Moffat Beach Seawall Reconstruction Project

Community Focus Group

Meeting 2 October 2024

Sunshine Coast COUNCIL

Meeting Agenda

Agenda items

Item no.	Agenda Topics	Time	By Whom
1.	Introduction	4:30pm	Chairperson
2.	Acknowledgement of Country	4:35pm	Chairperson
3.	Terms of Reference overview	4:40pm	Chairperson
4.	CFG members round table – introductions, values sharing, opportunities and key issues (5 mins per member)	4:50pm	All
5.	Moffat Beach Seawall Reconstruction status update - Presentation from SCC Officers	5:30pm	SCC Officers
6.	Q&A discussion	6:00pm	All
7.	Next steps	6:20pm	All
8.	General business and next meeting	6:25pm	Chairperson

Acknowledgement of Country

Terms of Reference Overview

CFG Members round table (5 mins per member)

- Values sharing
- Opportunities
- Key issues

Sunshine Coast COUNCIL

Moffat Beach Seawall Reconstruction Project Background and Status Update

Project Team

Historical context

Moffat Beach (circa 1920s) (SCC libraries collection)

Moffat Beach (circa 1930s) (SCC libraries collection)

Historical context

Moffat Beach (1940) (SCC libraries collection)

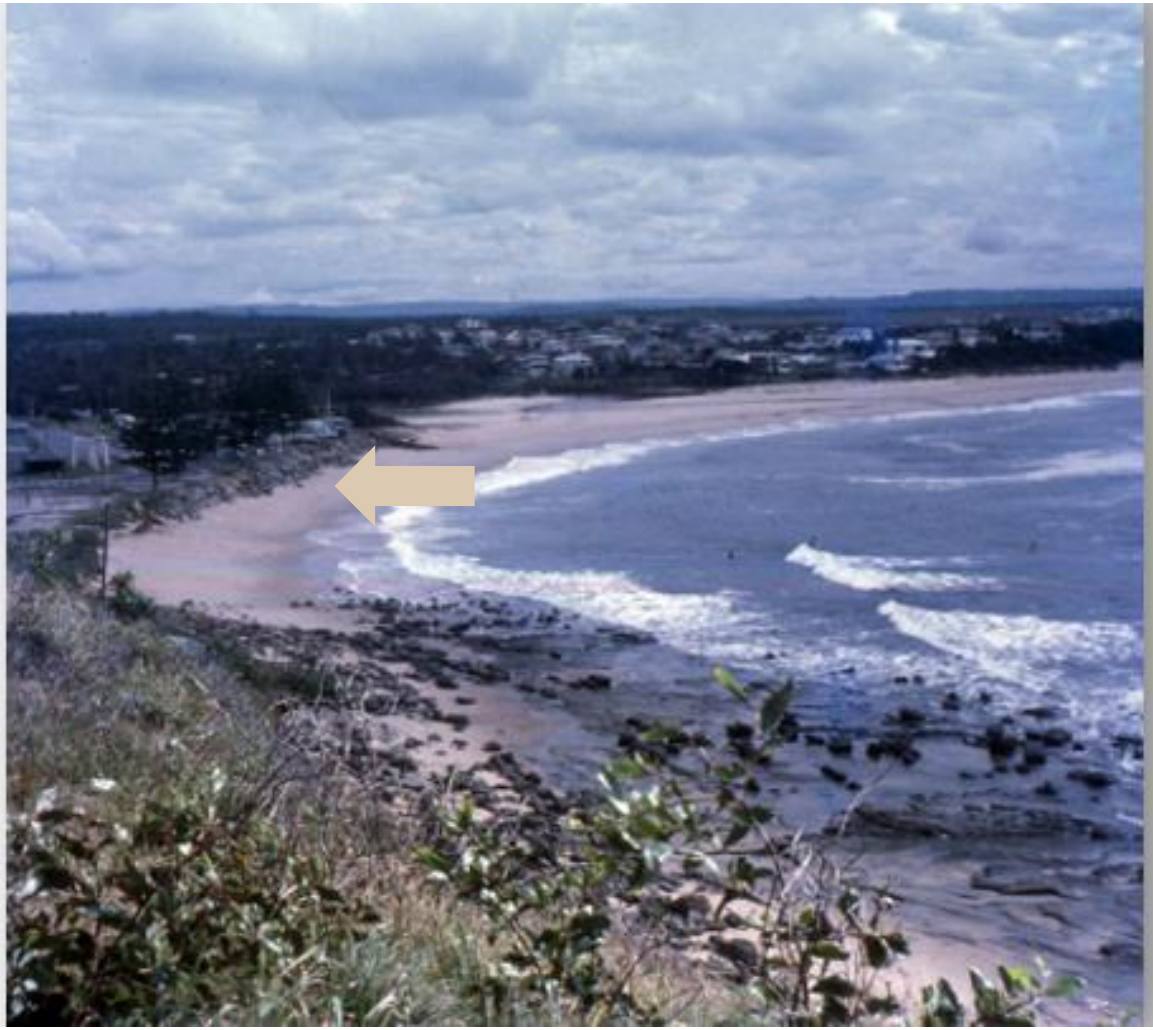
Moffat Beach (circa 1940s) (SCC libraries collection)

