

Shoalhaven Heads Estuary Taskforce

Meeting Date: Tuesday, 15 March, 2022
Location: Council Chambers, City Administrative Centre, Bridge Road, Nowra
Time: 4:00pm

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Agenda

1. **Apologies**
2. **Confirmation of Minutes**
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3. **Declarations of Interest**
4. **Reports**
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5. **General Business**

Membership

Clr Serena Copley - Chairperson

All Councillors

Mr Gareth Ward MP (Nominee – Mr Paul Ell)

Mr Mike James

Mr Phil Guy

Mr David Lamb

Mr Bob Williamson

Mr Barry/Brian Allen

Mr Craig Peters

Mr Gerald Groom

Mr Stephen Short

Ms Robyn Flack

Ms Carole Cassidy

Mr Rob Russell

Quorum – Three (3): One (1) Councillor and Two (2) Community Members

Purpose

- Examine options for pursuing a partial or complete opening of Shoalhaven Heads
- Review Councils current Entrance and Estuary Management Plans for Shoalhaven Heads
- Report directly to Council

MINUTES OF THE SHOALHAVEN HEADS ESTUARY TASKFORCE

Meeting Date: Wednesday, 16 June 2021
Location: Council Chambers, City Administrative Centre, Bridge Road, Nowra
Time: 4:00pm

The following members were present:

Clr John Wells – Acting Chairperson
Clr Nina Digiglio – (remotely)
Ms Robyn Flack
Mr Gerald Groom – (remotely)
Mr Phil Guy
Mr David Lamb – (remotely)
Mr Paul Ell, representing The Hon Gareth Ward MP – (remotely)
Ms Jessica Zealand

Also present:

Phil Costello – Director City Development
Michael Roberts – Manager Environmental Services
Nigel Smith – Coastal Coordinator

Clr Wells assumed the Chair and gave an Acknowledgement of Country.

The Taskforce members welcomed Council's new Environmental Services Manager, Michael Roberts.

Apologies / Leave of Absence

Apologies were received from Clr White, Clr Pakes, and Mike James.

Confirmation of the Minutes

RESOLVED (Robyn Flack / Clr Wells)

That the Minutes of the Shoalhaven Heads Estuary Taskforce held on Thursday 3 December 2020 be confirmed, incorporating the Matters Arising set out below.

Matters Arising:

Robyn Flack submitted the following notes to be incorporated into the Minutes:

1. Item 20.1 – Dredging Options

Greg Britton's presentation in line 9 of the minutes in regard to the River Road channel noted:

"There are no distinctive natural processes that would lead to natural replenishment – this can only be achieved by artificial renourishment. This option would require ongoing maintenance". The Shoalhaven Heads – Channel Dredging and Beach Nourishment report to be considered today repeats this professional view. And yet a recent reply from Council to a resident on river road regarding bank erosion included the words "Hopefully some calmer weather conditions over the coming weeks and months will allow nature to take its course and more sand to naturally be placed back on the area in front of the rock revetment and along the foreshore". Observers of the channel and river bank know there are no natural weather processes which build the sand naturally along this area. Understanding this science is a vital input to future management plans of the area.

2. Item 20.2

The issue raised by Gareth Ward MP regarding the spending of the portion of Tourism Grant funds is also of interest to SHET members. Could the SHET please request a copy of the explanatory letter sent to the Member for Kiama at number 2 of the recommendation.

3. Item 20.4

The SHET members have conferred and agree that the Taskforce's purpose and objectives can be met and the SHET disbanded if/when a comprehensive and effective coastal management program is adopted;

The issues which the SHET still sees as needing to be understood include:

- The acceptance that Shoalhaven Heads has high recreation, economic and tourism value; not considered in the 2008 Estuary Management Plan which focused on the environment. The EMP Acceptable, Unacceptable and Tolerable Risks leant heavily to adaptive methods of management, this led to nothing being done to fix storm water drainage and erosion issues along River Road until catastrophe was looming.
- The 3 year permit to remove mangrove seedlings from the front of Holiday Haven Caravan Park approved with the express guidance that this maintenance work should be included in the CMP.
- A clear understanding of the mechanisms affecting the river road channel and the need for ongoing sand replenishment and other maintenance e.g. sand scaping of sand fans which build from the discharging 8 stormwater drains into the channel must be included in the CMP for regular maintenance.
- An entrance management plan for flooding which works and meets the needs of the community. It is the SHET's view that a couple of scenarios exist – simply – let the flood waters build until a force opens the entrance and scours a deep and long lasting opening. This option will see major flood inundation and high cost to private and public assets. Or, manage the entrance by intervention at specific points which releases the water and prevents inundation damage but fails to scour the silts which are wide and deep and result in a shallower and shorter lived opening. Further studies are needed to assess the value of a dredged channel towards the entrance.

CARRIED

Declarations of Interest

Nil

REPORTS

SH21.1 Shoalhaven Heads - Channel Dredging and Beach Nourishment

HPERM Ref:
D21/208501

Phil Costello (Director, City Development) explained that a grant funding opportunity has arisen since this report was drafted, and is being pursued. Further environmental studies and approval will be required to shore up a formal dredging project.

Robyn Flack passed her compliments to staff for this good report on the issues of dredging in the area.

Clr Wells recommended there be a change in nomenclature for the River Road boat ramp from the expression "Holiday Haven Boat Ramp", which is misleading as it is used by the whole community.

He also expressed concern that with revenue being spent in Shoalhaven Heads on Wharf Road Boat Ramp, the importance of the River Road Boat Ramp may be diminished. Both boat ramps are fully utilised.

Phil Guy noted the boat ramp in River Road is mainly used by caravan park residents, whereas the Wharf Road boat ramp is more likely to be used by locals and itinerant users.

Clr Wells raised the deteriorating condition of the beach in front of the caravan park.

Jessica Zealand has not been receiving Taskforce communications, and is to be included in circulations.

