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25. Summary of Significant Effects

25.1 Introduction

25.1.1 Chapters 8 to 24 of this Environmental Statement (ES) have considered the potential environmental impacts and effects of the Proposed Development. This chapter provides a summary of those adverse and beneficial environmental effects that at this stage in the project development and based on preliminary assessments to date are considered to be significant (i.e. moderate and major effects).

25.2 Significant Environmental Effects and Proposed Mitigation Measures

25.2.1 Table 25-1 summarises the significant environmental effects of the Proposed Development that have been identified, following implementation of the embedded mitigation or impact avoidance measures included in the design of the Proposed Development (as detailed in Chapters 8 to 24, ES Volume I, Document Ref 6.3, where relevant). Table 25-1 also summarises any additional mitigation measures that have been identified in the technical assessments contained in the ES.

25.2.2 For each topic, the reasonable worst case scenario is assessed, including the construction programme scenario and design parameters, by applying the Rochdale Envelope, as set out in Chapter 4: Proposed Development and Chapter 5: Construction Programme and Management, ES Volume I, Document Ref 6.3. Where applicable, the reasonable worst case appropriate for each assessment is described in Chapters 8 to 24.

25.2.3 Effects have been assessed for the construction, operation (including maintenance) and decommissioning scenarios.

25.2.4 As outlined in Chapter 2: Assessment Methodology (ES Volume I, Document Ref 6.3), for the purposes of this Environmental Impact Assessment (EIA), an effect is considered to be 'significant' if it is assessed to be moderate (adverse or beneficial) or major (adverse or beneficial). Minor and negligible effects are only referenced in this chapter where a 'significant' (moderate or major) effect has been reduced to a 'not significant' effect following mitigation.

25.2.5 To provide further clarification on the nature of the effects, each has been identified for the purposes of this summary as:

- short term (St) – effects occurring only over a short period of time, e.g. an effect that only lasts for the duration of the construction period, or one that lasts for only part of the operational phase;
- medium term (Mt) – effects occurring for the duration of the Proposed Development's operation, but which cease when operations cease; or
- long term (Lt) – effects occurring beyond the operation of the Proposed Development, for example the permanent loss of semi-improved grassland associated with the Proposed Development;

- temporary (T) – effects that are not permanent because the effect would no longer occur if the impact was removed within the relevant timescale (for example the visual amenity impact of construction structures would be described as St, T as the impact goes when the structures are removed); or
- permanent (P) – effects that are permanent and cannot be readily reversed within the relevant timescale (for example an environmental feature that is lost and cannot be replaced until after decommissioning would be Mt, P. In the event that it could not be replaced at all, this would be Lt, P); and
- direct (D) – effects that result from a direct impact, for example, the loss of ecological habitat; or
- indirect (In) – also known as secondary effects are effects that result indirectly, for example, increased traffic could indirectly impact on air quality.

Table 25-1: Summary of Significant Effects

Development stage	Environmental Impact (following development design and impact avoidance measures)	Classification of effect prior to mitigation	Mitigation/ enhancement (if identified)	Classification of residual effect after mitigation	Nature of effect(s) (Lt/ Mt/ St and P/ T and D/ In)
Chapter 8: Air Quality					
Construction	No significant effects are predicted to occur.				
Operation	No significant effects are predicted to occur.				
Decommissioning	No significant effects are predicted to occur.				
Chapter 9: Surface Water, Flood Risk and Water Resources					
Construction	Surface water quality effects: chemical spillages (Tees Estuary, Tees Bay and Belasis Beck)	Moderate adverse (significant)	Further to the implementation of the CEMP and WMP (embedded mitigation), water quality monitoring pre-construction and during construction will be undertaken.	Slight adverse (not significant)	St, T, D
Operation	No significant effects are predicted to occur.				
Decommissioning	No significant effects are predicted to occur.				
Chapter 10: Geology and Hydrogeology					
Construction	No significant effects are predicted to occur.				
Operation	No significant effects are predicted to occur.				
Decommissioning	No significant effects are predicted to occur.				
Chapter 11: Noise and Vibration					
Construction	No significant effects are predicted to occur.				
Operation	No significant effects are predicted to occur.				
Decommissioning	No significant effects are predicted to occur.				

Development stage	Environmental Impact (following development design and impact avoidance measures)	Classification of effect prior to mitigation	Mitigation/ enhancement (if identified)	Classification of residual effect after mitigation	Nature of effect(s) (Lt/ Mt/ St and P/ T and D/ In)
Chapter 12: Terrestrial Ecology and Nature Conservation					
Construction	No significant effects are predicted to occur.				
Operation	No significant effects are predicted to occur				
Decommissioning	No significant effects are predicted to occur.				
Chapter 13: Aquatic Ecology and Nature Conservation					
Construction	No significant effects are predicted to occur with use of embedded mitigation (e.g. pollution control measures).				
Operation	No significant effects are predicted to occur with use of embedded mitigation (e.g. pollution control measures).				
Decommissioning	No significant effects are predicted to occur with use of embedded mitigation (e.g. pollution control measures).				
Chapter 14: Marine Ecology and Nature Conservation					
Construction	Underwater Sound – Pinnipeds Effects to pinnipeds, including harbour seals, from underwater sound generated by Unexploded Ordnance (UXO) detonations, if required, during the construction phase.	Significant	Should UXO detonation only be required in Tees Bay or further offshore, with the adoption of the JNCC standard mitigation measures, the effect of UXO detonations upon seals is predicted to be Not Significant. If UXO detonations are required within the Tees Estuary, it is proposed as additional mitigation that they should be carried out outside of the sensitive breeding and moulting season for harbour seals (June to early September). Abatement measures such as implementation of acoustic barrier technologies, deflagration and the use of acoustic deterrent devices shall also be investigated and incorporated into the Proposed Development where practicable.	Not significant	T, St, D
Operation	No significant effects are predicted to occur.				

