

HyNet North West Hydrogen Pipeline

Delivering clean growth



Chapter 20:

Summary

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Revision 1

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20. Summary

20.1 Introduction

- 20.1.1 This chapter provides a summary of the likely significant effects reported in this Draft ES. Topic specific impact assessments of the Project are presented in **Chapters 5 to 19** of this Draft ES.
- 20.1.2 The methodology for the assessment of likely significant effects is set out in **Section 3.10 of Chapter 3: Approach to Preparing the Draft ES**, and within the technical chapters (**Chapter 5 to 19**) of this Draft ES where relevant. Effects, where adverse or beneficial, are assessed as being 'major' will always be determined as being significant. 'Moderate' effects may be significant, although there may be circumstances where such effects are considered not significant on the basis of specific scenarios or professional judgement. 'Minor' or 'negligible' effects will always be deemed as not significant. Any deviation from this approach is detailed in the specific topic chapter of this Draft ES.
- 20.1.3 Table 20.1 provides a summary of the likely significant effects reported in **Chapters 5 to 19** of this Draft ES, in addition to the potentially significant effects reported at the PEIR stage of the Project. It should be noted that where there are no residual significant effects for a topic specific assessment, or an element within a topic, no details of individual effects are presented in Table 20.1.
- 20.1.4 The design of the Project has evolved since publication of the PEIR in 2022 to take account of:
- ongoing engineering design;
 - refinement based on the findings of planned geotechnical, topographical, walkover and utility surveys;
 - design changes in light of on-going environmental surveys and assessment; and
 - feedback received during Stage 2 Statutory Consultation, through engagement, including through consultation events with the public, key stakeholder meetings and discussions with landowners.
- 20.1.5 Details of the how the design has evolved are described in **Appendix 2A: Design evolution** of the Draft ES and the **Design Evolution Report 2024**. Table 20.1 includes details of how these design changes have influenced the conclusions of the assessments in **Chapter 5 to 19** of this Draft ES when compared to those identified in the PEIR.

Table 20.1 Summary of Likely Significant Effects

Significant Effects in PEIR	Significant Effects in Draft ES	Overview and next steps
Chapter 5: Biodiversity		
At PEIR three options were considered for the location of the Rocksavage HAGI. Potentially significant effects were predicted for options RSH2 and RSH3 on East Clifton Tip Local Wildlife Site (LWS), as a result of habitat loss and fragmentation.	RSH3 has been selected as the Rocksavage HAGI location. Potentially significant effects on East Clifton Tip LWS are therefore predicted during the construction and demolition phases, associated with habitat loss and fragmentation.	The assessment presented in the Draft ES has identified a potential significant effect on the non-statutory designated biodiversity site; East Clifton Tip LWS. Assessment of residual effects will be presented within the Final ES once additional mitigation and compensation measures have been developed in conjunction with landowners and relevant stakeholders.
Chapter 6: Historic Environment		
Potentially significant effects were predicted to buried remains of prehistoric mortuary monuments as a result of disturbance through removal and/or compaction.	Following a scheme of geophysical survey and geoarchaeological monitoring of ground investigations, the potential for significant effects to buried remains has been refined. Moderate (Significant) potential for disturbance to previously unidentified archaeological remains within the East Corridor and Warburton and Partington Spurs.	The Draft ES assessment has identified a high potential for the presence of archaeological remains within the East Corridor, Warburton and Partington Spurs. There is therefore potential for partial disturbance to associated archaeological remains. With an appropriate programme of archaeological recording as mitigation, as set out in the OWSI (Appendix 6G), the overall magnitude of change would be low resulting in an effect which is not significant.

Significant Effects in PEIR	Significant Effects in Draft ES	Overview and next steps
Potentially significant effects were predicted to artefacts and ecofacts within peat layers as a result of disturbance through removal and/or compaction.	Following geoarchaeological monitoring of ground investigations and subsequent geoarchaeological desk-based assessment, the potential for significant effects to buried remains has been refined. Moderate (Significant) potential impacts remain for disturbance to Sink Moss (MCH25379). Construction would include the pipe trench and adjacent a trenchless crossing beneath the M6 motorway. These would impinge on the Moss and may involve physical removal of peat deposits.	Effects on these deposits would be mitigated through a programme of archaeological recording, as set out in the OWSI (Appendix 6G).
As a result of the potential for disturbance of archaeological remains, potential for dewatering waterlogged remains, or impacts to the setting, potentially significant effects were predicted to the following Scheduled Monuments: Vale Royal (Scheduled Monument: 1016862) Bowl barrow 160m north-east of Moultonbank Farm (Scheduled Monument: 1011123) Bowl barrow 120m east of Village Lane (Scheduled Monument: 1011166) Roman settlement at Wilderspool (Scheduled Monument: 1006769)	As a result of refinements to the project design and the detailed assessment presented in the Draft ES, no significant effects are predicted to any Scheduled Monuments.	No significant effects anticipated on any scheduled monuments.