Recommendation (Item to be determined under delegated authority)

That the Taskforce receive the Shoalhaven Heads – Channel Dredging and Beach Nourishment Options Report for information and endorse the next steps. In summary, the next steps include:

- Endorsement of the Transport for NSW (TfNSW)/Maritime Infrastructure Delivery Office) grant application and acceptance by Council;
- Subject to the provision of grant funding, pre-dredge feasibility studies will be undertaken including, but not limited to, hydrographic survey and land survey, engineering studies and terrestrial and aquatic flora and fauna studies for input to a Review of Environmental Factors (REF) or Environmental Impact Statement (EIS);
- Subject to the outcomes of the pre-dredge studies, preparation of a REF (or EIS), including intergovernmental consultation, and submissions and approvals; and,
- Subject to environmental approvals from the REF (or EIS), prepare a detailed cost-benefit analysis to ascertain the viability of undertaking channel dredging and beach nourishment.

RESOLVED (Robyn Flack / Phil Guy)

That the Taskforce receive the Shoalhaven Heads – Channel Dredging and Beach Nourishment Options Report for information and endorse the next steps. In summary, the next steps include:

- Endorsement of the Transport for NSW (TfNSW)/Maritime Infrastructure Delivery Office) grant application and acceptance by Council;
- Subject to the provision of grant funding, pre-dredge feasibility studies will be undertaken including, but not limited to, hydrographic survey and land survey, engineering studies and terrestrial and aquatic flora and fauna studies for input to a Review of Environmental Factors (REF) or Environmental Impact Statement (EIS);
- Subject to the outcomes of the pre-dredge studies, preparation of a REF (or EIS), including intergovernmental consultation, and submissions and approvals; and,
- Subject to environmental approvals of the REF (or EIS), prepare a detailed cost-benefit analysis to ascertain the viability of undertaking channel dredging and beach nourishment.

CARRIED

**SH21.2 River Road Foreshore Precinct Rehabilitation Project
Progress Report**

**HPERM Ref:
D21/209794**

Clr Wells asked whether point (d) in the Project Update, “Undertaking beach scraping/nourishment works, supplemented from dry-notch maintenance, in conjunction with the Coastal staff”, is foreshadowing the relocation of sand from the dry notch to the river. Nigel Smith clarified the sand is from the stockpile from the dry notch maintenance at the entrance was used at the toe of the rock revetment wall in its entirety. The beach scraping was to move sand further east of the rock revetment. This work has been carried out and site completion surveys have been submitted.

Phil Guy advised the sand may be washed away now. The bank at that location is undermined, from south-westerly winds, but there is a large log there and as a temporary measure he suggested a bobcat be used to push it underneath the bank to stop it eroding. Phil noted the log can't shore up where the area is totally eroded, and some banksias on the edge are at risk, but it may help. He showed an image of the area to the Taskforce.

Regarding the sand, Phil Guy advised the stockpile has been removed so there is no excess sand. It should be a priority that work still needs to be done on it holistically. He explained that when the bank was identified as being at risk it was divided in 4 sections (A-D) and 4 priorities. B priority is east of the rock wall, where erosion is currently occurring, and another B priority is near the toilet block. Unfortunately, nature is telling us that while we're fixing this we're breaking that, and we need to move on.

Jessica Zealand recommended taking a long term perspective as this issue with the rock revetment is going to continue, due to ongoing tidal impacts when the entrance is open.

Clr Wells noted this erosion had been identified as a potential risk. Same phenomenon occurred elsewhere. He has had representations from the CCB Chair, which have been passed to the relevant Directors.

Michael Roberts clarified that in relation to the long term plan, this is an adaptive program, and will be captured in the Coastal Management Program (CMP) for the Lower Shoalhaven River. The Water Research Laboratory (WRL, 2016) tech report that had identified the zones can be revisited as part of the overall management of the site.

Jessica Zealand noted a concern of the community is how it is represented within the current estuary management and how that is reflected in the Estuary Management Plan (EMP) and then the CMP. The 1999 EMP report refers to living with the consequences. The Estuary Management Plan currently doesn't represent the view of the community and what needs to be done for the long-term management. At the moment the Plan is very restrictive on what can be done in the Shoalhaven Heads area.

David Lamb noted the Lower Shoalhaven Estuary Management Program committee has many community representatives on it. Those community interests need to have a voice.

Robyn Flack raised the matter of some Council work at Jim Napp's property on Bolong Road two years ago. Council had undertaken restoration work which is standing up very well. This work could be re-examined to understand why it is working so well.

Regarding the point “Rock revetment construction as per the design and peer review amendments”, Robyn asked whether all the requirements of the rock revetment contract have been checked and signed off. Michael Roberts confirmed they have, with some outstanding issues being worked through with the Project Management Team, to clarify the full execution of this scope. Originally, the tender specification was that understorey species were to be planted on the rock revetment, but from a practical perspective there would be issues associated with their survival/longevity given the harshness of this environment. Assessment of suitable planting to partially cover the revetment is therefore ongoing.

Phil Guy clarified that Robyn had been referring to the infilling of the rock from 1.5 to 4 metres high not being included in the revegetation principles plan. The draft planting plan has missed this from contractor's specifications. He asked whether this is the case, and whether that requirement has been overwritten or omitted. Michael Roberts advised it was originally in the WRL report, and the landscape architect and Council's plans (supporting the REF) also included it. It was then the contractor who spoke to the Project Management Team and decided that the lower understorey shrub species were probably not practicable for those areas. He agreed with Robyn that Lomandra, Dianella vines and scramblers would work in certain areas, and this will be worked through with the Project Management Team. Environmental Services had also raised this with the team at the time

Phil Guy noted the bushcare volunteers in the area are keen to commence work to beautify it, including planting to strengthen the bank above the rock wall. Council's Bushcare Coordinator is aware of this. Clr Wells suggested the Bushcare Coordinator liaise with City Services management to arrange for the bushcare groups to undertake maintenance. Michael Roberts confirmed that potential handover to the bushcare group has been discussed with the Bushcare Coordinator.

Michael Roberts advised that the non-native species are located at the eastern end of the wall at boundary fences where there is a private property. Phil Guy advised that the resident has been planting for privacy, to deter people walking around the property. Council staff confirmed that an Environmental Officer has spoken with the resident, and advised that while some species can be retained (native species), some of them can become environmental weeds and will need to be removed.