Development stage	Environmental Impact (following development design and impact avoidance measures)	Classification of effect prior to mitigation	Mitigation/ enhancement (if identified)	Classification of residual effect after mitigation	Nature of effect(s) (Lt/ Mt/ St and P/ T and D/ In)
Decommissioning	No significant effects are predicted to occur.				
Chapter 15: Ornithology					
Construction	No significant effects are predicted to occur.				
Operation	No significant effects are predicted to occur.				
Decommissioning	No significant effects are predicted to occur.				
Chapter 16: Traffic and Transportation					
Construction	No significant effects are predicted to occur.				
Operation	No significant effects are predicted to occur.				
Decommissioning	No significant effects are predicted to occur.				
Chapter 17: Landscape and Visual Amenity					
Construction	Impact on recreational users at viewpoint 5 South Gare Breakwater- during construction activities	Moderate adverse (significant)	No potential mitigation has been identified due to the proximity to the Proposed Development and the scale of the structures.	Moderate adverse (significant)	St, T, D
Construction	Impact on recreational users at viewpoint 7 England Coastal Path – during construction activities	Moderate adverse (significant)	No potential mitigation has been identified due to the proximity to the Proposed Development and the scale of the structures.	Moderate adverse (significant)	St, T, D
Construction	Impact on recreational users at viewpoint 8 Redcar seafront during construction activities	Moderate adverse (significant)	No potential mitigation has been identified due to the proximity to the Proposed Development and the scale of the structures.	Moderate adverse (significant)	St, T, D

Development stage	Environmental Impact (following development design and impact avoidance measures)	Classification of effect prior to mitigation	Mitigation/ enhancement (if identified)	Classification of residual effect after mitigation	Nature of effect(s) (Lt/ Mt/ St and P/ T and D/ In)
Opening	Impact on recreational users at viewpoint 7 England Coastal Path – during opening	Moderate adverse (significant)	Partial mitigation through layout and design	Moderate adverse (significant)	Lt, P, D
Operation	Impact on recreational users at viewpoint 7 England Coastal Path – during operation	Moderate adverse (significant)	Partial mitigation through layout and design	Moderate adverse (significant)	Lt, P, D
Chapter 18: Archaeology and Cultural Heritage					
Construction	No significant effects are predicted to occur.				
Operation	No significant effects are predicted to occur.				
Decommissioning	No significant effects are predicted to occur.				
Chapter 19: Marine Heritage					
Construction	No significant effects are predicted to occur.				
Operation	No significant effects are predicted to occur.				
Decommissioning	No significant effects are predicted to occur.				
Chapter 20: Socio-economics and Tourism					
Construction	Construction employment - the estimated net employment generated during the construction phase is 2,440 workers per annum of which 1,220 are likely to be from the Middlesbrough and Stockton Travel to Work Area (TTWA).	Major beneficial (significant)	N/A	Major beneficial (significant)	T, St, D/In

Development stage	Environmental Impact (following development design and impact avoidance measures)	Classification of effect prior to mitigation	Mitigation/ enhancement (if identified)	Classification of residual effect after mitigation	Nature of effect(s) (Lt/ Mt/ St and P/ T and D/ In)
Operation	Operation employment – increased levels of employment.	Moderate beneficial (significant)	N/A	Moderate beneficial (significant)	P, Lt, D/In
Decommissioning	No significant effects are predicted to occur.				
Chapter 21: Climate Change					
Construction	No significant effects are predicted to occur.				
Operation	No significant effects are predicted to occur.				
Decommissioning	No significant effects are predicted to occur.				
Chapter 22: Major Accidents & Natural Disasters					
Construction	No significant effects are predicted to occur.				
Operation	No significant effects are predicted to occur.				
Decommissioning	Decommissioning of the Proposed Development is not specifically included at this stage as not enough information is known in relation to decommissioning activities. However, it is likely that impacts during the decommissioning stage would be similar to those assessed for the construction phase i.e. no significant effects are predicted to occur.				

Development stage	Environmental Impact (following development design and impact avoidance measures)	Classification of effect prior to mitigation	Mitigation/ enhancement (if identified)	Classification of residual effect after mitigation	Nature of effect(s) (Lt/ Mt/ St and P/ T and D/ In)
Chapter 24: Cumulative and Combined Effects					
Construction	Construction employment	Major beneficial (significant)	N/A	Major beneficial (significant)	T, St, D/In
	Visual impact on Recreational users at South Gare, England Coast Path and Redcar seafront	Moderate adverse (significant)	N/A	Moderate adverse (significant)	St, T, D
Operation	Operation employment	Moderate beneficial (significant)	No potential mitigation has been identified due to the proximity to the Proposed Development and the scale of the structures.	Moderate beneficial (significant)	P, Lt, D/In
	Visual impact on Recreational users of the England Coast Path	Moderate adverse (significant)	Partial mitigation through layout and design	Moderate adverse (significant)	Lt, P, D
Decommissioning	As the Proposed Development has an estimated design life of 25 years, cumulative effects during decommissioning are not considered as it is not possible to predict the developments which would be in progress at that point in time.				

Note: Lt = long term, Mt = medium term, St = short term, P = permanent, T = temporary, D = direct and In = indirect.