

## **18 Conclusions**

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## 18 Conclusions

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This EIA process has found, through systematic analysis and evaluation of all available data, that the Hayle Harbour development will have a number of significant residual environmental impacts, following mitigation, both adverse and beneficial. These significant impacts are summarised in Table 18–1 below and are set out in detail in the individual technical chapters. The table presents the significance of the residual impacts, post mitigation. For more detail as to the exact nature of these impacts and how they were assessed it is important to refer to the appropriate technical chapter.

### 18.1 Summary of planning context

The principle of redeveloping the Hayle Harbour area to introduce corresponding socio-economic regeneration benefits is broadly backed by national, regional and local policy. A policy review demonstrated that the proposed scheme responds to national, regional and local policy by making Hayle a more sustainable place through: the creation of a mixed use scheme in conjunction with existing built areas of the town; the provision of a significant number and variety of homes, jobs and services to expand the choice currently available; an integrated approach to land use and movement planning; the generation of intensive areas of activity all along the waterfront; the design of a walkable, permeable and well connected development; the introduction of high energy efficiency standards, waste and water management solutions; and through the protection of the built and natural assets that make the town such an appealing destination.

The sustainable development principles that are fundamental to current planning policy are also at the heart of the proposed scheme.

### 18.2 Summary of impact assessment

It is anticipated that there will be some significant adverse residual impacts during the construction phase on noise levels, visual amenity and landscape character, waste infrastructure, archaeological resources, ecology, water resources and ground conditions. However, these impacts will be no higher than moderate adverse and most will be temporary and short term. There will also be some beneficial impacts of up to major significance during construction from repair of harbour walls and other significant historical structures and up to moderate beneficial impacts from creation of new ecological habitat from wall renovation and marina construction.

There are some identified potential adverse residual operational impacts on noise levels, landscape character and visual amenity, traffic flows, waste infrastructure, air quality, ecology and water resources. The majority of these impacts would be no higher than minor adverse with a small proportion being predicted to be up to moderate adverse. No major adverse residual impacts are expected.

A number of residual beneficial impacts have been identified from operation of the scheme including; moderate beneficial impacts on landscape character and visual amenity, a number of beneficial impacts for ecology including minor beneficial impacts from dune habitat creation and restoration, up to moderate beneficial impacts on aquatic ecology from the new harbour and minor beneficial impacts on Little Grebe from the reinstated sluicing regime. The sluicing regime is also identified to bring major beneficial impacts to water resources from improved sediment management. Many of the works to the harbour will bring beneficial impacts to water resources including major beneficial impacts from improved recreational and commercial boating facilities, moderate beneficial impacts from sluicing from reduction in sand bar and straightening of the channel and minor beneficial impacts from increased fluvial flood storage. The planned remediation of contaminated soils on the site are also judged to bring minor beneficial impacts and the proposed energy strategy for the site will bring benefits in the form of reduced CO<sub>2</sub> emissions over a traditional Building Regulations 2006 compliant scheme.

Residual Impact type	Description and Significance	
	Adverse	Beneficial
<b>Construction</b>		
Noise impacts.	Up to moderate adverse during piling of the marina pontoons.	
Landscape impacts	Minor adverse impact on Hayle Harbour Moderate adverse impact on Riviere and Hayle Towans, Phillack Valley Side Moderate adverse impact on Penpol	
Visual impacts	From distant and intermediate views up to moderate adverse impacts Up to moderate adverse impacts on some local views.	
Traffic flows	Adverse impacts from small increase in traffic flows due to construction vehicles accessing the site. Construction traffic routes will use main roads and minimise access through Phillack	
Construction waste	Moderate adverse impact on Penwith District C&D waste management infrastructure capabilities and capacity	
Impacts on archaeological and cultural receptors	Minor adverse impact from demolition of a number of receptors from the site. Moderate adverse impacts from demolition of parts of the parapet north of railway swing bridge	Repairs to a number of historic structures within the site will bring up major beneficial impacts

