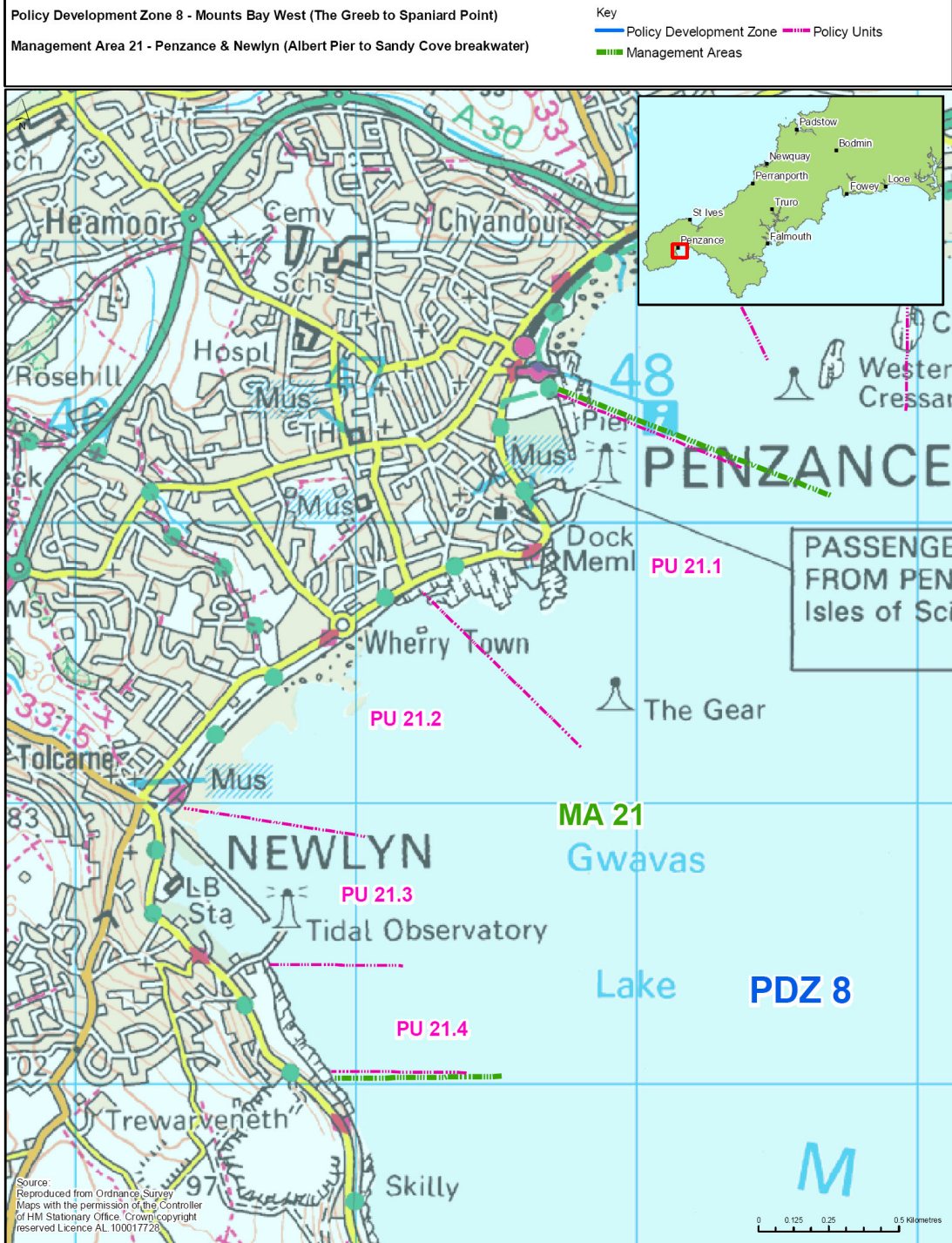


Location reference: Penzance and Newlyn (Albert Pier to Sandy Cove)
Management Area reference: MA21
Policy Development Zone: PDZ8