Significant Effects in PEIR	Significant Effects in Draft ES	Overview and next steps
Heavy Anti-aircraft gunsite, near Cuerdley (Scheduled Monument: 1019531) Micklehead Green moated site (Scheduled Monument: 1012329) Moated site, fishpond and connecting channel, Elton (Scheduled Monument: 1012122) St Anne's Well, near Rainhill (Scheduled Monument: 1019449) Drakelow Hall (Scheduled Monument: 1020100)		
As a result of the potential for disturbance of archaeological remains assessment, or impacts to the setting, potentially significant effects were predicted to the following listed buildings: Whatcroft Hall (Grade II* Listed Building: 1138463) Winnington Hall (Grade I Listed Building: 1310245) and designated and non-designated assets associated with Winnington Works Sutton Hall (Grade I Listed Building: 1253572) Daresbury Hall (Grade II* Listed Building: 1330337) Brook House Farm House (Grade II Listed Building: 1160385)	As a result of refinements to the project design and the detailed assessment presented in the Draft ES, the only significant effect predicted to any listed building is a moderate (Significant) change to the setting of Sutton Hall (Grade I Listed Building, 1253572) and associated feeding trough and barn (Grade II Listed Buildings, 1253612, 1261738). This impact is anticipated to occur during the construction phase and would have a temporary effect on the setting of Sutton Hall.	Change to the setting of this asset during pipeline construction will be temporary and relatively short-lived. Pipeline construction will potentially require the removal of trees from within the avenue to Sutton Hall Grade I Listed Building (NHLE 1253572) but this would be minimised as far as possible with provision for replanting with specimens as similar to the extant trees as possible. This activity would be completed in alignment with a commitment provided within the Outline LEMP, secured by DCO requirement.

Significant Effects in PEIR	Significant Effects in Draft ES	Overview and next steps
N/A – Feature not identified at PEIR stage	A moderate (significant) effect has been predicted to occur, associated with disturbance to a Sub-circular cropmark (CPm_301) identified from aerial imagery.	Any potential remains associated with this possible late prehistoric roundhouse are considered to be of medium heritage significance. Construction activity in this area comprises the pipeline and a material storage area. The feature is located outwith the LoD for the pipeline so would not be affected. The material storage area may partly or wholly impact buried archaeological remains associated with this feature depending on the construction techniques used. Any potential effects would be mitigated through a programme of archaeological excavation secured through a WSI. Therefore, in a worst-case scenario where topsoil removal is required, the magnitude of change to potential remains is deemed to be medium, resulting in an overall moderate effect which would be Significant. This assessment is subject to a review of the design relating to the material storage area and will be updated at Final ES stage as appropriate.
Chapter 7: Water Environment		
No significant effects to the water environment were concluded in the PEIR.	Major (significant) flood risk effects are predicted for the material storage areas at Acton Bridge (South Corridor) and at Eastford Road (Warrington Spur).	The material storage area at Acton Bridge coincides with Flood Zone 2 associated with the River Weaver and is in an area where flooding has been recorded in the