Historical context

Moffat Beach pre-infilling of park (circa 1950s)

Moffat Beach (1965) (SCC libraries collection)

Historical context



Moffat Beach after dump rock on shoreline, infilling of park (circa 1960)

Looking north from Queen of Colonies Parade, Moffat Headland, ca 1970

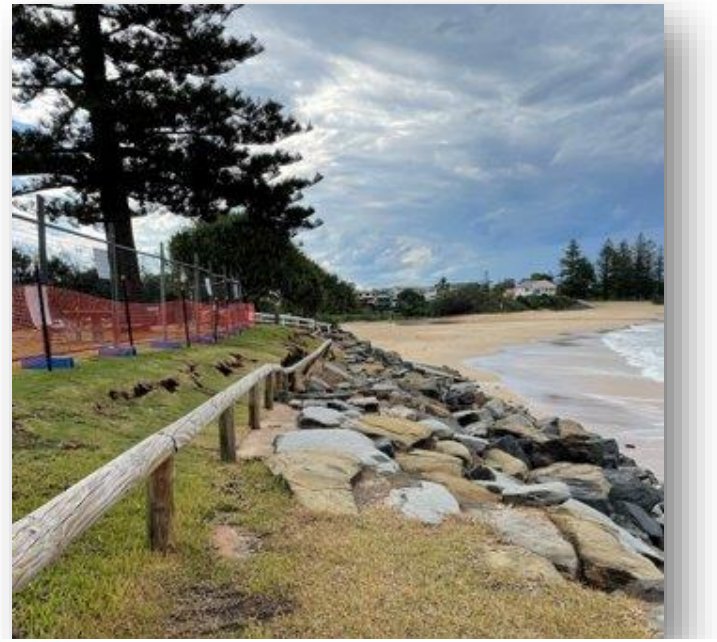
Historical context

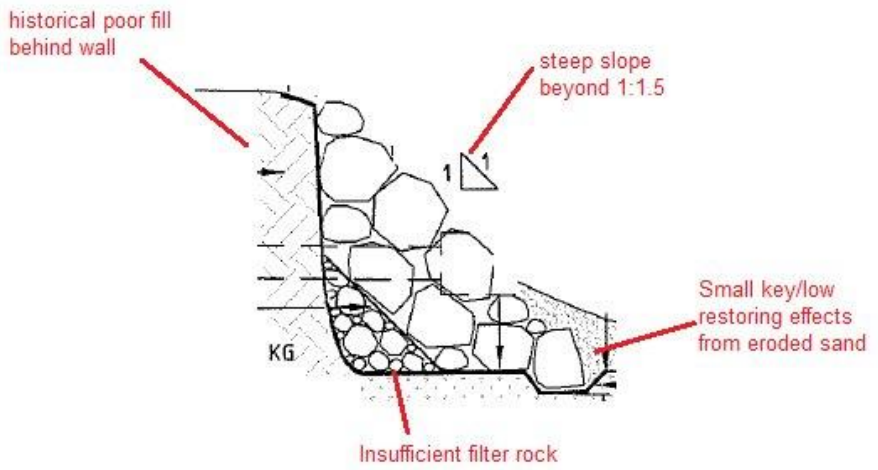
Moffat Beach after cyclones in February 1972

