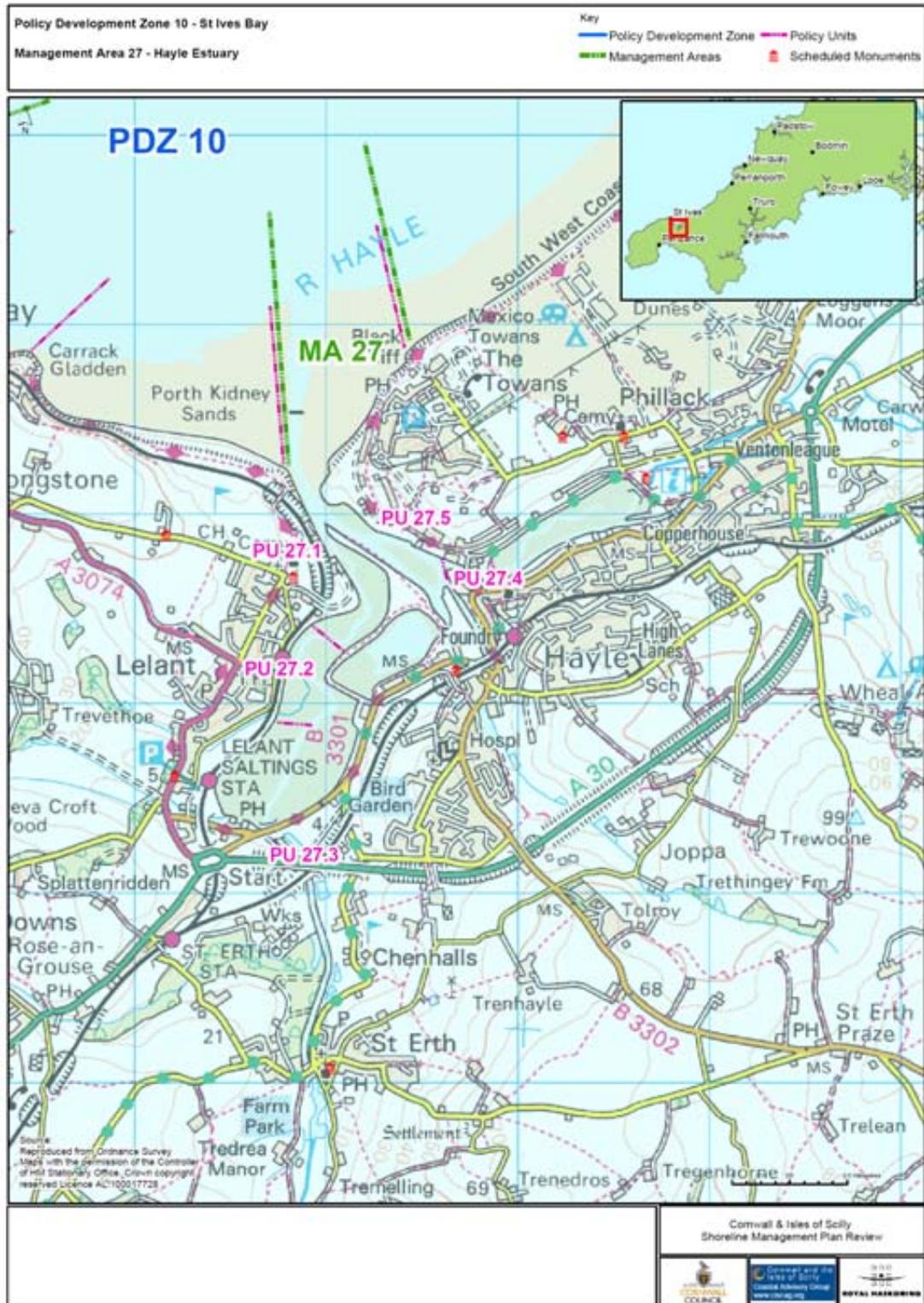


Location reference: Hayle Estuary
 Management Area reference: MA27
 Policy Development Zone: PDZ10