Significant Effects in PEIR	Significant Effects in Draft ES	Overview and next steps
	Moderate (potentially significant) to Major (significant) flood risk effects are predicted for third-party receptors near material storage areas at Acton Bridge and Eastford Road.	past. The material storage area at Eastford Road is entirely in Flood Zone 3 adjacent to the River Mersey. The Applicant intends to implement measures that would reduce the significance of the effect to Not Significant. A conclusive position as regards the significance of this effect will be included in the Final ES.
Chapter 8: Landscape and Visual		
The preliminary assessment considered a number of different receptor types. The preliminary assessment concluded potentially significant effects upon landscape character arising from the construction of the Project in the following landscape character areas: Landscape Character Areas: 4a Frodsham, Helsby & Lordship Marches (Moderate and Significant to No Effect) 9a Dunham to Tarvin Plain (Major/Moderate and Significant to No Effect) 8a Aston (Major to Major/Moderate and Significant to No Effect) 15c Lower Weaver valley (Major to Major/Moderate and Significant to No Effect)	The following landscapes have been identified as experiencing significant effects during construction: Landscape Character Areas <u>Construction:</u> 4a Frodsham, Helsby & Lordship Marches (Moderate and Significant to No Effect) 9a Dunham to Tarvin Plain (Major/Moderate and Significant to No Effect) 15c Lower Weaver valley (Major to Major/Moderate and Significant to No Effect) 8a Aston (Major to Major/Moderate and Significant to No Effect) 5d Whitley and Comberbach (Major/Moderate and Significant to No Effect)	The assessment reported in this Draft ES differs from the PEIR in that it separates out the different phases of the Project (construction, operation and decommissioning) and it provides greater detail as to the nature of the effect identified. With changes to the routing of the Project since PEIR a smaller number of receptors are likely to be affected by the Project. The assessment of significance demonstrates that effects will be predominantly associated with the construction of the Project. As such effects will be temporary and short term. All operational effects identified are in locations in proximity to the above ground infrastructure. Those effects which are

Significant Effects in PEIR	Significant Effects in Draft ES	Overview and next steps
5b Frodsham to Northwich (Major/Moderate and Significant to No Effect) 1a Delamere (Major/Moderate and Significant to No Effect) 15b Mid Weaver Valley (Major to Major/Moderate and Significant to No Effect) 5c Eaton, Marton & Over (Major/Moderate and Significant to No Effect) 13b Arley West (Major/Moderate and Significant to No Effect) 5d Whitley and Comberbach (Major/Moderate and Significant to No Effect) 14a Northwich (Major/Moderate and Significant to No Effect) 10b Stublach Plain (Major/Moderate and Significant to No Effect) Runcorn Hill and Heath parkland (Major/Moderate and Significant to No Effect) North Widnes Farmland (Major/Moderate and Significant to No Effect) Daresbury Sandstone Escarpment (Major/Moderate and Significant to No Effect)	5b Frodsham to Northwich (Major/Moderate and Significant to No Effect) 1a Delamere (Major/Moderate and Significant to No Effect) 5e East Winsford (Major to Major/Moderate and Significant to No effect) 15e Dane Valley (Major/Moderate and Significant to No Effect) 10b Stublach Plain (Major/Moderate and Significant to No Effect) 13b Arley West (Major/Moderate and Significant to No Effect) Runcorn Hill and Heath parkland (Major/Moderate and Significant to No Effect) North Widnes Farmland (Major/Moderate and Significant to No Effect) Daresbury Sandstone Escarpment (Moderate and Significant to No Effect) Preston on the Hill Undulating Enclosed Farmland (Major/Moderate and Significant to No Effect) FF2 Sutton Manor Fringe (Major/Moderate to Moderate and Significant to No Effect) FF4 Bold Heath (Major/Moderate to Moderate and Significant to No Effect) EF1 Elton Head Hall Farm (Major/Moderate to Moderate and Significant to No Effect)	recorded as significant will often experience a reduction in the level of magnitude as planting matures. For most receptors a range of effects has been concluded. For example, there may be a localised, significant short term adverse effect during the construction phase (where the construction of the pipeline corridor has a direct but temporary impact on localised part of a landscape character area). However, further from the Project and within the same landscape character area there may be no change and hence No Effect. This same principle applies to linear receptors such recreational routes, canals and rivers. Certain close up views may experience significant impact, although for the majority of that route no change would be experienced. The landscape and visual assessment will be refined for the Final ES reflecting its greater certainty.

