

20. Summary – Project of Assessment

Introduction

- 20.1 The purpose of this Chapter is to provide a summary of the outcome of the assessments reported within **Technical Chapters 7 – 18** for the Project for Assessment, focusing on the following key objectives:
- Provide a summary of residual effects and conclude if these are significant or not; and
 - Provide a summary of the assessment of cumulative effects, including how they differ from previously identified effects and again conclude if these are significant or not.
- 20.2 The summary of the outcome of the assessments for the Proposed Scheme is provided in **Chapter 21: Summary – Proposed Scheme**.
- 20.3 Through delivering these objectives, BC and RBC should have sufficient information on environmental impacts to inform their decision-making process.
- 20.4 The residual effects defined within this Chapter rely upon the implementation of the mitigation set out within **Volume 3: Environmental Management Plan**. This is critical as the project team have developed detailed mitigation in order to avoid, resolve or off-set impacts. Without the implementation of **Volume 3: Environmental Management Plan**, the conclusions of the ES may change.

Summary of Residual and Significant Effects

- 20.5 A consolidated summary of the outputs of the assessment (i.e. residual effects and the judgement on significance) for both the construction and operation stages are set out within **Table 20.1** and **Table 20.2**, respectively.
- 20.6 Where effects were identified to be significant, this is indicated by the text being in **bold** and is highlighted in red (adverse), green (beneficial) or in automatic / normal text (negligible).
- 20.7 Where Technical Chapters have identified individual level of effects for specific sensitive receptors for an assessed effect, each level of effect has been concluded in **Table 20.1** and **Table 20.2** and the greatest level of effect has been considered when considering the effects as a whole (i.e. to all receptors).

Table 20.1: Summary of Residual Effects and Significant Effects During Construction

Technical Chapter	Potential Effect	Receptor	Residual Effect
Chapter 7: Socio-economics and Human Health	Employment generation	Labour force in the Local and Wider Impact Areas	Moderate beneficial
	Access to Work and Training	Labour force in the Local and Wider Impact Areas	Moderate beneficial
Chapter 8: Transport and Access	The construction stage effects are represented by operational stage effects in Table 20.2 .		
Chapter 9: Noise and Vibration	Noise from construction works	Residential, hotel, and educational receptors	Major adverse
		Pilsworth Fisheries	N/A
	Vibration from construction works	Residential receptors	Major adverse
	Construction traffic noise on the road network	Residential receptors	Major adverse
Chapter 10: Air Quality	Road Vehicle Exhaust Emissions	Human Receptors	Negligible to minor adverse
Chapter 11: Biodiversity	Overall loss of habitat and degradation to retained habitats	Broadleaved woodland	Minor beneficial to negligible beneficial
		Hedgerows	Minor beneficial to negligible beneficial
		Neutral grassland	Minor beneficial to negligible beneficial

Technical Chapter	Potential Effect	Receptor	Residual Effect
	Risk of killing/ injury/ loss of habitat and disturbance to populations of wildlife	Standing water/ ponds	Minor beneficial to negligible beneficial
		Scattered trees	Minor beneficial to negligible beneficial
		Wet ditches	Negligible beneficial
		Amphibians	Minor beneficial
		Bats	Minor beneficial
		Badgers	Negligible adverse
		Birds (breeding and over-wintering)	Negligible beneficial
		Otter	Negligible beneficial
		Other Fauna	Minor adverse
		Reptiles	Negligible adverse
		Water voles	Negligible adverse
Chapter 12: Hydrology, Flood Risk and Water Quality	Flood risk as a result of flooding from failure of On-Site attenuation features installed as part of drainage strategy	Less Vulnerable and More Vulnerable infrastructure adjacent to and within the Project for Assessment boundary	Negligible adverse
	Changes to biological and morphological features within the Main Rivers from structures within the Wetland Habitat Corridors	Main Rivers (Whittle Brook, Brightley Brook, Hollins Brook, River Roch) and downstream hydraulically connected sites (Hollins Vale and Pilsworth Fisheries)	Negligible adverse

