHL.

HPERM Ref: D18/75302

Kelie Clarke explained that Council had sought the peer review as it had applied for large grant for foreshore works. The assessment report had been produced by the UNSW Water Research Laboratory, and had recommended that one section undergo works. Council subsequently engaged the Manly Hydraulics Laboratory to review, who agreed with the approach, and recommended including the additional design elements to increase resilience.

Robyn Flack agreed it was a very worthwhile exercise obtaining peer review. She stated that the River Road channel is problematic, identified as far back as the report of 1999. She had raised this at the Committee meeting in September 2017, and referred to previous reports. She requested the addition of a further recommendation 3 on the viability of the channel. She added that the present document is dated 20 February, and the Committee should have had it before now. She advised that sufficient data is available for a desktop review by experts.

Kelie clarified that there had been several drafts of the 20 February document, and the date on the document has not kept up with drafts. She said Council is looking at sourcing sand as part of beach nourishment / dry notch work. She spoke against including a part 3 as the grant guidelines

are very specific, and there is a risk of not meeting our milestone requirements. We can investigate long term sources of sand as a side project to the recommendation. Council had been presented with dredging as one option, so was obliged to look into it. We need to understand the channel and how it works. The advice received by Council was that it is not a simple desktop assessment.

Dirk Treloar asked about the use of sand already on site. The response was that we need a process study into how this would affect the estuary if sand is moved. Sand will be needed over time to nourish the beach.

Phil Costello clarified the proposal is a short-term option that will not interfere with other long-term options. Robyn stressed the need to design for the longer term.

Chris Grounds added that works need to be carried out at particular time of the year. Kelie confirmed that Council is working on that basis.

Regarding the timeframe, Council has just received formal grant notification, and is to formally accept it in two weeks' time. Clr Findley was concerned this may be too late. Up until this time the Shoalhaven Heads community has had significant consultation. There is a need to balance the process of consultation, the scoping of the project, with what is being asked for. If SHET wish to continue to move the navigation channel south, it has to be separate. We have an opinion that we move the channel to the south that will provide a better outcome. Staff have advised that the movement of that channel will take extensive planning and assessment. Do we use the funds we have to address the initial issue of stormwater, and then come back at a later time to consider the matter of moving the channel as part of a larger plan and consultation process?

Robyn clarified she was not suggesting to move anything, but that the channel may not be viable. It is a dead channel, and this is recognised as such by experts. We should not introduce new assets or dredge for navigation. The sands would have to continue to be replenished in years to come.

Recommendation:

That Council

1. Receive the Manly Hydraulics Laboratory technical review of the WRL River Road Coastal Option Report titled *MHL2595 – Review of River Road Foreshore, Shoalhaven Heads: Assessment of Coastal Management Options Report dated February 2018*, for information; and
2. Subject to availability of funding, incorporate the following technical information in the detailed design of any future coastal erosion remediation control structure at the River Road foreshore precinct:
 - a. Coastal erosion remediation structure be designed for a more conservative large river entrance opening to reduce the risk of failure.
 - b. A minimum design life of 25 years for coastal erosion remediation structure be adopted.

RECOMMENDATION (By consent)

That Council

1. Receive the Manly Hydraulics Laboratory technical review of the WRL River Road Coastal Option Report titled *MHL2595 – Review of River Road Foreshore, Shoalhaven Heads: Assessment of Coastal Management Options Report dated February 2018*, for information; and
2. Subject to availability of funding, incorporate the following technical information in the detailed design of any future coastal erosion remediation control structure at the River Road foreshore precinct:
 - a. Coastal erosion remediation structure be designed for a more conservative large river entrance opening to reduce the risk of failure.
 - b. A minimum design life of 25 years for coastal erosion remediation structure be adopted.

CARRIED

SN18.12 Additional Item - River Road Channel

Discussion of the River Road channel would have to go to Council as it involves budgetary implications. It needs to be considered in the context of works in the whole Shoalhaven.

Kelie suggested she meet with Robyn to clarify the channel's viability. If we go back to NHL they may be able to investigate. We will have to work out budget, time, and impact matters.

RESOLVED (By consent)

That Council arrange a meeting with Robyn Flack, Council staff and members of the Shoalhaven Heads Estuary Taskforce to clarify if the navigation channel viability fits with the funding model.

CARRIED

SN18.10 Undertaking a Scientific Analysis of the Shoalhaven Dredging Program

**HPERM Ref:
D18/80719**

Clr White recommended the report should be received for information only at this stage, as point 2 of the recommendation will all form part of coastal management program. The Committee agreed.

Recommendation

That Council:

1. Receive the report for information; and
2. Include the development and implementation of a scientifically based environmental monitoring and evaluation program in the project brief and design of any future dredging projects and other large-scale Council projects. This will ensure that:
 - the implementation and success of projects can be monitored and evaluated;
 - reduce the risk of failure of environmental controls and mitigation measures and potential increased project costs;
 - ensure compliance with legislative obligations; and
 - learn valuable lessons for future projects to avoid and minimise potential environmental and community impacts and therefore save resources, time and money.

The scale of an environmental monitoring and evaluation program would be dependent upon the scale of the proposed project and potential direct and indirect environmental impacts.

RECOMMENDATION (By consent)

That Council receive the report for information.

CARRIED

SN18.11 Proposed Millards Creek and Currarong Creek Flood Study Projects

**HPERM Ref:
D18/68633**

Ali Sevenler presented the background and outline of the project. Council has received funding from OEH for this flood management study. The grant application had not initially been funded but it was accepted from the reserve list.

The estimated project timeframe is as follows:

By July 2018: Prepare technical briefs, forward them to local, region, NRFC and SES for feedback; Prepare tender documentation; Appoint successful tenderer(s).

By October 2019: Project familiarisation; Review Existing Data; Preparing and managing Survey Brief; Development of hydrologic model; Development of hydraulic model; Technical steering group and community engagement; Consultation with local, region, NRFC and SES for feedback.

By December 2019: Draft flood studies for peer review; Public exhibition; Finalise flood studies; Council adopt flood studies.

Council is currently preparing the technical briefs and tender documentation. We plan to advertise the tender by May/mid-June, and engage the successful tender end of July. The studies are expected to be completed by December 2019.

Recommendation

That Council:

1. Accept the OEH grant of \$88,666 toward the cost of the flood study for Millards Creek;
2. Allocate \$44,333 from the 2017/18 Flood Programme budget (Job Number 15706) as Council's contribution to the Millards Creek Flood Study;
3. Accept the OEH grant of \$77,000 toward the cost of the flood study for Currarong Creek; and
4. Allocate \$38,500 from the 2017/18 Flood Programme budget (Job Number 15706) as Council's contribution to the Currarong Creek Flood Study.

RECOMMENDATION (By consent)

That Council:

1. Accept the OEH grant of \$88,666 toward the cost of the flood study for Millards Creek;
2. Allocate \$44,333 from the 2017/18 Flood Programme budget (Job Number 15706) as Council's contribution to the Millards Creek Flood Study;
3. Accept the OEH grant of \$77,000 toward the cost of the flood study for Currarong Creek; and
4. Allocate \$38,500 from the 2017/18 Flood Programme budget (Job Number 15706) as Council's contribution to the Currarong Creek Flood Study.

CARRIED

GENERAL BUSINESS

Ian Stewart advised that he had attended the workshop yesterday on Managing Environmental Change Through Planning for Transformative Pathways. A small number of people from this Committee had been present, and a larger number from the Sustainable Futures Committee. Scenario planning exercise comprising six workshops over 12 months. He suggested that members should participate.

There being no further business, the meeting concluded, the time being 7.12pm.

Clr Amanda Findley
CHAIRPERSON

SN18.13 Shoalhaven Natural Resources and Floodplain Committee - Resignations - David McCorkell and Ian Stewart

HPERM Ref: D18/226765

Group: Finance Corporate & Community Services Group
Section: HR, Governance & Customer Services

Purpose / Summary

To advise of the resignation of Mr David McCorkell and Mr Ian Stewart from the Shoalhaven Natural Resources and Floodplain Management Committee.

Recommendation

That:

1. The resignations of Mr David McCorkell and Mr Ian Stewart from the Shoalhaven Natural Resources and Floodplain Management Committee be accepted.
2. Council write to Mr McCorkell and Mr Stewart to thank them for their contributions to the Committee.
3. Two members be sought to fill the vacancy created on the Committee by the resignation of Mr McCorkell and Mr Stewart.

Options

1. As recommended

Implications: The vacancies for two community representatives will be filled by further report to the Committee.

2. The Shoalhaven Natural Resources and Floodplain Management Committee adopt an alternate recommendation.

Background

On Tuesday 29 May 2018, Council received Mr David McCorkell's resignation from the Shoalhaven Natural Resources and Floodplain Management Committee. Mr McCorkell has been a community member of the Shoalhaven Natural Resources and Floodplain Management Committee since March 2016, and previously a member of the Natural Resources and Floodplain Management Committee since 2004.

In his resignation, Mr McCorkell stated he had enjoyed many years on the Committee and had found it most valuable to be in a position to relate the Committee proceedings to the residents of Greenwell Point.

On Friday 1 June 2018, Council received Mr Ian Stewart's resignation from the Shoalhaven Natural Resources and Floodplain Management Committee. Mr Stewart has been a community member of the Shoalhaven Natural Resources and Floodplain Management Committee since March 2016.

In his resignation, Mr Stewart said he appreciated the opportunity he was given to participate in the work of this committee and wished it well in its ongoing deliberations.

The Committee is invited to consider recommending that Council advertise the community member vacancies created by the resignations of Mr McCorkell and Mr Stewart.

SN18.14 Update: Crown reserve management under the Crown Land Management Act 2016

HPERM Ref: D18/129823

Group: Planning Environment & Development Group
Section: Environmental Services

Purpose / Summary

The purpose of this report is to inform the Committee of the potential implications to the management of Crown land, since the commencement of the Crown Land Management Act 2016 (CLM Act) on 1 July, 2018. The following report was prepared by Council's Business & Property Unit and reported to the Strategy & Assets Committee on 17 April 2018.

Recommendation (Item to be determined under delegated authority)

That the report be received for information.

Options

Nil

Background

The *Crown Land Management Act 2016* (the CLM Act) assented to on 14 November 2016 implements reforms identified through the comprehensive review of Crown land management and follows over four years of engagement with the community on the future of Crown land (NSW Department of Industry website).

It is expected that this new Act will commence 1 July 2018, although the following provisions commenced on the date of assent:

- Division 4.2 (Vesting of Crown land in local councils);
- Section 13.5 (Regulations); and
- Schedule 7 (Savings, transitional and other provisions).

The CLM Act authorises the management of Crown land by local councils under the provisions of the *Local Government Act 1993* even though the legislation retains broad and general powers for the Minister for Lands and Forestry to influence that management.

Council has been actively engaged in the legislative reform process through:

- a detailed submission on the Crown Lands White Paper in June 2014 (D16/191670);
- lodgement of a submission with the then Minister for Natural Resources, Lands and Water which asked that Shoalhaven City Council be considered as a participant in the proposed pilot program to consider the preferred management outcomes in relation to Crown lands in New South Wales (D14/135706);
- the making of a submission to the Upper House enquiry into Crown land (D16/215722) and the giving of sworn evidence by the General Manager to the Upper House enquiry held in Nowra in August 2016;

- d. submission of an Expression of Interest for approval to participate in the Land Negotiation Programme (D17/272748) – approval was granted to Council for the right to participate in the programme with Jerrinja and Nowra Aboriginal Land Councils commencing in 2019/2020 (D17/397723);
- e. the making of a submission to the Department of Industry – Lands and Forestry on the draft Crown Land Management Regulations 2017; and
- f. the appointment of a staff member to the Crown Land Council Reference Group convened by the Office of Local Government and tasked with advising local councils on the implementation of the CLM Act.

Key Issues

Although the legislative reform process which resulted in the CLM Act has been comprehensive, it has also been controversial, as there has been much speculation about implications of the reforms for local government. This has arisen because of a failure to disseminate meaningful information which is only now being addressed by the formation of a Council Reference Group tasked with the responsibility of advising local government on implementation of the CLM Act.

The Reference Group is made up of representatives from Department of Industry – Lands, Office of Local Government, Local Government NSW, Bayside Council, Blacktown City Council, Gunnedah Shire Council, Port Macquarie Hastings Council, Port Stephens Council and Shoalhaven City Council.

Whilst there are many elements to the reform, in essence, there are four (4) major issues arising out of the CLM Act:

1. From commencement of the CLM Act, Councils will manage Crown land as public land under the provisions of the *Local Government Act 1993*. Plans of management have to be prepared for every reserve and the legislation provides a transition period of three (3) years for this to happen.
2. Each parcel of Crown land must be classified under the *Local Government Act 1993* and every parcel of land classified as “community” land must be categorised as one or more of the following: natural area, general community use, park, sportsground, area of cultural significance. The natural area category has a subset comprising foreshore, watercourse, bushland, escarpment and wetland.
3. Crown Land Negotiation Programme – aims to provide an opportunity for the strategic assessment of Crown land in local government areas and through negotiation involving the NSW State Government, Council and local Aboriginal Land Councils, have land transferred to Council or the Land Council. The programme aims to deliver local ownership of Crown land to benefit local communities, a reduction in red tape and regulatory burdens on local government, more efficient and streamlined management of public land and recognition of the importance of land to Aboriginal people and to support spiritual, cultural, environmental and economic benefits for Aboriginal people.
4. Each Council must employ or engage a Native Title manager to ensure that the Council’s dealings with the relevant land (Crown land irrespective of whether or not it is reserved, dedicated or vested in Council) comply with any applicable provisions of the native title legislation.