Moffat Beach following Cyclone Daisy, February 1972

Seawall background and failure

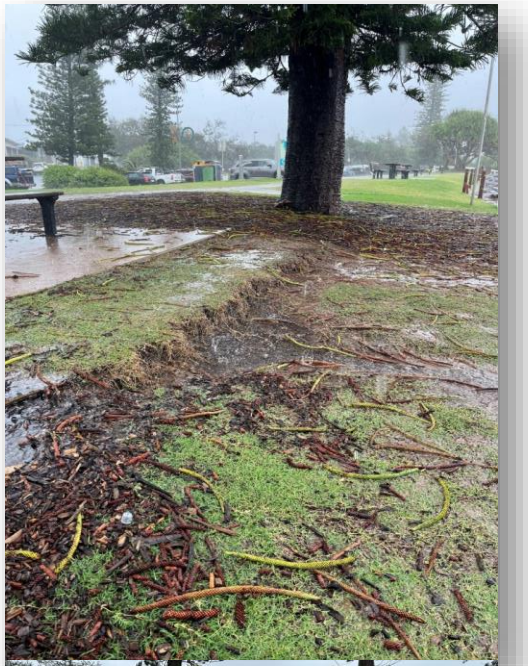
- The Moffat Beach seawall (approx. 260m), and its two timber beach accesses were constructed in 2008 following erosion of the embankment and collapse of the old dumped rock wall.
- The 2008 seawall design footprint was minimised to retain the Norfolk pines and park area whilst also reducing the encroachment onto the beach as much as possible. Because of this, the front face of the wall was constructed too steep - at or beyond 1:1 or 45 degrees (priority not given to function/safety/engineering design).
- Due to the narrow seawall, there was also insufficient drainage material placed at the time of construction.
- During the February 2022 rain event, a 60m section of seawall underwent a rotational failure.
- The main causes of this failure included:
  - Extended period of wave erosion - low sand levels at the base of the wall offer little restoring force.
  - Heavy and consistent rainfall, successive La Nina years – led to high ground water pressure behind the seawall with poor drainage.
  - Steep seawall batter, the rock is placed beyond its natural angle of repose and is more prone to failure and wanting to return to this natural angle when stacked up a slope.





Seawall background and failure

- Emergency temporary rectifications works completed mid-2022.
- Emergency temporary works included removal of 2 pines which were in danger of falling due to the failure.
- During 22/23 storm season further movement in the wall was observed.
- QRA funding was approved mid-2023 for the western failed section, including funding to cover emergency rectification works.
- A seawall monitoring plan was implemented mid-2023 and monitoring extent was widened to include regular monitoring of the central part of the wall in early 2024.
- The central section showed signs of slumping and major rock displacement. Lidar scans done during monitoring in March 2024 showed significant movement had occurred and displaced amour rocks onto beach along with major slumping of the wall.
- Consultants recommended to restrict access to/around the seawall. This was implemented as far as practicable by Council prior to Easter 2024.
- Geotechnical analysis demonstrated a low Factor of Safety (FoS) and further failure is considered likely during an event (erosion and saturated backfill).
- Additional temporary works undertaken in August 2024 to reposition unstable rocks in the central section.
- Reconstruction of the seawall was recommended at the same time as the QRA funded western section.



Community Values

What we've heard – community values

Moffat Beach Seawall Reconstruction Project – Summary of community feedback

- Unique character of Moffat Beach – cultural values, connection to place, history
- A place for community/families/friends/visitors to meet, connect, play, dwell and socialise
- Informal and formal recreation opportunities (water and land-based)
- Connection to nature/sightseeing
- Accessibility - coastal pathway, beach and parkland access
- First Nations cultural values
- The beach/sand
- Tooway lake
- Open space parklands/playgrounds
- The wave (surfing/watersports)
- Dog walking
- Norfolk pines – iconic
- Trees/shade
- Local businesses
- Social group gatherings
- What else?