Technical Chapter	Potential Effect	Receptor	Residual Effect
	Changes to chemical status of the groundwater body from works that interface with the water table	Northern Manchester Carboniferous Aquifers (Secondary A Aquifer)	Negligible adverse
	Decrease in water quality due to disturbance of poor quality peat deposits	Main Rivers (Whittle Brook, Brightley Brook, Hollins Brook, River Roch) and all waterbody receptors such as ponds within the Assessment Boundary. Downstream waterbodies within the area of interest (including Hollins Brook and River Roch)	Negligible adverse
Chapter 13: Ground Conditions and Contamination	Potential risk of mining and ground collapse	Commercial Properties Residential Properties Construction Workers Highways Infrastructure	Negligible beneficial
Chapter 14: Agriculture and Soils	Loss of agricultural land	BMV agricultural land	Moderate adverse
		Other agricultural land	Minor adverse
	Loss of or damage to soil resources	Soil (heavy clay loam and clay textures)	Minor adverse
		Soil (all other textures)	Negligible adverse
	Reduction in farmable area and business viability	Main tenanted farm holding	Moderate adverse
Chapter 15: Archaeology	Direct effects including the truncation, disturbance, or removal of known and unknown archaeological remains	Castle Brook - Potential Prehistoric Camp	Moderate adverse
		Meadowcroft Fold - Medieval Settlement and Iron Smelting Site	Moderate adverse

Technical Chapter	Potential Effect	Receptor	Residual Effect
		Whittle Brook - Medieval Iron Smelting Site	Moderate adverse
		Non-Designated Archaeological Assets Across the Project for Assessment	Moderate – Major adverse
Chapter 16: Built Heritage	Impact on the significance (character and appearance) of Birch Village Conservation Area, as a result of direct impacts and change within its setting	Birch Village Conservation Area	Major adverse
	Impact on the significance (special architectural and historic interest) of listed buildings and Registered Parks and Gardens (RP&Gs), as a result of change within their setting	Heaton Park (grade II RP&G)	Minor adverse
		Temple to the north east of Heaton Hall (grade II* listed building) (HAP 1)	Minor adverse
		Alkrington Hall (grade II* listed building) (HAP 2)	Negligible adverse
		Brick Farmhouse (grade II listed building, HAP 3)	Moderate adverse
		Lower Whittle Farmhouse (grade II listed building (HAP 4)	Minor adverse
	Impact on the significance of non-designated heritage assets as a result of their demolition	Moss Side Barn/Farm Griffe Lane (HAP 15)	Minor adverse
		Meadowcroft Fold Farmhouse and Barns (HAP 19)	Minor adverse

Technical Chapter	Potential Effect	Receptor	Residual Effect
Chapter 17: Landscape and Visual		Thurston Fold (HAP 22)	Minor adverse
		Birch Mill (HAP 34)	Minor adverse
		Lodge View (HAP 54)	Minor adverse
		Higher Fields Farm (HAP 45)	Minor adverse
		Broomhill Farm (HAP 50)	Minor adverse
	Changes to Landscape Character	Local Landscape Character: (LCT) Mosslands and Lowland Farmland	Major / Moderate adverse
		Local Landscape Character: (LCT) Urban Fringe Farmland	Major / Moderate adverse
		Landscape Character Area (LCA) No. 26 Prettywood, Pilsworth and Unsworth Moss	Major / Moderate adverse
		Landscape Character Area (LCA) No. 27. Simister, Slattocks and Healds Green	Major / Moderate adverse
		The Character and Features of the Assessment Boundary and Application Boundary	Major / Moderate adverse

Technical Chapter	Potential Effect	Receptor	Residual Effect
	Changes to the character and amenity of views	Users of footpaths and roads within the western extents of the Assessment Site (Photoviewpoints 1, 2, 3 and 4)	Major / Moderate adverse
		Users of Unsworth Academy Playing Fields (Photoviewpoint 2)	Major / Moderate adverse
		Users of footpath BY/12WHI / Pole Lane (Photoviewpoint 5)	Major / Moderate adverse
		Users of footpath BY/9WHI / Egypt Lane (Photoviewpoint 6)	Major / Moderate adverse
		Users of footpaths BY/8WHI and BY/46WHI (Photoviewpoints 7 and 8)	Major / Moderate adverse
		Users of footpath BY/3WHI (Photoviewpoint 11)	Major / Moderate adverse
		Users of Rochdale Way Promoted Long Distance Footpath (Photoviewpoints 12, 13 and 14)	Major / Moderate adverse
		Users of footpaths RD/Hey/Fp72, RD/Hey/Fp75 and RD/Hey/Fp74 (Photoviewpoints 16, 17 and 18)	Major / Moderate adverse
		Users of footpath BY/1WHI (along the south-eastern edge of Pilsworth Quarry) to the north (Photoviewpoints 19 and 20)	Major / Moderate adverse
Chapter 18: Climate Change	Construction Stage	Release of GHG emissions impacting the Global Climatic System	Minor adverse

