

14. SUMMARY AND RESIDUAL EFFECTS

Introduction

- 14.1 This chapter summarises the mitigation measures and residual effects identified in each of the technical assessments included in the ES, which has been prepared to accompany a hybrid planning application for development of land at Stakehill, Rochdale Road for:

"Hybrid planning application seeking:

Full Planning permission for the erection of residential development (Use Class C3) with associated landscaping, means of access, drainage, and other necessary supporting infrastructure.

Outline planning permission for residential development, mixed-use development, landscaping, and supporting infrastructure (all other matters reserved)."

Mitigation Measures

- 14.2 The Development has been subject to an iterative design process. As this process progressed measures have been incorporated into the Development in order to avoid, reduce or offset significant environmental effects. These include:

Detailed Element:

- In the western portion of the Development, three new SuDS attenuation ponds adjacent to Thornham Cricket club will be created alongside the existing linear pond, providing increased flood attenuation and biodiversity benefits;
- The existing pond south of Carnforth Avenue will be retained and a new pond will be created adjacent to it, providing biodiversity enhancements;
- Meadow grass mix will be planted alongside new trees and a proposed wildlife pond and existing trees surrounding St John's Church towards the south west of the Development will be retained, reducing the adverse effect on the setting of the Grade II listed building;
- A Public Right of Way (PRoW) running through the western central portion of the Site will be retained as part of the Phase 1 detailed element of the Development, creating a recreational path for the new residents and encouraging active travel, which will have a beneficial effect on residents' health;

- The detailed element of the Development will comprise 15% affordable housing for new residents, as well as a range of housing tenures from 1–5 bedroom homes, which will have a beneficial effect on local housing supply;
- The local centre could provide affordable homes as well as a commercial use for new residents, therefore having a beneficial effect on access to local infrastructure;
- Proposed native tree and shrub planting in the western portion of the Site adjacent to Carnforth Avenue will mitigate the effect of a changed landscape for existing residential receptors;
- The 3m shared footpath and cycleway will encourage a modal shift to more sustainable forms of travel, therefore having beneficial effects in terms of transport, air quality and noise; and
- New planting of a variety of trees, hedgerows, plants and grassland, alongside new wildlife ponds will sequester carbon from the atmosphere, therefore improving climatic effects.

Outline Element:

- The community parkland in the south of the Development will provide ecological enhancements as well as recreational space, therefore having beneficial health effects for new residents and visitors to the area;
- Land to the north of St John's primary school includes open space which will enhance biodiversity on the Site and provide an area for recreation for pupils, therefore having beneficial health effects;
- The school extension land, as shown in Figure 3.1, provides space for a school extension to increase pupil capacity should it be necessary, improving primary school capacity in the local area;
- The north and east of the Development will comprise an area of green infrastructure, as shown in Figure 3.1, and this will mitigate effects on the Development in terms of noise and air quality from the adjacent motorways;
- As shown in Figure 3.1, the maximum height of the Development will be up to 3 storeys and 12.5m (to ridge level), in keeping with the local area, which will mitigate adverse effects on landscape and views;
- There will be several pedestrian access points to the Development, as shown in Figure 3.1, including from Chatburn Avenue and Carnforth Avenue to the west, along Thornham Lane in the south and from the M62 to the north. This will integrate the Development to the existing built form and encourage a walkable neighbourhood, and therefore have beneficial health effects;
- A secondary access point, to provide access to approximately 100 homes within the

north of the Development, will alleviate significant adverse transport effects on the primary access point; and

- Ponds and trees will be retained throughout the outline element of the Development which will be beneficial in terms of biodiversity.

14.3 Following assessment of the Development, additional mitigation measures have been proposed to be secured and implemented. These are set out in Table 14.1 below along with the residual effects of the Development following mitigation.