Current Council Management of Crown Lands under the Crown Lands Act 1989

Councils currently manage Crown land as the appointed reserve trust manager which manages the affairs of a reserve trust charged with responsibility for the care, control and

management of Crown reserves. As a result of the legislative reform, reserve trust managers are to be replaced by Crown Land Managers.

Management of Crown reserves can occur without the need for plans of management however the Minister can direct that a plan of management be prepared for a particular reserve and Councils can also elect to prepare a plan of management. Plans of management can be used to inform the future management of Crown reserves and they can also authorise additional uses.

The Local Government Act 1993 and Public Land Management

The *Local Government Act 1993* provides for the management of public land and the classification of such land as either “community” land or “operational” land.

Classification as community land reflects the importance of the land to the community because of its use and/or its special features. Community land is typically a “public reserve” type asset such as a sportsfield, showground, public park, community hall or natural area.

The majority of Crown reserves are to be managed as if they are community land under the provisions of the *Local Government Act 1993* which includes but is not limited to the following specific requirements/prohibitions:

- community land cannot be sold;
- community land cannot be leased, licensed or have the creation of any other estate over the land for greater than 21 years;
- community land can only be leased or licensed subject to restrictions outlined in Part 2 Division 2 of Chapter 6 of the *Local Government Act 1993* which deals with the use and management of community land;
- community land must have a plan of management.

The classification of Crown land as “operational” land requires the consent of the Minister.

Plans of Management

Plans of management generally require:

- categorisation of the land that focuses on the essential aspects of each area of the land;
- land management objectives;
- performance targets;
- means of achieving objectives and targets; and
- means of performance assessment.

Plans of management may be site specific or generic but it is important to understand that plans of management for Crown reserves in future will have to be prepared in accordance with the requirements of the *Local Government Act 1993*, even if a plan of management under the *Crown Lands Act 1993* is already in place.

The NSW Government has allocated \$7 million in funding over two (2) years to support council Crown Land Managers in the preparation of plans of management. This funding is not intended to cover all costs of developing plans of management and it is anticipated that, under a formula devised by Crown Lands, Shoalhaven City Council’s funding share is likely to be in the order of \$37,000. If plans of management for between 115 and 170 Crown reserves in the Shoalhaven LGA must be drawn up, there will be a substantial funding shortfall even if a majority of the reserves can be covered by a generic plan of management.

It has been estimated that site specific plans of management typically can be developed over a period ranging from 50 to 90 days but there will be exceptions at both ends of this range. This has the potential of being resource hungry in terms of both personnel and budget if plans of management are to be prepared in accordance with timeframes stipulated in the legislation. Plans of Management also require community consultation and this can add to timeframes and costs to manage the process.

The resourcing requirements for the re-writing of generic plans of management to consider the need to extend coverage to Crown reserves have not been identified at this stage.

The requirement to adopt a *Local Government Act 1993* compliant plan of management will be phased in over three (3) years from the commencement of the CLM Act.

Crown Reserve Use and Purpose

The use of a Crown reserve is limited by the purpose(s) for which the land is reserved or dedicated and any other permissible use(s) under the CLM Act or other Act. Use of Crown land generally must be consistent with or incidental or ancillary to the reserve purpose(s).

Management of Crown land under the *Local Government Act 1993* – Additional Considerations Provided by the *Crown Land Management Act 2016*

Council Crown Land Managers must conform to legal obligations for the management of Crown reserves provided by the CLM Act despite any other provision of the *Local Government Act 1993*. These additional considerations are summarised as follows:

- Crown reserves can only be classified “operational” with Ministerial consent;
- A category assigned to community land must closely relate to the reserve purpose (S3.23(3));
- The Minister has to be notified of any proposed categorisation as soon as practical (S3.23(2)) and has to give consent to any plan of management that would alter the categorisation of the land if it would otherwise require an “additional purpose” (S3.23(7)(d));
- The Minister can require alteration of an initial category and cannot give consent to a subsequent alteration if it is considered that the alteration is likely to adversely impact the use of the land for its reserve purpose;
- Council must obtain the consent of the Minister to the sale of Crown land;
- Council must comply with any conditions of any appointment instrument; and
- Council must comply with any Crown land management rule established by the Minister to influence the management of Crown reserves.

Other Legislative Implications for Crown Land

There will remain some marked differences for the management of Crown reserves and the management of “public land” under the *Local Government Act 1993* as a result of additional statutory requirements provided by the CLM Act.

These additional requirements address broader implications for Crown land management arising out of the environment from which Crown land, Native Title and Aboriginal Land Rights legislation has evolved.

It is important to recognise that these implications generally do not apply to “public land” under the *Local Government Act 1993*.

Native Title

The Native Title provisions in Part 8 of the CLM Act specifically recognise and expressly provide for compliance with Native Title requirements by Council Crown Land Managers.

The Commonwealth *Native Title Act 1993* provides legal recognition and protection of the rights of traditional ownership of land and waters that have always belonged to Aboriginal people according to their traditional laws and customs. The *Native Title Act 1993* also provides that native title may exist in relation to unallocated Crown land, State Forests, National Parks, Crown reserves, watercourses and certain leasehold interests.

Crown reserve management by Council Crown Land Managers must consider the recognition and protection of native title provided by the *Native Title Act 1993* to both minimise the risk of adversely impacting native title rights and of generating a liability for the State of New South Wales or Council.

The CLM Act in S8.6 requires that Council employ or engage at least one Native Title Manager to ensure that Council's dealings with the Crown estate comply with any applicable provisions of the native title legislation. This position does not exist in the current staff structure nor is it budgeted for however will in all likelihood be an "added responsibility" to an existing position within the Property Unit.

Aboriginal Land Rights

The *Aboriginal Land Rights Act 1993* provides that Aboriginal Land Councils may claim any reserved Crown lands that:

- are not lawfully used or occupied;
- do not comprise land needed or likely to be needed as residential land;
- are not needed for an essential public service; and
- are not subject to a native title determination application registered under the Native Title Act 1993 or subject to an approved determination that native title exists.

Any land use of Council managed Crown reserves must be consistent with the legal requirements provided by both Division 2 of the *Local Government Act 1993* (relates to community land) and the additional requirements of the CLM Act or risk constituting an unlawful use or occupation and therefore limiting the considerations under which the Minister may refuse a land claim.

Roads Act 1993

Crown roads provide lawful access to many privately owned and leasehold lands where little or no subdivision has occurred since the early nineteenth century. These roads are part of the State's public road network and are regulated under the *Roads Act 1993* and associated regulations.

In addition to overseeing Crown roads, the Minister for Lands and Forestry is currently responsible for the closing of public roads where Council is the relevant road authority and this often creates duplication and delay.

Proposed amendments to the *Roads Act 1993* are intended to address these inefficiencies and support roads administration in the following ways:

- Councils will be responsible for closing Council public roads in their local government area and Crown roads will remain the responsibility of the Minister for Lands and Forestry;

- the existing public consultation requirements and practices relating to road closures will not change;
- relevant safeguards and appeal provisions are included in the proposed amendments to ensure a road closure is appropriate and does not deny access to a property;
- where an identified hazard presents a risk to the safety of road users or the environment on a Crown road not generally used for access by the public, the Minister for Lands and Forestry will be able to direct the users to repair and maintain the road.

Proposed amendments to the *Roads Act 1993* have triggered a review of policy within Crown Lands on the administration of Crown roads. Full details of this review are not yet available for consideration by Council but will be the subject of a further report to Council when the full implications of the policy review are understood.

It is likely that such review will provide opportunities to consider the transfer of Crown roads to Councils, the closure and sale of Crown roads and approvals to carry out road works where a Crown road is not suitable for transfer to Council.

Financial Implications

The implications for Council of the CLM Act, which are expected to materialise as the date of commencement of the Act draws nearer, are expected to be significant.

Staff will be tasked with responsibilities for classification and categorisation of Crown land as well as the preparation of plans of management notwithstanding acceptance of a proposition that specialist skills will have to be engaged to fulfil Council's legislative responsibilities as outlined in this report. The requirement to develop new PoMs within three years will have significant resource implications for Council. Although the NSW Government has allocated seven million dollars (\$7,000,000) over two years to assist Councils in the preparation of PoMs this likely to equate to little more than \$37,000 to each Council.

In addition, the employment or engagement of a Native Title Manager and the deployment of personnel to represent Council in the Crown land negotiation programme will have financial implications which are yet to be quantified.

A working party has been formed so that the full implications can be better understood and plans put in place to ensure that Council's short and long-term obligations are met and that financial planning is undertaken to ensure that resourcing requirements can be provided for in the development of future budgets.

The Natural Resources & Floodplain Unit has been identified as a stakeholder for inclusion in consultation.

SN18.15 Currarong Erosion Remediation Project

HPERM Ref: D18/211178

Group: Planning Environment & Development Group
Section: Environmental Services

Attachments:

1. Currarong Q&As final [↓](#)
2. Currarong Beach Erosion Remediation Study - Options Assessment Report (under separate cover)
3. Summary of Community Meeting Outcomes - 26/05/2018 [↓](#)
4. Summary of Community Submissions - Currarong Erosion Remediation Project - 2016/17 [↓](#)

Purpose / Summary

To provide an update on the status of the project and to seek Committee/Council's endorsement to continue.

Recommendation (Item to be determined under delegated authority)

1. Committee endorse the future strategy of this project as detailed in this report and recommend to Council accordingly.

Options

1. As per the recommendation

Implications: The project will comply with the legislation and be endorsed by NSW DoI – Land and Water as the land owner. Council will be required to fund further technical investigations and allocate staffing resources to undertake further community consultation. The timeframe for project completion will also be extended.

2. Proceed with the Currarong Erosion Remediation Project as per the Technical Design and Review of Environmental Factors, which is based on the three preferred coastal hazard management options identified by Council, the community and state government agencies.

Implications: The Remediation Project wouldn't comply with the adopted CZMP (LA3.2 & LA3.3) and would be built unlawfully without landholder (NSW DoI – Land & Water) consent, who are also the licensing authority.

Background

History/Process to Date

Currarong Beach is an open-coast beach located north-east of Jervis Bay on the Shoalhaven coast. The Beach has been studied by several leading coastal engineering specialists (e.g. WP Geomarine 1995) and the 2004 Snowy Mountains Engineering Company Citywide Risk Assessment confirmed its status as a high-risk erosion site. The 2016 Risk Assessment completed by Advisian confirmed all previous assessments (CES 2003, SMEC 2009, SMEC 2011) using the most recent data sets and survey information taken following the June 2016 East Coast Low (ECL) storm.

Coastal engineering studies have confirmed a long-term recession rate of 0.17m/yr along the western half of the beach and of 0.25m/yr along the eastern half (SMEC, 2007). Such a long-term recession would result in a landward movement of approximately 8.5 to 12.5m within 50 years and would make both private (residential properties) and public assets (road, water and sewage pipelines) more vulnerable to future coastal storms.

Council resolved to undertake a comprehensive study to determine appropriate options for beach erosion remediation (see attached Currarong Beach Erosion Design Study: Options Assessment Report 2011). This report investigates possible options for the beach erosion remediation including sand nourishment, construction of groynes, sea walls or breakwater, realignment of Currarong Creek entrance and combinations of 19 different options.