Significant Effects in PEIR	Significant Effects in Draft ES	Overview and next steps
Moore Village and Keswick Brook Valley (Moderate and Potentially Significant to No Effect) Preston on the Hill Undulating Enclosed Farmland (Major/Moderate and Significant to No Effect) FF2 Sutton Manor Fringe (Major/Moderate to Moderate and Significant to No Effect) FF4 Bold Heath (Major/Moderate to Moderate and Significant to No Effect) IF1 Link Road (Moderate and Significant to No Effect) EF1 Elton Head Hall Farm (Major/Moderate to Moderate and Significant to No Effect) RVI1 Thatto Heath (Major/Moderate to Moderate and Significant to No Effect) RFS1 Grange Park (Moderate and Significant to No Effect) UIV3 Ravenhead Heath (Major/Moderate to Moderate and Significant to Minor to Negligible and Not Significant to No Effect) UiV2 Sutton Brook (Moderate and Significant to No Effect) Mossland (Major/Moderate and Significant to No Effect) Settled Sandlands (Major/Moderate and Significant to No Effect) River Meadowland (Moderate and Significant to No Effect)	UIV2 Sutton Brook (Moderate and Significant to No Effect) UIV3 Ravenhead (Major/Moderate to Moderate and Significant to No Effect) Mossland LCT (Major/Moderate and Significant to No Effect) Settled Sandlands LCT (Major/Moderate and Significant to No Effect) River Meadowlands LCT (Major/Moderate and Significant to No Effect) 3c Lymm (Major/Moderate and Significant to No Effect) 5a River Mersey/Bollin (Major/Moderate and Significant to No Effect) 1f Penketh & Cuerdley (Moderate and Significant to No Effect) 1a Stretton and Hatton (Major/Moderate and Significant to No Effect) 3a Appleton Park and Grappenhall (Major/Moderate and Significant to No Effect) 6a Victoria Park to Fiddlers Ferry (Moderate and Significant to No Effect) 7a Arley (Major/Moderate and Significant to No Effect) 10a Lower Bollin (Major/Moderate to Moderate and Significant to No Effect).	

Significant Effects in PEIR	Significant Effects in Draft ES	Overview and next steps
3c Lymm (Major/Moderate and Significant to No Effect) 5a River Mersey/Bollin (East) (Major/Moderate and Significant to No Effect) 5a River Mersey/Bollin (West) (Major/Moderate and Significant to No Effect) 1f Penketh & Cuerdley (Moderate and Significant to No Effect) 1a Streeton & Hatton ((Major/Moderate and Significant to No Effect) 3a Appleton Park & Grappenhall (Major/Moderate and Significant to No Effect) 6a Victoria Park to Fiddlers Ferry (Moderate and Potentially Significant to No Effect) 7a Arley (Major/Moderate and Significant to No Effect) 10a Lower Bollin ((Major/Moderate and Significant to No Effect) Potentially significant effects upon landscape character at operation were identified in the following character areas: 15b Mid Weaver Valley (Major/Moderate and Significant to No Effect) Settled Sandlands (Moderate and Potentially Significant to No Effect)	<u>Operation:</u> 15c Lower Weaver Valley (Major/Moderate to Moderate and Significant to No Effect) 5d Whitley and Comberbatch (Moderate and Significant to No Effect) Runcorn Hill and Heath Parkland (Major/Moderate and Significant to No Effect) Mossland LCT (Moderate and Significant to Not Significant) Settled Sandlands LCT (Moderate and Significant to No Effect) 3a Appleton Park & Grappenhall (Moderate and Significant to No Effect) 7a Arley (Moderate and Significant to No Effect) <u>Decommissioning:</u> 15c Lower Weaver Valley (Major/Moderate to Moderate and Significant to No Effect) 10b Stublach (Major/Moderate to Moderate and Significant to No Effect) 5d Whitley and Comberbatch (Major/Moderate and Significant to No Effect) Runcorn Hill and Heath Parkland (Major/Moderate and Significant to No Effect) FF4 Bold Heath (Major/Moderate to Moderate and Significant to No Effect)	