Table 14.1: Significance Table

Phase	Effect/ Receptor	Mitigation	Residual Significance (Bold indicates significant effects)
LANDSCAPE AND VISUAL EFFECTS (CHAPTER 6)			
Construction	Effects on Landscape Features	Protection of retained planting.	Major Adverse - Neutral
	Effects on Landscape Character	Implementation of the Construction Environmental Management Plan (CEMP), to be secured via planning condition.	Minor Adverse
	Effects on Visual Receptors	Landscape planting to provide buffers/ offsets to visually sensitive edges.	Major - Moderate – Minor Adverse
Operation	Effects on Landscape Features	Maturation and maintenance of the landscape mitigation planting.	Moderate Adverse – Moderate Beneficial
	Effects on Landscape Character		Negligible Adverse
	Effects on Visual Receptors		Moderate – Negligible Adverse
BIODIVERSITY (CHAPTER 7)			
Construction	Loss of roosting provision and commuting/foraging habitat for bats.	Provision of new roosting and habitat enhancement through suitable landscaping.	Minor Adverse (Local)
	Loss of aquatic habitat for breeding amphibians and GCN.	Retention of water bodies on-site and creation of new water features/ bodies.	
	Loss of nesting and foraging provision for breeding bird species.	Provision of nest boxes.	
	Fragmentation of habitats for all species.	Suitable landscaping to provide continued connectivity.	
	Possible killing or injuring of all species.	Sensitive working practices and Reasonable Avoidance Measures to be implemented.	Minor Adverse (International level)
	Impact on statutory and non-statutory sites		
	Effects on hedgerows and trees	Implementation of a CEMP to be secured through a planning condition and Reasonable Avoidance Methods (RAMs)	Negligible
Operation	Light Spill for light sensitive species, including bats.	Implementation of sensitive lighting.	Minor Adverse (Local)
	Disturbance for all species.	Provision of open space and retained areas with a lower level of human disturbance.	
	Habitat fragmentation for all species.	Suitable landscaping to provide continued connectivity.	
	Impact on statutory and non-statutory sites	A report to Inform a Habitat Regulations Assessment (HRA) has been submitted to RBC to inform an Appropriate Assessment.	Minor Adverse (Local)
	Effects on hedgerows and trees	Implementation of new hedgerow planting and retention of existing hedgerows and trees.	Minor Beneficial (Local)
CULTURAL HERITAGE (CHAPTER 8)			

Phase	Effect/ Receptor	Mitigation	Residual Significance (Bold indicates significant effects)
Construction	Destruction of potential archaeological remains	Archaeological preservation by Record.	Unknown but could be Minor Adverse
	Setting of Designated Asset Church of St John NHLE 1390504	Implementation of CEMP, introduction of further screening using vegetation and tree cover.	Minor Adverse
	Setting of Designated Asset War Memorial NHLE 1452837		
	Setting of Slattocks Top Lock (No. 54) and adjoining bridge NHLE 1068507		
	Setting of Sand Hole Farm NHLE 1396460		
	Setting of Castleton South Conservation Area DGM3513		Negligible
	Setting of Rochdale Canal		Minor Adverse
	Setting of Thornham Fold		Negligible
	Setting of St John CE Thornham Primary School		Minor Adverse
	Setting of Thornham Lane Parsonage		Negligible
	Setting of Toll Bar Cottage		Minor Adverse
	Setting of New Hey Farm		Negligible
	Setting of Hopwood Arms Farm		Minor Adverse
	Setting of Richard Bentley Smalley Memorial Hall		Negligible
Operation	Setting of Designated Asset Church of St John NHLE 1390504	Embedded mitigation measures in place, introduction of further screening using vegetation and tree cover.	Minor Adverse
	Setting of Designated Asset War Memorial NHLE 1452837		
	Setting of Slattocks Top Lock (No. 54) and adjoining bridge NHLE 1068507		
	Setting of Sand Hole Farm NHLE 1396460		
	Setting of Castleton South Conservation Area DGM3513		Negligible
	Setting of Rochdale Canal		Minor Adverse
	Setting of Thornham Fold		Negligible
	Setting of St John CE Thornham Primary School		Minor Adverse
	Setting of Thornham Lane Parsonage		