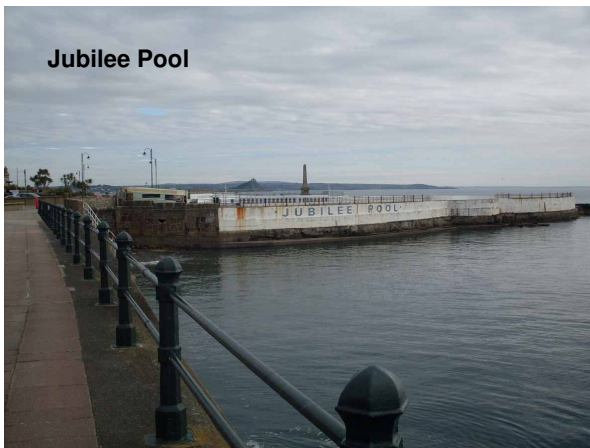
Cornwall & Isles of Scilly
Shoreline Management Plan Review

CORNWALL COUNCIL
 Cornwall and the Isles of Scilly Coastal Advisory Group
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 ROYAL HASKONING

DISCUSSION AND DETAILED POLICY DEVELOPMENT

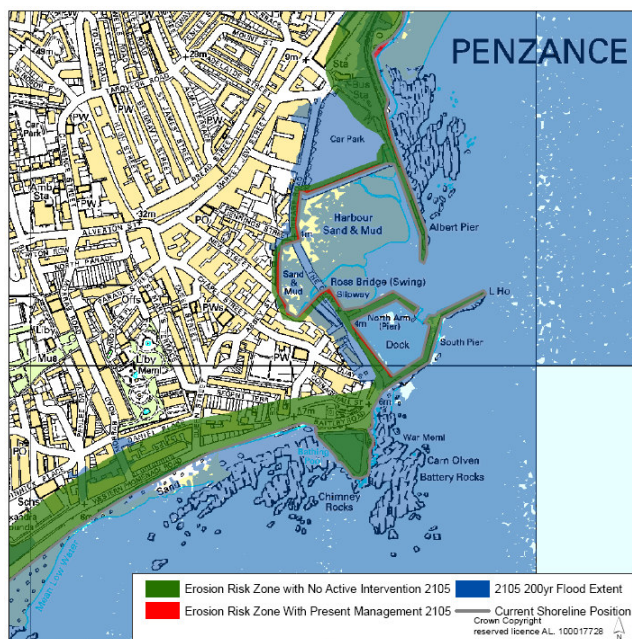
This Management Area will require a robust policy solution to address the historic problems of overtopping, flooding and destruction of property along the Wherry Town frontage, plus its continuing net loss of beach sediment. In plan form, the area can be seen as the lower-lying, essentially softer frontage of Wherry Town, bounded to east and west by the harder points of Penzance and Newlyn harbours respectively. Both harbours are currently the subjects of proposed regeneration projects, including the proposed upgraded ferry link to the Isles of Scilly at Penzance harbour.

To the west of the Eastern Green and Chyandor is the **Penzance Harbour** area. This part of the frontage is the most heavily modified, with extensive rock armour, seawall, harbour and pier structures. It includes the mainline Penzance railway station. It is also probably the most sustainable section of the coastline between



Marazion and Newlyn, in that it is positioned upon a more resistant rocky outcrop of hard Devonian slate, with rocky outcrops adjacent to Albert Pier and at Battery Rocks and Chimney Rocks, providing some natural shelter from the wave climate.

The Harbour area fronts the extensive conservation area of Penzance which contains many listed buildings. The erosion assessment has indicated some risk at the southern end of the section, with some recession potential around Chimney Rocks. This area will need to be carefully managed as it will provide a transition into the Wherry Town frontage and potential realignment of shoreline position (see