Table 20.2: Summary of Residual Effects and their Significance During Operation

Technical Chapter	Potential Effect	Receptor	Residual Effect
Chapter 7: Socio-economics and Human Health	Employment generation	Labour force in the Local and Wider Impact Areas	Major beneficial
	Access to Work and Training	Labour force in the Local and Wider Impact Areas	Major beneficial
Chapter 8: Transport and Access	Increase in Severance	Communities using the following links: • Moss Hall Road between Pilsworth Road and Whittle Lane; and • Pilsworth Road, between Moss Hall Road and M66.	Moderate adverse
	Increase in Driver Delay	Vehicle drivers using links: • M62 Westbound Off-Slip; • Hollins Brow, between Hollins Lane and Manchester Road; • Manchester Road, north of Hollins Brow; and • Pilsworth Road, between Hareshill Road / Pilsworth Road and A58 Bury St.	Moderate adverse
	Increase in Non-motorised user Delay	• NMUs using links: • Moss Hall Road, between 3 arrows (Junction 9) and Fowler Welch (Junction 10);	Moderate adverse

Technical Chapter	Potential Effect	Receptor	Residual Effect
		• Moss Hall Road, between Pilsworth Road and Whittle Lane; • Pilsworth Road, between Moss Hall Road and M66; • Pilsworth Road, between Hareshill Road / Pilsworth Road and Heywood Distribution Park; and • M66 Junction 3, Southbound Off-Slip.	
		NMUs using links: • Moss Hall Road, between Pilsworth Road and Whittle Lane; and • Pilsworth Road, between Moss Hall Road and M66. Vehicle drivers / NMUs using the following routes:	
	Reduction in Non-motorised User Amenity	• Hareshill Road / Queen Elizabeth II Way Corridor, between Hareshill Road / QEII / South Heywood residential & local centre (Junction 3); • Hareshill Road, between Hareshill Road / Queen Elizabeth II Way / South Heywood residential & local centre (Junction 3) and Hill Top Road;	Moderate adverse

Technical Chapter	Potential Effect	Receptor	Residual Effect
		- Pilsworth Road, between Hareshill Road / Pilsworth Road and Heywood Distribution Park; - Pilsworth Road, between Heywood Distribution Park and Access to Committed Development on South Side of Pilsworth Road; - Moss Hall Road, between 3 Arrows (Junction 9) and Fowler Welch (Junction 10); - Manchester Road, between Queen Elizabeth II Way and Coronation Avenue; and - Pilsworth Road, between Moss Hall Road and M66.	
	Increase in fear and intimidation	Vehicle drivers / NMUs using the following routes: - Hareshill Road / Queen Elizabeth II Way Corridor, Between Hareshill Road / QEII / South Heywood residential & local centre (Junction 3); - Hareshill Road, between Hareshill Road / Queen Elizabeth II Way / South Heywood residential & local centre (Junction 3) and Hill Top Road;	Moderate adverse

Technical Chapter	Potential Effect	Receptor	Residual Effect
		- Pilsworth Road, between Hareshill Road / Pilsworth Road and Heywood Distribution Park; - Pilsworth Road, between Heywood Distribution Park and Access to Committed Development on South Side of Pilsworth Road; - Moss Hall Road, between 3 Arrows (Junction 9) and Fowler Welch (Junction 10); - Manchester Road, between Queen Elizabeth II Way and Coronation Avenue; and - Pilsworth Road, between Moss Hall Road and M66.	
	Increase in accidents and reduction in safety	Vehicle drivers / NMUs	Negligible adverse
	Impact to Public right of Way (PRoW) Network	PRoW and users (NMUs)	Minor beneficial
	Increased demand on Public Transport	Public Transport Network and users	Moderate beneficial
Chapter 9: Noise and Vibration	Noise from proposed commercial and industrial uses	Residential, and educational receptors	Minor adverse
		Recreational facilities (Pilsworth Fisheries)	N/A
	Noise from proposed energy infrastructure	Residential, and receptors	Minor adverse

Technical Chapter	Potential Effect	Receptor	Residual Effect
		Recreational facilities (Pilsworth Fisheries)	N/A
	General Activities (Vehicle Movements On The Internal Access Roads and Car Parking)	Residential, and educational receptors	Moderate adverse
		Recreational facilities (Pilsworth Fisheries)	N/A
	Noise from development generated road traffic and new highway infrastructure	Residential receptors	Negligible to moderate adverse
		Other receptors (Grade II listed buildings, Heap Village Primary School along Heap Brow and public rights of way)	Negligible to minor adverse
	Noise from existing and reasonably foreseeable future noise sources	Residential receptors	Moderate adverse
Chapter 10: Air Quality	Road Vehicle Exhaust Emissions	Human Receptors	Negligible to minor adverse
Chapter 11: Biodiversity	Degradation through recreational pressure	Non-statutory designated sites	Negligible adverse
	Overall loss/ degradation of retained and created habitats	Retained and created habitats	Negligible beneficial
	Risk of killing/ injury/ loss of habitat and disturbance to populations of wildlife	Amphibians	Negligible adverse
		Badgers	Negligible adverse
		Bats	Negligible adverse
		Birds (breeding and over-wintering)	Negligible adverse