There is to be a meeting of the project management team on 30 June to discuss all of these outstanding issues. It was recommended that information be passed to the Forum that will come to SHET.

Jessica Zealand raised the issue of the 4 knot zone. No signage is visible when approaching from the west until halfway along the rock wall. This is due to the sign being moved during the recent rock revetment works. To maintain some stability by keeping the boat wash down, the sign should be moved back to a visible location.

Phil Guy added the 4 knot sign approached from the public jetty is not easily noticed, and proposed that Council request Transport for NSW better define the 4 knot zones from the public jetty to channel. Michael Roberts mentioned that this correspondence should mention the implementation of their compliance functions to enforce this.

Recommendation (Item to be determined under delegated authority)

That the Taskforce receive the Shoalhaven Heads River Road Foreshore Precinct Project (Regional Growth - Environment and Tourism Fund Grant # RNSW1279) Progress Report for information.

RECOMMENDATION (Phil Guy / Paul Ell)

That:

1. The Taskforce receive the Shoalhaven Heads River Road Foreshore Precinct Project (Regional Growth - Environment and Tourism Fund Grant # RNSW1279) Progress Report for information.
2. Council relocate the 4 knot zone and to write to Transport for NSW in relation to the visibility of other signage requirements as well as their enforcement of this to reduce boat wash and associated erosion.

CARRIED

SH21.3 Update on the Lower Shoalhaven River Estuary Coastal Management Program (CMP)

HPERM Ref: D21/212553

Nigel Smith advised that Council has been successful in receiving DPIE funding on a 2-to-1 basis for the Coastal Management Program for the Lower Shoalhaven River. The project brief is large and there is a lot of work to be done, but it is 90% complete. Council is working with Northern Coastal Management Program Advisory Committee on this project brief before it is advertised for tender.

Clr Wells asked whether a copy of the project brief could be provided to the Shoalhaven Heads Community Forum to be pass to SHET for information. Nigel advised the brief is guided by the Scoping Study, so the topics under consideration in the current discussion are not included but will be part of the consultation phase in the community.

Jess Zealand asked when the strategic plans are undertaken for each of the area, if they become the estuary management plan, addressing the more detailed actions into which the community are seeking to have input. Nigel confirmed this is the case, and advised the information such as the WRL report (inclusive of the coastal erosion risk zones) for River Road will be included for the consultants to respond in this brief. The community submissions made as part of the scoping study will be included.

Robyn Flack asked whether all the issues raised which are of long standing, such as the sand fans, stormwater, and removal of mangroves from in front of Holiday Haven, will already be logged. There is concern that these matters the community are trying to communicate may be lost in translation. Nigel advised the consultants are responding with different methodologies for engagement in their tender proposals. Hence this issue will be dependent on the specific consultants responses received for the Lower Shoalhaven River CMP Request for Tender (RFT).

Clr Wells noted the next stage is the release of the brief and the tender, and then the end of stage 4 when Council will go back into community with an implementation strategy.

Nigel advised the flood study, at least in draft, will be available by the end of this year. A review of the entrance management of Shoalhaven Heads will be recommended, to be addressed as part of the CMP. Jessica Zealand described changes to what is now a deep channel, and changes to how the water moves that will impact the flood study and entrance management; it is a holistic system, and they should not be looked at as separate issues. She stressed the importance of the CMP and the strategic plan, as this will hopefully rectify much of the frustration in the community.

Recommendation (Item to be determined under delegated authority)

That the Taskforce receive the report on the status of the Coastal Management Program for information.

RESOLVED (Jessica Zealand / Robyn Flack)

That the Taskforce receive the report on the status of the Coastal Management Program for information.

CARRIED

SH21.4 Shoalhaven Heads Estuary Taskforce - Review of Purpose, Objectives and Achievements

HPERM Ref: D21/215714

The following points were raised in discussion of this item:

- The Taskforce requires members from Greenwell Point, given that occurrences at Shoalhaven Heads have a significant influence on Greenwell Point.
- There is potential at Shoalhaven Heads for large tourism activities as it has the only flat waterway in the area. Shoalhaven Heads has limited growth potential, being bordered by

natural areas. Visitor numbers rise from 3k to 8k at peak times. Resources need to be managed to be robust and accessible. It is important to balance tourism and environmental impacts, and to weight up how many visitors Shoalhaven Heads and its boat ramps can take without impact. Tourism is set to grow more than the 5% given in the report; currently it is running between 17 and 25% above pre-COVID levels.

- Issues of water quality to be considered.

Phil Costello confirmed the new Council will reconsider all the committees at its first meeting following the Local Government election in September. It should be made clear to the new Council that the Taskforce consider there is much work still to be done, to inform Council's decision.

There was agreement the Taskforce could be disbanded once the CMP Lower Shoalhaven River that encompasses these matters is in place and sufficiently robust.

Recommendation (Item to be determined under delegated authority)

That the Taskforce review the purpose/objectives of the Shoalhaven Heads Estuary Taskforce as per the attachment.

RESOLVED (Phil Guy / Paul Ell)

That the Shoalhaven Heads Estuary Taskforce retain its objectives and purpose per the attachment, pending the decision of the Call Meeting of Council following the September 2021 elections.

CARRIED

Introduction of Items as Matters of Urgency

RESOLVED (By consent)

That the following addendum reports be introduced as matters of urgency:

1. SH21.5 Membership - Resignation from Mike James

CARRIED

The Chairperson ruled the matters as ones of urgency as they relate to urgent business of Council and allowed their introduction.

ADDENDUM REPORTS

SH21.5 Membership - Resignation from Mike James

**HPERM Ref:
D21/244363**

Recommendation

That Council

1. Accept the resignation of Mr Mike James and Ms Carole Cassidy.
2. Write to Mr James and Ms Cassidy to thank them for his contribution to the Taskforce.