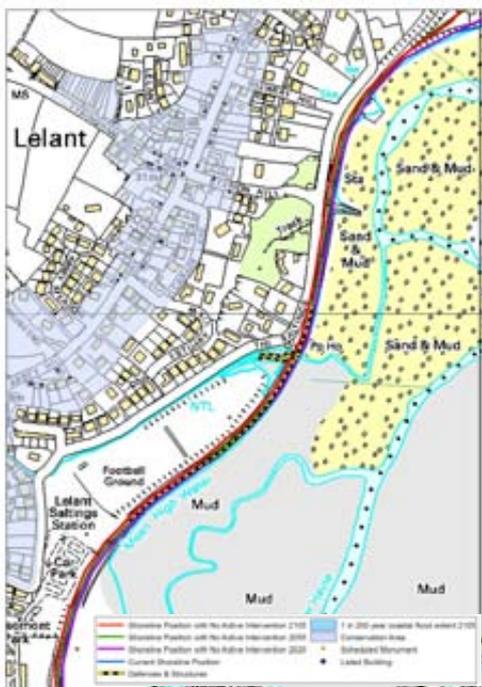
DISCUSSION AND DETAILED POLICY DEVELOPMENT

At **Lelant Towans** there may be some loss of dune area and roll back of the shoreline expected in response to sea level rise (see inset map, right) but the estuary is expected to remain a net sink for sediment, therefore foreshore levels may raise themselves in response to sea levels.

The future response may partly depend on future dredging strategies and how much sediment is removed from within the estuary system. If loss is experienced this could impact on the golf links area. A managed realignment approach is preferred to accommodate the natural variability of this area and would allow a managed approach to the risks to the wharf, railway line and golf links. This approach could also provide intertidal habitat benefits.



Although some limited future flood risk exists along the more developed **Lelant** frontage, actual recession under the NAI scenario is anticipated to be very limited.



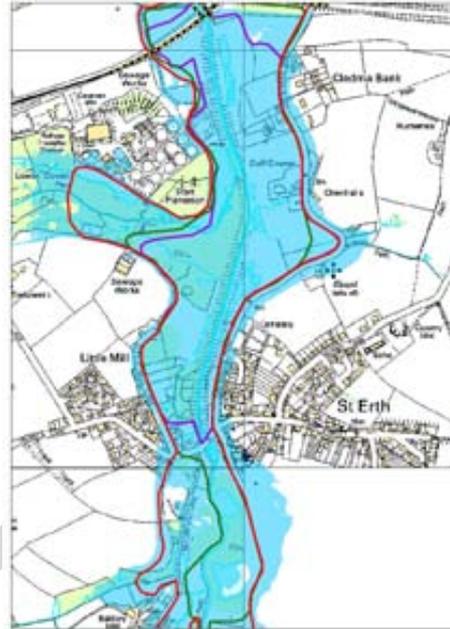
This indicates the current shoreline position is relatively sustainable. In addition the St Erth to St Ives rail link runs along the entire length of the Lelant frontage immediately next to the shoreline (inset map, left). The importance of this local transport link to the wider economy and the perceived sustainability of the shoreline position dictate that a continued hold the line policy is preferred for the Lelant frontage.

A secondary driver for holding the line is the presence of The Saltings, a local access road which runs immediately behind the railway line. The low pressure on the frontage means there is no pressing requirement for managed realignment. A no active intervention approach however has been rejected due to the presence of the railway line as even minor erosion due to failure of defences would have a major impact.

Suggested removal of the tidal barrier at **St Erth** to provide habitat creation benefits would be likely to increase pressure on upstream defences and dictate that they