Residual Impact type	Description and Significance	
	Adverse	Beneficial
	<p>Moderate adverse impacts on the Swing Bridge from the new road bridge</p> <p>Moderate adverse impact on the Harbour's Managers Office from the raised road</p> <p>Moderate adverse impact from loss of historic harbour railway</p>	
Ecology	<p><u>Terrestrial</u></p> <p>Minor adverse impact on Petalwort</p> <p>Minor adverse impact on dune grassland</p> <p>Minor adverse impact on reptiles</p> <p>Minor adverse impact on Linnet</p> <p>Minor adverse impact on Song Thrush</p> <p>Up to minor adverse impact on Ivy Broomrape</p> <p>Minor adverse impact on hedges and Cornish hedge banks</p> <p><u>Aquatic</u></p> <p>Minor adverse impact from loss of small area of intertidal and subtidal habitat, and removal of seaweeds and invertebrates on tunnels at Carnsew Pool</p> <p>Up to moderate adverse impacts on flora and fauna from reduced velocities at Carnsew tunnels</p> <p>Moderate adverse impacts from excavation of the harbour</p>	<p><u>Terrestrial</u></p> <p>None</p> <p><u>Aquatic</u></p> <p>Moderate beneficial impact from creation/renovation of harbour walls</p> <p>Minor beneficial impact from new piles for marina</p> <p>Minor beneficial impact from new fisherman's quay</p> <p><u>Ornithology</u></p> <p>Up to minor beneficial impact from new habitats from renovation of harbour walls</p>



Residual Impact type	Description and Significance	
	Adverse	Beneficial
	<p>Potentially up to major adverse impact from dredging of basin adjacent to Carnsew Wharf</p> <p>Minor adverse from removal of sediments from excavation at south end of Penpol Creek</p> <p>Minor adverse impact from half tide gate at Penpol Creek</p> <p>Up to minor adverse impact from dredging of Cockle Bank</p> <p>Minor adverse impact from dredging of harbour and sand trap area</p> <p>Up to minor adverse impact from new vehicular bridge</p> <p>Minor adverse impact from remedial works on North Quay, Carnsew Wharf, Carnsew Quay, and East Quay walls</p> <p>Minor adverse impact from slipway construction</p> <p><u>Ornithology</u></p> <p>Up to minor adverse impact from disturbance from construction of bridge at Carnsew Pool</p> <p>Minor adverse impact from disturbance from excavation of harbour</p> <p>Up to minor adverse impact from dredging</p> <p>Minor adverse impact from dredging of Cockle bank and surrounding area</p> <p>Minor adverse impact from loss of habitat to</p>	

Residual Impact type	Description and Significance	
	Adverse	Beneficial
	floating pontoons Minor adverse impact from mobilisation of contaminants during bridge construction Minor adverse impact from wall remedial works	
Water resources	Up to minor adverse impact from increased sedimentation during excavation Up to minor adverse impact from increased dust and debris Up to minor adverse impacts from accidental spillages or leaks Up to minor adverse impacts from disturbance of contaminated material The excavation/dredging of the harbour, including Cockle Bank, will be controlled to limit potential sediment plume formation. The impact on coastal erosion is therefore judged as minor adverse.	
Ground conditions	Moderate adverse impact from dredging of Cockle Bank and the harbour Minor adverse impact from stockpiling of contaminated soils	
Socio-economic	No residual adverse impacts	

Operation		
Road traffic noise	Up to low adverse impacts	
Landscape impacts	Moderate adverse impact on Phillack Valley Side	Moderate beneficial impact on Hayle Harbour Moderate beneficial impact on Penpol
Visual Impacts	Minor adverse impact on Viewpoint 7: Copperhouse Moderate adverse impact on Viewpoint 5: Hayle Towans	Moderate beneficial on Viewpoint 2: Lelant Saltings Station Moderate beneficial on Viewpoint 3: The Causeway Major beneficial on Viewpoint 4: Lelant Towans
Traffic flow	Adverse impacts on traffic flows at Foundry Square and Lethlean Lane junctions. Adverse impacts to the A30 north junction will be mitigated to some degree by proposed remedial works	The effects of travel demand management are difficult to quantify, as is the timeframe over which the benefits will be realised. The scheme when implemented in full will prove to be a catalyst for wider more sustainable travel patterns to and within the town. Provide wider range of facilities within Hayle reducing need to travel.
Operation Waste	Moderate adverse impact on Penwith District MSW and C&I waste management infrastructure capabilities and capacity	
Impacts on archaeological	Adverse impacts (up to moderate) resulting from changes to setting of a number of	Beneficial impacts resulting from development of a viable and

