HyNet North West

ENVIRONMENTAL STATEMENT (VOLUME III)

Appendix 19.2 Intra-Project Effects Assessment (Tracked Change)

HyNet Carbon Dioxide Pipeline DCO

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 – Regulations 5(2)(a)

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TABLES

1. INTRODUCTION

1.1.1. This **Revision B** of **Appendix 19.2: Intra-Project Effects Assessment** replaces and supersedes **Revision A (APP-173)**. **Appendix 19.2 (Revision B)** provides updated assessments in response to the proposed design changes as outlined in **Table i.i** of **Chapter I** of the **ES Addendum 2023 Change Request 1**.

~~1.1.~~1.2. STEP A

~~1.1.1.~~1.2.1. The Step A assessment identified receptors and resources which could be affected by more than one environmental topic, and therefore potentially more than one type of residual effect. These receptors are referred to as 'common receptors' (see **Table 1** below).

~~1.1.2.~~1.2.2. There are a number of interactions between topics that are taken into account in each of the **Technical Chapters 6-18 (Volume II)**. Where common receptors or types of effect are already considered within one technical assessment, or are excluded for other reasons, the reported findings are not repeated in this assessment. These are listed in **Table 19-3** of **Chapter 19 - Combined and Cumulative Effects (Volume II)**.

~~1.1.3.~~1.2.3. **Table 1** below lists the common receptors identified for assessment and the corresponding environmental topics.

Table 1 – Common Receptors

Common Receptors	Environmental Topics
Residential Receptors (residents and residential properties)	• Landscape and Visual • Noise and Vibration (Construction and Decommissioning Stage only) • Population and Human Health (Construction Stage only) • Traffic and Transport (Construction Stage only) • Water Resources and Flood Risk (Construction Stage only)
Recreational Areas and PRoW (and their users)	• Landscape and Visual • Population and Human Health (Construction Stage only)
Non-Residential Properties (and their users)	• Noise and Vibration (Construction Stage only) • Population and Human Health (Construction Stage only) • Traffic and Transport (Construction Stage only)

~~1.2.~~1.3. STEP B

~~1.2.1.~~1.3.1. **Table 2** and **Table 3** comprise a summary of the residual effects from **Technical Chapters 6-18 (Volume II)** on common receptors identified in **Table 1** for the Construction and Decommissioning Stages respectively. No common receptors have been identified for the Operation Stage.

~~1.2.2.~~1.3.2. Residual effects that have been identified in **Chapters 6-18** that do not affect common receptors have not been presented in these tables, as there is no potential for intra-project effects.

Table 2 – Residual Effects on Common Receptors – Construction Stage

Common Receptors	Landscape and Visual	Noise and Vibration	Population and Human Health	Traffic and Transport	Water Resources and Flood Risk
Residential Receptors (residents and residential properties)	Section 1 (AGI and Pipeline Works) – ***Moderate Adverse (significant)*** Section 2 (Pipeline and BVS Works) – ***Moderate Adverse (significant)*** Section 3 (Pipeline and BVS Works) – ***Moderate Adverse (significant)*** Section 4 (Pipeline Works) – ***Moderate Adverse (significant)*** Section 5 (AGI, Pipeline and BVS Works) – *Minor to* ***Moderate Adverse (significant)*** Section 6 (AGI and Pipeline Works) – *Minor to* ***Moderate Adverse (significant)*** Section 7 (BVS Works) – Minor to ***Moderate Adverse (significant)***	Daytime: Section 7 – *not significant* Sections 1 ~~and~~ -6 – *not significant* ~~Sections 2, 3, 4, 5 and 7 – *not significant*~~ *or* ***significant*** (depending on individual receptor location) Evening and ~~night~~Night-time: ~~All~~ Sections~~:~~ 1 and 7 – *not significant* Sections 2 - 6 – *not significant or* ***significant*** (depending on individual receptor location)	Section 2 – *Minor* to ***Moderate Adverse (significant)*** Sections 3, 4, 5 and 7 – *Minor Adverse*	Sections 1, 4, 5 and 6: Severance, fear and intimidation, driver delay – *Minor adverse* Sections 2 and 3: Severance, fear and intimidation, driver delay, highway safety – *Minor adverse* Section 7: Severance, pedestrian amenity fear and intimidation, driver delay – *Minor adverse*	Risk to residents and users of the surrounding land whilst works being carried out within the floodplain – *Slight Adverse*
Recreational Areas and PRoW (and their users)	Section 2 – ***Moderate Adverse (significant)*** Section 3 – ***Moderate Adverse (significant)*** Section 4 – ***Moderate Adverse (significant)*** Section 5 – Minor to ***Moderate Adverse (significant)*** Section 6 – Minor to ***Moderate Adverse (significant)*** Section 7 – Minor Adverse	n/a	Sections 1, 3, 4 and 5 – *Minor Adverse* Section 2 – *Minor to* ***Moderate Adverse (significant)***	n/a	n/a