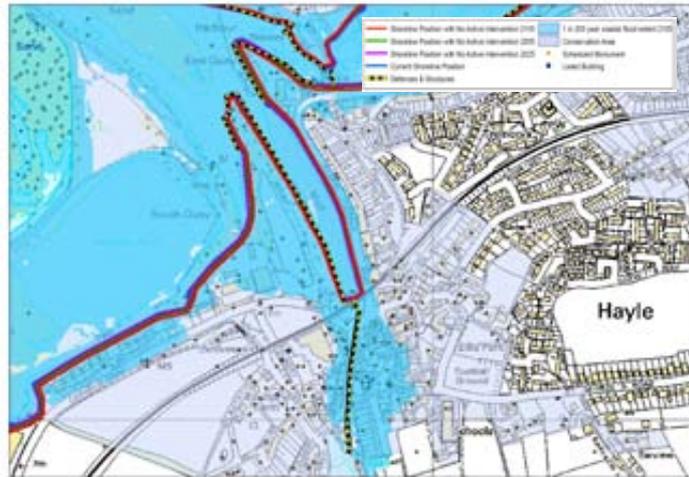
become tidal defences rather than fluvial. A continued defence strategy as part of managed realignment is required to manage and reduce risks to some populated areas of St Erth. It is anticipated that the forthcoming Hayle Strategy will look at this complex area in more detail and will provide more detailed refinement of the preferred plan and policies taken forward in the SMP. There is certainly some extensive possibility of intertidal habitat creation when considering the possible extent of the floodplain and shoreline position in 2105 (see inset map right).

Investigation into the possible opportunities of adopting a managed realignment approach along the **Griggs Quay / Causeway** frontage (inset map, below) are recommended to be taken forward by the forthcoming Hayle Strategy. This could provide additional flood storage and increase in lower estuary tidal prism (water volumes) to alleviate pressures at St Erth and elsewhere within the estuary. There are

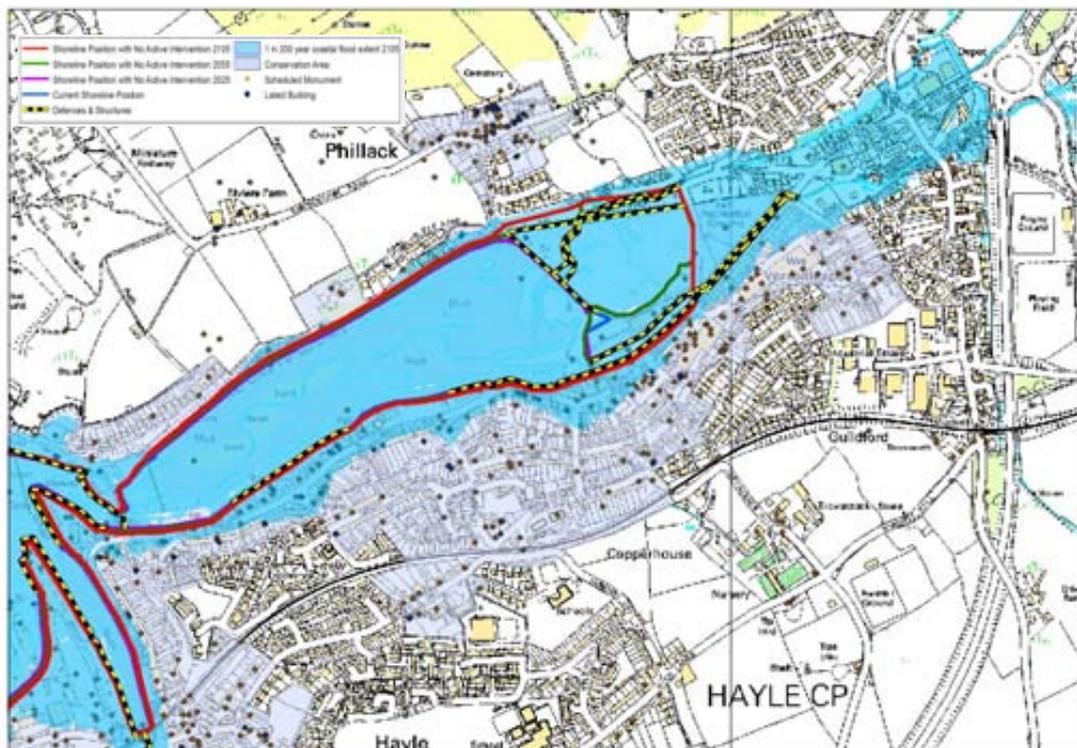


potentially significant habitat creation opportunities under this management approach. Given the important local transport routes in the vicinity (and historically the Causeway is a listed building), no active intervention is not considered suitable and although existing structures could be held in place, a hold the line policy would do little to help manage or alleviate future flood risk and would not allow opportunities for environmental improvements to be pursued. Therefore managed realignment is preferred.