RECOMMENDATION (By consent)

That Council:

1. Accept the resignation of Mr Mike James and Ms Carole Cassidy.

2. Write to Mr James and Ms Cassidy to thank them for their contributions to the Taskforce.

CARRIED

GENERAL BUSINESS

- Jessica Zealand is to be added to the membership circulation list.
- Phil Guy asked about the status of the Northern Floodplain Risk Management Plan Advisory Committee. Michael Roberts will check with the Senior Floodplain Engineer and provide a response via SHET.
- Phil Guy advised that communications are being made between SHET membership and Council regarding the review of the River Road rock wall and associated works project, with management being positive towards that concept.
- Phil Guy raised a **Question on Notice** for the Director City Services regarding drainage works at the rock wall project: There were three parts to the project the drainage, the rock wall, and the dredging. Apparently during the drainage works there had been an issue related to the trench, meaning it was difficult for Council to continue the works, and a call was made that the works were to be abandoned. However, that call was not forwarded to the project management team. Was this the case?

Clr Wells recommended that members send questions in advance of the meeting where possible.

There being no further business, the meeting concluded, the time being 5.06pm.

Clr John Wells
ACTING CHAIRPERSON

SH22.1 Shoalhaven Heads - Pre-dredge feasibility studies - grant project update

HPERM Ref: D22/78861

Department: Environmental Services

Approver: James Ruprai, Director - City Development

Reason for Report

This report is to update the Shoalhaven Heads Estuary Taskforce on the progress of the Lower Shoalhaven River, pre-dredge studies grant (Milestone 1 only) awarded by Transport for NSW's (TfNSW) Maritime Infrastructure Development Office (MIDO) under their NSW Boating Access Dredging Program.

Recommendation (Item to be determined under delegated authority)

That the Taskforce receive the Lower Shoalhaven River, pre-dredge studies grant Progress Report for information.

Options

1. Receive the Lower Shoalhaven River, pre-dredge studies grant Progress Report for information.

Implications: Nil.

2. Provide an alternative recommendation.

Implications: The details will need to be provided for staff to ratify.

Background

Council has received a grant from Transport for NSW's (TfNSW) Maritime Infrastructure Development Office (MIDO) under their NSW Boating Access Dredging Program. The grant is to undertake pre-dredge studies of the Lower Shoalhaven River to determine if dredging of a navigation channel linking the Holiday Haven Caravan Park boat ramp and the public jetty at Jerry Bailey Road is feasible. Undertaking this grant is the first step to determine the feasibility and potential environmental approvals pathway to undertake channel dredging.

Background to the Grant

The estuary foreshore adjacent to River Road at Shoalhaven Heads experienced localised significant erosion following a series of storm events that culminated in the June 2016 East Coast Low (ECL). The erosion was a consequence of the open ocean entrance, elevated water levels, and large ocean swells that penetrated the entrance and intensely strong winds that generated large swells across the estuary. Ordinarily, the foreshore adjacent to River Road is relatively sheltered.

Council engaged Royal HaskoningDHV (RHDHV) in August 2020 to provide assistance in investigating beach nourishment and channel dredging. This engagement was principally to map out a pathway aimed to address a number of objectives in a holistic and integrated manner. These objectives included:

- improving foreshore amenity (beach nourishment);
- mitigating ongoing foreshore erosion (beach nourishment in combination with the rock revetment);
- providing a navigation channel, of suitable depth and width for safe navigation, between the River Road boat ramp and the public jetty at Jerry Bailey Road; and
- consideration of the opportunity to ‘value add’ to the above works for the benefit of water quality, flooding, and ecology.

The RHDHV investigation was undertaken prior to the grant commencement to inform future steps including to:

- consider options and the feasibility for dredging and beach nourishment;
- finalise a preferred option in consultation with the community; and
- develop the design of the preferred option and seek the necessary environmental approvals including completion of the required additional specialist studies. The approvals sought would include a five (5) year licence from NSW Crown Land for dredging.

The RHDHV investigation concluded there was a need for pre-dredge feasibility studies of the Lower Shoalhaven River to investigate an environmental approvals pathway and design for dredging and possible beach nourishment.

Council staff recognised a possible funding source for such studies, leading to the submission of a grant application to MIDO, under their NSW Boating Access Dredging Program funding program on 7 May 2021.

Council staff were advised in August 2021 that \$150,000 will be granted to Shoalhaven City Council by MIDO for pre-dredge feasibility studies. The full breakdown of the grant application is provided in the Financial Implications section below.

The grant was awarded to undertake the pre-dredge studies, however only \$150,000 of the \$200,000 proposed cost. Council is contributing the additional \$50,000 toward the grant (DE21.98).

The potential for Council undertaking navigation channel dredging and beach nourishment is contingent on the outcomes of further investigations and the environmental approvals process. These need to be completed before the possibility of any actual on the ground dredging works is determined. No grant funding, or budget allocation, has been applied for at this stage for on ground dredging works. Additionally, if Council progresses past the environmental approvals stage to implementing the proposed design solution, consideration will then be guided by a cost benefit analysis before proceeding further. Indicative costs associated with channel dredging of this magnitude are in the order of \$2M - \$3M.

In summary, the next steps include:

1. Pre-dredge studies (Milestone 1 - \$200,000), currently underway include the following:
 - Hydrographic survey and land survey;
 - Preparation and implementation of a sampling and analysis plan (SAP);
 - Terrestrial and aquatic flora and fauna studies; and
 - Engineering studies including design and drawings sufficient for input to a REF (or EIS) and to support applications for necessary approvals (excludes detailed design and documentation).
2. Subject to the outcomes of the pre-dredge studies, preparation of a REF (or EIS), including intergovernmental consultation, and submissions and approvals; and,
3. Subject to environmental approvals from the REF (or EIS), prepare a detailed cost-benefit analysis to ascertain the viability of undertaking channel dredging and beach nourishment.

It needs to be highlighted that Steps 2 and 3 above were not funded by the successful MIDO grant, only Step 1 (Milestone 1) was. As such, if there is a successful outcome of Milestone 1, further funding will need to be sought through a MIDO grant or Council funding.

Pre-dredge studies – Milestone 1

Council was awarded \$150,000 under MIDO’s NSW Boating Access Dredging Program to undertake Milestone 1: Pre-dredge studies.