Common Receptors	Landscape and Visual	Noise and Vibration	Population and Human Health	Traffic and Transport	Water Resources and Flood Risk
Non-Residential Properties (and their users)	n/a	Daytime: Sections 2~~, 3, 4 and~~ 5 – *not significant or* ***significant*** ~~(~~depending on receptor location) Evening and night-time: ~~All~~ Sections~~:~~ 2 - 5 – *not significant or* ***significant*** (depending on individual receptor location)	Sections 1 and 5 – *Minor Adverse* Sections 3 and 4 – *Minor to* ***Moderate Adverse (significant)***	Sections 1, 4, 5 and 6: Severance, fear and intimidation, driver delay – *Minor adverse* Sections 2 and 3: Severance, fear and intimidation, driver delay, highway safety – *Minor adverse* Section 7: Severance, pedestrian amenity fear and intimidation, driver delay – *Minor adverse*	n/a

Table 3 – Residual Effects on Common Receptors – Decommissioning Stage

Common Receptors	Landscape and Visual	Noise and Vibration
Residential Receptors (residents and residential properties)	Sections 1, 2, 3~~, 5~~ and 6 - ***Moderate Adverse (significant)*** Section 5 and 7 - *Minor to* ***Moderate Adverse (significant)***	Section 7 (Cornist Lane BVS): 1 receptor – ***significant***

~~1.3.~~1.4. STEP C

~~1.3.1.~~1.4.1. The common receptors identified in Step A with residual effects exceeding negligible (identified in Step B) have proceeded to Step C to determine the levels of any intra-project effects that may occur as the result of interactions of multiple non-negligible residual effects. If the intra-project residual effect is significant (moderate adverse or higher) then mitigation recommendations are included.

~~1.3.2.~~1.4.2. **Table 4** and **Table 5** below display the assessment result of intra-project effects on common receptors for the Construction and Decommissioning Stages respectively.

Table 4 – Intra-Project Effects Assessment – Construction Stage

Common Receptor	Residual Effects	Intra-Project Effects	Mitigation
Residential Receptors (residents and residential properties)	**Landscape and Visual** • Section 1 – ***Moderate Adverse (significant)*** • Section 2 – ***Moderate Adverse (significant)*** • Section 3 – ***Moderate Adverse (significant)*** • Section 4 – ***Moderate Adverse (significant)*** • Section 5 – *Minor to* ***Moderate Adverse (significant)*** • Section 6 – *Minor to* ***Moderate Adverse (significant)*** • Section 7 – *Minor to* ***Moderate Adverse (significant)*** **Noise and Vibration** Daytime: • Section 7 – *not significant* • ~~Sections~~ 1 ~~and~~ 6 – *not significant* • ~~Sections 2, 3, 4, 5 and 7 – *not significant*~~ *to* ***significant*** Evening and night-time: • ~~All~~ Sections~~:~~ 1 and 7 – *not* *significant* • Sections 2 - 6 – *not significant to* ***significant*** **Population and Human Health** • Section 2 – *Minor to* ***Moderate Adverse (significant)*** • Sections 3, 4, 5 and 7 – *Minor Adverse* **Traffic and Transport** • Sections 1, 4, 5 and 6: Severance, fear and intimidation, driver delay – *Minor adverse* • Sections 2 and 3: Severance, fear and intimidation, driver delay, highway safety – *Minor adverse* • Section 7: Severance, pedestrian amenity fear and intimidation, driver delay – *Minor adverse* **Water Resources and Flood Risk** • Risk to residents and users of the surrounding land whilst works being carried out within the floodplain – *Slight Adverse*	Adverse effects on residents are anticipated from different topics, including significant adverse effects on visual amenity, noise and vibration and population and human health. The adverse effects identified will be temporary and some will be intermittent in nature, affecting varying receptor locations. Some affected receptors are located outside of the potential areas of effects from some topics. Notably, effects from noise and vibration are only anticipated to impact receptors within 300m of works, whereas traffic and transport effects extend further but are limited to the road network. Only the noise and vibration topic has identified evening and night-time noise effects; these are not anticipated to interact with other effects, thus a magnification of effects would not occur. The effects experienced by residential properties in Section 1 (predominantly in and around Elton) include significant visual effects and noise effects, with minor/non-significant effects relating to ~~noise,~~ traffic and transport, and flood risk. ~~These effects are~~ The visual and noise effects have the potential for a measurable interaction, though this is considered unlikely to ~~interact to the extent that they~~ produce a significant magnification of effect~~,~~ (as both residual effects are already significant), so the intra-project effect would be ~~*Negligible*~~*Minor Adverse* *(not significant)*. Residential properties in Section 2 (a predominantly rural area including Thornton Le Moors, Picton, Wervin and Backford) will experience significant effects in relation to visual amenity, noise and population and human health. Other effects include a slight adverse flood risk impact, access restrictions to Thornton Manor Care Centre and Nursing Home and to properties on Cryers Lane, and traffic effects on Rake Lane, Little Rake Lane and Chorlton Lane. Minor highway safety effects are also expected at the A5117/Rake Lane and Little Rake Lane/Rake Lane junctions. These effects largely act on different receptors which are considered too distant from one another to result in a tangible magnification of effects, so the intra-project effect would be *Negligible (not significant)*. Residential properties in Section 3 (a predominantly rural area including the villages of Saughall and Mollington) will experience significant effects in relation to visual amenity and noise. Other effects include a slight adverse flood risk impact, access restrictions to properties on Grove Road and minor traffic effects on Overwood Lane. Minor highway safety effects at the A540 Parkgate Road and Roundabout are considered too distant to result in a magnification of effects. However, residents of Mollington may experience some magnification of effects due to the interaction of visual amenity, noise, and access effects; this is expected to be a *Minor Adverse* (not significant) effect. Section 4 (containing the villages of Sandycroft, Mancot and Pentre) contains the greatest number of residential receptors experiencing significant noise effects.	None required.