Technical Chapter	Potential Effect	Receptor	Residual Effect
		Otter	Negligible adverse
		Other Fauna	Negligible adverse
		Reptiles	Negligible adverse
		Water voles	Negligible adverse
Chapter 12: Hydrology, Flood Risk and Water Quality	Flood risk as a result of flooding from failure of On-Site attenuation features installed as part of drainage strategy	Less Vulnerable and More Vulnerable infrastructure adjacent to and within the Project for Assessment boundary	Negligible adverse
	Changes to biological and morphological features of the waterbody from structures within the Wetland Habitat Corridors	Main Rivers (Whittle Brook, Brightley Brook, Hollins Brook, River Roch) and downstream hydraulically connected sites (Hollins Vale and Pilsworth Fisheries)	Negligible adverse
	Changes to quantitative status of the groundwater body from foundations and structures that interface with the groundwater flow	Northern Manchester Carboniferous Aquifers (Secondary A Aquifer)	Negligible adverse
	Decrease in water quality as a result of runoff	Ordinary watercourses and waterbody receptors within the Project for Assessment, Main Rivers and	Negligible adverse

Technical Chapter	Potential Effect	Receptor	Residual Effect
		downstream hydraulically connected non-statutory sites	
	Increase in surface water flood risk as a result of increased overland flows from changes to topography and increased areas of hardstanding	Less Vulnerable and More Vulnerable infrastructure adjacent to and within the Project for Assessment boundary	Negligible adverse
	Increased demand on existing drainage networks and Waste Water Treatment Works	Wastewater Treatment Works and associated infrastructure	Negligible adverse
	Increased demand on water resources and associated infrastructure	Aquifers and existing potable water infrastructure	Negligible adverse
Chapter 13: Ground Conditions and Contamination	No operational stage effects are reported.		
Chapter 14: Agriculture and Soils	No operational stage effects are reported.		
Chapter 15: Archaeology	No operational stage effects are reported.		
Chapter 16: Built Heritage	Impact on the significance (character and appearance) of Birch Village Conservation Area, as a result of direct impacts and change within its setting	Birch Village Conservation Area	Moderate adverse
		Heaton Park (grade II RP&G)	Minor adverse

Technical Chapter	Potential Effect	Receptor	Residual Effect
	Impact on the significance (special architectural and historic interest) of listed buildings and Registered Parks and Gardens (RP&Gs), as a result of change within their setting	Temple to the north east of Heaton Hall (grade II* listed building) (HAP 1)	Minor adverse
		Alkrington Hall (grade II* listed building) (HAP 2)	Minor adverse
		Brick Farmhouse (grade II listed building) (HAP 3)	Moderate adverse
		Lower Whittle Farmhouse (grade II listed building) (HAP 4)	Minor adverse
Chapter 17: Landscape and Visual	Changes to Landscape Character	Local Landscape Character: (LCT) Mosslands and Lowland Farmland	Major / Moderate adverse
		Local Landscape Character: (LCT) Urban Fringe Farmland	Major / Moderate adverse
		Landscape Character Area (LCA) No. 26 Prettywood, Pilsworth and Unsworth Moss	Major / Moderate adverse reducing to Moderate adverse in Year 15
		Landscape Character Area (LCA) No. 27. Simister, Slattocks and Healds Green	Major / Moderate adverse
		The Character and Features of the Assessment Boundary and Application Boundary	Major / Moderate adverse

Technical Chapter	Potential Effect	Receptor	Residual Effect
	Changes to the character and amenity of views	Users of footpaths and roads within the western extents of the Assessment Site (Photoviewpoints 1, 2, 3 and 4)	Major / Moderate adverse
		Users of Unsworth Academy Playing Fields (Photoviewpoint 2)	Major / Moderate adverse
		Users of BY/12WHI / Pole Lane (Photoviewpoint 5)	Major / Moderate adverse
		Users of BY/9WHI / Egypt Lane (Photoviewpoint 6)	Major / Moderate adverse
		Users of footpaths BY/8WHI and BY/46WHI (Photoviewpoints 7 and 8)	Major / Moderate adverse
		Users of footpath BY/3WHI (Photoviewpoint 11)	Major / Moderate adverse
		Users of Rochdale Way Promoted Long Distance Footpath (Photoviewpoints 12, 13 and 14)	Major / Moderate adverse
		Users of footpaths RD/Hey/Fp72, RD/Hey/Fp75 and RD/Hey/Fp74 (Photoviewpoints 16, 17 and 18)	Major / Moderate adverse
		Users of footpath BY/1WHI (along the south-eastern edge of Pilsworth Quarry) to the north (Photoviewpoints 19 and 20)	Major / Moderate adverse
Chapter 18: Climate Change	Operational Stage – Buildings	Release of GHG emissions impacting the Global Climatic System	Minor adverse