The 19 options considered were:

1. **Vertical Seawall (300 m):** Provision of a 300m long vertical front concrete seawall to protect the eastern end of Warrain Crescent from coastal erosion;
2. **Revetment (300 m):** Provision of a 300m long sloping rock or gabion revetment to protect the eastern end of Warrain Crescent from coastal erosion;
3. **Vertical Seawall (entire beach):** Provision of a vertical front seawall extending from the entrance of Plutus Creek to the entrance of Currarong Creek to protect Warrain Crescent (950m long)
4. **Revetment (entire beach):** Provision of a sloping revetment extending from the entrance to Plutus Creek to Currarong Creek (950m long)
5. **Artificial Reef:** Provision of an artificial reef offshore to improve the wave climate of the beach and encourage accretion along Warrain Crescent
6. **Groyne (rock) at the centre of Currarong Beach:** Provision of a permanent rock groyne which would involve using boulders to raise the level of the existing rock reef at the centre of the beach to encourage accretion of sand updrift and improve recreational amenity of the beach on both sides of the groyne. This option includes beach nourishment;
7. **Groyne (geotubes) at the centre of Currarong Beach:** Provision of a trial geofabric groyne at the existing rock reef at the centre of the beach to encourage accretion of sand updrift and improve recreational amenity of the beach on both sides of the groyne. Such a groyne would be subject to evaluation of its effectiveness over time. This option includes beach nourishment;
8. **Groyne (rock) at eastern end of Currarong Beach:** Provision of a permanent rock groyne on the western side of Currarong Creek acting as a training wall to encourage accretion of sand updrift and improve recreational amenity of the beach west of the groyne. This option includes beach nourishment;
9. **Groyne (geotubes) at eastern end of Currarong Beach:** Provision of a more temporary geotube groyne acting as a training wall on the western side of Currarong Creek to encourage accretion of sand updrift and improve recreational amenity of the beach west of the groyne. Such a groyne would be subject to evaluation of its effectiveness over time and includes beach nourishment;
10. **Relocation of Currarong Creek entrance with training wall:** Creation of training walls to straighten Currarong Creek entrance to encourage accretion on both sides of the new entrance;
11. **Beach nourishment only:** Beach nourishment of the western half of Currarong Beach using sand obtained from Plutus Creek to form a dune and beach berm;
12. **Beach nourishment plus groyne and revetment (300m):** Beach nourishment of the area seaward of Warrain Crescent using sand obtained from Plutus Creek and Currarong Creek to form a dune and beach berm, combined with construction of a rock or geotube

groyne to prevent loss of the nourished beach profile due to longshore drift at the centre of the beach and construction of a 300m long revetment to reduce the coastline hazard risk to the eastern half of Warrain Crescent;

13. **Beach nourishment plus vertical wooden dune fence:** Regular beach nourishment of the area seaward of Warrain Crescent using sand obtained from Plutus Creek and Currarong Creek, combined with the construction of a timber dune fence to stabilise the newly created dune and berm;

14. **Beach nourishment plus dune reinforcement with geotextile:** Regular beach nourishment of the area seaward of Warrain Crescent using sand obtained from Plutus Creek and Currarong Creek to form a dune and beach berm, combined with an underlayer composed of geotextile wrap or sand tube;

15. **Planned Retreat with voluntary purchase:** Planned retreat from the coastline, involving voluntary purchase of homes at risk on Warrain Crescent east of Cambewarra Rd at market value and rehabilitation of the land on which they were on, with its return to public use;

16. **Road relocation:** Removal of Warrain Crescent east of Cambewarra Rd where at threat and creation of a new access road landward of the houses;

17. **Planning controls:** Planning controls which prevent further development to the houses when in the coastal hazard zone through the DCP and LEP;

18. **Dune Management Only:** Dune management including accessway management;

19. **Do nothing:** This option assumes a “Status Quo” of Council’s activities.

Computer wave and refraction modelling SWAN, REF/DIF and SBEACH were undertaken to examine the coastal processes of the area and to refine the coastal management scheme for this design study.

Current Situation

The current proposed Currarong Erosion Protection Remediation works, identified in **section LA3.2** of the current adopted Coastal Zone Management Plan, are based on the 19 coastal management options identified by Council. The final three preferred options are:

1. **Trial Groyne** - A groyne located along at the eastern end of Warrain Beach, to allow natural build-up of sediment seaward of the area that is undergoing recession in addition to beach nourishment to minimise the impact on the beach down drift of the groyne;
2. **Sand Nourishment** - Beach nourishment at the central reef where the dwellings behind the dune are the closest to the beach; and
3. **Dune Management-** Maintain and improving the health of the dune vegetation.

In June 2016, the NSW South Coast was impacted by a large East Coast Low (ECL) storm, which was generated in the NSW mid-coast and tracked south. The direction of the ECL impacted many of the Shoalhaven beaches with a north-easterly aspect. Warrain Beach had 20,000m³ of sand lost during this event and all eight beach accessways were destroyed. Following this event, the Currarong community endorsed the progression of the above three coastal options to a detailed design and approvals stage.

It was at this stage that it was identified that the Beecroft Pde foreshore crown reserve, where private assets (residential properties) were impacted by coastal hazards during the 2016 ECL storm, would require rock revetment works to protect these assets.

Council directly appointed Royal Haskoning DHV to undertake the detailed design and REF for the Beecroft Pde rock revetment and the Warrain Beach trial geotextile groyne/sand nourishment. The draft detailed design and REF have been prepared and have been sent to the following state government departments/agencies for feedback/review:

- Jervis Bay Marine Park Authority;
- NSW Office of Environment and Heritage; and
- NSW DoI – Land and Water.

To date no feedback has been received from any of these departments/agencies. Council and Royal Haskoning DHV staff meet with the Currarong Community in May 2018 to give an overview of the design and the REF. At this meeting, the issue of microplastic contamination from the geotextile material was raised by the community. Council and Royal Haskoning DHV are currently investigating this issue.

A key requirement of the project will be monitoring of the sand build up. This will be completed in the form of 6-monthly surveys. The groyne and the rock revetment will also require regular on-going maintenance.

Community Engagement

On 30 August 2010, an options assessment workshop was held with Council's Shoalhaven Coastal Committee.

The NSW Office of Environment & Heritage Policy options, under the previous Coastal Protection Act 1979, fell under three main classes:

- Retreat;
- Protect; and
- Adapt

A preliminary options assessment was provided by SMEC with all options considered, describing the advantages and disadvantages of each.

The purpose of the options assessment was to provide a basis for the workshop to consider various options for shortlisting for future concept design work, with guiding Ecologically Sustainable Development principles for management decisions on the NSW coastline.

An appropriate coastal management option, based on the coastal processes at the site, was selected after the workshop with Council and the Committee. This comprised a combination of the groyne structure, beach nourishment and dune management. At this stage, prior to the 2016 ECL storm, the preferred community option was to repeat beach scraping and sand nourishment.

In October 2016, a community meeting was held at Currarong, with over 100 people in attendance. The outcomes of this meeting, plus the feedback received via Council "Get Involved" project page, confirmed the community support for the trial groyne, sand nourishment and dune management project option determined in 2010.

Following the October 2016 Community Meeting, Council undertook a community engagement process via Council's "Get Involved" platform. Approximately 45% of the submissions received were in favour of the trial geotextile groyne, 20% were neutral and 35% opposed (see attached spreadsheet for the summary of submissions received).

A second community meeting was held on 26 May 2018, in conjunction with the Currarong Progress Association, to discuss the current project progress, including:

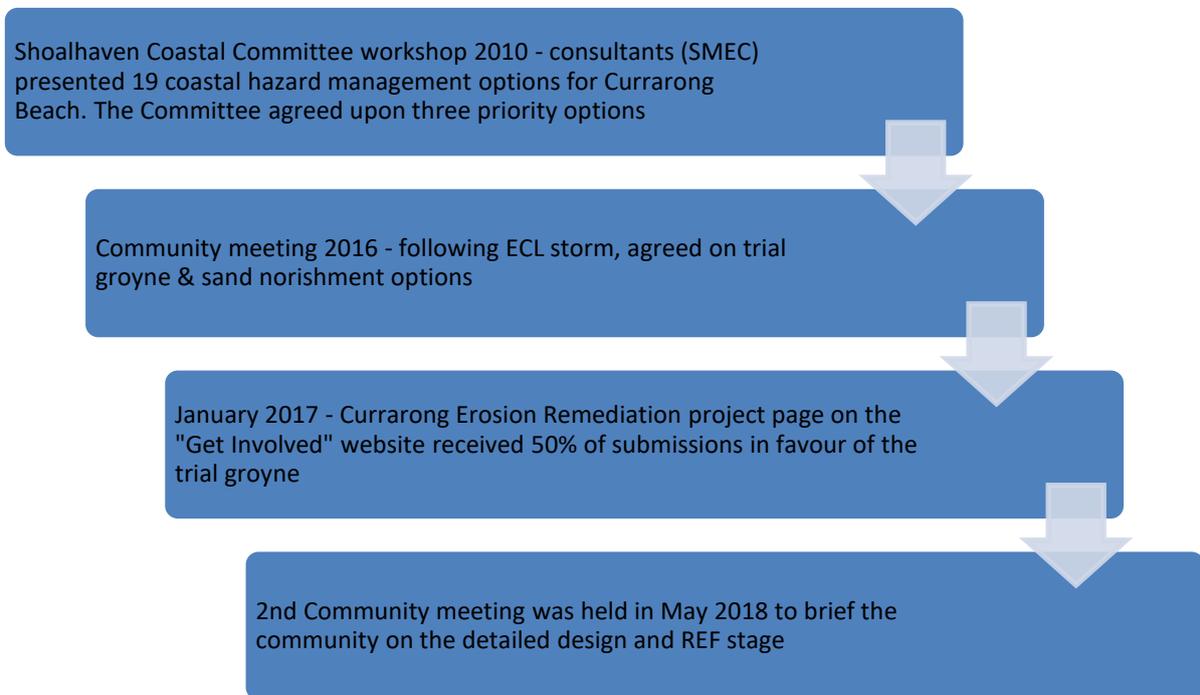
- Design drawings for Warrain Crescent;
- Design drawings for the rock revetment at Beecroft Parade;
- Additional beach access at the western end of the beach; and

- The Review of Environmental Factors including the Aboriginal Heritage Impact Permit application.

The May 2018 community meeting, Council committed to the following:

- Installing an additional fifth beach accessway at the eastern end of Warrain Beach, opposite the Cambewarra Rd and Warrain Crescent;
- Investigate and report back the potential microplastic marine contamination from the geotextile material used to construct the groyne; and
- Prepare an artist impression of the geotextile groyne, to give the community an idea of the visual impact of the structure.

The following is a summary of the process of consultation undertaken in deciding on the coastal hazard management options to form the basis of the detailed design of the Currarong Erosion Remediation Project.



SN18.15

Table 1: Community consultation chronology – Currarong Erosion Remediation Project

NSW Department of Industry (DoI) – Land and Water Response to Shoalhaven Coastal Zone Management Plan (CZMP)

In 2017 and recently in May 2018, Council sought endorsement of the Shoalhaven Coastal Zone Management Plan from the DoI – Land and Water, prior to seeking certification from the NSW Minister for the Environment, as per the requirement of the NSW Coastal Management Act 2016. DoI – Land and Water has responded to Council and sought changes to the CZMP before the Department would provide endorsement. One of changes that the Department requested of Council was to the Currarong Erosion Remediation Project, both the trial groyne/sand nourishment and the rock revetment at Beecroft Pde.

DoI expressed concern that the CZMP did not adequately describe how this management strategy was identified or the process followed to evaluate the various coastal hazard management options. Since receiving the Department’s response, the actions in the CZMP have been updated to state that Council will undertake detailed technical investigations of

coastal hazard management options that are feasible for this location, cognisant of coastal processes and risks.

Please note that positioning the groyne onto the narrowest point of the sand spit was proposed to manage the risk of a creek “break through” during a flood event. The location of the groyne has been a subject of coastal engineering considerations, which, whilst using current best practice, do not produce a definitive conclusion, and this uncertainty justifies the use of geofabric to “test the design” over time before the transition to a permanent rock structure. Please refer to attached Q&A Handout for further information.

Future Strategy

The future strategy for progressing the Currarong Erosion Remediation Project, given the response from DoI – Land and Water and outcomes of the 26 May 2018 community meeting, are as follows:

1. Council’s Environmental Services provide the following information to the NSW Department of Industry – Land and Water:
 - a. confirmation of the location of the proposed erosion control works, with a survey of cadastral boundaries and confirmation of the land status where the works will be situated;
 - b. all background and current information, including technical reports/plans and community consultation/workshop outcomes, to assist in adequately describing how these management options have been identified and the process followed to evaluate the various management options that could be considered for this location;
2. Council continue to seek feedback/comments from state government agencies, previously listed, on the Beecroft Pde rock revetment and Warrain beach trail groyne/sand nourishment detailed design and REF;
3. Following the receipt of the above feedback/comments, Council Staff are to organise a meeting with Catherine Knight, Manager Coastal Management Unit, NSW DoI Land and Water and the Currarong Progress Association executive to discuss what types of investigations into the coastal options they require and how the project can progress; and
4. Council and Royal Haskoning DHV continue to investigate the microplastic contamination risk for the trail geotextile groyne.

A report to Council will be provided prior to placing the REF on public exhibition.

Financial Implications

The adaptive management of the final design and construction stage has operational and capital budget allocation to meet reasonable community and Government expectations. However, additional engineering design may have substantial cost implications for Council.

Additional investigations into the coastal management options, as per the feedback from NSW DoI – Land and Water, will also require additional staff time for research, preparation of briefs and community consultation. The additional investigation and research into the microplastic contamination will also require additional costs for the consultant.

The total projected cost for the Beecroft Pde rock revetment and the trail groyne/sand nourishment, with a 40% contingency added, will be \$1,616,160. If Council seeks external grant funding to assist with the project, under the NSW Coastal Management Act 2016, this will trigger the requirement for a Cost Benefit Analysis.

Risk Implications

The 2018 Coastal Risk Assessment for Currarong again confirmed the road, water supply and private property are at high risk. Several risks management strategies are included in the current design such as positioning the groyne at the narrowest point of the spit to potentially manage the risk of a creek break through during a flood event with loss of sand nourishment. However, endorsement by NSW DoI – Land and Water as the land owner is required.

Monitoring and maintenance will be essential risk mitigation components of any management option. Also the potential risk from microplastic contamination is being investigated and will require future adaptive management.



Gary Blumberg of Royal Haskoning DHV will provide additional detail about coastal processes and the technical designs for Currarong Beach and Becroft Parade.

The story so far in a nutshell...