Operation		
and cultural receptors	listed/important structures/buildings from flood defences, raised road and new road bridge.	sustainable scheme that provides access to, and activity along, the water's edge; heritage interpretation introduced throughout the harbour to raise awareness and inform understanding of the history of the town and harbour, cultural heritage and the function and importance of specific historic features, both retained and lost; and provision of further information through the preservation in record of that which is lost
Air quality	The scheme is expected to have minor adverse impact on air quality	
Ecology	<p><u>Terrestrial</u></p> <p>Minor adverse impact on Petalwort</p> <p>Up to minor adverse impact on Bats</p> <p>Up to minor adverse impact on reptiles</p> <p>Up to minor adverse impact on nesting birds</p> <p>Minor adverse impact on Ivy Broomrape</p> <p>Up to minor adverse on hedges and hedge banks</p> <p>Minor adverse impacts on salt marsh</p> <p><u>Aquatic</u></p> <p>Minor to moderate adverse impact on invertebrates and alga from sluicing of Carnsew Pool</p> <p>Minor adverse impact on some fish from Carnsew</p>	<p><u>Terrestrial</u></p> <p>Minor beneficial long-term impact on dune habitats district-wide, via dune habitat creation at Hayle Towans and positive management of wider Towans</p> <p><u>Aquatic</u></p> <p>Minor beneficial permanent impact on invertebrates and algae from Carnsew second sluice</p> <p>Moderate beneficial impact from new harbour</p> <p>Minor beneficial impact from operation of Fisherman's quay</p> <p>Negligible to minor beneficial impacts on fish from sluicing during the period</p>

Operation		
	<p>second sluice.</p> <p>Impacts from dredging would range from negligible to moderate adverse short-term impacts</p> <p>Minor adverse impact from gate at Penpol Creek from loss of intertidal habitat</p> <p>Minor adverse impact from increased risk of pollution</p> <p>Up to moderate adverse impact from dredging of sand trap</p> <p>Minor to moderate adverse impact on invertebrates and algae from sluicing from Copperhouse Pool</p> <p><u>Ornithology</u></p> <p>Adverse impact on waterfowl using intertidal area from sluicing</p> <p>Up to minor adverse impact from disturbance from access road and parking on the Triangular spit</p> <p>Up to minor adverse impact from disturbance to waterfowl from new vehicular bridge adjacent to intertidal rocks at eastern end of Carnsew Pool.</p> <p>Minor adverse impact from disturbance from vehicular bridge at Copperhouse Gate</p>	<p>15 April to 30 August, due to effective increase in the subtidal area</p> <p><u>Ornithology</u></p> <p>Minor beneficial impact for little Grebe from increases in fish utilisation from sluicing</p> <p>Minor beneficial impact from maintenance dredging of marina area</p> <p>Minor beneficial impacts from reduction in risk of fuel spills at the improved fisherman's quay</p> <p>Minor beneficial impact on Little Grebe from sluicing from Copperhouse Pool.</p>
Water resources	<p>Minor adverse impact from sedimentation of harbour</p> <p>Minor adverse impact on water quality from half tide gate</p>	<p>Major beneficial impact from management of sediment ingress through sluicing and sand trap</p> <p>Minor beneficial impact from increased fluvial flood storage behind</p>

Operation		
	<p>Minor adverse impact on navigation from half tide gate</p> <p>Moderate adverse impact from increased water level retention from sluicing from Carnsew and Copperhouse pools</p> <p>Minor adverse impact from increased pollution risk</p> <p>Minor adverse impact from safety risk from increased boat use</p> <p>Minor adverse impact from altered sediment regime from use of sand trap</p>	<p>gate at Penpol Creek</p> <p>Moderate beneficial impact from reduced sand ingress to estuary from sluicing</p> <p>Moderate beneficial impact from straightening of channel and reduced sand bar from sluicing</p> <p>Major beneficial impact from improved recreational boating amenity</p> <p>Major beneficial impact from improved commercial user amenity</p> <p>Major beneficial impact from increased facility and amenity to boat users</p>
Ground conditions		Minor beneficial impact from remediation of contaminated soils
Socio-economic	No residual adverse impacts	
Energy		Beneficial impacts from reductions in CO <sub>2</sub> emissions compared to a scheme which complies with current Building Regs.

**Table 18– 1 Summary of significant residual impacts**