Significant Effects in PEIR	Significant Effects in Draft ES	Overview and next steps
Settlements The assessment also considered the potential for visual effects. The following were identified as being potentially significant during construction: Frodsham (Major/Moderate and Significant to No Effect) Runcorn (Major/Moderate and Significant to No Effect) Sutton Weaver (Major/Moderate and Significant to No Effect) Aston (Moderate and Significant to No Effect) Aston Heath (Moderate and Significant to No effect) Dones Green (Major/Moderate and Significant to No Effect) Anderton (Major/Moderate and Significant to No Effect) Bartington (Moderate and Significant to no effect) Acton Bridge (Major/Moderate and Significant to No Effect) Gorstage (Moderate and Significant to No Effect) Cuddington (Moderate and Significant to No Effect) Hartford (Moderate and Significant to No Effect)	Mossland LCT (Major/Moderate and Significant to Not Significant) Settled Sandlands LCT (Major/Moderate and Significant to No Effect) 5a River Mersey/Bollin (Major/Moderate and Significant to No Effect) 3a Appleton Park & Grappenhall (Major/Moderate and Significant to No Effect) 7a Arley (Moderate and Significant to No Effect) Local landscape designation receptors <u>Construction:</u> Weaver Valley ASCV – Lower Weaver (Major/Moderate and Significant to No Effect) Bollin Valley LLD (Major/Moderate and Significant to No Effect) There are no significant operation and decommissioning effects predicted. Visual Effects <i>Residential Visual Receptors</i> <u>Construction:</u> Elton (Major/Moderate and Significant to No Effect) Sutton Weaver (Major/Moderate and Significant to No Effect) Aston (Moderate and Significant)	

Significant Effects in PEIR	Significant Effects in Draft ES	Overview and next steps
Davenham (Major/Moderate and Significant to No Effect)	Aston Heath (Moderate and Significant – construction traffic)	
Moulton (Major/Moderate and Significant to No Effect)	Dones Green (Major/Moderate and Significant to No Effect)	
Winsford (Moderate and Significant to No Effect)	Bartington (Moderate and Significant to No Effect)	
Bostock Green (Moderate and Significant to No Effect)	Acton Bridge (Major/Moderate and Significant to No Effect)	
Lower Whitley (Moderate and Significant to No Effect)	Weaverham (Major/Moderate and Significant to No Effect)	
Higher Whitley (Moderate and Significant to No Effect)	Gorstage (Moderate and Significant to No Effect)	
High Legh (Moderate and Significant to No Effect)	Hartford (Moderate and Significant to No Effect)	
Broomedge (Major/Moderate and Significant to No Effect)	Davenham (Major/Moderate and Significant – construction traffic)	
Dunham Woodhouses (Moderate and Significant to No Effect)	Moulton Hartford (Moderate and Significant to No Effect)	
Sinderland Green (Moderate and Significant to No Effect)	Whatcroft (Major to Major/Moderate and Significant – construction traffic)	
Partington (Moderate and Significant to No Effect)	Lower Whitley (Moderate and Significant to No Effect)	
Moore (Major/Moderate and Significant to No Effect)	Higher Whitley (Moderate and Significant)	
Higher Walton (Major/Moderate and Significant to No Effect)	Broomedge (Major/Moderate and Significant to No Effect)	
St Helens (Moderate and Significant to No Effect)	Dunham Woodhouses Hartford (Major/Moderate and Significant to No Effect)	

Significant Effects in PEIR	Significant Effects in Draft ES	Overview and next steps
The potential for significant visual effects during operation were identified at the following settlements: Dones Green (Moderate and Significant to No Effect) Dunham Woodhouses (Moderate and Significant to No Effect) National Cycle Routes Potentially significant effects were also identified upon users of national cycle routes during construction: NCR5 (Major/Moderate and Significant to No Effect) NCR 562 (Major to Major/Moderate and Significant to No Effect) RCR 70 (Major to Major/Moderate and Significant to No Effect) NCR 62 (Major to Major/Moderate and Significant to No Effect) No NCRs were predicted as sustaining significant visual effects during operation. Long Distance Footpaths Long distance footpaths potentially experiencing significant effects at construction were: Weaver Way and North Cheshire Way 3 (Major and Significant to No effect)	Sinderland Green (Moderate and Significant to No Effect) Partington (Major/Moderate and Significant to No Effect) Moore (Major/Moderate and Significant to No Effect) Higher Walton (Major/Moderate and Significant to No Effect, Moderate and Significant for HWH8 HAGI) Warrington (Major to Major/Moderate and Significant NP6) Sutton Manor (Moderate and Significant to No Effect) <u>Operation</u> Dunham Woodhouses (Moderate and Significant to No Effect Year 1) <u>Decommissioning</u> Dones Green (Major/Moderate and Significant to No Effect) Hartford (Moderate and Significant to No Effect) Higher Walton (Moderate and Significant to No Effect) <i>Users of promoted recreational routes</i> <u>Construction:</u> NCR 5 (Major to Major/Moderate to Moderate and Significant to No Effect) NCR 562 (Major to Major/Moderate and Significant to No Effect)	