Coastal hazards, and associated risks, at Currarong Beach have been extensively investigated by coastal experts since the mid-1990s and are reasonably well understood. Coastal erosion remediation options have been assessed and discussed with the community over many years since the Currarong Beach Erosion Design Study was completed by SMEC in 2011. Since then, following further assessment and ongoing community consultation, a trial geotextile groyne with beach nourishment is confirmed as the favoured option.

The June 2016 storm demonstrated and confirmed that we now need to act to mitigate the impacts of ongoing beach recession.

- **June 2016 storm and the response**

The 2016 storm destroyed all beach access stairs and left a major erosion scarp. It was estimated that 20,000 m³ was eroded from Currarong Beach.

Emergency interim works were completed in December 2016 and proved to be reasonably effective. However, the beach remains vulnerable to future storm events.

As a result of the June 2016 storm, Council engaged Royal Haskoning (RHDHV) to further investigate adaptive responses and to assist with community consultation.



Currarong Beach post June 206 storm

On October 14, a public meeting was held at Currarong and Gary Blumberg (Technical Director – Coastal for RHDHV) outlined all the work that had been undertaken over many years to understand the coastal processes and assess which remediation options are most feasible and effective for Currarong Beach.

Once again, the combination of a trial geotextile groyne with beach nourishment was confirmed as the favoured option.

- **Is 'Do Nothing' an option?**

Data collected over more than 60 years confirms that Currarong Beach is eroding. The coastal processes impacting the beach, particularly during storms, result in a beach that is gradually eroding and therefore receding.

The Coastal Risk Assessment (2018) for Currarong Beach states that the road, water supply infrastructure and 10 private properties at the eastern end of Warrain Crescent have a high risk rating by 2050 as shown in the 2018 risk map below.



Evidence shows that Currarong Beach is a receding beach and doing nothing has not been advised by any of the coastal experts who have studied this area.

• **Why a Groyne?**

Out of all the options considered by coastal experts, a trial geotextile groyne is considered to be necessary to mitigate the impacts of beach erosion and ongoing recession at Currarong.

The Currarong Beach Erosion Design Study undertaken by SMEC in 2011, presented an assessment of nineteen options of which nine were shortlisted as being potentially suitable for Currarong. The table below lists these 9 options and provides some comment about their application, feasibility and effectiveness.

Option	Comment	At Currarong?
Seawalls or revetments	This is a very expensive option and creates 'edge effects', meaning that the dune will erode at each end of the wall, requiring ongoing management and maintenance, adding to the cost. Eventually the beach is lost with ongoing recession.	No
Artificial reef	Worldwide, artificial reefs have proven to be ineffective in managing beach erosion. The risks of an artificial reef are too high and exposed for it to be supported as an option.	No
Trial geotextile groyne structures	Groynes have proven to be effective in trapping sand on a beach because of longshore sediment transport as happens at Currarong Beach.	Yes
Beach nourishment – on its own or accompanied with revegetation	Proven effective as a 'soft option', adding sand to the front of the dune improves dune resilience in preparation for the next storm. To be effective It's been estimated that 15,000 m ³ of sand is required and that compatible sand of sufficient quantity could be sourced from Currarong Creek and Plutus Creek. A groyne is required to accompany beach nourishment to manage natural sand loss.	Yes
Dune management	This includes beach nourishment as well as enhancing dune vegetation cover to improve sand retention on the beach. Dunes provide a natural defense for the land and assets behind the beach, so restoring and enhancing the dune system will assist in protecting valuable assets.	Yes
Planning controls	These are covered in the Citywide DCP chapter G6 – Coastal Management Areas.	Yes
Planned retreat – relocation of the road and/or property purchase	This is not a viable option for Currarong due to lack of feasible funding options	No
Relocate and train entrance to Currarong Creek	This is not a recommended option due to cost and environmental impacts	No
Do nothing	This is not recommended given the regular beach	No

	erosion and evidence of ongoing beach recession	
--	---	--

Confirmed in the assessments by SMEC and followed by workshops with Council, Councils' Coastal Management Committee, community representatives and OEH officers, a combination of three of the options listed above were shortlisted for mitigating the impacts of beach recession at Currarong; a groyne, beach nourishment and dune management.

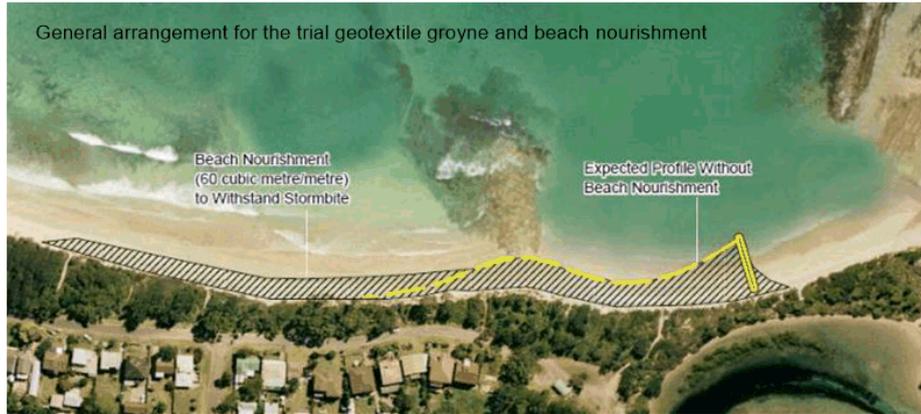
These options have been confirmed by the 2018 RHDHV document – Currarong Coastal Erosion Protection, Technical Design Report.

Monitoring: In addition to implementing these actions, a fourth component will be added – monitoring. Beach survey transects will be undertaken to monitor sand movement in order to understand if the project has been successful in its aim of keeping sand on the beach and mitigating the impacts of ongoing erosion and recession.

- **Is the groyne permanent?**

The current groyne design is temporary and easily removable. The purpose of the groyne is to keep sand on the beach and slow down, or prevent, sand loss which is driving beach recession.

Should the monitoring show that the groyne is ineffective in keeping sand on the beach, it can be removed with no lasting changes to the beach or dune.



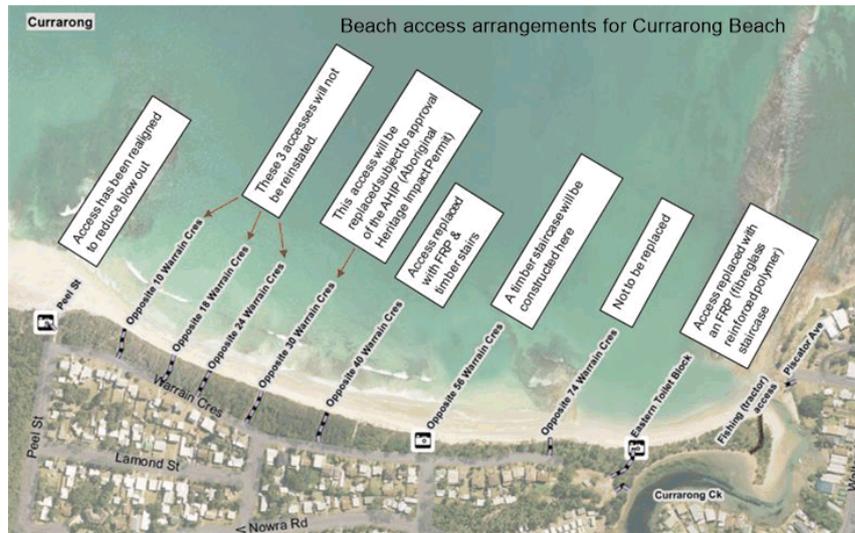
- **When will the additional beach access ways be built ?**

Since the June 2016 storm, 2 beach accesses have been rebuilt and the Peel St access has been realigned to limit blow out and sand loss.

There will be two additional accesses constructed.

- ✓ A treated pine staircase opposite 56 Warrain Crescent (to replace the lookout) and installed with minor sand nourishment from local beach scraping
- ✓ Opposite 30 Warrain Crescent, subject to the AHIP approval and funding availability.

Timing is dependent on approval of the AHIP and funding availability.



• **What is proposed for Becroft Avenue erosion remediation ?**

The design is for a permanent rock revetment with a boardwalk onto the rock platform. As this area is naturally protected by the rock platform it remains a second priority after the Currarong Beach groyne/nourishment project.

The intention is to complete the whole remediation project in stages. The project is currently in the engineering design phase and explained in detail in the RHDHV presentation.

• **When will construction start ?**

Unfortunately, we are not able to confirm a construction timeframe due to the 2018 review of the Shoalhaven Coastal Zone Management Plan which is currently on public exhibition. Following public exhibition the Plan will be forwarded to the NSW Minister for Environment for certification. Without certification, Council will not be eligible for funding under the NSW Coast and Estuaries Program which is Council’s main source of funding, especially for larger more costly coastal projects such as this one. With certification, Council can apply for funds to implement the project

The design process is approaching completion and, should the CZMP be certified, a project funding application will be submitted in June 2018. The application approval timeframe is likely to take some months, as will the tender process.

• **Can we walk on the beach?**

Due to standard public safety considerations, it’s very likely that public access to the beach will be restricted during groyne construction and sand nourishment works. Both activities will require large machinery to be operating on the beach. Following construction the beach fill batters will easily allow walking over the groyne near the back of the beach. Inconvenience will be minimised where possible.

Comments Welcome

Planning Environment & Development Group



File: 7514E
Document No. D18/193721
Date 08/06/2018
Subject Currarong Coastal Erosion Project – Public Meeting – 26 May 2018 – Outcomes

FILE NOTE

The following outlines the outcomes of the public meeting held at 2pm on 26 May at the Currarong Community Hall. The purpose of the meeting was to give the residents/ratepayers of Currarong an overview of the Currarong Erosion Remediation Project detailed design and the outcomes of the projects review of environmental factors, undertaken by Royal Haskoning DHV.

The meeting was chaired by the Currarong Progress Association executive, and Ray Massie, Coast and Estuaries Officer and myself from Council staff and Gary Blumberg, Technical Director – Coastal, from Royal Haskoning DHV. There was approximately 26 people in attendance. A Q & A fact sheet on the project and background was prepared for the project and handed out to attendees (D18/178831)

Tony Lund, Chair of the Currarong Progress Association opened the meeting and introduced staff and Gary, he gave a brief overview of project. I addressed the meeting and gave a background to the project, both the trail groyne at Warrain Beach and the rock revetment at Beecroft Pde, and how we had decided on the use of a trail groyne.

Gary gave a more detailed presentation on the project details and the coastal processes and hazards affecting Warrain Beach and the Beecroft Pde frontage (D18/179081). We then took questions from the floor from those in attendance.

The three key outcomes of the meeting were as follows:

1. Council to install an additional 5th beach access way at Warrain Beach, opposite 56 Warrain Crescent
2. Investigate the impacts on the geotextile materials used in the trail groyne on the marine environment
3. Council to prepare an artist impression of what the finished trail geotextile groyne will look and have the available on the Councils website.

Alasdair Stratton
Manager - Natural Resources & Floodplain Unit

Currarong Beach Erosion - Community Submissions			
Document No.	Name	Comments	opinion
D16/326048/D16345446	Francois Kempster	Request for link to make a comment. Council's generic email address provided. No record of a submission.	
D16/326217	Diana Perkins	Supports trial groyne along with beach nourishment. Would like a updated diagram of what groyne will look like with proposed height, width. Also Council should remove the sand spit placed at eastern end of dune in the 50's or 60's which resulted in significant sand build up in creek. Use this sand for beach nourishment rather that from bosom.	
D16/333503	Dr Cassi Plate	Not saying 'do nothing', concerned about impacts of groyne 1. that the work to reinforce the dune and protect 10 houses and the road is due to vegetation being removed for views. Houses should be 'acquired'. 2. that the build up of sand on one side of the groyne could see sand disappear from the other side and that more groyne would be required 3. Removing sand from healthier areas, may spread the risk to those places 4. Is there a conflict of interest? Who stands to gain the contracts for the building of the groyne? 5. Attraction of Currarong will be lost with 'unsightly' groyne	
D16/334431	Bruce Selby	Fully supports the groin - especially likes the geotextile material	
D16/334433	William Watson	Concerns: guarantees little and creates potential for major damage. 1. Uncertainty re the side effects of a groyne and whether it will have the desired result 2. potential damage to the creeks due to removing sand 3. the creek entrance area is popular with families and is protected from the nor'easters. Doesn't want this area damaged. 4. the groyne would create a scar and a barrier 5. the natural feature of Peels Reef isn't resulting in a build up of sand, so why would a built structure do this? 6. cost to rate payers - other areas were damaged. Why is the money just being spent on one area? 7. will the groyne be removed if it fails or is found to create unacceptable environmental problems?	

