

## Environmental Impact Assessment (EIA)

Network Rail (NR) intends to reclaim platform seaward of the existing seawall to allow installation of buttressing to stabilise the cliffs between Parsons Tunnel and Teignmouth (the Scheme) This would require new coastal defences, a realigned coastal footpath and a revised railway alignment.

Due to the nature of the proposed Scheme, Network Rail will be required to undertake an Environmental Impact Assessment in accordance with the relevant statutory regimes, which for this Scheme are the Marine Works (Environmental Impact Assessment) Regulations 2007 (as Amended) and The Transport and Works (Applications and Objections Procedure)(England and Wales) Rules 2006.

The scope of the EIA will therefore need to cover potential impacts that could give rise to 'likely significant effects' to both terrestrial and marine environments.

The table below summarises the proposed scope of the EIA for the Parsons Tunnel to Teignmouth Resilience works.

Environmental Topic	Included in the EIA scope?	Summary
Terrestrial Ecology	Construction: Yes	<b>Construction:</b> Potential impacts through habitat loss and fragmentation, potential displacement, injury or mortality of resident invertebrate, reptile, nesting bird and foraging bat species. Potential disturbance caused by construction. Potential pollution impacts through fuel run off as well as light pollution.
	Operation: Yes	<b>Operation:</b> Potential impacts through increase recreational pressures from members of the public due to public path along the base of the cliff, including trampling, canine pollution and predation and increased risk of fires.
Benthic Ecology	Construction: Yes	<p><b>Construction:</b> Potential temporary physical disturbances, including compaction, abrasion and displacement to intertidal and subtidal habitats and species as a result of:</p> <ul style="list-style-type: none"> <li>• The movement of construction plant</li> <li>• The placement of anchors and the feet of jack-up barges on the seafloor</li> <li>• The conduct of pre-construction sampling surveys (if required)</li> </ul> <p>Potential sediment scouring and smothering of benthic species due to the re-distribution of fine suspended sediments from construction and offshore dredged material disposal (if required) including potential sediment plume effects on the benthic ecological interest features of the Lyme Bay and Torbay SAC (for which consideration within an HRA may be required).</p> <p>Potential for contaminated sediments to be disturbed and effects on water quality and benthic ecology.</p> <p>Transmission of adverse levels of underwater noise and vibration due to piling or other noisy construction activity.</p>
	Operation: Yes	<b>Operation:</b> Permanent loss of habitat within the footprint of the Scheme resulting in net reduction in local benthic habitat.

Fish & Shellfish Ecology	Construction: Yes	<p><b>Construction:</b> Potential critical habitat and/or modifications to migration behaviours due to adverse levels of underwater noise and vibrations and suspended sediments, including potential effects on the salmon interest of the Dartmoor SAC (for which consideration within an HRA may be required).</p> <p>Potential disturbance of contaminated sediments and/or accidental spillages of fuels and chemicals and associated effects on fish and shellfish ecology.</p>
	Operation: Yes	<p><b>Operation:</b> Potential permanent loss of habitat within the footprint of the Scheme resulting in net reduction in local intertidal habitat for fish and shellfish.</p>
Marine Mammals and Marine Birds	Construction: Yes	<p><b>Construction:</b> Potential physiological and behavioural effects, such as avoidance of critical habitat due to significant levels of underwater noise and suspended sediment arising from the construction.</p> <p>Potential effects of turbidity plumes on foraging of marine mammals and birds and fish prey availability.</p> <p>Potential disturbance of contaminated sediments and/or accidental spillages of oil, fuels and chemicals into the marine environment and associated effects on marine mammals and marine birds.</p>
	Operation: Yes	<p><b>Operation:</b> Potential permanent loss of habitat within the footprint of the Scheme resulting in net reduction in local intertidal habitat for birds, including birds for which SPAs in the region may be designated (for which consideration within an HRA may be required).</p>
Landscape	Construction: Yes	<p><b>Construction:</b> The assessment will include seascape, landscape and visual impacts from all construction activities.</p>
	Operation: Yes	<p><b>Operation:</b> Potential impacts on visual amenity due to loss of shoreline and enlargement of coastal defence; potential impact on views from key receptors such as ProW, footpaths, homes and the shoreline; and potential impacts to landscape and seascape character.</p>
Cultural Heritage	Construction: Yes	<p><b>Construction:</b> There is the potential for both designated and non-designated heritage assets to be affected, including potential impact on the Church Roads Wreck (protected).</p>
	Operation: Yes	<p><b>Operation:</b> There is the potential for both designated and non-designated heritage assets to be affected, including potential impact on the Church Roads Wreck (protected).</p>
Air Quality	<p>Construction dust: Yes</p> <p>Construction Odour: No</p>	<p><b>Construction Fugitive dust:</b> Fugitive dust emissions as a result of construction works are scoped in.</p> <p><b>Construction Odour:</b> Material being extracted would comprise sands and gravels, which would contain very little organic matter. As such, the odour potential of the material is considered to be very low, and odour has been scoped out on this basis. However, odour mitigation measures would be</p>