Significant Effects in PEIR	Significant Effects in Draft ES	Overview and next steps
Trent and Mersey Canal Walk, Dane Valley Way and E8 (Major to Major/Moderate and Significant to No Effect) Delamere Way (Major and Significant to No Effect) Bolin Valley Way (Major to Major/Moderate and Significant to No Effect) Timberland Trail (Major to Major/Moderate and Significant to No Effect) Mersey Way and Weaver Way (Major to Major/Moderate and Significant to No Effect) Trans Pennine Trail (Major to Major/Moderate and Significant to No Effect) Bridgewater Way and Cheshire Ring Canal Walk (Major to Major/Moderate and Significant to No Effect) Palatine Plod (Major and Significant to No Effect) No long distance footpaths were predicted as sustaining significant visual effects during operation. Canals and Rivers Users of Canals and Rivers potentially experiencing significant visual effects at construction were identified at: Manchester Ship Canal (Major and Significant to No Effect)	RCR 70 Cheshire Cycleway (Major to Major/Moderate to Moderate and Significant to No Effect) NCR 62 (Major to Major/Moderate to Moderate and Significant to No Effect) Weaver Way (Major to Major/Moderate to Moderate and Significant to No Effect) Trent and Mersey Canal Walk (Major to Major/Moderate to Moderate and Significant 0.8km section north of Bartington) Delamere Way (Major to Major/Moderate to Moderate and Significant to No Effect) Bollin Way (Major to Major/Moderate to Moderate and Significant to No Effect) Timberland Trail (Major to Major/Moderate to Moderate and Significant to No Effect) Mersey Way (Major to Major/Moderate to Moderate and Significant to No Effect) Trans Pennine Route assessed as part of NCR 62 and E8 Bridgewater Way (Major and Significant to Moderate and Not Significant to No Effect) Cheshire Ring Canal Walk assessed as part of Bridgewater Way and Trent and Mersey Canal Walk Palatine Plod (Major/Moderate and Significant to Moderate and Not Significant to No Effect)	

Significant Effects in PEIR	Significant Effects in Draft ES	Overview and next steps
Weaver Navigation (Major to Major/Moderate and Significant to No Effect) River Weaver (Major/Moderate and Significant to No Effect) River Mersey (Major and Significant to No Effect) River Bollin (Major and Significant to No Effect) The Manchester Ship Canal was predicted as experiencing a Major to Major/Moderate and Significant to No Effect during operation. Golf Clubs Users of the Fiddlers Ferry Golf Course, Runcorn Golf Club and Vale Royal Abbey Golf Club were predicted as experiencing a potentially significant visual effect at construction (Major/Moderate and Significant to No Effect) Sandiway Golf Club would experience Moderate and Significant to No Effect No Golf Clubs were predicted as sustaining significant visual effects during operation.	Users of recreational canals and rivers <u>Construction:</u> Manchester Ship Canal (Major to Major/Moderate to Moderate and Significant to No Effect (HWH2)) Weaver Navigation (Major to Major/Moderate to Moderate and Significant to No Effect) River Bollin (Major and Significant to No Effect) <u>Operation:</u> Manchester Ship Canal (Major to Major/Moderate to Moderate and Significant to No Effect Year 1 (HWH2)) Weaver Navigation (Major to Major/Moderate to Moderate and Significant to No Effect) <u>Decommissioning:</u> No significant visual effects are predicted. NB. Golf Clubs were not identified as experiencing significant effects at either construction, operation or decommissioning stages given that users of golf courses are categorised as those engaging in active sports, where the focus is not on the landscape and are therefore of medium visual sensitivity.	
Chapter 9: Air Quality		