The studies in Milestone 1 include:

Study	Cost (Inc. GST)	Progress to date	Status
Hydrographic survey	\$26,290	Bathymetric surveys of the proposed area were undertaken by specialist hydrographer November 2021 – January 2022	Complete
Preparation and implementation of a sampling and analysis plan (SAP)	\$24,624.60	A sediment analysis plan was prepared and reviewed by council staff. Sediment samples have been collected and analysed. Final report in preparation	Fieldwork: Complete Awaiting final report Expected completion: March 2022
Terrestrial and aquatic flora and fauna studies	\$12,878.80	Specialist consultant engaged. Study underway. Awaiting clear weather to complete fieldwork.	Expected study completion: April 2022
Coastal Engineer studies: review of pre-dredge studies	TBC	Procurement process to begin. Estimated completion June 2022.	To begin once all other studies are complete
TOTAL Expenditure to date	\$63,793.40 (inc. GST)		

SH22.1

Community Engagement

Several different methods will be utilised to communicate and engage with key stakeholders throughout the future stages of this project. The most appropriate stakeholder engagement method will be selected to target specific audiences to ensure the information is disseminated effectively and efficiently to the community. It is essential Council affords the community an opportunity to provide feedback on projects, such as this one, to incorporate the social dimensions and effects.

Policy Implications

Subject to the outcomes of the pre-dredge studies, preparation of a Review of Environmental Factors (REF) (or an Environmental Impact Statement (EIS)), including intergovernmental consultation will be developed.

Additionally, the use of the Infrastructure State Environment Planning Policies (SEPP) versus the Coastal SEPP will need to be investigated further through consultation with MIDO and other state agencies to accurately identify the environmental approvals pathway.

Financial Implications

A grant was awarded to only undertake the pre-dredge studies (Milestone 1). The remainder of the Milestones are contingent upon the findings of these studies and additional successful grant applications/internal Council funding.

The grant application required a proposed workplan for the project that detailed costings. Costs were formed based on consultant's advice on the preliminary design and environmental approvals associated with similar sized dredging programs, as well as best practice in the coastal environment based on Council technical staff experience.

The costings of the grant submitted in the proposed workplan were split into four milestones and costed as detailed in the table below:

Milestone Number	Milestone	Total Cost (ex GST)	Applicant's (Council's) contribution (ex GST)	Grant amount sought (ex GST)
1	Pre-dredge Studies	\$200,000	\$50,000	\$150,000
2	Preparation of REF or EIS	\$100,000	\$25,000	\$75,000
3	Design and optimisation of channel position and configuration	\$100,000	\$25,000	\$75,000
4	Environmental review of proposed works and approvals	\$50,000	\$12,500	\$37,500
Totals		\$450,000	\$112,500	\$337,500

If it is determined a REF is required, rather than an EIS, the cost of Milestone 2 will be reduced. It is also worth highlighting that the milestones in the proposed workplan are dependent on the success of the previous one, i.e., pre-dredge studies (Milestone 1) may determine that progressing to an EIS or REF (Milestone 2) is not plausible.

Risk Implications

Risk 1: Community expectations and anecdotal evidence on the way forward may not be consistent with the recommendations derived from the studies undertaken as part of a successful grant application.

Risk 2: Preliminaries and environmental assessments undertaken as part of a successful grant may dictate that the full extent of the proposed works cannot be executed due to approvals from State and Federal levels not being granted.

Risk 3: If findings of the MIDO grant reveal that dredging or other treatment management options can proceed with the appropriate environment approvals, it may be cost prohibitive for Council to implement.

SH22.2 River Road Foreshore Precinct Rehabilitation Project Progress Report

HPERM Ref: D22/79029

Department: Environmental Services

Approver: James Ruprai, Director - City Development

Reason for Report

This report is to update the Shoalhaven Heads Estuary Taskforce on the progress of the Shoalhaven Heads River Road Foreshore Precinct Project (Regional Growth - Environment and Tourism Fund Grant # RNSW1279), in conjunction with a presentation from Water Research Laboratory (WRL).

Recommendation

That the Taskforce receive the Shoalhaven Heads River Road Foreshore Precinct Project (Regional Growth – Environment and Tourism Fund Grant # RNSW1279) Progress Report for information.

Options

1. Receive the River Road Foreshore Precinct Rehabilitation Project Progress Report for information.

Implications: Nil.

2. Provide an alternative recommendation.

Implications: The details will need to be provided for staff to ratify.

Background

Environmental management works are being undertaken at the River Road reserve foreshore to ensure the long-term health and safety of the area. These works primarily involve the construction of a rock revetment of the bank, stormwater infrastructure improvements, and tourism infrastructure.

A Tender process for the revetment construction occurred in November 2020, and the Strategy and Assets Committee approved the recommendation to award the contract to MGN Civil Pty Ltd in December 2020 (MIN20.920).

By way of summary, the purpose of the project was to:

- Reduce the risk of further damage to the foreshore and infrastructure from ongoing coastal and estuarine processes;
- Provide immediate and ongoing environmental benefits by improving the health of the foreshore;
- Enhance access to, and use of, the River Road Precinct for the benefit of the local community and visitors; and
- Improve recreational and tourism infrastructure for the Shoalhaven LGA, thereby increasing visitation rates and expenditure locally and regionally.

The project was funded to cater for tourism infrastructure works since the projected increase in tourism visitation – estimated as a conservative increase of around 4-5% over current figures – has the potential to create significant off-peak and shoulder season visitation and associated spend.

Accordingly, works conducted comprised:

- Rock protection wall in the highest risk areas;
- Stormwater detention and discharge works to reduce impacts caused by these on the foreshore area;
- Beach nourishment and beach scraping works; and
- Foreshore vegetation remediation.

Additional “tourism infrastructure works” included:

- New viewing platforms; and
- New beach access stairways replacing the storm damaged assets.

Project Update

The Rock Revetment design, completed by consultant Magryn & Associates, was peer reviewed by Greg Britton from Royal HaskoningDHV (RHDHV) in October 2020. A number of issues were identified by both Council staff and RHDHV that required amendment before construction of the rock revetment could commence.