Common Receptor	Residual Effects	Intra-Project Effects	Mitigation
		Many of these receptors will also experience significant visual effects, as well as minor flood risk, traffic, and population and human health effects. Minor magnification of effects may occur in eastern Sandycroft due to the interaction of visual and traffic and population and human health effects, resulting in a *Minor Adverse (not significant)* effect. A large number of residential properties in Section 5 (a more urban area containing the villages of Ewloe Green, Aston, and Northop Hall) would experience significant noise and visual effects. Other effects include a slight adverse flood risk impact and traffic and access impacts on the B5125 and other roads and properties in Aston, Northop Hall and near Alltami. The effects in this Section would largely be acting on different specific residential receptors so the intra-project effect is considered to be *Negligible (not significant)*. Residential receptors in Section 6 (largely rural, with scattered dwellings) would experience significant effects, ~~predominantly~~ from landscape and visual and noise. Other non-significant effects relate to ~~noise,~~ flood risk and traffic. The geographic dispersal of the receptors being acted on in this Section make intra-project effects unlikely, resulting in a *Negligible (not significant)* effect. Residential receptors in Section 7 (a predominantly rural area containing scattered residential dwellings, in the vicinity of the BVS works in this Section) would likely experience less extensive effects, with the main significant adverse effects relating to visual amenity ~~and noise~~ (with minor adverse effects from noise, traffic and transport, flood risk and population and human health). These effects would also act on reduced numbers of receptors which in some cases, such as landscape and visual, are concentrated very close to the BVS sites in comparison to traffic and transport where receptors are bound to roadways. As a result, the intra-project effect in relation to Section 7 is anticipated to be *Minor Adverse (not significant)*.	
Recreational Areas and PRoW (and their users)	**Landscape and Visual** • Section 2 – ***Moderate Adverse (significant)*** • Section 3 – ***Moderate Adverse (significant)*** • Section 4 – ***Moderate Adverse (significant)*** • Section 5 – *Minor to* ***Moderate Adverse (significant)*** • Section 6 – *Minor to* ***Moderate Adverse (significant)*** • Section 7 – *Minor Adverse* **Population and Human Health** • Sections 1, 3, 4 and 5 – *Minor Adverse* • Section 2 – *Minor to* ***Moderate Adverse (significant)***	Adverse effects are anticipated to recreational receptors from different topics, including significant adverse effects from visual amenity in Sections 2-6 and from population and human health in Section 2 only. The identified adverse effects from the different topics will be temporary and potentially intermittent. The population and human health chapter and landscape and visual chapter both report non-negligible impacts on various recreational areas and PRoW. However, the population and health chapter ~~considers~~consider the impact of temporary changes to visual amenity, green space and PRoW on mental health and perceived amenity value. Further intra-project effects between the visual impacts and population and human health impacts identified are therefore not anticipated, resulting in a *Negligible (not significant)* effect.	None required.
Non-Residential Properties (and their users)	**Noise and Vibration** Daytime: • Sections 2~~, 3, 4 and ~~5 – *not significant to* ***significant***	Significant effects are anticipated at receptors in Sections 3 and 4 relating to noise and population and human health, and in Sections 2 and 5 for noise only. The nature of effect for different topics varies depending on receptor locations as	None required.