Significant Effects in PEIR	Significant Effects in Draft ES	Overview and next steps
No significant air quality effects were concluded in the PEIR.	No significant air quality effects are concluded in the Draft ES.	The Final ES will consider the implications of any potential design changes on air quality as appropriate.
Chapter 10: Noise and Vibration*		
Construction traffic noise: Residences on two rural roads will experience high levels of temporary road traffic noise increases. Noise from trenchless crossings: High noise levels for a significant duration (i.e. 10 days in a 15-day rolling period, or over a month, dependent on the noise level)	As a result of refinements to the project design, including construction traffic access routes and a refinement in traffic volumes, the only significant effect concluded is in relation to Noise from trenchless crossings.	Additional measures will be investigated to mitigate significant effects and discussed in Chapter 10: Noise and Vibration ; these may include management procedures or engineered screening to reduce noise. and vibration. An assessment of operational noise effects, and more detailed assessment of construction noise effects, will be undertaken for the Final ES.
Chapter 11: Traffic and Transport		
No significant traffic and transport effects were concluded following implementation of additional mitigation – including at Anderton Boat Lift	No significant traffic and transport effects have been concluded following implementation of additional mitigation. There are no impacts at Anderton Boat Lift as the Northwich Spur has been removed from the Project.	Additional measures identified to mitigate significant effects on severance, pedestrian amenity, pedestrian delay and fear and intimidation include limiting traffic during certain times of day (e.g. between 08:00 – 09:00 and 15:00 – 16:00 every school day) on certain roads links. The Applicant will also review the potential to reroute or reduce traffic on certain road links as the Project progresses.

Significant Effects in PEIR	Significant Effects in Draft ES	Overview and next steps
Chapter 12: Ground Conditions		
No significant ground conditions effects were concluded in the PEIR.	No significant ground conditions effects have been concluded in the Draft ES.	The Final ES will consider the implications of any potential design changes on ground conditions as appropriate.
Chapter 13: Agriculture and Soil Resources		
At PEIR, potentially significant effects were predicted associated with the permanent loss of agricultural land and soil resources during construction. It was noted that the significance may be reduced depending on the design (e.g. by reducing the area of land needed), or if high sensitivity receptor areas can be avoided.	The Draft ES also reports potentially significant effects associated with the permanent loss of agricultural land, depending on the sensitivity of the receptor (determined by the Agricultural Land Classification (ALC) grade) and notes that the assessment will be updated once further ALC survey has been completed for the Final ES.	Further site-specific ALC data will be needed to confirm the sensitivity of soils within each LPA boundary. This will be updated in the Final ES.
The PEIR considered impacts associated with soil compaction, erosion, soil mixing, damage to land drainage systems and temporary loss of agricultural land during the construction phase but did not anticipate these being significant.	The Draft ES predicts potentially significant impacts associated with soil compaction, erosion, soil mixing, damage to land drainage systems and temporary loss of agricultural land during the construction phase, depending on the sensitivity of the receptor (determined by the ALC grade) and notes that the assessment will be updated once further ALC survey has been completed for the Final ES.	These impacts will be mitigated through use of a site specific Outline Soil Management Plan (SMP), in conjunction with a Materials Management Plan (MMP) and commitment to appropriate land restoration. Further site-specific ALC data will be needed to confirm the sensitivity of soils within each LPA boundary. This will be updated in the Final ES.

Significant Effects in PEIR	Significant Effects in Draft ES	Overview and next steps
The PEIR predicted potentially significant impacts as a result of damage to peat during excavation, storage or reinstatement and the permanent loss of peat during construction	The Draft ES also predicts potentially significant impacts as a result of damage to peat during excavation, storage or reinstatement and the permanent loss of peat during construction.	Further site-specific peat data will be needed to confirm the extent of peat found in each LPA boundary. This will be updated in the Final ES. Further ALC and peat survey will also provide information to inform the Peat Management Plan (PMP), which will be used in conjunction with an MMP and Outline SMP during construction of the Project.
Chapter 14: Land Use		
The PEIR predicted potential significant adverse effects on the following tourism and recreation receptors: • Barnton Cricket Club • Vale Royal Golf Club • Runcorn Golf Club • Big Hands Riding School	Considering design refinements and route amendments, the Draft ES now predicts potential significant adverse effects on the following tourism and recreation receptors: • True Fit Golf Club • Allotments adjacent to Centre Link Bridge	The ongoing Golf Course Impact Assessment will confirm the exact effects and mitigation measures required for True Fit Golf Course. This will be completed and feed into the Final ES. No additional mitigation has been identified for the allotments at Centre Link Bridge and as such, the effects would remain significant albeit temporary during the construction phase.
The PEIR predicted potential significant adverse effects associated with the sterilisation of minerals in the following locations: • Sutton Weaver	The Draft ES reports significant adverse effects associated with the sterilisation of minerals in the following locations: • Aston Grange Minerals Safeguarding Area	Effects to minerals safeguarding areas are considered unavoidable. No additional, residual mitigation has been identified and as such, the effects on minerals safeguarding areas remain significant.