Phase	Effect/ Receptor	Mitigation	Residual Significance (Bold indicates significant effects)
	Setting of Toll Bar Cottage		Negligible
	Setting of New Hey Farm		Minor Adverse
	Setting of Hopwood Arms Farm		Negligible
	Setting of Richard Bentley Smalley Memorial Hall		
	Setting of Slattocks Top Lock (No. 54) and adjoining bridge NHLE 1068507		Minor Adverse
	Setting of Sand Hole Farm NHLE 1396460		
TRANSPORT (CHAPTER 9)			
Construction	The effect of construction on Severance	Implementation of a Construction Traffic Management Plan (CTMP), to be secured through an appropriately worded planning condition.	Negligible
	The effect of construction on Driver Delay		
	The effect of construction on Pedestrian Delay		
	The effect of construction on Pedestrian & Cycle Amenity		
	The effect of construction on Accidents & Safety		
Operation	Operational effects on Severance	Infrastructure improvements as part of the Development including a Sustainable Travel Plan, to be secured through an appropriately worded planning condition	Negligible
	Operational effects on Driver Delay		Minor Beneficial
	Operational effects on Pedestrian Delay		
	Operational effects on Pedestrian & Cycle Amenity		Negligible
	Operational effects on Accidents & Safety		
AIR QUALITY (CHAPTER 10)			
Construction	Construction phase impacts of the Development on local air may potentially arise due to the generation and re-suspension of dust and particulate matter during the construction phase.	Measures will be incorporated into a detailed CEMP, to be secured by planning condition.	Negligible
	Increase in pollutant concentrations as a result of exhaust emissions arising from construction phase traffic and plant	N/A	
Operation	Increase in pollutant concentrations as a result of additional traffic exhaust emissions arising from operational phase	A Travel Plan has been prepared and includes mitigation measures to promote and deliver sustainable modes of transport.	Negligible
NOISE (CHAPTER 11)			
Construction	Noise from Works	Best Practical Means (BPM) as defined in the Control of	Minor Adverse

Phase	Effect/ Receptor	Mitigation	Residual Significance (Bold indicates significant effects)
		Pollution Act 1974 (CoPA) to be implemented in a CEMP to be secured through a suitably worded planning condition.	
Operation	Change in Road Traffic Noise	N/A	Minor Adverse
POPULATION AND HUMAN HEALTH (CHAPTER 12)			
Construction	Construction employment	None required	Minor Beneficial
	Wider Human Health	Protection of retained planting. Implementation of a CEMP to be secured through a planning condition	Major to Minor Adverse (Visual Effects) Minor Adverse (Noise) Negligible (Transport, Air Quality)
Operation	Operational housing delivery	None required	Major-Moderate Beneficial
	Household expenditure		Minor Beneficial
	Early years education provision		Moderate-Minor Adverse
	Primary education	Financial contribution	Negligible
	Secondary education provision	None required	Moderate-Minor Adverse
	GP provision	Financial contribution	Negligible
	Wider human health	Ongoing maintenance and management of landscape features. Implementation of a Travel Plan.	Moderate Adverse to Negligible (Visual Effects) Minor Adverse (Noise) Negligible (Transport, Air Quality)
	Open and play space provision		Major Beneficial
	Operational employment		Negligible
	Resident employment	None required	Negligible
CLIMATE CHANGE (CHAPTER 13)			
Construction	Construction transport emissions	Implementation of a CEMP, to be secured through a planning condition and appropriate construction vehicle routing.	Negligible
Operation	Operational transport emissions	Implementation of a Travel Plan to be secure through a planning condition.	Moderate Adverse
	Operational energy emissions	Implementation of the Energy Hierarchy for the outline phase of the Development, to be secured by a planning condition. Solar PV panels to be considered.	Negligible
	Carbon sequestration potential	Implementation of a Landscape and Ecological Management	Minor Beneficial

Phase	Effect/ Receptor	Mitigation	Residual Significance (Bold indicates significant effects)
		Plan (LEMP) to manage landscaping over 30 years.	
	Effects of climate change on future site users	Fabric measures in the detailed phase should be incorporated into the outline phase through planning conditions. An Overheating Assessment should be secured via a planning condition.	Moderate Adverse (Heatwaves)
	Effects of climate change on infrastructure	Infrastructure will be safeguarded at detailed design stages, such as finished floors levels set a minimum of 150mm above the local ground level.	Minor Adverse
	Effects of climate change on the natural environment	A LEMP, to be secured by a planning condition.	
	Effects of climate change on flood risk	Detailed SuDS strategy and drainage regime.	