D16/334695	Richard and Stephanie Hall	Doesn't support a groyne as the wave action is 'surface chop' not 'ground swell'. No mention made of the success rate of groynes. Suggests a sloping rock wall in the affected area filled with sand and planted with dune grasses. Noted that Council's coastal erosion consultants are also the contractors for the groyne construction - conflict of interest.	
D16/338934	Lynette Lamond	Copy of William Watson's letter	
D16/341605	Anne Norton	Opposed to the groyne. Sceptical of the groyne impacts, especially 'downdraft sand depletion', the potential to cause other unforeseen problems, impacts on beach access and aesthetics. Also concerned that it only protects 10 properties and isn't of benefit to beach users, other residents and visitors.	
D16/341623	Jenny Bull	Support the trial geotextile groyne and beach nourishment	
D16/343531	W G Lamond	Doesn't support a groyne, does support beach nourishment. Concerns about the expense with no guarantee of benefits. Prefers to let nature return the sand to the beach.	
D16/329090	Christine Wayne	Concerned that proposed work doesn't include Beecroft Parade. No mention of the groyne.	
D16/345394	David Astridge and Abbie Galvin	General support for a groyne. Concerns about the process and the information presented at the meeting. Other comments focus on the access ways.	
D16/351875	David Johnstone & Jocelyn Whittington	Compliments on the information and consultative approach. Concerned that study material is 4 yrs old, no aerial photos of current situation, no mention of Abraham's Bosom or Beecroft Pde, suggest that as much effort be put into the risk analysis of building the groyne as not building it with community input into the risk analysis. Include a do nothing	
D16/352357	Peter Cumes	Council should undertake actions as required, which are in the best interests of the community, to implement long term protection/remediation measures along Currarong Beach.	
D16/355491	Currarong CCB (Tony Lund)	...from last night's meeting (17 people) that there was unanimous support for the consultant's recommendations for the longer term management of the beach and dunes	
D16/360756	Peter Price	Does not favour artificial solutions at Currarong. Vegetation destruction for views needs to be addressed and the false sand hill should be removed and spread on the beach.	
D16/346839	Jennifer Faddy	Distrust of 'science' given what's happened to the creek. No visual intervention is acceptable.	

SN18.16 Citizen science for coastal monitoring

HPERM Ref: D18/229248

Group: Planning Environment & Development Group
Section: Environmental Services

Purpose / Summary

To provide the committee with an update on Photomon 'Citizen Science – utilising technology to monitor the coast' project, as per Council resolution MIN 18.389, dated 22 May 2018.

Recommendation (Item to be determined under delegated authority)

That

1. Council Staff investigate NatureMapr as an alternative to using Photomon and if determined that NatureMapr is an appropriate alternative, utilise this App as a coastal monitoring tool for volunteers and staff.

Options

1. As recommended.

Implications: Council officers' time would be required initially to investigate the suitability of NatureMapr and ability to utilise data collected via this technology.

2. Not investigate or utilise NatureMapr.

Implications: Council officers' would need to continue researching suitable, cost effective, options for coastal monitoring.

Background

Citizen science is a vehicle for building Council/community relationships and provides Council with valuable data that will enable staff to more effectively manage the environment in a cost-effective manner.

Photo monitoring is a visual tool that integrates with traditional monitoring methods, such as land survey, to capture the physical changes in dynamic natural landscapes. Monitoring often uses a combination of built and vegetation features as key monitoring points where shorelines fluctuate naturally through time. Visual monitoring is increasingly important in the landscape to demonstrate natural cycles.

On 22 May 2018, Council resolved that:

1. Council endorse the opportunity to engage in a citizen science project by taking up the three-month free trial offered for the Photomon App;
2. Council seek an expression of interest through the Shoalhaven Natural Resources & Floodplain Management Committee, Community Consultative Bodies and Shoalhaven Bushcare Groups for volunteers to be involved in the citizen science project via the Photomon App; and

3. *A further report be provided to the Shoalhaven Natural Resources & Floodplain Committee and Council on the outcomes of the trial to determine whether to proceed with a full subscription for future coastal monitoring.*
4. *The public be invited to contribute to the project*

Following Council's endorsement of the free, three-month Photomon trial, Staff contacted the relevant officer at the Northern Agriculture Catchment Council (NACC) in Western Australia to confirm Council's participation. Staff were informed that Photomon was under 'review' and that Council Staff would be informed of the outcome of the review at the end of June 2018. After not being informed of this outcome, in July 2018, Staff again emailed the contact officer and received an automated reply saying that the officer no longer worked with NACC.

Considering Photomon was under review by the company offering the free trial and that the relevant officer for this trial no longer worked at the company, the prospect of participating in a free trial was becoming doubtful. However meanwhile, a new citizen science platform option emerged in Shoalhaven - [NatureMapr](#).

Community volunteers in Shoalhaven linked up with Canberra NatureMapr and the Atlas of Life in the Coastal Wilderness and established the [Atlas of Life Budawang Coast](#). The NatureMapr App (referred to as Nature Mapr) is an easy tool for anyone to add photos to build a data base of biodiversity in the region - from the Great Dividing Range to the coast; from Moruya to Kiama. The aim of NatureMapr projects is to identify as many living creatures as possible. NatureMapr may also be suitable for posting photos of landscape features such as lake entrances and beaches.

Environmental Services Staff are already collaborating with NatureMapr volunteers. Two workshops were held on 10 July 2018 at the Shoalhaven Entertainment Centre, one for community and one for Staff, to provide NatureMapr information and training. Council was invited to become a NatureMapr administrator and has committed \$20,000 to further develop the project.

Council staff will continue to liaise with the NatureMapr team to identify how the App can be adapted to function as a coastal photographic monitoring tool. Staff will notify the Natural Resources & Floodplain Management Committee, Community Consultative Bodies and Shoalhaven Bushcare Groups, if and when, NatureMapr is functional and available as a coastal monitoring tool.

Community Engagement

NatureMapr and the Atlas of Life Budawang Coast, is a community project. It is a community volunteer team driving this project and they were responsible for engaging with Council and forming the working relationship that is already proving to be beneficial to Council.

The community volunteer team also facilitated and ran the two workshops held on 10 July, 2018.

Policy Implications

Using NatureMapr to monitor changes to estuary entrances and beaches will better inform coastal management and policy decision making.

Financial Implications

Council has already provided \$20,000 to the NaturMapr project. Existing staff time will be required to manage and monitor the project. Adapting the App to function as a coastal monitoring tool will not incur any additional cost.

Risk Implications

A major focus of coastal management is managing the risks associated with coastal hazards and dynamic coastal environments. Photo monitoring is a useful tool that integrates with traditional monitoring methods, such as land surveys, to capture changes in the coastal environment to better inform coastal management decision making.

SN18.17 Shoalhaven City Council - Strategic Approach to Managing the Natural Environment

HPERM Ref: D18/229526

Group: Planning Environment & Development Group
Section: Environmental Services

Purpose / Summary

Provide the Shoalhaven Natural Resources and Floodplain Committee with information on Council's strategic direction on the sustainable management of the natural environment under ownership or management of Shoalhaven Council, as per MIN SN17.20.

Recommendation (Item to be determined under delegated authority)

That the Committee receives the report for information.

Options

1. As per the recommendation
Implications: Nil
2. Recommendation other than provided
Implications: Depend on the recommendation

Background

On 7 September 2017, the Shoalhaven Natural Resources & Floodplain Committee passed the following resolution:

1. *The following motions submitted by Ian Stewart be considered by Staff and reported back to the Shoalhaven Natural Resource & Floodplain Management Committee:*
 - a. *Strategic approach progress - the Committee be regularly advised of the progress being made in developing and implementing Council's strategic approach to managing the natural environment so that committee members can make an ongoing contribution to help inform, shape, monitor and review this strategy, especially in relation to the high-level vision, values, principles, goals and priorities.*
 - b. *Evaluating development impacts*
 - i. *Implications of the current strategic directions on the natural environment, especially in relation to tourism and residential development impacts, should be considered carefully by this Committee as an important part of our role and responsibility.*
 - ii. *All tourism developments should be required to establish a business case which includes a contribution of funds for required infrastructure, maintenance and compliance costs to preserve our natural environment*
 - c. *Practical collaborative management of impacts - Shared responsibility with NPWS for information and awareness raising, regulation and compliance controls to*

manage the increasing impacts of human activity, such as dog walking in sensitive natural environments, should be aligned and jointly undertaken.

2. *Ian Stewart and other relevant Committee members to be invited to a meeting so that Staff can brief members further on Council's strategic approach.*

Response Part 1a)

As part of the Integrated Strategic Planning process, Shoalhaven City Council has prepared a Community Strategic Plan. This CSP has the following vision for the management of the Shoalhaven LGA up to 2023:

"We will work together in the Shoalhaven to foster a safe and attractive community for people to live, work, stay and play; where sustainable growth, development and environmental protection are managed to provide a unique and relaxed lifestyle."

The key component of the CSP vision that relates to the strategic integrated management of the natural environment, is the second part of this vision that relates to sustainable growth, development and environmental protection. This is underpinned by the core principles of ecologically sustainable development, which requires the integration of economic and environmental considerations for the following:

1. *The precautionary principle - where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental damage;*
2. *Intergenerational equity;*
3. *Conservation of biological diversity and ecological Integrity; and*
4. *Improved valuation, pricing and incentive mechanisms.*

The CSP also uses community indicators to provide a snapshot of progress towards the plans objectives. The methods used to capture data on the progress indicators is done via an annual community survey (see community engagement for results of surveys on natural environment management), which together with other Council data measures the progress of the CSP objectives.

The CSP has identified five key areas, which set out the objectives and strategies for the strategic management of the city up to the year 2023. These are:

- People;
- Place;
- Prosperity ;
- Leadership; and
- Sustainable Service and Programs.

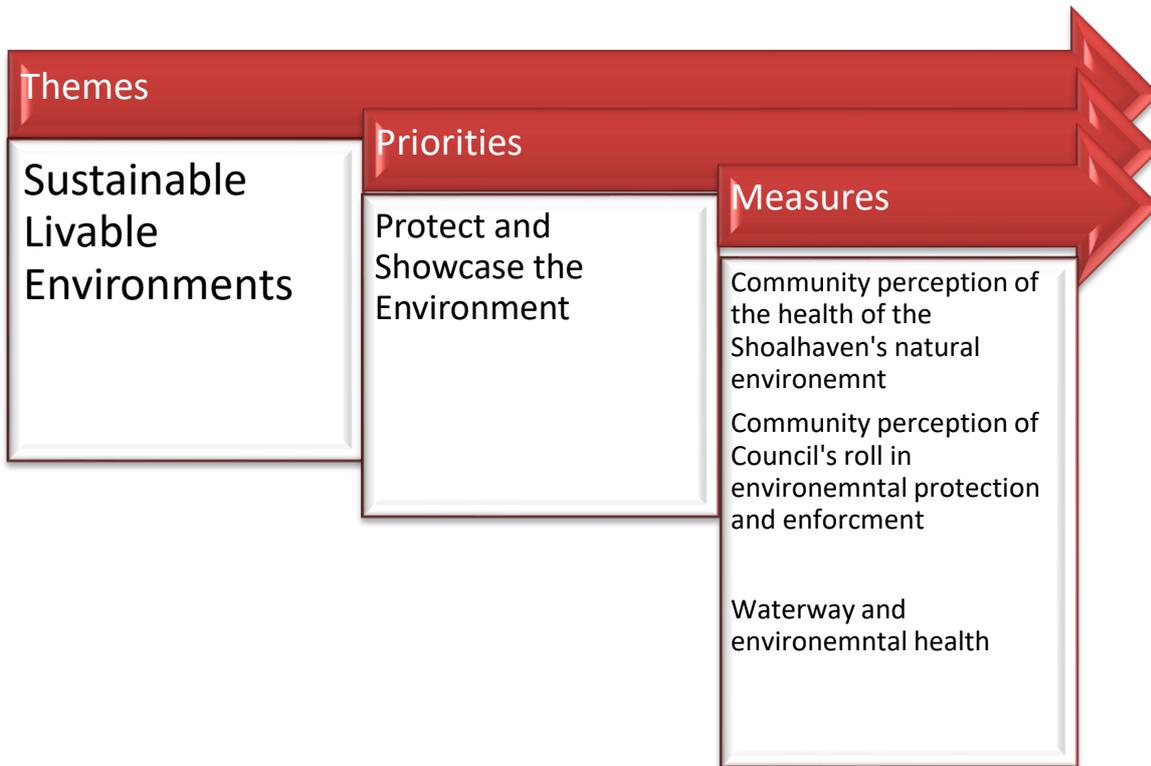
The key area of the CSP that directly relate to the management of the natural environment is place. The objectives and the strategies that directly relate to the sustainable management of the natural environment are as follows:

CSP Key Area – Place

Objectives/Strategies

- ❖ 2.1 A city which values, maintains and enhances its natural and cultural environment
 - 2.1.1 Support and enable the sustainable use of the natural environment for education, research and recreation
 - 2.1.2 Ensure that the natural ecological and biological environments and the built and cultural heritage of the Shoalhaven are protected and valued through careful management
- ❖ 2.2 Population and urban settlement growth that is ecologically sustainable and carefully planned and managed
 - 2.2.2 Create active and connected foreshores that support and promote the natural environment while encouraging appropriate community recreational use
- ❖ 2.4 Community infrastructure that is environmentally responsible and ecologically sustainable
 - 2.4.2 Develop land use and related plans for the sustainable growth of the City which use the core principles of the Growth Management Strategy and ESD principles, also carefully considering community concerns and the character of unique historic townships

Council has developed measures by which to implement the objectives and strategies that are directly related to the sustainable management of the natural environment, both for the CSP and the Delivery Program Operational Plan (DPOP), which identify how the CSP will be delivered across Council. Tables 1 and 2 outline these themes, priorities and the measures used by Council to assess progress.