Significant Effects in PEIR	Significant Effects in Draft ES	Overview and next steps
• Dutton Lodge • Sandiway • Bartington • Peterhouse Farm • Agden Bridge	• Bold Heath Minerals Safeguarding Area • Lower Whitley Minerals Safeguarding Area • Dunham Massey Minerals Safeguarding Area • Partington Minerals Safeguarding Area • Acton Bridge Minerals Safeguarding Area • Sandiway Minerals Safeguarding Area	
Chapter 15: People and Communities		
Potentially significant beneficial effects were identified on: • The general public; and • Users and producers of hydrogen. Potentially significant beneficial effects were identified on: • Commercial markets for hydrogen infrastructure development nationally and internationally; Potentially significant adverse effects identified on the following: • Employment markets; and	<u>Construction</u> Moderate beneficial (potentially significant) effects are identified on the following: • Commercial markets for hydrogen infrastructure development nationally and internationally. Moderate adverse (potentially significant) effects are identified on the following: • People and communities travelling and experiencing areas within the project area and people and communities with needs to access particular land and amenities.	The distribution network provided by the Project is key for customers in the North West, seeking to conduct decarbonised business activities through use of hydrogen and for their suppliers. Embedded environmental measures / additional mitigation secured in other technical topic chapters, such as Chapter 10: Noise and Vibration and Chapter 11: Traffic and Transport are relevant to potentially significant effects to people and communities. The assessment will be updated in the Final ES to incorporate further refinement

Significant Effects in PEIR	Significant Effects in Draft ES	Overview and next steps
Individuals and communities with needs to access particular land and amenities.	<u>Operation</u> Major beneficial (significant) effects are identified on the following: - Customers and producers of hydrogen. Moderate adverse (potentially significant) effects are identified on the following: - General public and businesses potentially disrupted by operational effects; and - General public - concern with hydrogen.	to the project design and information on severance, noise and vibration, economic employment and GVA.
Chapter 16: Major Accidents and Disasters		
Potentially significant effect identified from rupture or large release from pipework at a HAGI. ¹	No significant major accidents and disasters effects were concluded in the Draft ES.	The Final ES will consider the implications of any potential design changes with respect to major accidents and disasters, as appropriate.
Chapter 17: Climate Change – Greenhouse Gases		
No significant greenhouse gas effects were concluded in the PEIR.	No significant greenhouse gas effects were concluded in the Draft ES.	The Final ES will consider the implications of any potential design changes with respect to greenhouse gas emissions, as appropriate.
Chapter 18: Climate Change Resilience		

¹ It should be noted that it was not possible to categorically rule out the potential for a significant effect of this kind at PEIR stage and earlier stages of project design.

Significant Effects in PEIR	Significant Effects in Draft ES	Overview and next steps
No significant climate change resilience effects were concluded in the PEIR.	No significant climate change resilience effects were concluded in the Draft ES.	The Final ES will consider the implications of any potential design changes with respect to climate change resilience, as appropriate.
Chapter 19: Intra-Project Effects		
N/A – assessment not undertaken at PEIR stage	Specific residential receptors within the proximity of trenchless crossing and construction compounds are anticipated to experience significant intra-project effects during the construction phase of the Project.	The intra-project effects assessment will be updated in the Final ES to consider within the completion of technical topic assessments, including effects occurring in the operational and decommissioning phases, which are not assessed in the Draft ES.

* Note that only a construction phase assessment has been undertaken for Noise (in both the PEIR and Draft ES)

20.2 Summary

- 20.2.1 The technical assessments (**Chapter 5-19**) presented in this Draft ES have identified a number of significant residual effects, some beneficial and some adverse.
- 20.2.2 This summary chapter provides a comparison of the potentially significant effects that were identified in the PEIR and the likely significant effects identified in the Draft ES assessment. The project design has continued to be refined, whilst technical assessments have been developed to reflect greater detail in the nature and scale of the Project. Whilst assessment conclusions of the PEIR are indicative of a point in time, they provide a basis to compare the evolution of the project design and development of the technical assessments.
- 20.2.3 This summary chapter will be updated to reflect the significant residual effects identified as the Project progresses to the Final ES. It will also present any changes in assessment conclusion that have occurred from the Draft ES.

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