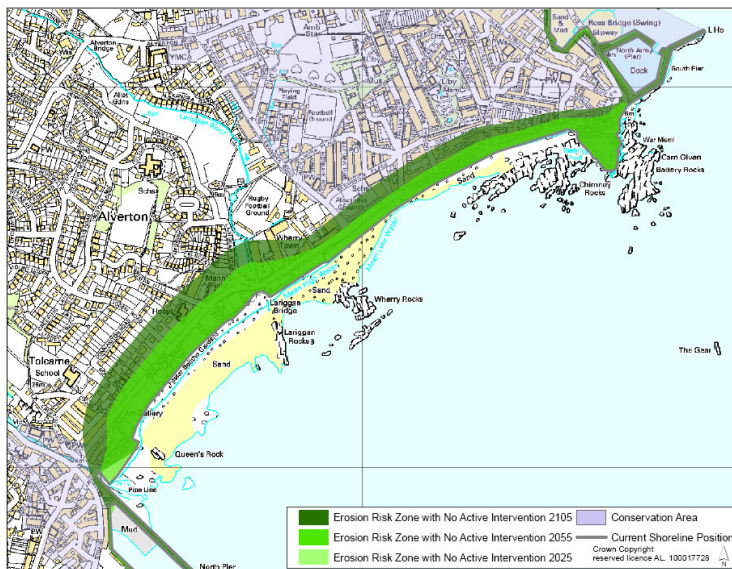


section below). It also houses the Jubilee Pool (see inset photo, above) which is an historic, Grade II listed structure and also a popular amenity. There is a well known flood risk during high water level, storm surge events, particularly when they coincide with storm waves from the south or south-east and this flood risk will increase with time and sea level rise, as indicated in the inset map. This risk is mostly associated with the harbour car park.

It is proposed that the preferred plan for the Penzance Harbour area would be to hold the line

across the three epochs. There may need to be some readjustment of the defensive line just to the west of the Jubilee Pool, in order to provide transition into the Promenade and Wherry Town frontage.

Shoreline pressure on defences at **Wherry Town** is significant and the effects of coastal squeeze have been evident for some time as the frontage has lost its sediment and intertidal width in front of the promenade and masonry seawall. This in turn has increased pressure on the structures. Historically, the Wherry Town frontage has already undergone a period of realignment when the most seaward line of properties which existed seaward of the current promenade position were damaged or destroyed by storms.

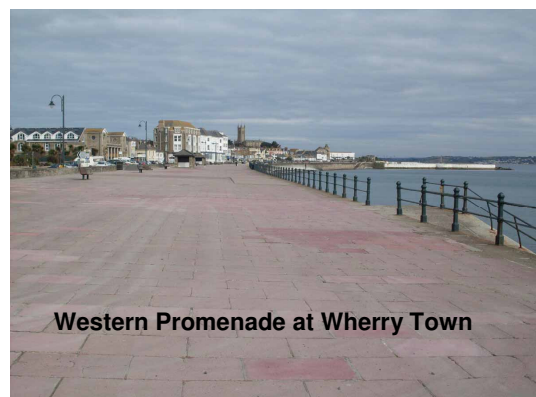


The coastal squeeze and resultant pressure along this frontage will continue to increase in line with sea level rise and increased storminess. The assessment of erosion risks has indicated a possible zone of erosion (under the no active intervention scenario) by 2105 which could extend

by up to 140m inland at the south-western end of the frontage (see inset map, left). This could result in excess of 300 properties at risk.

Whilst still water tidal flooding is mainly concentrated around Wherrytown (see inset map, right), significant flood risks can be caused by wave overtopping along the entire length of the promenade and current flood mapping doesn't provide an accurate indication of the extent of this risk. Storms with waves and wind from the south-east are most problematic to this frontage, with an example of this being the October 2004 storm event, when large waves heights combined with a storm surge tide caused overtopping and flood flows along the Western Promenade Road of over 300mm. During this event the road had to be closed to access by the emergency services. This must be considered in any Flood and Coastal Risk Management strategy, as well as being considered in planning policy and decisions.

The current shoreline position is simply not sustainable in its current plan configuration. The considerable width of the promenade area along the frontage (see inset photo, right) gives scope for realignment of the defensive line with from 45m to 75m of width available before the first properties are encountered. The first priority of the preferred plan at Wherry Town therefore would be to increase the



width of the intertidal area to re-establish a level of natural defence. This would have a secondary benefit of increasing the amenity and tourism value of the beach. However, simply re-aligning the shoreline and defences landward may not in itself create a long-term sustainable shoreline position, given the history of sediment loss from this frontage. It is possible that the frontage will require some artificial assistance in retaining sediment. The addition of offshore structures such as fish tail groynes which would act to both encourage the retention of sediment inshore from them and reduce wave energy reaching the shoreline are a possible second part of a solution at Wherry Town. This approach would of course require a very detailed study of technical and environmental feasibility.