Council and MGN Civil commenced Stage 2 of the project – Construction, in early February 2021.

The construction works completed included:

- a) Rock revetment construction as per the design and peer review amendments;
- b) Stormwater remediation works are ongoing;
- c) New access stairs and a segment of the boardwalk within the rock revetment;
- d) Undertaking beach scraping/nourishment works, supplemented from dry-notch maintenance, in conjunction with the Coastal staff; and,
- e) Undertaking site rehabilitation/revegetation works as per the plan.

Refer below for photographs.



Beach nourishment works



Access stairs



Access stairs and rock revetment



Rock revetment and segment of the boardwalk



Rock revetment



Revegetation works

SH22.2

As a result of the construction works, further erosion of areas directly to the east of the protected zone has occurred, with a small area of exacerbated erosion immediately adjacent to the eastern end of the revetment occurring, known as “end effects”.

Following a meeting with community representatives, Council sought recommendations to mitigate the impacts of this subsequent erosion in the formulation of an environmental assessment to determine an appropriate engineering solution. Water Research Laboratory (WRL) were engaged to provide a design solution to this issue (Blacka, 2022), and RHDHV were subsequently engaged to provide a peer-review of the proposed amelioration solution.

An overview of recommended management works is provided in Figure 1 below, broken down into three chainages. Figures 2 and 3 illustrate the proposed concept solution specifically for the chainage where the end effects are occurring. Recommended management works can be summarised as follows:

- Ch 680 to 720 m: Modifications to the rock revetment to reduce its occupation space and minimise impacts on adjacent stretches of unprotected foreshore. These modifications include stripping of the armour and rebuilding the structure with a steeper slope and a single layer of well-placed primary armour stones. In addition, sand nourishment of the beach in front of the revetment to lift the beach level to at least 1.1 m AHD, to reduce the interaction of swash with the rocks and the resulting scouring effects currently being experienced.
- Ch 720 to 800 m: Sand nourishment of the intertidal section of the beach to achieve a more suitable beach volume, including re-building of the back-beach erosion scarp to a more stable slope. Stabilisation and re-profiling of the bank surface and crest through revegetation and ground cover.

- Ch 800 to 950 m: Re-profiling of the erosion scarp, stabilisation, and revegetation of the bank surface.
- The recommended modifications to the end section of rock revetment will produce an excess of armour stone. Council then can consider re-using a portion of this armour stone to further improve the alignment of the revetment's eastern end and to repair the current "end-effect" erosion.



SH22.2

Figure 1. Overview of recommended management works.



Figure 2. Proposed concept design solution to ameliorate the end effect erosion.

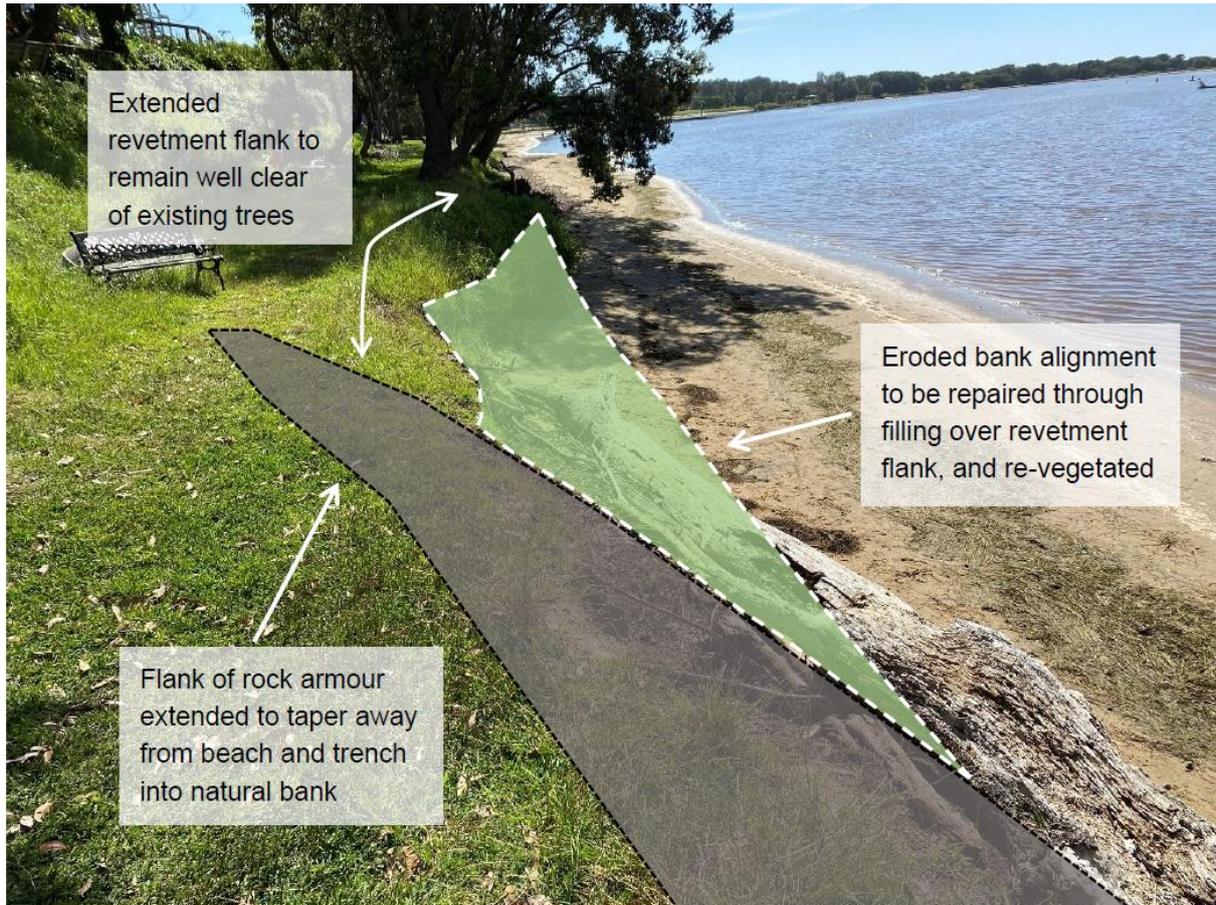


Figure 3. Proposed concept design solution to ameliorate the end effect erosion.

