Teignmouth Beach Management Plan (BMP)

The issue

Beach lowering – loss of sediment

Compromising resilience of defences – especially toe of sea wall

Existing groynes in poor condition – little functionality

The BMP

Led by Teignbridge District Council in partnership with the Environment Agency

Extensive analysis and modelling by Jacobs Consulting and CMAR (University of Plymouth)

Coastal processes (sediment changes, wave and swell dynamics), condition of defences, overtopping analysis, Environmental and Economic assessments.

Provides the required critical evidence for new erosion/flood defence design and national investment

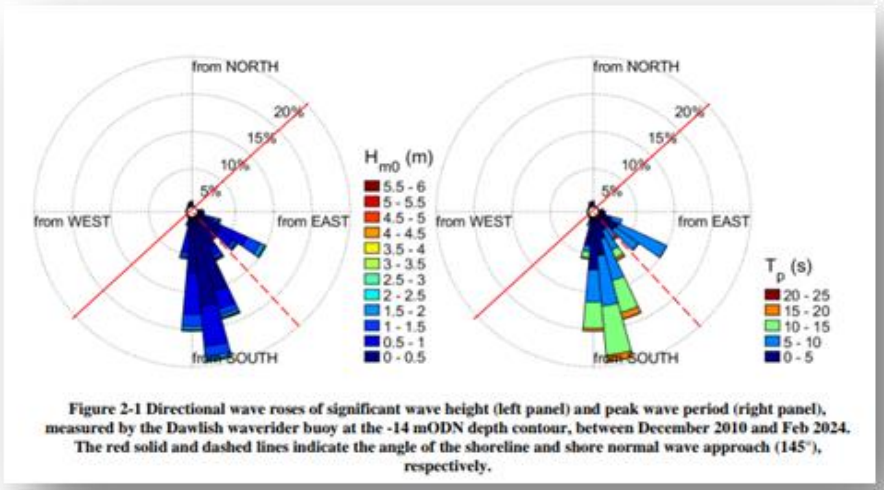
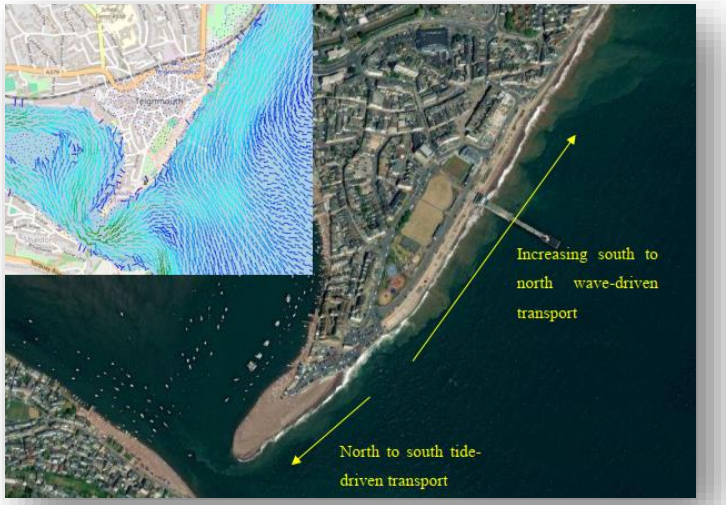


Figure 2-1 Directional wave roses of significant wave height (left panel) and peak wave period (right panel), measured by the Dawlish waverider buoy at the -14 mODN depth contour, between December 2010 and Feb 2024. The red solid and dashed lines indicate the angle of the shoreline and shore normal wave approach (145°), respectively.



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Key findings

- Beaches vulnerable to erosion
- Overtopping approaching/exceeding limits for pedestrian safety in storm events
- Wave dynamics are evolving – reduction in Easterly conditions with dominance of Southerly waves resulting in net transport of sediment (beach material) from south to north along open coast at Teignmouth
- Changes to sediment deposition divergence area – more scour (lowering of beach levels) between lighthouse and pier, with material moving either side of this location - mainly to the north (Eastcliff and Holcombe) with some limited volumes moving south to Point Spit.
- Ebb tide delta circulation thought to be weaker than previously assumed
- Point Breakwater – role better appreciated
- Potential to beneficially reuse material dredged from navigational channel by placing directly on beach

Next steps

Detailed design, Business case/funding confirmation and construction of Defence Scheme to address BMP evidence/risk

Led by the Environment Agency in partnership with Teignbridge District Council – Coastal and Drainage

- Repair and improve Seawall – especially toe enhancement
- Upgrade Point Breakwater
- Replace Groyne field – likely to have different layout / frequency / lengths
- Beneficially reuse dredged materials
- Expectation for delivery 3-4 years (toe protection may be prioritised sooner)