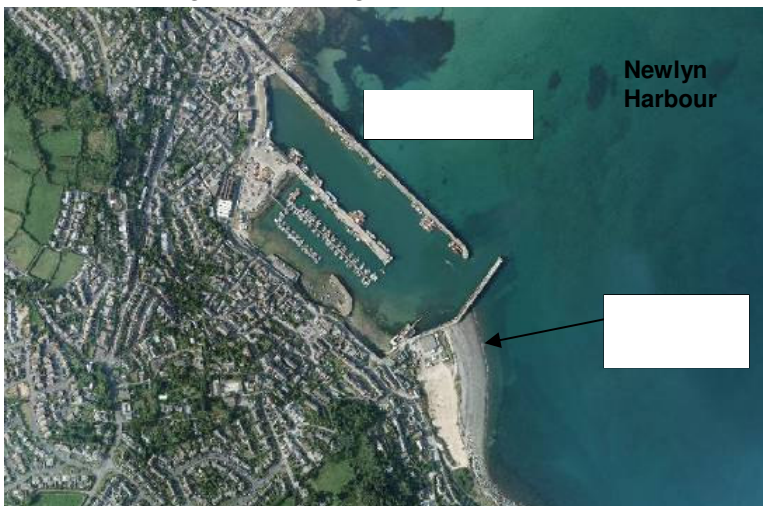
To the west of Penzance and the Wherry Town frontage, **Newlyn** is situated in the most westerly part of Mount's Bay. This means it is also generally the most sheltered location; however it is very exposed to the infrequent south-easterly storms. A conservation area covers most of the settlement adjacent to the harbour with a number of listed buildings present.

Regeneration of the Newlyn Harbour area has been proposed for some years and centres around providing facilities for both the fishing fleet and leisure craft and generally a better use of the space around the harbour. The economic importance of the harbour to Newlyn is fully acknowledged and continued existence of the harbour and the facilities it provides is critical to the local economy – over 50% of employment in Newlyn is linked to the harbour. There is a substantial flood risk identified for Newlyn from the 0.5% flood event in 2105. Some flooding occurs as a direct result of quay overtopping and some flood waters inundate via the discharge point of the Newlyn Coombe River, at the north-western extremity of the harbour. There are already significant defences at this point (inset photo, below) but it remains a difficult area to provide defence to. The preference at Newlyn is to hold the line at the harbour over the three epochs to ensure the continued operation of the harbour



and to maintain Newlyn as the regions premier fishing port. In doing so, local objectives to protect employment will be met – an adaptive approach to any future regeneration plans should allow adaptation and resilience to be built in as part of the ongoing management of Newlyn Harbour and the associated flood risk areas.

Directly to the south-east of Newlyn Harbours' South Pier is **Sandy Cove**, a small area of mostly sandy foreshore (inset photo, below). Sandy Cove is implicated within the development proposals for the Harbour area. The assessment of erosion risks indicates that no recession of the shoreline would be anticipated here over the long term and this is supported by recent observations that the foreshore at Sandy Cove is accreting. Certainly the South Pier is likely to act as a longshore sediment transport interruption device, as a terminal groyne. Sediment moved from the south during larger, long period swells would be likely to accumulate against this structure. There is some development relatively close to the mean high water position, including the Newlyn to Mousehole Road and a number of residential properties. Given the accreting nature of the frontage and the general perceived lack of erosional pressure, the development to the rear of the foreshore is not likely to be at significant risk over the SMP lifetime. The preferred plan at Sandy Cove is to therefore manage the frontage under a no active intervention policy. The strategic



importance of Sandy Cove to the Newlyn Harbour redevelopment proposals is recognised however and the preferred plan of NAI should not preclude management taking place relating to the South Pier.

The scale and options for any managed realignment through this section should be

considered in detail by a Mount's Bay Flood and Coastal Risk Management Strategy. The Local Development Framework should include this area in a Coastal Change Management Area, and ideally address the necessary climate change adaptation through an Area Action Plan in the next LDF. It is essential that the strategy and land use plans work together to find the optimum adaptation strategy. Options for the strategy and any future redevelopment of the area should consider as appropriate options from promenade structures supported by offshore structures through to roll back of the most vulnerable development areas and re-establishment of sand dunes (an important BAP habitat) in their place.