SH22.2

Community Engagement

The community has been regularly engaged throughout the design stage of the project. The drainage design went through several iterations, with the final option being supported by the community.

A sod turning event occurred in October 2020 to mark the commencement of the construction works at the site.

An official opening will be undertaken in accordance with the funding agreement once all works are completed on site.

Financial Implications

Whilst the rectification of the construction works will result in maintenance and monitoring costs for Council, it will ultimately alleviate repair and environmental management costs, which are only expected to escalate with each storm event causing further damage.

Preliminary cost estimates have been provided by WRL for the rectification works as detailed above in Figure 1. These costs will need to be confirmed with suitably qualified contractors and are dependent on the identification and location of a suitable source of nourishment material.

Risk Implications

The majority of works are now complete, however there are deviations from the Magryn engineering design as detailed in WRL's assessment. The pathway forward to rectify this has been proposed leaning heavily on coastal engineering.

In addition, there is a risk that if the proposed amelioration works are undertaken without proper oversight, the design will not have the expected outcomes. To reduce this risk, the Coastal Management Unit within Council will oversee the works and will be ensuring the construction meets design specifications. The engagement of a contractor that is suitably qualified and that has ample experience working with rock structures in the coastal environment is vital to the success of the required modifications.

The WRL report also reassessed the risk of coastal erosion and coastal processes that threaten the rock revetment works and entire foreshore region to the east of the construction. This updated risk assessment has been included as part of the proposed design.

An additional risk of the rock revetment if it is extended to the east is that the erosion issue may be just extended further east. However, the proposed design to extend the rock to the east has a trenched design that gradually bends to the north, making less of a rapid transition, and has been designed in mind with reducing this erosion.

SH22.3 Shoalhaven Heads - River Opening

HPERM Ref: D22/99472

Submitted by: Robyn Flack

Recommendation

That

1. Shoalhaven City Council engages a consultant to further investigate the options proposed from the “Management Options for Improving Flows of the Shoalhaven River at Shoalhaven Heads” WRL 2015 report as outlined in the report as:
 - a. Decreased cross-sectional area of Berry’s Canal;
 - b. Increased circulation at Shoalhaven Heads via oceanic transfer pipes;
 - c. Increased estuary wide circulation via a channel on the eastern side of Comerong Island;
 - d. Targeted dredging works within Shoalhaven Heads to improve circulation; and
 - e. Assessment of a permanent entrance.
2. That the review of the Shoalhaven Heads Entrance Management Plan for Flood Mitigation, and other related plans currently on review, include an analysis and modelling of the effects of an open entrance and improved flows at Shoalhaven Heads on flooding events at Shoalhaven Heads, Greenwell Point, and upstream of the Shoalhaven River.

Background

In November 2015 the Water Research Laboratory (Glamore, Ruprecht and Rayner) of UNSW delivered their “Management Options for Improving Flows of the Shoalhaven River at Shoalhaven Heads” report. This report reviewed all known previous reports and documents numbering over 75. *The report reviewed a number of options and proposed further investigation of:*

1. Decreased cross-sectional area of Berry’s Canal;
2. Increased circulation at Shoalhaven Heads via oceanic transfer pipes;
3. Increased estuary wide circulation via a channel on the eastern side of Comerong Island;
4. Targeted dredging works within Shoalhaven Heads to improve circulation; and
5. Assessment of a permanent entrance.

The patterns, costs and damage caused by floods over the years have been extensively recorded and studied, as has the increase in silting in the Shoalhaven River entrance bay.

An agreed conclusion in recent reports is that Berry’s Canal now takes 100% of the Shoalhaven River flow and that flooding in Shoalhaven Heads, Greenwell Point, and upstream to a degree, is mitigated when an entrance/outlet at Shoalhaven Heads is open and flowing with large water discharges to the sea.

The early research concluded that the river entrance would break out when trigger levels, as detailed in the ‘Shoalhaven River Entrance Management Plan for Flood Mitigation’ was met,

with mechanical assistance (and mechanical assistance has always been necessary since the 1970's).

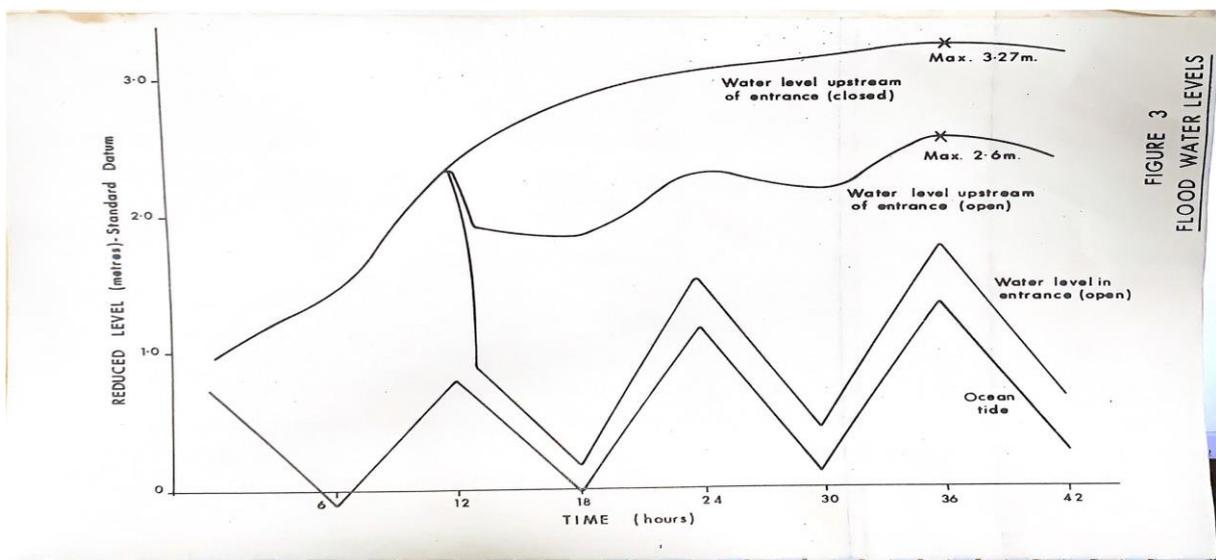
As the silts in the bay around the Shoalhaven Heads entrance have hardened the break in the sand dunes with water flowing over the increased silts has performed more as a weir and not as a deep river channel. It appears a tipping point may have been reached for an effective entrance, created at flood time, without a directional channel stemming back as far as Berry's Canal entrance.

