

## East Beach briefing note

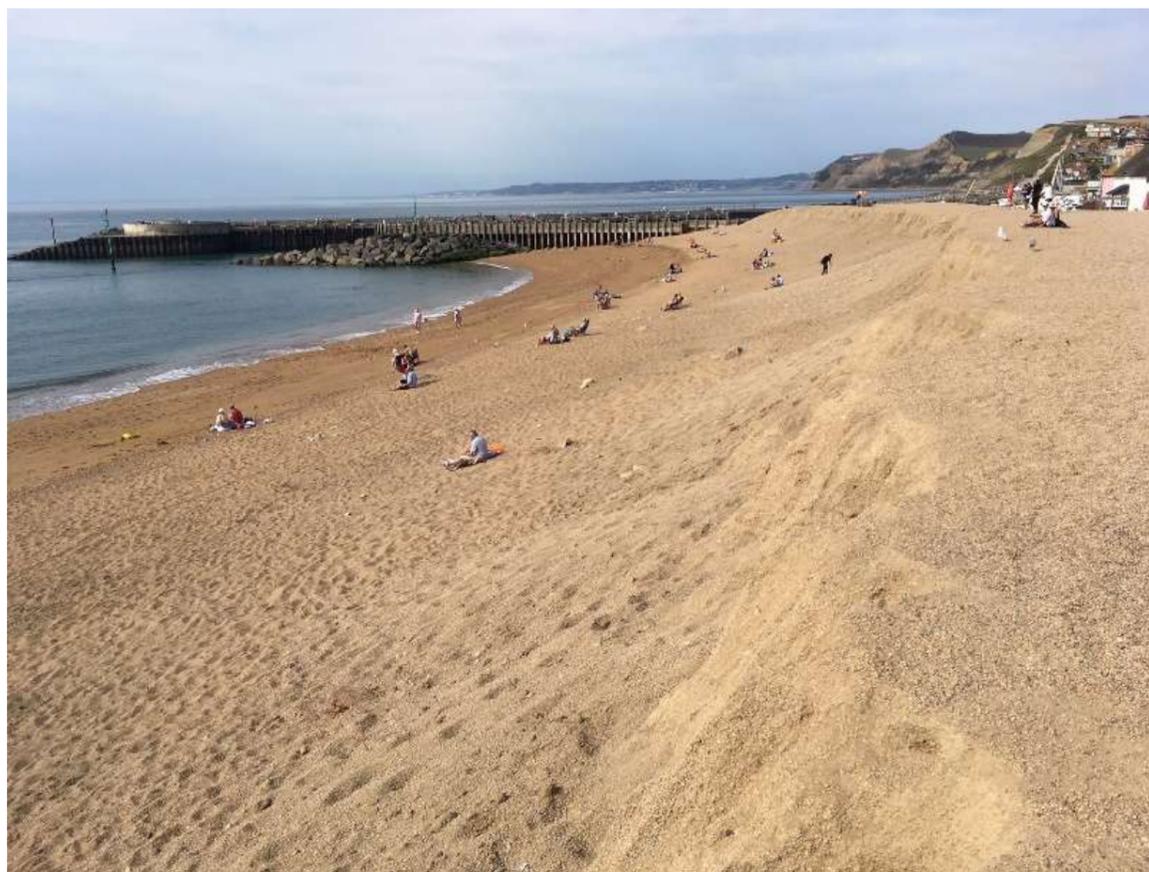
### Current beach conditions

We completed the West Bay Coastal Improvements project in October 2019 and included flood defence works to incorporate a buried rock revetment within East Beach. This rock core provides an additional line of defence to reduce flooding to West Bay, should the beach be eroded and lost during stormy weather.

Beach levels at East Beach have been dropping slowly for most of 2020 and are now at some of the lowest levels recorded. This has reduced the width of the beach crest and created a steep front beach face in several places, partly exacerbated by the very low beach levels. Our flood defence work last year disturbed the shingle of the beach crest and caused fine material, like clay and sand, to form a hard crust in many areas. This means that the beach is now less mobile, more compacted and steeper in places than normal. Beach material that is well sorted and washed by the sea or heavy rain will not form such steep slopes, although it is also more easily eroded by the wind and waves.