Interactive Effects

- 14.4 Regulation 4 (2) states that an ES must include a description of the aspects of the environment likely to be significantly affected by the Development and the interrelationship between these effects. There is no published methodology for determining the significance of interactive or synergistic effects. Combining effects with respect to one environmental discipline with another has to be qualitative and is necessarily based on judgment. Therefore, a matrix system has been used to indicate where such effects would likely occur for the construction and operational phases, highlighting where effects occur to a common receptor. This has been informed by the residual effects of the Development (as identified above in Table 14.1) and professional judgment. The findings of this exercise are set out in Table 14.2 below.

Table 14.2: Interactive Effects

Effect	Local Population and Site Users	Landscape and Views	Users of the Local Road Network	Biodiversity	Climate Change
Construction					
Effects from construction traffic	*		*	*	
Loss of habitat and boundary planting	*	*		*	*
Effects of construction dust and air quality	*			*	*
Disturbance of below ground built heritage assets	*	*			
Loss of Agricultural Land		*		*	*
Operation					
Housing provision	*				
Enhanced planting and habitat provision	*	*		*	*
Views of the Development	*	*			
Improvements to the road network	*		*		
Operational road and plant pollutant emissions	*		*	*	*
Operational traffic changes	*		*	*	
New open space creation	*	*		*	*

*indicates where a significant effect may occur.

- 14.5 Appropriate mitigation during the construction phase has been identified in the ES as necessary, such as best practice measures to reduce or eliminate potential adverse environmental effects as far as possible. Furthermore, ES Chapter 5: Construction Methodology and Phasing proposes a programme and approach to works which will ensure that the Development would be implemented in the most efficient and least intrusive manner. This includes measures set out and secured through the implementation of the

CEMP for the Development (see Chapter 5 for further details). Relevant legislative requirements would also be adhered to.

- 14.6 During the construction and operational phases of the Development, it is considered that interactions could potentially occur as set out in Table 14.2. It is considered that interactive effects during construction on the surrounding area will be minor and not significant. Any significant adverse effects would be temporary in duration and are likely to be associated only with the peak periods of construction activity. It is considered that the interactive effects during operation of the Development on the surrounding area will also be minor and not significant.

Cumulative Effects Summary

- 14.7 Each of the technical assessments considers the likely significant cumulative effects of the Development with the cumulative schemes set out in Chapter 2.
- 14.8 The technical assessments identified the following significant beneficial cumulative effects:
- Housing delivery (Major-Moderate Beneficial).
- 14.9 The technical assessments identified that there are no significant adverse cumulative effects.

Summary/Conclusions

- 14.10 The Development will result in the following significant beneficial residual effects:

Operation:

- Housing delivery (**Major-Moderate** Beneficial);
- Open and play space provision (**Major** Beneficial); and
- Effects on Landscape features (Moderate adverse to **Moderate** Beneficial).

- 14.11 The Development will result in the following significant adverse residual effects:

Construction:

- Effects on Landscape Features (**Major** Adverse – Neutral);
- Effects on Visual Receptors (**Major - Moderate** – Minor Adverse); and

- Effects on Wider Human Health (Visual) (**Major** to Minor Adverse).

Operation:

- Effects on Landscape Features (**Moderate** adverse to Moderate Beneficial);
- Effects of operational transport emissions (**Moderate** Adverse); and
- Effects of climate change on future site users during heatwaves (**Moderate** Adverse).