Holding the line within the **Hayle Harbour** area and along the quays and wharves is preferred as it facilitates the progression of re-development plans for this part of Hayle, perceived as being a critical part of the regeneration of the wider Hayle conurbation. It also provides consideration and protection of the historic listed quays and wharves, docks and the swing bridge, which are all listed features

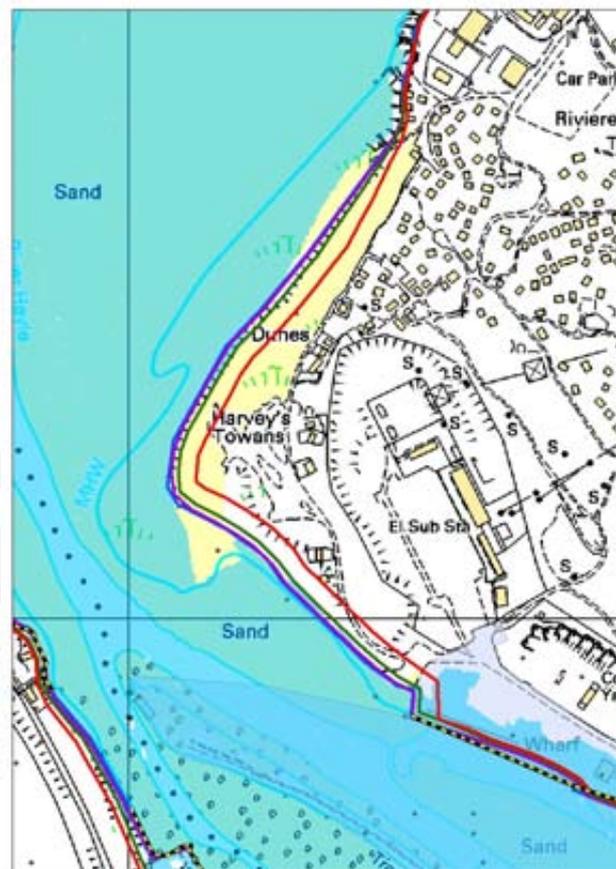


of the Cornwall and West Devon Mining World Heritage Site. It follows therefore that this area is generally considered very important historically. The HTL policy should however not preclude local adjustment of the current shoreline configuration where it is necessary and possible to do so without damage to the cited features. The Hayle Strategy should progress and refine the policy. Hold the line provides the most effective way of managing the flood risk to the area around the wharves and harbour of the South Quay, East Quay and particularly the risk which exists around the Viaduct and Foundry Square (see inset map below). No active intervention has been rejected as an unsuitable policy for this frontage. It is however likely that there will be aspects of managed realignment within the localised adjustment of the defences and structures along this frontage under future regeneration plans.



Significant future flood risk exists along the southern bank of the **Copperhouse Pool (see inset map above)**. This risk extends significantly into the Hayle Conservation Area and also into Ventonleague to the north-east of the Pool. The structures within this part of the estuary are currently managed as flood defences. There is very little scope for realignment due to the position and magnitude of residential development adjacent to the southern (and northern) banks of the pool. In addition, the Copperhouse Pool and its structures are also listed features of the Mining World Heritage Site. The preferred plan is to maintain the current level of protection provided to the residential development through a policy of hold the line. This would also prevent loss of, or damage to the WHS features. It is anticipated that the forthcoming Hayle Strategy will progress and refine the policy.

There may some loss of the dune front expected along the **Harvey's Towans** frontage (inset map, right) in response to sea level rise, but the estuary is expected to remain a net sink for sediment, therefore foreshore levels may raise themselves in response to sea levels. The future response may partly depend on future dredging strategies and how much sediment is removed from within the estuary system. A non-interventional approach is preferred to accommodate the natural variability of this area and would allow natural response to climate change impacts. However this should not preclude local management of the frontage to address any future risks to the on-shore wave hub cable termination point.