What we've heard – community values

Environment and Liveability Strategy:

- 68% of respondents identified that "*access to the natural environment*" is among their top 5 items. Among urban environment this increased to between 70%-75% of respondents.
- Residents' ability to access nature is the single biggest contributor to quality of life on the Sunshine Coast and residents will be very sensitive to any policy decision that could possibly detract from their ability to engage with nature.

Moffat to Shelly Beach Coastal Study:

- Strong desire to preserve what is special about the area – to ensure future generations can enjoy the same experiences
- Take an integrated and whole of landscape approach to deliver holistic approaches that balance the needs of people, flora and fauna
- Fit for purpose services and infrastructure
- Increased area of public recreation open space
- Improved awareness and coordination of management activities across stakeholders to improve ecological and amenity outcomes aligned to asset of shared objectives

Costal Hazard Adaptation Strategy:

- A need for balance, recognising that adaptation will require a nuanced approach linked to the specific issues and needs of the local area/community
- The importance of retaining healthy and functioning coastal ecosystems as a key element for coastal adaptation planning and resilience
- The need for existing infrastructure located within a coastal hazard zone, to be designed and/or upgraded to ensure longer term function and resilience
- The critical role a healthy coastal zone plays in underpinning our economy and community identity
- The need to ensure decisions are based on the best available scientific evidence and assessment of risk
- The desire for many in our community to be involved in the ongoing management of our coastal zone
- Integrated planning and asset management needs to be embedded and funded across all levels of government

Seawall Design Requirements and Considerations

Project Scope

- Western Section (QRA funded) – rock seawall design and construction
- Middle Section (SCC funded) – rock seawall design and construction
- Eastern Section – design only (note construction not currently funded)

- Vehicle access ramp (DTMR funded) – design and construction integrated with seawall
- Beach accesses (QRA and SCC funded) – design and construction integrated with seawall
- Open space landscape and amenity immediately behind the seawall, including surrounding parklands, plantings, coastal pathway, seating, tables, beach showers, etc. (SCC funded)

Moffat Beach Seawall Requirements

The Moffat Beach seawall needs to:

- adhere to modern coastal engineering standards
- be designed for the specific Moffat Beach coastal conditions
- keep our community safe
- balance the protection of the park and the health of our beaches and coastline
- be constructed lawfully with all necessary statutory approvals obtained

The current seawall has failed and a new design for the reconstructed seawall will alter the footprint.

This change to the seawall's footprint means the Seawall Reconstruction Project Team will need to submit a development application and receive approval for the new design before any work can begin.

Project Constraints

- Legislative compliance
- Seawall engineering requirements
- Project delivery timeframes (critical pathways)
- Approvals
- Community safety
- Budget
- Impacts to coastal processes and erosion (design and alignment)
- Funding deadlines

Negotiables / Non-Negotiables

Negotiables

- Landscape elements
- Plantings
- Shade
- Beach access embellishments (showers, taps, bike racks, etc)
- Parkland furniture (seating, shelters, tables, etc)
- Some vehicle access ramp design elements

Non-Negotiables

- Seawall design type
- Seawall alignment
- Coastal modelling outcomes
- Geotechnical assessment
- Beach access points
- Legislative compliance
- Delivery timeframes
- Impacts to coastal processes (legislative)
- Vehicle access ramp location and engineering principles

Budget

A total of $4.55 million has been allocated to rebuild the western and middle sections of the Moffat Beach seawall.

This includes:

- $1.6 million from the QRA under a Disaster Recovery Funding Arrangement agreement (approved in May 2023) for the western section
    - (Note - ~$350k QRA funding was provided retrospectively for temporary safety works undertaken following the seawall failure in 2022)
- $150,000 from the DTMR (approved in August 2023) for the western section (vehicle access ramp)
- $2.85 million through SCC 2024-25 Capital Works Program budget (approved 20 June 2024) for the middle section.
    - This also includes landscaping elements to reinstate any areas impacted by construction of the seawall.