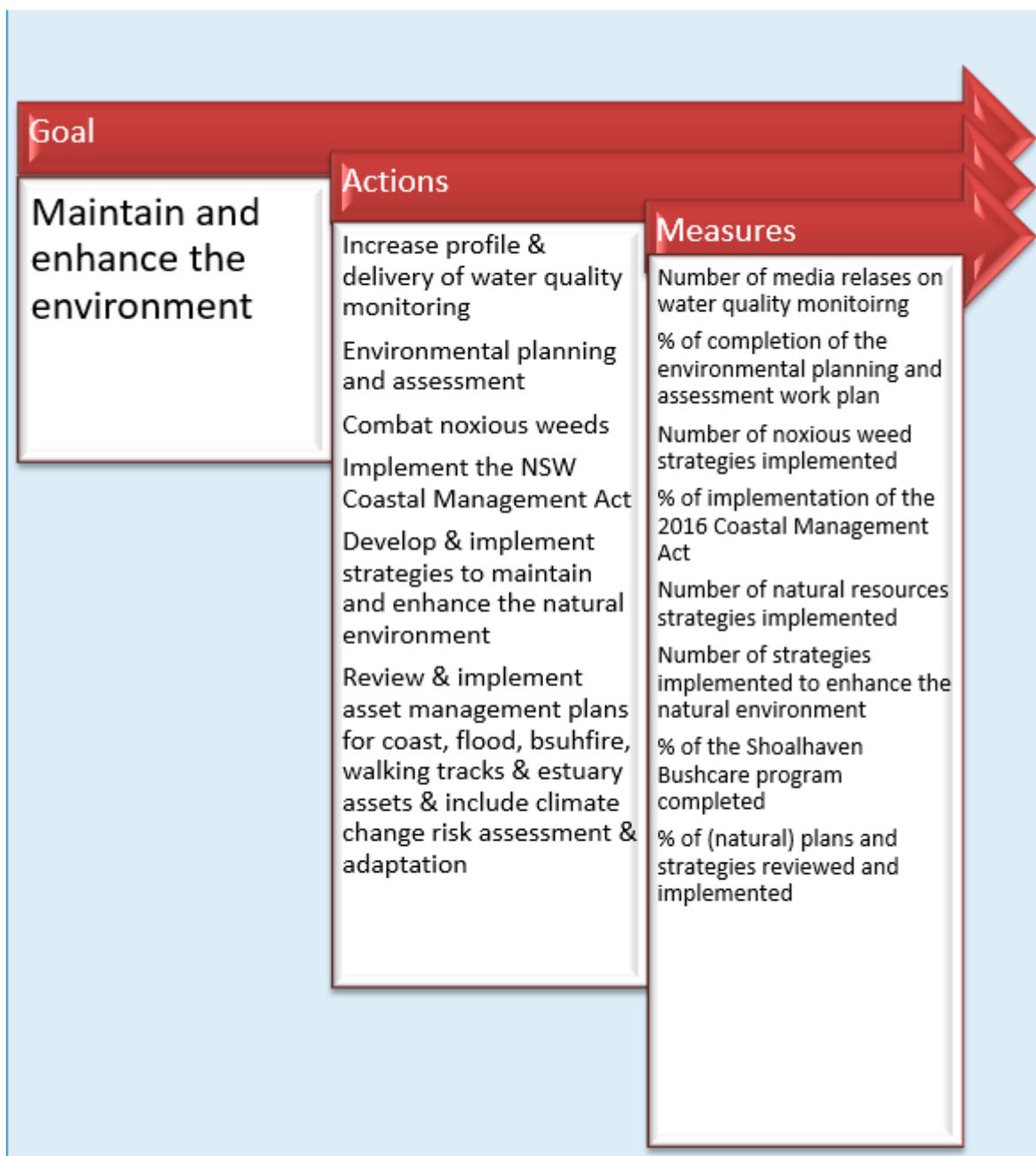


SN18.17

Table 1: Shoalhaven Community Strategic Plan themes, priorities & measures directly related to protection of the natural environment (Shoalhaven Community Strategic Plan 2013)

These measures have been reported in the past via three methods as follows:

1. The Shoalhaven State of the Environment Report provides feedback on the key indicators used to measure land management, land rehabilitation and biodiversity;
2. The DPOP has Key Performance Indicators (KPI's) which are reported on four times a year to measure success against the measures; and
3. Council conduct community surveys to use as an indicator of the community perception in protecting and showcasing the environment (see results contained within the community consultation section of this report).



SN18.17

Table 2: Shoalhaven Delivery Program Operational Program goals, actions and measures directly addressing sustainable and integrated management of the natural environment

The adopted Shoalhaven Coastal Zone Management Plan has four focus areas regarding managing natural coastal ecosystems, as illustrated below in Figure 1. These focus areas are contained within, and interact with, an adaptive management framework. Adaptive management is a process for managing uncertainty, incomplete information and knowledge and changing and dynamic natural systems to improve and refine management responses over time.



Figure 1: Key considerations for adaptive management

Response to Part 1 b)(i)

Council is currently developing a new sustainable tourism model. Models differ from management plans in that such plans can only be written in one moment of time. The more time passes, the more chance the management plan can become out of date. Models however are designed to be flexible and overarching.

Destination 360 is a sustainable tourism model being designed for the Shoalhaven region. Shoalhaven 360 is a living, constantly adapting plan to help create and keep sustainable tourism in Shoalhaven. Figure 2 presents the three parts of Shoalhaven 360 as being:

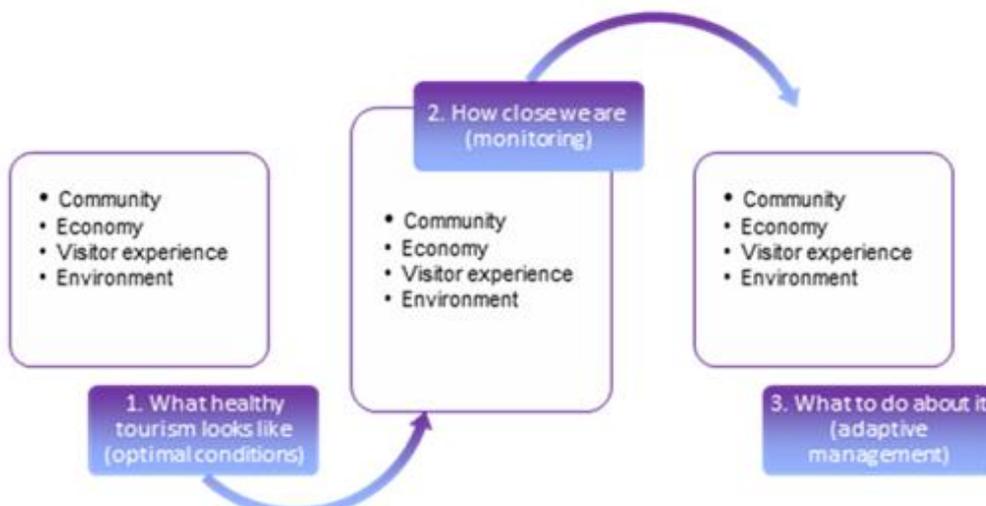


Figure 2: The three parts of Shoalhaven 360 – emphasising the staged role of each of the three components.

Shoalhaven 360 operates on a web platform, so that all stakeholders can view it and understand how tourism in Shoalhaven is performing against the optimal conditions. Any adaptive management introduced will also be acknowledged in the website. The addition of Shoalhaven 360 is a fundamental difference to other Destination Management Plans in Australia.

Response to Part 1 b)(ii)

Developer contributions can only be levied in accordance with the Environmental Planning and Assessment Act. Such contributions are essentially limited to infrastructure and land acquisition for infrastructure.

Response to Part 1 c)

Currently Shoalhaven Council and NSW OEH NPWS collaborate on environmental management programs such as the NSW South Coast Shorebird Recovery Program, pest animal and plant control programs and Save Our Species Program (SOS) (such as the Bomaderry Zieria Recovery Project and the Protecting Shoalhaven Plants).

In regard to shared responsibilities with compliance, this is restricted to land tenure with each organisation only having legal jurisdiction and authority on land owned or managed by each organisation.

Response to Part 2

Although this meeting has not occurred, a workshop on sustainable tourism indicators was held with the committee on 18 April 2018.

Policy Implications

The Shoalhaven Community Strategic Plan and the Delivery Program Operational Plan themes and objectives align with all key planning and strategic documents, such as the Shoalhaven LEP 2014 and Shoalhaven DCP 2014. The CSP themes and objectives also align with the regional priorities of the Illawarra/South Coast Regional Action Plan.

Community Engagement

As previously stated in this report, Council undertakes regular surveys to measure the progress of meeting the Community Strategic Plan's targets. The recent 2017 community survey indicated that 38% of the Shoalhaven community were satisfied with Council in the management, enforcement and protection of the environment. It is noted that 38% of the community were neutral and 24% were dissatisfied with how Council were managing and protecting the environment (SCC Community Satisfaction Survey 2017).

The table below from the SCC Community Satisfaction Survey 2017, highlights what the community thought were Council strengths and weaknesses in regards the sustainable management of the Shoalhaven's natural environment.

Table 3.5. Major Themes – Sustainable management of Shoalhaven’s natural environment

Strengths	
Current appearance and maintenance	Respondents who were satisfied with this service were complimentary of the overall performance of Shoalhaven City Council in maintaining the appearance of parks, beaches and other features of natural environment in the region.
National parks	Satisfied respondents were particularly pleased with management of national parks.
Improvements	
Effort	Neutral respondents [satisfaction rating of 3] believed Council could do more to alleviate the pressure on volunteers to maintain and manage the natural environment.
Tree clearing	Of the relatively few respondents who were dissatisfied, a primary concern was the extent of tree clearing for urban development.

(Source: SCC Community Satisfaction Survey 2017)

Risk Implications

Shoalhaven Council already has considered the management of natural processes and systems in its key overarching strategic planning framework, through the Community Strategic Plan (CSP) and Delivery Program Operation Plan (DPOP). This higher-level planning document guides and feeds other planning and policy development within Council, including the Shoalhaven Coastal Zone Management Plan and Natural Areas Plan of Managements.

SN18.18 Shoalhaven Safe Navigation Action Group (SNAG) Dredging Plan - Communications with Staff

HPERM Ref: D18/229805

Group: Planning Environment & Development Group
Section: Environmental Services

Attachments: 1. SNAG Dredging Plan 2017 (under separate cover)
2. SNAG & Council Staff Meeting Minutes - 7 June 2018 [↓](#)

Purpose / Summary

Provide the Committee with a summary of the consultation between SNAG and Council staff, following the resolution of MIN 18.388 at the meeting of the Shoalhaven Natural Resources & Floodplain Management Committee meeting of 22 May 2018.

Recommendation (Item to be determined under delegated authority)

That the Committee receive the report for information

Options

1. As per recommendations

Implications: Continued engagement with Shoalhaven Safe Navigation Action Group (SNAG) in relation to the implementation of their dredging plan.

2. Other recommendation

Implications: Unknown. Would depend on the recommendation.

Background

At the 22 May 2018 Natural Resources and Floodplain Committee meeting, a report was tabled on the Safe Navigation Action Group's Dredging Plan for Sussex Inlet and the entrance to the St Georges Basin estuary.

The SNAG dredging plan outlined the vision for managing the Sussex Inlet channel and the entrance and identified 12 goals to achieve this vision. The plan was presented to Council in September 2017, following which time senior Staff met with representatives of SNAG and made a commitment to present the report to Council via the Shoalhaven Natural Resources and Floodplain Management Committee.

In May 2018, the report presented to the Committee reviewed and analysed the SNAG report against the key natural resources management plans for the St Georges Basin estuary. These were the St Georges Basin Estuary Management Plan, the Swan Lake Entrance Management Plan, Swan Lake and Barrera Creek Natural Resources Management Strategy and the Shoalhaven Citywide Dredging Feasibility Study. Each of the SNAG Dredging Plans goals were assessed and reviewed against the strategies and the recommendations of these plans and strategies.

Following the presentation of the report, the Committee resolved:

That:

- 1. The Committee receive the report on the Safe Navigation Action Group's Sussex Inlet Dredging Plan 2017 for information.*
- 2. Further engagement between Council staff and SNAG take place.*
- 3. Following the consultation between SNAG and SCC, that a further report be brought back to this Committee.*
- 4. The Committee notes that any future dredging program needs to be strategically considered within Council's coastal management program.*

Council staff and representatives from SNAG met on 7 June 2018, where the following four goals from the Shoalhaven SNAG Dredging Plan were presented as being a priority for progression:

Goal 8 - Waterfront Maintenance Levy – Riviera Keys;

Goal 5 - Chris Creek Navigational Channel;

Goal 9 - Alamein Marina; and

Goal 10.- Improve navigation full length of Estuary from St. Georges Bain to the Ocean.

Council and SNAG agreed on a set of strategies to progress these goals further, which will involve on-site meetings to identify future collaboration with key stakeholders, such as NSW RMS and NSW DoI – Land & Water, to source grant funding and approvals.

Policy Implications

All four key priority goals identified in the SNAG Dredging Plan will require the updating and reviewing of key plans and policies relating to the Sussex Inlet Keys, St George Basin Estuary Management Plan and the Citywide Dredging Feasibility Study. Council will also need to collate any further investigations undertaken to provide up to date scientific data and hydrological surveys on which to base any further dredging decisions.