		<p>included within the CEMP as a precaution, should odour issues arise during the construction works.</p> <p><b>Construction traffic emissions:</b> Scoped out as most deliveries will be via sea or rail.</p>
	Operation: No	<p><b>Operation:</b> A change in frequency or volume of trains is not proposed, and the railway line does not require further assessment due to heavy traffic of diesel passenger trains. Air quality during the operation phase has therefore been scoped out.</p>
Noise and Vibration	<p>Construction: land-based noise: Yes</p> <p>Construction: marine noise – Yes</p> <p>Construction land-based vibration: No</p> <p>Construction marine vibration: Yes</p>	<p><b>Construction – Land-based noise:</b> The assessment considers noise from construction plant and construction vehicles.</p> <p><b>Construction – Marine noise:</b> scoped in</p> <p><b>Construction – Land-based vibration:</b> Given the separation distance to residential receptor locations, construction vibration impacts at terrestrial locations has been scoped out.</p> <p><b>Construction – Marine vibration:</b> scoped in</p>
	<p>Operation noise: Yes</p> <p>Operation vibration: No</p>	<p><b>Operation – noise:</b> The assessment considers the change in rail noise level at receptor/s within 300m of the rail alignment.</p> <p><b>Operation – vibration:</b> Given the separation distance to residential receptor locations from the track alignment, operational vibration impacts at terrestrial locations has been scoped out.</p>
Coastal Processes	Construction: Yes	<p><b>Construction:</b> The construction phase would involve reclamation and dredging with potential impacts associated with the dispersion of sand. It will also involve temporary offloading facilities of rock or armour on the beach with potential impacts on waves, flows and sediment transport. Potential impacts on waves, flows and sediment transport are also associated with the gradual encroachment onto the beach as the coastal defence line is moved forwards. The construction phase is therefore scoped in.</p>
	Operation: Yes	<p><b>Operation:</b> The operation phase is scoped in due to potential impacts will be including:</p> <ul style="list-style-type: none"> <li>• Changes to beach width along the frontage</li> <li>• Changes to erosion and deposition over the wreck area</li> <li>• Changes to erosion and deposition in the main channel of the Teign Estuary (particularly at the mouth of the estuary and in the vicinity of Teignmouth Port)</li> <li>• Changes to erosion and deposition at the location of other key receptors</li> </ul>
Ground Conditions	Construction: Yes	<p><b>Construction:</b> Potential effects on geological resources, potential effects on receptors associated with ground or groundwater, risk of contamination (e.g. fuel spillage), potential for exposure to human health receptors to contaminants,</p>

		creation of new pollutant pathways and potential effects associated with earth moving.
	Operation: No	<b>Operation:</b> It is considered that the effects of historic (pre-existing) ground contamination within the Scheme will be reduced to acceptable levels by the time the Scheme is operational. Whilst trains can present some contamination risks, they are not considered likely to be significant. It is therefore proposed that the operation phase for ground conditions be scoped out.
Water Resources	Construction – water quality: Yes Construction – flood risk and drainage: Yes Construction – surface and groundwater resources: Yes	<b>Construction – water quality:</b> Silted or otherwise contaminated runoff generated during construction phase activities could cause deterioration in the water quality of nearby surface water receptors. <b>Construction – flood risk and drainage:</b> Construction activities have the potential to effect existing surface water runoff overland flow routes and drainage infrastructure/outfalls. There is also potential for changes to the drainage regime as a result of creation of new areas of impermeable land cover. <b>Construction – surface and groundwater resources:</b> Construction activities have the potential to introduce sources of contaminating or turbidity in groundwater.
	Operation – water quality: No Operation – flood risk and drainage: Yes Operation – surface and groundwater resources: Yes	<b>Operation – water quality:</b> Subject to a suitable operational drainage design, that incorporates treatment measures and measures to contain accidental spills, impacts on surface water quality would be negligible. Surface water quality is therefore scoped out. <b>Operation – flood risk and drainage:</b> It is possible that existing surface water flow paths could be altered by the railway line and supporting infrastructure. <b>Operation – surface and groundwater resources:</b> Stabilisation of cliffs may be secured, in part, by groundwater control methods which may include (but not necessarily be limited to) horizontal and lateral gravity fed drainage systems. The impact of any such drainage on identified features will be assessed.
Transport	Construction: Yes	<b>Construction:</b> Potential changes in journey duration and amenity for pedestrians, cyclists and equestrians. Potential changes in journey duration for rail users.
	Operation: Yes	<b>Operation:</b> Potential changes in journey duration and amenity for pedestrians.
Other Marine Users	Construction: Yes	<b>Construction:</b> Potential interactions between construction vessels and other marine users and potential exclusion impacts
	Operation: Yes	<b>Operation:</b> Potential net loss of marine area due to reclamation along the route.
Resources and Waste	Construction: Yes	<b>Construction:</b> Potential environmental impacts are associated with the production, movement, transport, processing and disposal of waste from the application site