The current condition of the beach is not unique to West Bay, with very low beach levels currently seen from West Bay to Hive Beach and at many other beaches across the south coast. It is unclear exactly why the beach levels are so low but it is likely to be a result of the average wind and wave conditions which we have experienced so far this year.

West Beach has performed well since completion of the main scheme in 2019. Dorset Council is satisfied with the current status of West Beach and there are no plans to alter the beach profile at the moment.



East Beach Sept 2020

### Is the flood defence compromised?

The beaches at West Bay form the primary flood defence as well as providing an amenity benefit, however both beaches have a secondary hard defence which acts to reduce the risk of flooding. At East Beach, once the beach material is eroded away, the rock revetment becomes exposed and acts to reduce wave overtopping during storm events. This is currently still buried beneath the beach and would only become exposed if further significant losses to the beach continued.

The beach currently looks different from when the scheme was completed in 2019, however the flood defence is working as designed and continues to reduce flood risk. The current steep beach face actually has an added benefit for flood defence as it reduces waves running up the lower beach and overtopping the beach crest. However we recognise that this is not ideal for beach users and restricts access to the lower beach.



Rock revetment in construction at East Beach

Due to the local environmental designations at West Bay and the inclusion in the Jurassic World Heritage Site, the rock revetment at East Beach should remain buried in the beach as much as possible to preserve the natural appearance of this section of coastline.

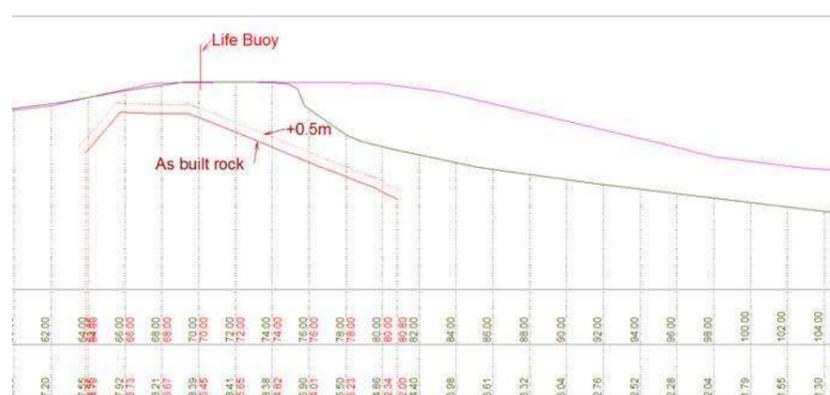
### Is the beach currently monitored?

We regularly survey the beach using specialist equipment once a month to calculate beach levels and volumes. Our officers also visually inspect it during check rounds with photographic records kept. East Beach is also a site for the Coast Snap project, where members of the public can take a photo of the beach from the designated point on the coastal path and upload it to the Coast Snap website. This also forms an important record of beach monitoring and change for later analysis.

We are also conducting surveys of the sea floor just off the beach, to identify if any beach material is lying just offshore. This material would be mobilised by larger winter storms and this may bring the shingle back to the beach foreshore later in the year, which we can then move back onto the beach using machinery.



Example Coast Snap site image



Example beach profile survey data

### What further works are planned for West Bay?

Mechanical works using diggers at East Beach to reduce the steep front face of the beach were completed in March and July 2020, with similar mechanical works planned for the end of September 2020. These works to the beach crest have limited flood defence benefit and are only for amenity access to the beach. The works in September will allow better access at several locations, either end of the beach, whilst retaining the steeper crest for the remainder of the frontage. This current management approach is supported by Dorset Council.

We have been closely monitoring the beach over the summer, in anticipation that beach material will return to the lower foreshore. We could then use it to widen and regrade the beach crest, however there is little material currently available. Any works are carefully considered, based on the latest survey data and inspections.



Beach works with a machine July 2020

### What are the exposed rocks on the beach and the steel sheet piling?



Beach works in August to remove steel sheet piling



Exposed rock strata at the eastern end of East Beach

When the beach is very low, the natural rock at the eastern end of the beach can become exposed. This is not part of the recent new flood defence scheme and will naturally be covered again as beach material returns.

An old Wessex Water pipe outfall in the beach may also be exposed when beach levels on the foreshore are low. This structure is surrounded by old steel sheet piling, which was partly removed by Wessex Water during August due to its exposure.