The high level economic assessment for Management Area 21 provided a benefit / cost value of 1.18 (refer to the Economics Summary Table below and Appendix H). Whilst generally supporting the hold the line approach proposed at Penzance Harbour and at Newlyn, this is close enough to unity for sensitivity testing to indicate a possible below unity value if capital or maintenance costs increased significantly. This should be considered in more detail as part of the wider strategy for Mount's

Bay. In reality it is likely that the high level economic analysis is failing to pick up all the benefits relating to wave driven storm damage, especially along the Wherrytown frontage and therefore the benefit / cost ratio is probably more robust than indicated by the SMP assessment.

SUMMARY OF PREFERRED PLAN RECOMMENDATIONS AND JUSTIFICATION

PLAN:

Location reference:	Penzance and Newlyn (Albert Pier to Sandy Cove)
Management Area reference:	MA21
Policy Development Zone:	PDZ8

PREFERRED POLICY TO IMPLEMENT PLAN:

From present day (0-20 years)	HTL at Penzance Harbour; HTL at Wherry Town: HTL at Newlyn; NAI at Sandy Cove.
Medium term (20-50 years)	HTL at Penzance Harbour; MR at Wherry Town: HTL at Newlyn; NAI at Sandy Cove.
Long term (50 -100 years)	HTL at Penzance Harbour; MR at Wherry Town: HTL at Newlyn; NAI at Sandy Cove.

SUMMARY OF SPECIFIC POLICIES

Policy Unit		SMP1 Policy	SMP2 Policy Plan			Comment
		50 yrs	2025	2055	2105	
21.1	Penzance Harbour & Docks	Hold the line	HTL	HTL	HTL	Harbour & docks integral to Penzance economic well-being. This PU is located upon prominent outcrop of slate which provides natural resistance.
21.2	Wherry Town	Hold the line	HTL	MR	MR	Loss & narrowing of foreshore linked to overtopping and damage of promenade and loss of amenity benefits, tourism etc. Realignment of defensive line, or possible offshore structures to build width and encourage sand retention, detailed strategy should consider possible solutions, to be taken forward as soon as possible.
21.3	Newlyn	Hold the line	HTL	HTL	HTL	Harbour central to Newlyn economy and linked closely to Penzance and Mousehole. Also located adjacent to outcropping slate geology, providing more natural resistance.
21.4	Sandy Cove	Hold the line	NAI	NAI	NAI	Does not preclude local management as part of regeneration strategy for Newlyn
Key: HTL - Hold the Line, A - Advance the Line, NAI – No Active Intervention MR – Managed Realignment						

ENVIRONMENTAL ASSESSMENT

Strategic Environmental Assessment (SEA):

The policies of HTL and MR will continue to protect the settlements and infrastructure associated with Penzance Harbour & Docks, Wherry Town and Newlyn in regards to maintaining the current standards of defence. The policy of HTL will continue to provide protection of the Penzance Conservation Area and Newlyn Conservation Area and numerous Listed Buildings.

Appropriate Assessment (AA):

HTL for all Epochs is proposed at Marazion Town, St Michael's Mount (Harbour), Marazion West, Marazion Marsh, Chyandour, Penzance Harbour and Docks, Newlyn, Cliff Road, and Mousehole.

HTL in the first Epoch followed by MR (or NAI) for the remaining Epochs is proposed at St Michael's Mount (Causeway), Longrock, Eastern Green, and Wherry Town. NAI is proposed for all undefended cliffs, Marazion east, and Sandy Cove. The Habitats Regulation Assessment has not been able to discount adverse impacts of Managed Realignment on Marazion Marsh due to constraints on the relocation of the site to a more resilient inland location. Hold the Line has therefore been adopted to ensure that the plan does not introduce impacts to the site. However, as the site will remain vulnerable in its present location, Managed Realignment options should nonetheless be considered as part of any future Strategy or Local Development Framework.

IMPLICATION WITH RESPECT TO BUILT ENVIRONMENT

Economics Summar		by 2025	by 2055	by 2105	Total £k PV
Property	Potential NAI Damages (£k PV)	3047.7	5770.2	5303.3	14121.1
	Preferred Plan Damages (£k PV)	0.0	0.0	0.0	0.0
	Benefits of preferred plan (£k PV)	3047.7	5770.2	5303.3	14121.1
	Costs of Implementing plan £k PV	6844	3134	2018	11996
				Benefit/Cost ratio of preferred plan	1.18