SUMMARY OF PREFERRED PLAN RECOMMENDATIONS AND JUSTIFICATION PLAN:

Location reference:	Hayle Estuary
Management Area reference:	MA27
Policy Development Zone:	PDZ10

PREFERRED POLICY TO IMPLEMENT PLAN:	
From present day (0-20 years)	MR at Lelant Towans. HTL along Lelant frontage / railway. HTL/MR at St Erth. MR along Griggs Quay / Causeway frontage. HTL within the Hayle Harbour area. HTL along the Copperhouse Pool frontages.
Medium term (20-50 years)	MR at Lelant Towans. HTL along Lelant frontage / railway. HTL/MR at St Erth. MR along Griggs Quay / Causeway frontage. HTL within the Hayle Harbour area. HTL along the Copperhouse Pool frontages.
Long term (50 -100 years)	MR at Lelant Towans. HTL along Lelant frontage / railway. HTL/MR at St Erth. MR along Griggs Quay / Causeway frontage. HTL within the Hayle Harbour area. HTL along the Copperhouse Pool frontages.

SUMMARY OF SPECIFIC POLICIES

Policy Unit		SMP1 Policy	SMP2 Policy Plan			Comment
		50 yrs	2025	2055	2105	
27.1	Lelant Towans	Hold the existing defence line	MR	MR	MR	A managed realignment approach is preferred to accommodate the natural variability of this area.
27.2	Lelant frontage	Hold the existing defence line	HTL	HTL	HTL	Low recession rates. Importance of railway transport links.
27.3	St Erth	<i>Not considered in SMP1</i>	HTL/MR	HTL/MR	HTL/MR	Forthcoming Hayle Strategy should provide more detailed refinement
27.4	Griggs Quay / Causeway	Hold the existing defence line	MR	MR	MR	Potentially significant habitat creation opportunities.
27.5	Harbour, East Quay & South Quay	Hold the existing defence line	HTL	HTL	HTL	Hayle Strategy should progress and refine the policy. World Heritage Site features will partly dictate management approach.
27.6	Copperhouse Pool	Hold the existing defence line	HTL	HTL	HTL	Hayle Strategy should progress and refine the policy. World Heritage Site features will partly dictate management approach.
27.7	Harvey's Towans	Hold the line	NAI	NAI	NAI	A non-interventional approach is preferred to accommodate the natural variability of this area and would allow natural response to climate change impacts.
Key: HTL - Hold the Line, A - Advance the Line, NAI – No Active Intervention MR – Managed Realignment						

ENVIRONMENTAL ASSESSMENT

Strategic Environmental Assessment (SEA):

For the Hayle Estuary, the HTL and MR policy will ensure the continued protection of residential and commercial properties and assets along the frontages of Hayle and the following key features: Hayle Railway line; Hayle golf course; Lelant Conservation Area; Hayle Conservation Area; and Various Listed Buildings.

The HTL policy will however potentially impact upon the integrity of designate sites including Hayle estuary & Carrack Gladden SSSI, Hayle estuary RSPB Nature Reserve and saline BAP habitats associated with Cooperhouse Pool and reedbed BAP habitat; Railway Bridge (SM) and Black Cliff (RIG).

Appropriate Assessment (AA):

HTL is proposed at Porthmeor, Porthgwithden, St Ives Harbour, Porthminster beach, Lelant, St Erth, Hayle (Harbour, Quays, and Copperhouse Pool), with MR proposed at Lelant Towans, St Erth, Griggs Quay/Causeway, and Gwithian Beach and Red River. These policy locations are at least 7km from the nearest Natura 2000 Site and, therefore no direct or indirect effects are expected.

IMPLICATION WITH RESPECT TO BUILT ENVIRONMENT

Economics Summary		by 2025	by 2055	by 2105	Total £k PV
Property	Potential NAI Damages (£k PV)	2855.7	1782.8	770.4	5408.9
	Preferred Plan Damages (£k PV)	0.0	0.0	0.0	0.0
	Benefits of preferred plan (£k PV)	2855.7	1782.8	770.4	5408.9
	Costs of Implementing plan £k PV	3260	1638	1089	5987
				Benefit/Cost ratio of preferred plan	0.90

Notes

Marginal B/C ratio due to long lengths of frontages that need protection. Future re-development plans may alter the overall economics. Road disruption not included, which will increase B/c ratio