Design and Construction Timing

- Design contract for the entire seawall awarded in late July 2024.
- Geotechnical surveys conducted September 2024, results currently being analysed.
- Coastal modelling package being finalised – provides model run data of beach width/erosion impacts with different wall alignments along with wave overtopping estimates.
- Design considerations:
  - Placed rock design maintaining current look and feel of Moffat Beach, alignment TBC
  - Reconstruction of 2 staircases (similar look and feel)
  - Sandstone block seating (location tbc)
  - Coastal path, shower/s & seating
  - Minor open space improvements
  - New vehicle access ramp located in a more suitable area
- State and Council design approvals to be submitted in November to ensure construction timeframes can be met.
- Construction is expected mid-2025.
- Due to flattening out of slope and additional drainage material required for the wall to meet modern standards the footprint will increase.
- For public safety, warning signs and temporary fencing must be retained until end of rebuild.

Application Process

To submit a development application Council must:

- seek pre-lodgement advice from the Queensland Government before the application is lodged
- obtain the landowner's consent (Queensland Government)
- lodge the application with Council as the assessment manager
- refer the application to the Queensland Government's State Assessment and Referral Agency
- answer any information requests from either Council (the assessment manager) or the State
- wait for the State's review response
- Council (the assessment manager) makes the final decision on the application and, if approved, issues the decision notice inclusive of any conditions from the State's referral agencies.

More info on the application process can be found on the Moffat Beach Seawall Reconstruction webpage

State Government Approvals

Matters of State Environmental Significance – Queensland Government

The Seawall Reconstruction Project Team understands that as part of this process the project will require assessment of:

- maritime safety – assessed by Maritime Safety Queensland
- tidal work – assessed by the Department of Environment, Science and Innovation
- removal, destruction or damage of marine plants – assessed by the Department of Agriculture and Forestry.

The Queensland Government has a list of requirements for each aspect listed above and the seawall project must make sure that the application adheres to these requirements.

The requirements are in the following State Development Assessment Provisions:

State Code 7 – Maritime safety

State Code 8 – Coastal development and tidal works

State Code 11 – Removal, destruction or damage of marine plants.

State Government Approvals

State Code 8 - Key Performance Outcomes:

Performance Outcome 12 (PO12) of State Code 8 states that:

- *Erosion control structures minimise interference with coastal processes and reduce the severity of erosion on adjacent land.*