Under the NSW Coastal Management Act 2016, Council will be required to identify any future dredging actions within a Coastal Management Program (CMP). Council is currently in the process of seeking suitably qualified consultants to prepare its CMP for the open coast as well as St Georges Basin and Lake Conjola. Part of this process requires Council to undertake a scoping study which will identify management actions, such as dredging, and be subject to detailed risk-based assessment and business plan to assess the impacts socially, economically and environmentally.

Financial Implications

The preparation of the Shoalhaven Coastal Management Program will cost Council in the order of \$200,000, of which 50% is funded by the NSW State Government via a NSW OEH Coast and Estuary Grant. Council is currently undertaking 30 hydrographic surveys of Sussex Inlet channel, as part of the St Georges Basin Flood Risk Study, at a cost of \$10,000. Part of the CMP process will require Council to prepare a business case to assess the feasibility of any management actions, both from a social, economic and environmental perspective.

Risk Implications

The scoping study phase of the Shoalhaven CMP processes requires an extensive risk assessment to assess the risks and vulnerabilities of undertaking any management actions. This will include the social, economic and environmental risk of any proposed dredging on the St Georges Basin estuary and the community.



**SAFE NAVIGATION ACTION GROUP INC
 SUSSEX INLET**

(Inc. No: 1301225)

Meeting with Council Representatives (Staff) to discuss goals in the Safe Navigation Action Group Dredging Plan 2017

**Meeting - Thursday 7th June, 2018 – 9am, Monument Room Level 2
 Minutes by Mrs Janis Natt – SNAG President**

Meeting opened at 9.05am

Attendees: (11)

- Mr. Phil Costello - Director, Planning Environment and Development
- Mrs Kellie Clarke - Environmental Services Manager
- Mr. Alasdair Stratton - Manager – Natural Resources & Floodplain Unit
- Mr. Tom Dimec - Section Manager – Asset Management
- Michael Strachan - Project Manager – Assets Management Section
- Clr. Patricia White - Deputy Mayor – Ward 3 Councillor
- Clr. Joanna Gash - Ward 2 Councillor
- Mrs Janis Natt - President - Safe Navigation Action Group Inc.
- Paul Beckett - Research Officer – SNAG (SPAATS Committee)(SNRFMC Member)
- Charles Court - Committee – SNAG (SPAATS Committee)
- Russell Neeves - Committee - SNAG (SPAATS Committee)

Janis Natt opened the meeting by handing all present, printed information on the items for discussion. Due to the time frame it would not be possible to discuss all 12 goals in the dredging plan, so, SNAG have identified 4 main goals in order of priority.

- Those being :
- Goal 8 - Waterfront Maintenance Levy – Riviera Keys,
 - Goal 5 - Chris Creek Navigational Channel,
 - Goal 9 - Alamein Marina,
 - Goal 10.- Improve navigation full length of Estuary from St. Georges Bain to the Ocean

The purpose of the meeting is to endeavour to promote a "Can Do" attitude so we can continue with positive dialogue with the members present and their respective Departments.

Goal 8: Waterfront Maintenance Levy – Riviera Keys

A proposal for a maintenance levy was presented to Michael Strachan in 2015 at a SNAG Management Committee Meeting. The proposal was prepared from feedback from our general meeting (July 2015) to provide a more equitable funding, which was felt to be unfair in its basic form of Wharf & Jetty Fees. The proposal gave a formula for applying the levy that would/could raise sufficient funding to cover, admin costs, insurance and maintenance funding. The residents agreed with the levy because it would be applied with their rates, and could be paid quarterly, could not be increased for five (5) years and if an increase was to be implemented, it had to go to IPART and council has to give proof or justification for the increase. This acts as a security net for the residents. Also, as a rates levy, the money stays from where it was collected. The Keys and can only be used for the maintenance of the keys.

At present the wharf and jetty fees being paid from the keys is still being deposited into Consolidated Revenue, and can be used anywhere in the Shoalhaven.

Michael Uptis conducted a survey of the canal properties and photographed all jetties, authorised and unauthorised. The purpose of this survey was so that Council could contact those people who have unauthorised jetties, to comply with council requirements. It is now almost 4 years and nothing has been done.

Following the riparian dredging done by the previous council, it was indicated to the residents that a plan of management to review every 12 months to establish if further work was required and to investigate funding for same. This is where our proposal gives the council an opportunity to have that regular funding available for the work.

At this time there is no urgent structural issues that need work. Colin Woods informed the members present at our SNAG meeting of the process planned. A drone would be used to film all properties on the keys. Following looking at that drone information, Ground Truthing would occur, where staff would call on every resident advising any non-compliance issue.

Tom Dimec: We need to work out how we can move forward. We have a policy in place, and need to report to council to introduce a maintenance levy scheme. It was suggested that perhaps an amnesty be offered for residents to come forward and rectify the issues with non-compliance.

Summary: We need to come up with either a formula where Council can fund this on an ongoing basis under Asset Management Plan, or establish how much the residents will need to pay to actually maintain the Keys. The current inequities need to be sorted out, as, currently only a few are paying for the rest. "Never before has so few, paid so much, for so many" This has to stop.

Goal 5: Chris Creek Channel:

At the time of the dredging project at the Haven, SNAG hoped that the surplus money available from the original grant amount, \$200k +, could be used to dredge the Chris Creek between the keys and the main inlet (River), as there is a lot of siltation, and this prevents the volume of water on the outflow from the keys (which were built as Drainage Canals), and as such should be kept clear so that flood waters can quickly recede through a properly structured channel. Unfortunately this money was given to Lake Conjola.

Russell Neeves advised that there is a large area of shoal rock in the middle of the navigation channel 30m east of the boat ramp, and at low tide some boats bottom out and the propellers damage the rock an of course, their props. Is it possible that whilst the equipment is on site, when building the Chris Creek Bridge to be used to remove the broken rock. It was pointed out that the equipment was there for a specific scope of works and it would be unlikely that permission would be given for additional work

Copy of letter sent to Michael Strachan 26th October 2017

Dear Michael,

The members of the Safe Navigation Action Group Inc. (SNAG), wish to draw your attention to the following infrastructure issues at Sussex Inlet.

Problem with Chris Creek Channel.

SNAG Inc has received a number of complaints about a navigational hazard located Approx. 30 metres from the Chris Creek boat ramp. The technical subcommittee, inspected the area (marked by a yellow line in the following aerial photograph) and found that a rock shelf and some loose rock are causing damage to some boats and motors at low tides.



Fig 1

As the council has a plan in place to upgrade the boat ramps within the Sussex inlet area, we wondered if it was possible to remove sufficient rock to improve the boat passage in this area to coincide with the proposed work/upgrade of the Chris Creek boat ramp. As you would be aware this boat ramp and boating passage are heavily utilized during weekends and holiday periods.

Paul Beckett noted that following the extension of the Ramp (by 3m), it now creates a narrow navigational channel when people are launching their boats. As this is the only exit from the keys (south) it has a large number of vessels using that channel. Safety of the people using that channel is paramount, so we feel that this is a priority situation, and look forward to any assistance Council can give us to help move this forward.

Michael Strachan said that they may be able to help us prepare a submission to RMS and get them to approve maintenance works in the channel.

Goal 9: Alemain Marina:

This area was spoken of in the original scope of works for dredging, but, after a flood a new scope of works was produced, and the Alemain Marina was no longer listed.

The waters are silting up and recently there was an article written from a boat owner in the marina, which states that his boat at low tide is sitting high and dry on the mud/siltation.

The existing concrete boat ramp is in a very dangerous condition (Photos shown to Tom Dimec), and if repaired, will be beneficial for people who find the Lions Park Boat ramp unsafe due to weather and current condition, as well as parking not available. The Edgewater Avenue Ramp will take some of the pressure off Lions Park and act as an overflow parking area. With the Marina dredged and the area deepened, people can safely launch and remove their vessels in an area not effected by the conditions as experienced at Lions Park.

Michael Strachan advised that he would arrange an onsite meeting with himself and Tom Dimec to inspect the issues, this should occur in the next couple of weeks.

Goal 10. Improve navigation full length of Estuary from St. Georges Bain to the Ocean

The navigational Channel does also include Chris Creek Channel (Goal 5. Deals with sperate issues regarding Chris Creek). Our hope is to return the inlet channel to its original status. We can demonstrate historically that in 1822 the survey vessel, HMS Snapper showed the river was two (2) Fathoms deep – 12 feet, and the Entrance/Bar was 1 fathom deep (6 feet). This was before any serious urbanisation. A photocopy of this historical data was given to Alasdair Stratton.

Clr. Patricia White noted that there is a permanent mooring situated out to sea, where large vessels are able to moor and then the people can come into the inlet via in a smaller vessel.

Coastal Zone Management Plan: (CZMP)

The State Government Plan – for funding for councils.

CZMP plan must include all areas of work required/planned. If an area is not mentioned, then you will not receive Government funding for a period of five (5) years. To get funding you must report on the rivers and estuaries. The previous report was not acceptable as the data used was too old. The plan of 2012 – was not acceptable to the State Government, Council staff are on a very tight timeframe to get this report done, and because of that , the Council will have to remove all reference to the estuaries and rivers. And the plan will only refer to the coastline. Which means that once you cross the Bar into the local waterways– no funding will be made available under the current application of the Coastal Zone Management Plan.

Coastal Management Act 2016 No 20. :

The Natural Resources Committee - created a small working group to identify key estuaries to be included in the plan. The estuaries chosen were St. Georges Basin, Sussex Inlet and Lake Conjola.

Kelie Clarke spoke on the issue with the Coastal Management Plan covered by the new Coastal Management Act. Funding has been received to prepare the Coastal Management Plan which covers the Open Coast, St Georges Basin (Including Sussex Inlet) and Lake Conjola. Alasdair Stratton advised that Cardno (NSW/ACT) Pty Ltd, is currently surveying St. Georges Basin which will include the Sussex Inlet.

Paul Beckett noted that in all of the reports, where a list of stake holders are listed for notification, SNAG is not listed and asked that we be put on the list.

Kelie confirmed that SNAG will definitely be on that list in the future.

Clr White noted that there have been a number of issues/problems where the Marine Rescue was not able to get out across the bar. (Refer Sussex Inletter Issue #683 11th April,2018).

“A vessel offshore advised a fuel related problem and requested assistance. Sussex Marine Rescue S10 set sail and on reaching the bar was not able cross because of low water level.

Ulladulla Marine Rescue was contacted and towed the vessel to the Stingray Bay Buoy, and on the rising tide S10 was able to tow the boat across the bar and into the river.”

Kelie advised that they had been in contact with Marine Rescue about an issue they have with their smaller vessel berth and the siltation preventing them from launching their vessel on some occasions. Kelie and Alasdair conducted an onsite inspection and suggested a possible solution would be to relocate their hoist into deeper water.

To date they have had no reply from Marine Rescue and Kelie asked that SNAG might be able to facilitate communication with them to progress forward, and hopefully be able to find a solution.

Clr White noted that in the recent Drone Video taken December 2018, it clearly shows where some people have had to dig a channel through the mud & silt to be able to access their jetties. It is illegal but, it has been done out of sheer frustration at not being able to find an authority to take ownership of the situation. RMS say it is councils responsibility to ensure the navigational channel etc is usable and safe. Regardless of who's job it is, just let us get it done... Alasdair asked for a copy of the Drone. Jan Natt gave permission and asked Clr White to download it for Alasdair.

Russell Neeves requested permission to continue dialogue with Assoc Prof Kerrylee Rodgers from UoW, asking her for any reports she can provide, without treading on council toes. She is a very professional person and will be discreet and not release sensitive information, on studies and the work that she is now doing for Council.

Kelie noted that any assistance that you can get is welcomed, but, that she (Kerrylee Rodgers) will be restricted in disclosing information on some matters.

Russell stated that we are trying to establish a scientific data base so that, if done regularly enough, we will have information to compare with, and be able to identify any changes.

Alasdair said the he will pass on our plan to the Consultant Cardon who are surveying the Basin. We are pleased for that to happen.

Charles Court: recently visited Coffs Harbour to meet with DPI representatives, Nicola Johnstone and Patrick Dwyer. The report is as follows.

REPORT OF MEETING WITH MEMA 23/05/2018

Present at meeting: Charles Court,- SNAG, Nicola Johnstone from The Marine Estate Management Authority, part of the NSW Government Department of Primary Industries and will be referred as MEMA in this report, and Pat Dwyer, Marine Biologist and MEMA.

It must be pointed out that when MEMA was set up the Shoalhaven from Jervis Bay to Batemans Bay were not included in the Authority's jurisdiction. This means that while I was welcomed by Nicola and Pat they do not have the authority to make binding decisions or recommendations to MEMA about the Shoalhaven Waterways. They can hold conferences and attend meetings dealing with topics within their charter or part of their work. They were able to make general recommendations and critique on what is presented to them, namely, our Sussex Inlet Dredging Plan 2017 as well as the additional information on the USB stick which Jan sent to me.

