Nearshore Beach Nourishment Trial

Frequently asked questions

What is Nearshore Beach Nourishment?

Nearshore nourishment is the process of placing new sand (i.e sand sourced from areas outside of the area being nourished) in the water and not on dry land. The sand is placed in the water, in an area where the waves and currents will distribute it. The aim is to increase the sand volumes on the beach to offer further protection from erosion of the area.

Why do we need the Nearshore Beach Nourishment trial?

The Sunshine Coast local government area has approximately 60 kilometres of coastline, stretching from Caloundra to Peregian Beach.

Our sandy beaches are constantly changing due to natural coastal processes and associated weather patterns.

As a result, our beaches are vulnerable to repeated erosion during storms, increased swells, and other weather events, which can also impact important community assets such as roads, parks, car parks, pathways, playgrounds and amenity blocks.

We need to be proactive and explore other ways to manage our beaches from the risk of coastal erosion in the future.

For example, without enough sand on beaches, such as Maroochydore Beach, roads and pathways, parks and buildings behind the beach could be undermined during storms.

Nearshore sand placement is one method available to increase the resilience of beaches from severe erosion caused by storms, swells and weather events.

The nearshore nourishment trial will provide critical evidence to support our understanding of the operational aspects of delivering additional sand to the Sunshine Coast and to optimise the “value for money” for future coastal management practices of this type along our coastline.

Why is the Nearshore Beach Nourishment trial happening at Maroochydore Beach?

Studies show that there is a limited supply of sand on the Sunshine Coast. Maroochydore Beach has been subject to significant erosion events and the addition of new sand from an external source in the coastal system, such as the Spitfire Channel, helps restore sand to the beach and protect the area from erosion.

What does Council expect the Nearshore Beach Nourishment trial will show?

Council expects the trial to show that additional sand placed in the nearshore area close to the sand bar will naturally migrate to the shoreline over time, this will confirm the effectiveness of utilising this well-established methodology as experienced by other government bodies on the Australian east coast.

What about the impact on the surf?

Maroochydore Beach is a popular place for surfing and this is an important consideration of the trial. Impacts on the surf break will be closely monitored and will be an important part of the trial evaluation. The trial is not

intended to have long-lasting impacts on the surf conditions.

Factors that will be considered during the trial are the location and shape of the sand placement.

The sand bar placed by the dredge will be monitored for both how the sand moves (sediment transport) and changes, if any, to the surfing conditions.

Can we improve the surf conditions or create new surf breaks?

While it is possible to create surf breaks with nearshore nourishment, the nature of such sand bars is not permanent, and the added sand will mix into the surf-zone over time.

The longevity of the sand bar will depend on volume, weather and placement area.

Can I swim or surf near the barge when its operating?

No. There will be a strict exclusion zone when the barge is in operation. However, the dredge will operate more than 100 metres from the shoreline. During the lead time, when the dredge is getting the sand from the shipping channel sailing back to Maroochydore, you'll be able to use the beach and surf as you normally would. Please follow all signs and instructions for your safety.

What about the impact of the trial on the marine environment?

The trial nourishment will target nearshore sand bar replenishment of the existing sandbanks. As part of this trial we will be undertaking ecological surveys to monitor the changes to the marine environment over a three year period.

An exclusion zone around reefs and other underwater areas (also known as benthic habitats) will be in place during the works.

What about the turtles?

Long term data collected as part of TurtleCare and Coolum and North Shore Coast Care turtle monitoring show that there is less than one nest per year laid at Maroochydore Beach.

The nests at this location are always relocated due to the impacts of artificial light on the hatchling survival.

Any nest relocations are done by qualified volunteers from TurtleCare and/or Coolum and North Shore Coast Care.

What about the shorebirds?

The trial will be conducted away from shore bird resting areas and is not expected to have any impact. The barge will be placing sand in the nearshore area off Maroochydore Beach, away from the mouth of the Maroochy River where shorebirds frequent.

What about council's plans to build a seawall at Maroochydore?

There is no timeline for constructing a buried seawall due to the success of the Council's current shoreline management approach in providing an erosion buffer along Maroochydore Beach.

Sand renourishment (including the outcomes of this trial), dune revegetation and protection, and limiting permanent beach access points are all part of the current

approach and are expected to continue for many years to come.

A future buried seawall was and is still considered a last line of defence.

Is the nearshore beach nourishment trial going to happen at other beaches?

At this stage, the highest priority area to trial this technique is along Maroochydore Beach because this beach has been identified in the Shoreline Erosion Management Plan (SEMP) as a vulnerable area.

However, the Coastal Hazard Adaptation Strategy has identified other beaches that may be vulnerable in the future and results from this trial will inform future planning for shoreline management.

Trialling the technique at Maroochydore will provide valuable data for increased accuracy for future detailed sediment modelling in the Mooloolaba/Maroochydore area.

How long is the nearshore Beach Nourishment trial going to take?

A dredge will deposit sand in the nearshore area for a few weeks, pending weather conditions. The dredge will work for 24-hours a day. It will take around seven hours to complete a full cycle which involves taking sand from the navigation channel in Moreton Bay, steaming to Maroochydore, placing the sand offshore from the beach, and then steaming back to the navigational channel.

It is difficult to predict how long it will take for the nourished sand to move from where it will be deposited because this will depend on weather conditions.

Monitoring of the sand will continue for up to three months, depending upon the weather conditions and the sediment movement. The analysis of the data may take a further two months. It is hoped that the outcome of the trial will be known by early 2023.

Where is the dredge coming from?