	Operation: No	<b>Operation:</b> During the lifetime of the Scheme limited amounts of material resources would be required and only minor quantities of operation waste would be produced. It is therefore proposed that operation for this topic is scoped out.
Climate Change	Construction – Green House Gases: Yes Construction – Climate change adaption: Yes	<b>Construction:</b> The impact of emissions from the construction activities is scoped in and will be assessed.  During construction, drought, high rainfall intensities and high winds could give rise to an increased risk of dust or water pollution, damage the landscape planting and increased vulnerability to flood events. Therefore, it is proposed that climate change adaptation during construction for this topic is to be scoped in.
	Operation – Greenhouse gases: No Operation – Climate change adaption: Yes	<b>Operation:</b> It is estimated that GHG emissions over the do something scenario emissions would be equal to the do minimum scenario over the appraisal period. Therefore, it is proposed that operation for the climate change (greenhouse gases) topic is scoped out.  Due to the potential impacts associated with climate change, including flooding, drought and vegetation stress, it is proposed that climate change adaptation during operation is to be scoped in.
Socio-economics & Health	Construction: Yes	<b>Construction:</b> Potential impacts on the local economy and employment, potential construction amenity impacts, potential changes to social infrastructure accessibility, potential reduction in natural surveillance (crime rates) and potential health impacts associated with changed access to employment and environmental changes.
	Operation: Yes	<b>Operation:</b> Potential impacts on the health of existing residents as a result of environmental change together with improvements to active travel opportunities.
Tourism & Recreation	Construction: Yes	<b>Construction:</b> Potential impacts on tourism and the visitor economy, potential impacts on usage of the South West Coastal Path (Teignmouth Footpath No.6 and Dawlish Footpath No. 12) and potential impacts on other recreational routes and facilities (including beaches).
	Operation: Yes	<b>Operation:</b> Potential impacts on tourism and the visitor economy and potential impacts on other recreational routes and facilities (including beaches).
Agriculture and Soils	Construction: Yes	<b>Construction:</b> Potential permanent loss of areas of BMV, potential significant adverse effects in relation to the land resource, potential effects on farm viability, potential effects on land drainage.
	Operation: No	<b>Operation:</b> During the operation phase possible significant effects are unlikely and so it is proposed that the operation phase for agriculture and soils is scoped out.

Network Rail will be consulting with the following statutory bodies to finalise the scope of the proposed EIA:

- Department for Transport
- Marine Management Organisation
- Environment Agency
- Natural England
- Historic England
- Devon Wildlife Trust; and
- Devon and Severn Inshore Fisheries and Conservation Authority
- Sea Mammal Research Unit
- British Trust for Ornithology
- Whale and Dolphin Conservation
- Teignbridge District Council
- Devon County Council
- Royal Yachting Association ('RYA')
- The Local Harbour Authority (in this instance ABP Teignmouth, formerly Teignmouth Harbour Commissioner)
- The local Inshore Fisheries and Conservation Authority (Devon and Severn)
- Trinity House
- Maritime and Coastguard Agency
- The Crown Estate

The aim of EIA is to assess the likely significant effects the proposed scheme will have on the environment and to identify appropriate mitigation measures to minimise any identified impacts thereby ensuring that the decision-maker, when deciding whether to grant permission for a project does so in the full knowledge of the likely significant effects and required mitigation measures; this is then taken into account in the decision-making process. In general terms, the main stages in preparing the EIA are as follows:

- Data Review – drawing together and reviewing available data
- Scoping – setting the subject matter of the EIA and undertaking consultations with required consultees to obtain feedback on the scope of the assessment, any relevant baseline consideration and approach to methodology, including issues that are not deemed significant and do not need to be subject to an EIA
- Baseline surveys and data collection- undertaking baseline surveys and desk studies to identify existing baseline conditions
- Assessment and iteration – assess likely effects of the proposed development, identify reasonable alternatives, provide feedback to the design team on any adverse impacts, incorporate mitigation and assess the effects of the mitigated development
- Submission and Consultation of the ES as part of the consenting process