The main criticism was that there was insufficient mention of our references and how they impact on the Dredging Plan (are they in favour or against the plan). An example of this is the reference to the Spurway Report which is only mentioned twice, once in the introduction on page 6 and again in the references at the end of the document on page19. If the reference is in support of our overall plan and goals, then we should draw attention to the positive and highlight this in some way wherever possible. We must remember that we are dealing with politicians and bureaucrats who may not have the time to search out and read the references in full.

Other criticisms are:

- To achieve goals 1 – 6 there must also be a plan for proposed regular, future dredging to maintain the desired Channel depth. This dredging would need to be funded by Council and/or State Government. The Strategic Planning and Advisory Technical Sub Committee (SPAARTS) could investigate ways to extend the life of the dredge and improve channel flow.
- Goal 7 should be started now and should also set out long term plans. The 2016 Swan Lake Management Plan should be followed up with Council.
- Although we are currently working with Lake Conjola Forum and The Amateur Fishing Association of NSW we should seek more and as much community involvement as we can.
-

- We should try to improve our relations with Council as we all need to work together to achieve our goals as per The Sussex Inlet Dredging Plan 2017 and The Swan Lake Management Plan 2016.
- The plan lacks information on what we want for the overall economic, recreational and social future of our river.
- They were strongly critical that the plan did not include a hazard and risk assessment which will identify, and assess risks, to the environment as well as social and economic values and will evaluate and select management actions to address those risks.

Although we are not a client and it is not in their charter to assist us, Nicola and Pat were very helpful and went on to offer further suggestions that may be helpful to us in fulfilling our goals.

- The use of river groynes to control the flow of water in the river. I am familiar with this structure having seen them in use in Europe in 2015 on a river cruise and our tour guide explained their purpose in the river. Recently I was on a cruise on the Burnett River at Bunderburg, Queensland. The captain explained that the extensive rock training walls that lined the river banks made the river narrower so as to speed up the flow of water to move the sand and maintain the deep navigational channel while also helping the water to get away more quickly to reduce river flooding. The select placement of river groynes caught the sand and deposited it in designated areas along the river banks. At the meeting it was pointed out to me that where the proposed promenade is to be located the use of groynes will help to stabilize the movement of sand and prevent it from washing out over time.
- Most importantly the use of groynes will allow for more accurate planning for dredging and if installed prior to dredging, groynes should reduce the frequency of dredging required to maintain the desired channel depth. A cheaper although less aesthetic alternative to the placement of tons of loose rocks might be to use wire baskets of rocks as a trial.
- Other suggestions made were mini marinas could be positioned in between groynes and jetties could be used for whale watching and fishing charter pick up points. It is desirable to encourage private investment in the river facilities. The list of possibilities is endless and only limited by your imagination.
- The other suggestion which surprised me was the specific type of mangrove that we should be encouraging in our river is the River Mangrove also known as the Black Mangrove (*Aegiceras Corniculatum*). This mangrove grows on the East Coast from Tweed Heads to Marimbula so it should have no problem growing in our area. This mangrove will grow in the "fringing" area of the tidal water which I understand to be about 1.8 meters deep. It grows to about 2 meters high, so that it has little impact on water views. Because it grows in deeper water it is a haven for small fish, crabs and other marine life. Vast areas of this native mangrove were decimated from the late 1800's to about 1950 by the oyster industry. They were used for the oysters to grow on. Because they are native trees they naturally attract the oyster. They came close to extinction and only a few small pockets remained. They are slowly making a comeback and are the mangrove of choice for our local water ways.
- It appears that in the past certain types and sometimes the wrong types of mangrove have been wrongly introduced and/or allowed to grow wild in inappropriate areas which is causing rivers, lakes and bays to silt up more quickly by slowing the water flow and thus allowing the wrong mangrove seeds to grow out of control which further speeds up the silting of the waterways. Pat Dwyer is a marine biologist and an expert on river mangroves. He is a lecturer at Sydney University and you can read more about him by googling him.
- We will have to do a lot of our own investigations as mentioned earlier MEMA cannot officially assist us but can critique when requested. It was suggested that we work more with the Office of Environment and Heritage as they can make binding decisions and are more involved with other government departments, Pat has offered to send us the names of contacts with whom he has dealt over the time and he feels may be helpful and sympathetic to us.

Charles Court,
Committee Member SNAG

Russel Neeves, asked that when Council are drafting the Estuary Management Plan, can we look forward to a more positive speak on dredging, that is, that the Estuary Management Plan for the Shoalhaven will be more in favour of dredging as a concept that Council will participate in, where it is deemed through scientific examination to be worthwhile.

Can we look forward into the future to a more positive conversation about dredging, as being something we don't so NO to straight out, but, we embark on a pathway that gives us the information to say 'It's worthwhile in this instance'.

Phil Costello noted that in his time with council, they have not said NO, but there is a process that must be followed and this meeting is step one (1) of that process.

Clr White asked if there was a factsheet that could be given to groups that come to council with issues asking for action to be taken in the various estuary locations.

Data information such as REF, Risk Management, and other Government Departmental Reports.

Janis Natt: Closed the meeting at 10.15am and thanked all present for their attendance and positivity shown. We look forward to a follow-up meeting in the near future to progress through some of the balance of goals(8) to discuss.

Janis Fae Natt

Mrs. Janis Fae Natt – President
Safe Navigation Action Group Inc.
Ph: 0410 435 010
Email: sammynatt@shoal.ner.au

SN18.19 South Mollymook Beach Cost Benefit and Distributional Analysis Study Update

HPERM Ref: D18/230165

Group: Planning Environment & Development Group
Section: Environmental Services

Attachments:

1. South Mollymook CBA & Distribution Analysis - Study Approach Memo (under separate cover)
2. South Mollymook - Foreshore Stabilisation - Concept Design Report 2016 (under separate cover)

Purpose / Summary

Provide the Committee with an update of the South Mollymook Cost Benefit Analysis and Coastal Hazard Distribution Analysis on the South Mollymook coastal foreshore protection structure.

Recommendation (Item to be determined under delegated authority)

That the Committee receive the report on the South Mollymook cost benefit analysis and distribution analysis for information.

Options

1. As per recommendation

Implications: Nil

2. Alternative recommendation

Implications: Unknown. Would depend on the recommendation

Background

There is a history of coastal erosion at Mollymook Beach. This was identified by Council's initial City Wide Coastal Risk assessment in 2004, prepared by the Snowy Mountains Engineering Company (SMEC), which was used to base our Coastal Zone Management Plan for the Shoalhaven's 165km coast line.

Hazard Summary (SMEC 2006) confirmed empirical analysis of coastal processes and divided the beach into four precincts. Also, confirmed at risk were the Mollymook Golf Club; public road sections; shared pathway and bridge; private property and public sewer and water assets. Fifteen (15) residences were identified at immediate risk; 2050 risk (46); 2100 risk (55); with 30 residences at risk from inundation in the 100-year storm.

The Shoalhaven Coastal Zone Management Plan 2018 Risk Assessment identified that there was one private asset (Mollymook Golf Club) at extreme risk from coastal erosion for the planning period 2050. Sewerage infrastructure (pumping station/rising main) and Mollymook SLSC were identified as being at high risk. The total value of assets at risk from coastal erosion for the planning period 2050 at Mollymook Beach is \$10,800,000 and for 2100 it is \$11,001,000.

There are currently three separate shoreline protection assets in place at South Mollymook:

1. Gabion Wall Structure;
2. Sandstone Block Wall; and
3. Concrete Wall.

These shoreline protection structures have provided protection from coastal erosion to public and private assets, however their condition is deteriorating. The East Coast Low storm of 2016 did significant damage to the sandstone block wall and the gabion seawall. Please refer to Figure 1 for location details.



Figure 1: Foreshore Protection Structure – South Mollymook Beach (Foreshore Stabilisation at Sth Mollymook Beach, Concept Design Report, 2016)

Council commissioned Royal Haskoning DHV to prepare a concept design report for the long-term coastal protection for the southern end of Mollymook Beach. The primary objective of the works is to protect Mollymook Golf Club, sewage pump station, stormwater outlet, access ramp and Golf Avenue. The report identified that the repair/replacement of all three existing shoreline protection structures to a standard where they would be in a condition to adequately protect the private and public assets would cost Council \$4,752,810.

Under the NSW Coastal Management Act 2016, any projects over the value of \$1 million automatically trigger a cost benefit analysis (CBA) to assess the cost of protection over the benefits that the protection offers.

Council received \$50,000 from NSW OEH Coast and Estuaries Grant Fund and contributed \$50,000 to undertake a CBA. Part of the project involved a coastal hazard distribution analysis to inform the CBA. In September 2017 Council engaged Origin Securities Pty Ltd to undertake the CBA, with Royal Haskoning DHV to undertake the coastal hazard modelling.

The purpose of the project is to carry out a cost benefit analysis and distributional analysis for the four identified management options of:

- ‘Do Nothing’ (‘Status quo’ / base case);
- Planned retreat;
- Protection (revetment/seawall) without beach nourishment; and
- Protection (revetment/seawall) with beach nourishment.

The intent of the work is to gain an improved understanding of the economic implications associated with each of the management options relative to the ‘status quo’ base case. This work is intended to form the basis for further decisions concerning future cost sharing arrangements and associated funding models for implementation of protection works.

The project is being completed in accordance with the 2016 ‘NSW Coastal Management Manual – Part C: Coastal Management Toolkit, Using Cost-Benefit Analysis to Assess Coastal Management Options: Guidance for Councils’ and NSW Treasury Guide to Cost-Benefit Analysis.

The key components of the CBA report are as follows:

1. Examine the economic, environmental, and social implications (costs/benefits) of options relative to the 'status quo' base case. The options are detailed in the concept design 2016 Foreshore Stabilisation Mollymook Beach South report by Royal Haskoning DHV. The CBA report will detail the findings in terms of understanding the physical processes and the economic implications of the four management options identified;
2. Consider environmental values, recreational use values and non-use values;
3. Include the timing of each of the costs and benefits associated with the construction of possible protection works (with and without nourishment) and 'planned retreat' against the 'status quo' base case over a time horizon of 20 and 50 years;
4. Consider all legal constraints, applicable development controls, and viable 'best-practice' engineered options that achieve the objectives of protection works using the best available information to inform the economic analysis;
5. Evaluate both structural and non-structural options for coastal erosion management, describing the parameters adopted, analysis time frames used, assumptions applied, and sensitivity analyses completed to test the effects of various discount rates and time periods;
6. Incorporate risk management, environmental constraints, engineering design, cost and structure life-span, number and value of properties protected and public infrastructure (protection and future maintenance);
7. Provide a distributional analysis that identifies and quantifies impacted parties. These may include visitors to the LGA, community, Council, property owners (e.g. Golf Club) and rate payers in the LGA. This should include the percentage by which a stakeholder group benefit or loss relative to the base case for each option; and
8. The CBA and distributional analysis is a tool for consideration of Council and the community to assess the relative options compared to the status quo base case.

Currently Staff are working with Origin Securities, Royal Haskoning, owners of the private assets such as the Mollymook Golf Club and the Mollymook SLSC, to define the proposed study approach for the CBA and Coastal Hazard Distribution Analysis. The coastal hazard analysis adopts a new modelling technique known as "probabilistic" coastal hazard modelling. This a relatively new technology, and moves away from the traditional Brun Rule, or "Deterministic" coastal hazard modelling.

The "Deterministic" modelling approach uses coastal hazard lines to determine the zone of reduced foundation capacity (lines in the sand) for the planning periods of 2030, 2050 & 2100. The "Probabilistic" modelling approach allows each input parameter to randomly vary according to appropriate probability distribution functions. The randomly sampled parameters are repeatedly combined in a process known as Monte-Carlo simulation. All outputs from the Monte-Carlo simulation are collated to develop a probability curve for shoreline erosion during a study period. A copy of the study approach is attached, which provides detail of the methods used for the CBA and coastal hazard modelling.

Council has also taken this opportunity to extend the "probabilistic" coastal hazard modelling along the entire length of Mollymook Beach. This will provide Council with needed data used in determining the probable risk to assets under future climate change scenarios. The two coastal hazard modelling methods used for Mollymook Beach will also be able to be compared for accuracy.

Currently the project has suffered delays, due to the complexity of the new coastal modelling technique. The project is due for completion by December 2018, with a draft CBA report being available for review by Council and other stakeholders, in September 2018.

Community Engagement

Council has undertaken extensive consultation with the affected owners of the public and private assets at South Mollymook Beach. These have been in the form of on-site meetings and direct correspondence. The stakeholders that have been engaged to date include:

- Mollymook Golf Club;
- Mollymook SLSC;
- Council's Shoalhaven Water Group; and
- Council's Asset & Works Group.

Financial Implications

The full cost of repairing/replacing the shoreline protection structures at South Mollymook is more than \$4 million dollars. The CBA will give Council and private asset owners the information required to make an informed decision on cost sharing arrangements for the repair or replacement of the shoreline protection assets against the four study scenarios.

Risk Implications

The CBA will provide Council with accurate information to be able to undertake an assessment of the vulnerabilities of the current foreshore protection structures to the effects of coastal erosion over the planning periods of 2050 and 2100. It will also provide accurate economic data on the cost versus the benefit of undertaking the following options:

1. 'Do Nothing' ('Status quo' / base case);
2. Planned retreat;
3. Protection (revetment/seawall) without beach nourishment; and
4. Protection (revetment/seawall) with beach nourishment.