Common Receptor	Residual Effects	Intra-Project Effects	Mitigation
	Evening and night-time: • ~~All~~ Sections~~:~~ 2 - 5 – *not* *significant* ~~to~~ ***significant*** **Population and Human Health** • Sections 1 and 5 – *Minor Adverse* • Sections 3 and 4 – *Minor to* ***Moderate Adverse (significant)*** **Traffic and Transport** • Sections 1, 4, 5 and 6: Severance, fear and intimidation, driver delay – *Minor adverse* • Sections 2 and 3: Severance, fear and intimidation, driver delay, highway safety – *Minor adverse* • Section 7: Severance, pedestrian amenity fear and intimidation, driver delay – *Minor adverse*	other receptor locations will have Negligible or Minor (not significant) residual effects. Receptors in Sections 6 and 7 only experience residual effects from traffic and transport, so will experience no interaction of effects. Only the noise and vibration topic has identified evening and night-time noise effects; these are not anticipated to interact with other effects, thus a magnification of effects would not occur. The population and human health and traffic and transport effects in Section 1 (including Encirc Glass and CF Fertilisers and users of Little Stanney Lane, Picton Lane and B5132 Cryers Lane) are experienced by different receptors. As such, the interaction of effects in this Section is *Negligible (not significant).* The noise and traffic and transport effects in Section 2 are experienced by different receptors. As such, the interaction of effects in this Section is *Negligible (not significant).* The noise, population and human health and traffic and transport effects in Section 3 (including St Oswald's School, Five Villages Hall, and users of Overwood Lane) are experienced by receptors around Mollington so these effects may interact. Noise screening mitigation has, however, been considered as part of the residual effects assessment for population and human health, so the effects interaction will be *Minor Adverse (not significant)*. The noise, population and human health and traffic and transport effects in Section 4 (including Sandycroft County Primary School, 2 Sisters Food Group, Greenacres Animal Park, and users of the B5129) are experienced by proximate receptors so there will be *Minor Adverse (not significant)* effects. The noise, population and human health and traffic and transport effects in Section 5 (including Highfield Hall and users of the B5125 west of Northop Hall centralised compound, Lower Aston Hall Lane, Upper Aston Hall Lane, Brookside, and the B5125 in Hawarden) are experienced by largely geographically separated receptors. However, effects interactions may occur around Highfield Hall/the B5125. Noise screening mitigation has been considered as part of the residual effects assessment for population and human health, so the effects interaction will be *Minor Adverse (not significant)*.	

Table 5 – Intra-Project Effects Assessment – Decommissioning Stage

Common Receptor	Residual Effects	Intra-Project Effects	Mitigation
Residential Receptors (Residents and Properties)	**Noise and Vibration** Section 7: ***significant***. **Landscape and Visual** • Sections 1, 2, 3~~, 5~~ and 6 - ***Moderate Adverse (significant)***	Adverse effects on residents are anticipated from different topics, including significant adverse effects from visual amenity in Sections 1-3 and ~~4~~5-7 and from noise and vibration in Section 7 only. As with the construction phase, the identified adverse effects will be temporary and potentially intermittent.	None required.

Common Receptor	Residual Effects	Intra-Project Effects	Mitigation
	• ~~Section~~ Sections 5 and 7 - *Minor to* ***Moderate Adverse (significant)***	Receptors in Sections 1~~, 2, -~~3, 5 and 6 will only experience residual effects from landscape and visual, so will experience no interaction of effects. The residential receptor near the junction of Cornist Lane / Lleprog Lane, also represented by viewpoint B9, would experience an interaction of effects from noise and vibration and from landscape and visual. The interaction of these effects is unlikely to result in significant magnification of effects on the receptor so this effect will be *Minor Adverse (not significant)*.	