Technical Chapter	Potential Effect	Receptor	Residual Effect
	Operational Stage – Transport	Release of GHG emissions impacting the Global Climatic System	Minor adverse
	Operational Stage – Green Infrastructure	Release of GHG emissions impacting the Global Climatic System	Negligible

20.8 A summary of the technical topics is provided in **Table 20.3** below where:

- No Significant effects were identified – denoted by ✕;
- Significant adverse effects were identified – denoted by ✓;
- Significant beneficial effects were identified – denoted by ✓; and
- A mixture of Significant adverse and beneficial effects were identified – denoted by ✓.

Table 20.3: Summary of Technical Topics

Technical topic	Significant effects? (During the construction stage)	Significant effects? (During the operational stage)
Socio-Economics and Human Health	✓	✓
Transport and Access	✓	✓
Noise and Vibration	✓	✓
Air Quality	✕	✕
Biodiversity	✕	✕
Hydrology, Flood Risk and Water Quality	✕	✕
Ground Conditions and Contamination	✕	N/A
Agriculture and Soils	✓	N/A
Archaeology	✓	N/A
Built Heritage	✓	✓
Landscape and Visual	✓	✓
Climate Change	✕	✕

Summary of Assessment of Cumulative Effects

20.9 An assessment of cumulative effects has been completed within **Chapter 19: Assessment of Cumulative Effects**. The assessment considered the two most common types of cumulative effect; effect interactions and in-combination cumulative effects. A summary of the outputs of the assessment for each type of cumulative effect is set out below.

Assessment of Effect Interactions

20.10 Effect interactions consider multiple effects generated by the Project for Assessment impacting upon the same receptor / receptor category. These are assessed under ‘factors’, which is essentially broad environmental topics in accordance with the EIA Regulations.

20.11 During construction, there are two effect interactions which are considered to be Significant.

- **Population and human health (local residents)** – associated with the interaction of adverse effects associated with an increase in traffic, traffic noise, traffic emissions and views experienced by users of the public rights of way; and
- **Cultural heritage** – there is an effect interaction, albeit this is driven by Birch Village Conservation Area, as a result of direct impacts and change within its setting from the potential highways infrastructure.

20.12 During operation, there is one effect interactions which is considered to be Significant, very similar to those considered at the construction stage.

- **Population and human health (local residents)** – associated with the interaction of adverse effects associated with an increase in traffic, operational noise (including traffic noise), small changes in air quality (from traffic emissions) and views experienced by users of the public rights of way.

20.13 For both the construction and operational stages, there are also Significant beneficial effects from employment generation and training opportunities, although these cannot balance or outweigh the adverse effects set out above.

Assessment of In-Combination Effects

20.14 The assessment of in-combination effects considered 16 Cumulative Projects on a technical topic-by-topic basis.

20.15 The purpose of the in-combination assessment is to understand whether there are in-combination effects (in which case there needs to be a common receptor); how the in-combination effect differs from that considered at the project level and whether there are any in-combination effects that are significant (particularly if they were not considered significant at the project level).

20.16 From the in-combination assessment completed, the following topics have concluded that there are no in-combination effects: archaeology; and ground conditions. Whilst there are in-combination effects across the following topics, the conclusions at the project level do not change¹: transport and access; noise and vibration; air quality; biodiversity; hydrology, flood risk and water quality; built heritage and landscape and visual.

20.17 The assessment of in-combination effects in relation to socio-economics and human health, concluded that construction related effects were greater (even more beneficial), with both effects concluding an effect of major beneficial as opposed to moderate beneficial at the project level, although both effects remain Significant as they were at the project level. Operational effects remained the same as assessed at the project level, albeit only because conclusions at the project level were already major beneficial and significant.

20.18 The assessment of agriculture and soils concluded that there were no in-combination effects in relation to soil resources and that the effects on farm business viability was the same as that considered at the project level. There is an increase in the loss of agricultural land (including best and most versatile land), however, the conclusions at the project level remained the same (up to moderate adverse and Not Significant) for Project for Assessment.

¹ i.e. the in-combination effect is no better or worse than that reported at the project level.