The dredge is coming from the Port of Brisbane. The Port of Brisbane Pty Ltd's Marine Services teams is responsible for safe navigation of the 90km shipping channel. Dredging forms part of these operations and the Port of Brisbane owns a flagship vessel, the TSHD Brisbane, which is likely to be used for the nearshore sand nourishment work at Maroochydore.

What type of dredge is it?

Typically, the trial will be carried out with a trailing suction hopper dredge, which is a certified ocean-going vessel. It can dredge in depth of 25m and can carry (has a hopper capacity of) 2,900m3, which is the equivalent of hundreds of trucks of sand being released with each load.

How does the dredge release the sand?

The dredge will take the sand from the shipping channel and place it in its hopper or hull. The sand will be released at Maroochydore via "bottom dumping" and rainbowing.

Bottom dumping operation involves opening the gates at the bottom of the dredge hull above the position required and allowing the sand in the dredge hopper to fall onto the seabed below. Rainbowing involves spraying a sand and water slurry from the deck of the dredge into the nearshore zone.

The sand will be placed in a formation that will encourage sand migration towards the

exposed beach, respectful of the site surf amenity.

How much sand will be moved to Maroochydore Beach?

It is expected that up to 30,000 cubic metres of sand will be used for this trial.

Where is the sand coming from?

The sand will come from the southern end of the shipping channel in Moreton Bay.

Is the sand dirty or contaminated?

The sand is taken from an approved source within the shipping channel which has been subject to strict State and Commonwealth environmental legislation and approvals. The sand will also be assessed as suitable for its placement location in the offshore area of Maroochydore by Queensland Government environmental agencies during the approval process.

How will you measure the results?

Monitoring of the sand through regular surveys, involving direct observation and measurement, will determine where the sand migrates to. Ecological monitoring will determine if any impacts have been observed as a result of the trial, this will involve direct surveys.

How does this trial fit into council's long-term plan to protect our beaches?

Council has a Shoreline Erosion Management Plan (SEMP) in place to guide how we look after areas vulnerable to severe coastal erosion. It outlines preferred management options that are underpinned by sound science, coastal engineering principles and our community values.

These options include sand nourishment, dune revegetation and protection, limiting permanent beach access points and coastal protection structures such as seawalls.

What is the link to the Coastal Hazard Adaptation Strategy (CHAS)?

The CHAS specifies offshore nourishment as a possible strategy in some locations for the medium and long-term planning horizons, in particular, to manage the impacts of climate change.

What is the sand sourcing study?

It is a document that Council produced to outline possible sand sources in the short, medium and long term to help with beach nourishment and erosion protection.

The study is available on council's website at https://www.sunshinecoast.qld.gov.au/Environment/Rivers-and-Coast/Coastal-Management

What is the link between the project and the sand sourcing study?

The sand sourcing study identified the shipping channel in Moreton Bay as a possible sand source for the Sunshine Coast in the medium term. The project aims to clarify the operational, social, environmental

and cost-effectiveness of this sand source and placement technique.

How much will the trial cost council?

The planning, approvals, placement and monitoring will cost approximately $600,000.

What technique will be used and is it effective?

A nearshore nourishment technique, which has been used in Australia and around the world, has been effective on many projects.

The trial focuses on the specific sand source, dredge and the properties of the unique Maroochy embayment area.

Where else has it been used?

The nearshore nourishment technique is routinely used on the Gold Coast as well as by the Tweed River Sand by passing operation.

Internationally, the USA, the Netherlands, Denmark and recently on the south east English coast have used a similar technique.

Will Council keep pumping sand onto Maroochydore beach?

Yes, the next major round of renourishment is due to occur in mid-2023, and the sand will be taken from Maroochy River mouth as part of council's regular maintenance activities.

Does this affect the natural coastal processes?

A sand bar naturally forms in the summer months from erosion from the upper beach, this sand bar naturally accretes back onto the beach during the low energy season.

This technique mimics this natural process, although it aims to increase the volume of sand in the offshore sand bar to build up the beach.

Why doesn't council build an artificial reef to protect the beach?

Artificial reefs are very expensive because they are challenging to build. Also artificial reefs don't completely stop erosion – an artificial reef's job is to minimize wave energy by breaking the waves offshore to lessen their energy and erosion potential.

Artificial reefs effects are also localised where as nearshore nourishment increases sand volume in the area, which helps protect a much larger section of the coastline at a lower cost.

Why is Council not planning a retreat at Maroocydore Beach?

Each year, locals and visitors alike love to enjoy our beautiful beaches. In fact, Maroochydore Beach is worth approximately $80 million each year in tourism, hospitality and event proceeds.

As outlined in the Sunshine Coast Coastal Hazard Adaptation Strategy, council's actions for the future protection of Maroochydore Beach includes a focus on protecting and enhancing dunes, confirming and implementing a nourishment program and reviewing the design for a last line of defence buried seawall, if triggered.

Who is on the technical advisory group?

Councillors, Queensland Government, Sunshine Coast Council, Surf Lifesaving Queensland, Queensland Police Service and expert engineering consultants will be on the group. If you have any questions on TAG please email

CoastalandCanals@sunshinecoast.qld.gov.au

Will I be able to provide feedback on the project?

Further details on how to provide feedback on the project will be advised soon.

Current as at March 2022.

Sunshine Coast Council
www.sunshinecoast.qld.gov.au
mail@sunshinecoast.qld.gov.au
T 07 5475 7272 **F** 07 5475 7277
Locked Bag 72 Sunshine Coast Mail Centre Qld 4560