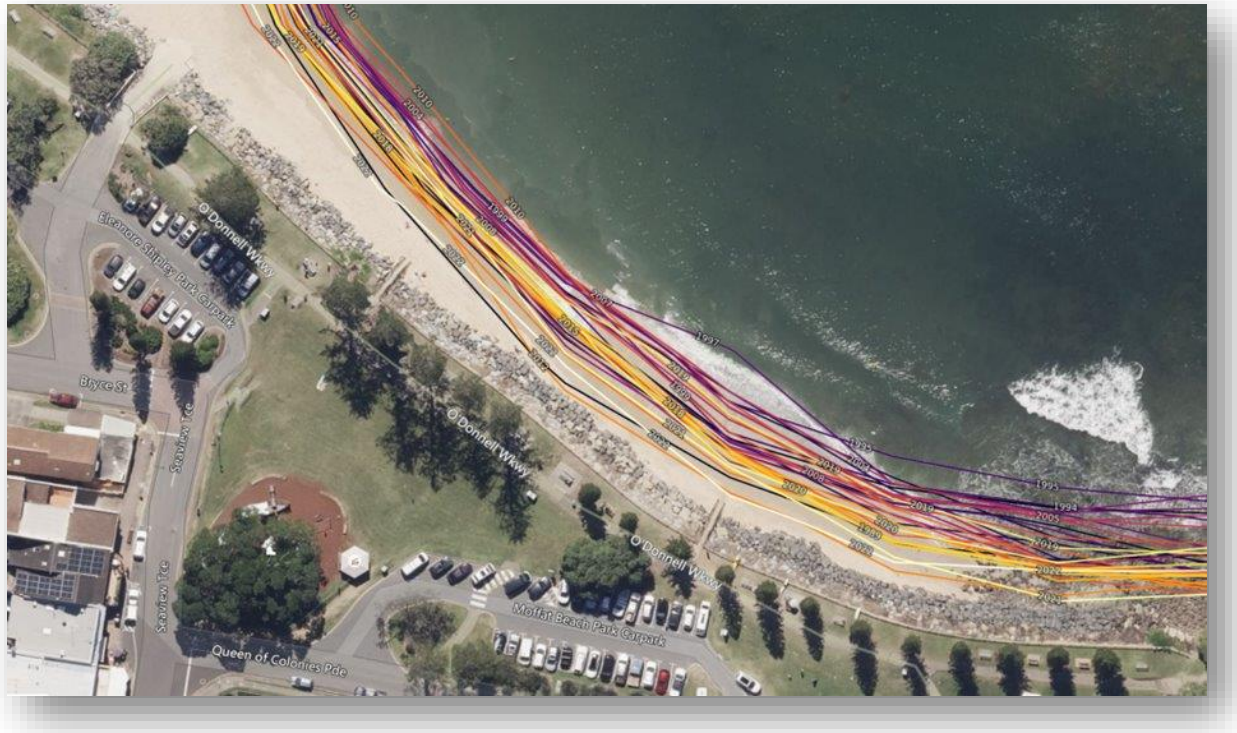
Performance Outcome 11 (PO11) of State Code 8 states that:

Erosion control structures (revetments only) are only constructed where:

- *There is an imminent threat to significant buildings or infrastructure, and there is no feasible option for either:*
- *beach nourishment; or*
- *relocation or abandonment of structures*

Coastal Processes at Moffat Beach

- Sand transport at Moffat Beach is dominated by cross-shore processes whereby sand is transported rapidly offshore during even relatively minor storm events and slowly onshore under calmer conditions.
- There is not much "new" sand coming onto the beach because of the rocky headland outcrops at the northern and southern extent of Moffat Beach. Sand typically bypasses the embayment.
- The wave climate at Moffat Beach is easterly/north-easterly – with an increased wave energy due to the navigational channel and creates a dumping wave
- The image represents the different shorelines (at MSL) since 1994, it shows a general recessive trend along the shoreline at Moffat Beach.
- It is especially important that the seawall alignment, geometry and material choice is considered carefully to ensure no worsening of impacts to coastal processes.



Seawall alignment

Placed rock wall – footprint extended seaward

Considerations for this design are:

- Potential for Norfolk trees to be retained (avoids structural root zone)
- Impacts on erosion during storm events
- Impacts on coastal processes
- Impacts on beach width
- Impacts on beach access closures associated with erosion events
- Impacts on wave refraction and backwash and risk to the public
- Compliance with State Code 8 - risk of DESI approval being denied creating significant delays to construction of the seawall. A new design and approval process could delay the project by another year.

Placed rock wall – footprint extended landward

Considerations for this design are:

- No expected impact on current coastal processes and beach erosion volumes
- Expected to comply with State Code 8
- No expected impacts to wave dynamics
- No expected worsening of current beach access closures during storm events
- Loss of Norfolk pines
- Loss of parkland/open space

Next Steps

Seawall Concept Design

- Coastal erosion modelling
- Geotechnical assessment
- Draft concept designs
- Independent expert review (coastal erosion modelling and draft concept design)
- Internal review – key council stakeholders
- Multi-Criteria Assessment for seawall design options to inform preferred design (opportunity for CFG input at next meeting)
- CFG review and feedback on two design options (next 2-3 weeks)
- Lodgement of design with SARA and Council (late October)

Q&A Discussion

General Business

- Review actions arising

Next Meeting

- Agree on meeting date, time and location
- Nominations for agenda items

Thanks for your time

Sunshine Coast COUNCIL

sunshinecoast.qld.gov.au