Gold Coast Beach Nourishment Project

In 2017 we spent five months topping up our beaches with sand so they'd be more resilient to the impacts of storms and severe weather.

The Gold Coast Beach Nourishment Project (GCBNP) delivered more than 3 million cubic metres of sand across many of our stunning beaches. There's always plenty of sunshine on the Gold Coast but read about how this project created lots of rainbows too.

Overview of project

Beach nourishment projects have been undertaken on the Gold Coast since the 1960s. The aim is to increase the width of our beaches with additional sand so our coastline is more resilient to storm damage, erosion, and to ensure there's more useable beach for the community. The sand is delivered to specific locations to mimic natural coastal processes which allow sand to shift continuously in response to changing waves and water levels.

Our most recent sand nourishment project used a specialised dredge vessel to transfer sand from our offshore sand reserves and place it around the nearshore wave breaking zone.

The dredge delivered the sand by "bottom dumping" and "rainbowing". "Bottom dumping" is where the collected sand is deposited to the wave breaking zone through the vessel hull. As the name suggests, "rainbowing" involves the sand being projected from the bow of the vessel as a sand/water mixture in a huge arc, just like a rainbow.

The image below shows where more than 3 million cubic metres of sand was strategically placed along the Gold Coast in 2017.

Where is the sand now?

The City has continued to monitor and collect data about Gold Coast beaches after sand nourishment.

The data shows the additional sand has moved both onshore and into the sand bar systems. This increase in overall beach sand volumes and beach width has improved beach amenity.

Due to the overall increase in sand volumes, both in the surf zone sand bars and on the upper beach, Gold Coast beaches are more resilient to the impacts of coastal storms, and are more accessible, with a balance of sand for walking, playing and relaxing.

<table>
<thead>
<tr>
<th>Beach width before beach nourishment</th>
<th>Beach width two years after beach nourishment</th>
<th>Offshore sand bar – acting as a defence for the upper beach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image date: 17 Feb 2017</td>
<td>Image date: 14 Oct 2019</td>
<td>Image date: 9 Aug 2019</td>
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</tbody>
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Project image gallery

Frequently asked questions

What is beach nourishment?

Beach nourishment (also referred to as beach replenishment) is the process by which sand is added to the beach from other locations. The sand acts as a buffer that provides protection from coastal erosion during weather events.

How much did the City spend on the Gold Coast beach nourishment project?

The City is committed to ensuring our beach amenity is maintained and that our infrastructure is protected from coastal hazards. The City invested $13.9 million dollars to undertake these nourishment works using a specialist beach nourishment contractor.

What did the beach nourishment project involve?
The project involved offshore dredging by a specialised vessel. The vessel took approximately three million cubic metres of clean sand from our offshore sand reserve closer to the shoreline in order to restore, protect and widen the beach. The nourishment will provide enhanced beach amenity for the Gold Coast community, and increase shoreline protection to withstand high energy weather events.

Is this method safe for marine wildlife?

The project was assessed by federal and state governmental agencies to make sure it met strict environmental approval requirements under the environmental legislation. This included assessment under the Environmental Protection and Biodiversity Conservation Act 1999 to ensure the activity was safe for marine wildlife, and the Coastal Protection and Management Act 1995 to ensure that the work would not negatively impact our coastal environment.

Was water quality affected by this project?

This activity did not affect the water quality; however there were localised, temporary changes in water clarity where the sand was being placed. These changes are typically less noticeable than those seen during large rainfall or swell events.

How long will it take for the sand to move around (response cycle)?

Generally, sand moves at different rates depending on where it is in the beach profile (above and below the surf zone). The sand deposited around the wave breaking zone is expected to move offshore within weeks, whereas the sand deposited offshore in deeper areas could take months or years.

How does this project link to the Gold Coast Surf Management Plan?

As part of the planning and design phase for the nourishment works, the City has investigated how sand can be placed to mimic natural sand bar formations known to promote good surfing conditions. The placement of sand by the contractor uses patterns that mimic these natural sand bars.

What impacts/benefits will the sand provide long term?

The sand will provide the beach with long-term protection from storm events.

Why not let 'Mother Nature' take control?

The historical pattern of development in the City has resulted in buildings and infrastructure being located within the area of the coastline that naturally experiences coastal erosion. If 'Mother Nature' was to do its thing, erosion of the beach would not only threaten our coastal development, but also mean that we simply wouldn't have a wide, usable beach. Ongoing coastal protection works are required to be undertaken (such as beach nourishment), to ensure there is a sandy beach – the very icon of the Gold Coast – into the future.

Is this project value for money?

Most taxpayers who live on the Gold Coast value their beaches. Our beaches are at the core of our lifestyle and economy and the City attracts 12 million tourists each year.

By ensuring our beaches are protected from future storm events by nourishing them with sand, ensures that our city stays in the condition it is known for. Investing in our biggest asset, our beaches, is an investment into our city's future.