Feedback from the March 2022 flood has been inundation to houses and other buildings at Shoalhaven Heads, water being very slow to recede along Bolong Road and very little flood minimisation effect at Greenwell Point once the entrance is operating.

The January 1984 Public Works Report "Shoalhaven River Entrance Management" attempted to mathematically simulate the operation of the entrance with an open and closed entrance. What was simulated is the lived experience of Shoalhaven Heads.

On 8th August 1998 the entrance was mechanically opened by Council at 4pm following a river peak at Nowra of 3.35AHD, a subsequent flood occurred on 19th August, while the entrance was open, with a peak level of 3.12AHD at Nowra.

The 8 August 1998 flood resulted in inundation to Councils Holiday Haven Caravan Park and houses in Hay Avenue and Jerry Bailey Road, while in the 19th of August flood there was no inundation at Shoalhaven Heads. Note: It is not clear how far "upstream" is in the graphic for the open entrance affect (below) to be felt.



SH22.3

Comments by Council officers

WRL (2015) assessed all the potential management options put forward by this community paper (D16/181073). The report did not propose further investigation of those actions as the report addressed management options from a feasibility perspective.

None of the management options assessed were deemed feasible due to them being largely ineffective, or cost prohibitive in the case of a permanent entrance opening. These management options also had additional environmental risk concerns. The reason that none of these options were deemed to be effective was because Berry's Canal is already a highly efficient channel for ocean tidal exchange and the existing water residence times in Shoalhaven Heads is low.

Further feasibility comments for each suggestion are outlined below as per the WRL (2015) assessment:

6. Decreased cross-sectional area of Berry’s Canal;

These were tested using a 2-D model. Key findings were: *“The results from this management option suggest that decreasing the cross sectional area of Berry’s Canal will not appreciably alter circulation within Shoalhaven Heads and would likely result in increased velocities and subsequent erosion. To this point unless significant and costly erosion control measures were installed, the channel would likely scour to the existing cross-sectional area. A decreased cross-sectional area would also have a significant influence on upstream flood levels and would need to be tested in any future flood study assessments...”*

7. Increased circulation at Shoalhaven Heads via oceanic transfer pipes;

Key findings were: *“The results from the analytical assessment suggest that the transfer pipes would not provide sufficient exchange to influence circulation... under a best case flushing scenario, the pipes are likely to only influence 0.8% of the daily tidal exchange. As such, this option does not warrant further consideration.”*

8. Increased estuary wide circulation via a channel on the eastern side of Comerong Island;

Key findings were: *“These results indicate that any impact from the channel would be minimal and largely localised to the area immediately surrounding where the channel enters the bay at Shoalhaven Heads. Interestingly the excavated channel does slightly reduce flushing rates in the Comerong Bay Harvest Area, which would be an undesired effect for local oyster growers. The channel may also influence bird habitat on/adjacent to Comerong Bay. Therefore, since the channel provides limited circulation benefits and has various potential concerns, it is not recommended to be pursued further.”*

9. Targeted dredging works within Shoalhaven Heads to improve circulation; and

Key findings were: *“An analysis of a similar strategy at Farquhar Entrance on the Manning River suggests that ongoing annual costs would range from \$250,000 to \$400,000 per annum, with additional initial capital costs. Of particular importance is that there is no location identified within the Shoalhaven Heads region for onsite dredge disposal that would be suitable for environmental or flood mitigation purposes.”*

“Numerical modelling results suggest that additional dredging to expand the tidal prism and, thereby increase circulation, would have a negligible effect on tidal flushing rates. This is because Berry’s Canal is already highly efficient and the tidal flushing rates within the vicinity of Shoalhaven Heads sufficiently low. Further, as discussed previously, approximately 50% of the available storage is already within the tidal range and relatively small additions in volume, as generated by dredging, would have limited impact.”

10. Assessment of a permanent entrance.

In relation to this option, it was deemed cost prohibitive: *“Based on the original Posford et al. (1977) design these recent cost estimates suggest that the groyne field at Shoalhaven Heads would cost approximately \$33,000,000. Note that this does not include costs associated with dredging the channel or assessing impacts to the upper estuary. Details on funding sources available in NSW to support coastal works are outlined in Carley et al. (2015). Importantly no single funding source is available for this level of associated investment.”*

In summary, the recommendations of the WRL (2015) report were:

- To address **water quality issues** of the whole catchment and to oyster leases – this is being addressed as part of the Lower Shoalhaven River Coastal Management Program (CMP);

- Update the 1990 **Flood Study** – this is currently being completed by SCC’s Flood team; and
- Implement an **educational program** to highlight:
 - Water quality in Shoalhaven Heads is good quality and overall has good circulation;
 - Flood preparedness;
 - Acid sulphate soils awareness; and
 - Shoals within the estuary being of temporary nature.

Section 6 of the report provides a clear summary of the findings and expands upon these recommendations.

Further to these findings and recommendations of the WRL (2015) report, threatened migratory shorebirds that nest at this location are protected under the NSW Biodiversity Conservation Act 2016 and international conventions. Accordingly, the pursual of these options is also unlikely to be permitted by NSW Department of Planning and Environment and Commonwealth Department of Agriculture, Water and the Environment.

Based on this previous body of work investigating entrance management options, as well as ongoing work on the Lower Shoalhaven River, Council Officers recommend that the options presented in the WRL (2015) report be reviewed as part of the Lower Shoalhaven River CMP Stage 2 studies.