

Landscape and Visual Impact Assessment

**PROPOSED STANLEY FERRY SAND AND GRAVEL QUARRY
STANLEY FERRY, WAKEFIELD**

Issue 1: March 2020

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Landscape and Visual Impact Assessment

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1.0 Introduction

1.1 Overview

- 1.1.1 This Landscape and Visual Impact Assessment (LVIA) assesses the effects arising from proposals for mineral extraction at the application site located at Stanley Ferry in the district of Wakefield, West Yorkshire.
- 1.1.2 The LVIA has been conducted by Mowbray Associates Ltd as part of the Environmental Impact Assessment (EIA) to form an Environmental Statement (ES). The ES will accompany a planning application for this proposal to be submitted to Wakefield Metropolitan District Council (WMDC) by MWP Planning on behalf of the applicant, Hargreaves (GB) Ltd, Dewsbury.
- 1.1.3 The purpose of the LVIA is to examine the effects of the proposals on the landscape as described at Chapter 2.0. This is undertaken in two ways: firstly the landscape character and its value are considered followed by an assessment of the effects arising from the proposals on this resource; and secondly the effects on the visual amenity and visual receptors in the area are reviewed by appraising views towards the site and assessing how these would be affected. On this basis, the assessment considers:
- the baseline condition in terms of topography, land use, vegetation and cultural and ecological resource
 - landscape and visual effects arising to the existing scenario from set up, mineral extraction operations and restoration scheme
 - landscape and visual effects after restoration at year 1
 - residual landscape and visual effects after restoration at year 15
- 1.1.4 The LVIA methodology is outlined in Chapter 3.0 and described in more detail at Appendix B. The desktop study is undertaken at Chapter 4.0. This includes consideration of the planning policy of relevance to landscape matters and also published landscape character studies for the area. Chapter 5.0 reviews the baseline situation and landscape and other relevant designations. Mitigation proposals are summarised at Chapter 6.0 with the potential landscape effects and visual effects assessed and detailed at Chapters 7.0 and 8.0. A cumulative assessment is undertaken at Chapter 9.0 with the LVIA conclusions summarised at Chapter 10.0.

2.0 Development outline

2.1 Site location

- 2.1.1 The Stanley Ferry application site is located in the Calder Valley floodplain within the meanders of the River Calder. The two sites are separated by the river and cover an area totalling approximately 22.31 hectares (ha). The working areas on the east side (Birkwood) and the west side (Smalley Bight) measure 11.96ha and 10.07ha respectively with the remainder of the area taken up by plant.
- 2.1.2 The Birkwood area of the application site is owned by Birkwood Farm and Fisheries based at Birkwood Farm, the location of which is on higher ground above the east bank of the Aire and Calder Navigation, 300m from site. The landowner of the Smalley Bight site which lies across the canal from the Birkwood site resides at Smalley Bight Farm immediately to the south of the site.
- 2.1.3 The application site is located within arable farmland and lies 300m to the south west of Stanley, 1.4km west of Altofts, 900m south of Bottom Boat village, 4km north east of Wakefield and 2km south of the M62 junction 30 as shown at Appendix A Figure A1 Site location.

2.2 Mineral type

- 2.2.1 The mineral to be extracted at Stanley Ferry would be a range of different grades of gravels and sands. The principal use of the sand would be as fine aggregate in concrete, mortar and asphalt production. The main use of gravel would be as coarse aggregate in concrete. Quantities of sand and gravel may also be used for construction fill.
- 2.2.2 As stated on the British Geological Survey (BGS) 'Minerals Resource Map for West Yorkshire' 2006¹, sands and gravels are defined on the basis of particle size rather than composition. In current commercial practice, following the introduction of European standards from 1 January 2004, the term 'gravel' (or more correctly 'coarse aggregate') is used for general and concrete applications to define particles between 4 and 80mm. The terms 'sand' is used for material that is finer than 4mm, but coarser than 0.063mm. For asphalt, 2mm is the breakpoint between coarse and fine aggregate. Most sand and gravel is composed of particles that are rich in silica - quartz, quartzite and flint - but other rock types may occur locally.
- 2.2.3 Dependant on market conditions, it is estimated that 70,000m³ of sand and gravels could be extracted from the Stanley Ferry site per annum. This translates into 120,000 tonnes of aggregate sold per year.

2.3 Proposed development programme

- 2.3.1 The start of works is proposed as Spring 2021. There would be a set up time period of around three months prior to a proposed duration of extraction at Birkwood of five and a half years followed by five and a half years extraction at Smalley Bight. Each of the extraction periods would be split into five phases of working of approximately one year

¹ <https://www.bgs.ac.uk/downloads>

duration amounting to ten phases overall. With each extraction phase being broadly the same in size, phase 1 (P1) at Birkwood would commence to the west, finishing in sequence to the east. Extraction of Smalley Bight would then commence at P6 in the west of the site also working eastwards across to P10.

- 2.3.2 Restoration works would commence at Smalley Bight after the end of P10, followed by restoration at Birkwood. Restoration of both sites would be complete around 12 months after the end of the extraction phases, in circa 2033. The lifetime of the development would therefore be approximately 12 years. An approximate timetable is as below at Table 1:

Table 1: Indicative development programme

	Birkwood			Smalley Bight		
	Set up	Excavation	Restoration	Set up	Excavation	Restoration
2021		P1				
2022		P1				
2023		P2	P1			
2024		P3	P2			
2025		P4	P3			
2026		P5	P4			
2027			P5		P6	
2028					P7	P6
2029					P8	P7
2030					P9	P8
2031					P10	P9
2032					P10	P10
2033	Removal of plant compound/lagoons/haul roads/conveyor bridge/wharf & wharf conveyor; Complete landscape restoration			Removal of lagoons/haul roads/conveyor bridge; Complete landscape restoration		

2.4 Proposed site layout, plant and haulage

- 2.4.1 The proposed Stanley Ferry application site is shown at Appendix A Figure A2A Location plan. The application area also includes an existing access from Smalley Bight to the A642 Aberford Road, a new access onto Ferry Lane from Birkwood, a conveyor bridge over the River Calder and a new wharf onto the Aire and Calder Navigation.
- 2.4.2 As shown at Appendix A Figure A2B Scheme of working, soil bunds of maximum 3m height would be constructed from soils stripped from the lagoon and extraction areas to provide noise attenuation and visual screening. At Birkwood, a 3m high soil bund (S1) would extend anti-clockwise from the north east corner of the site. It would follow the river bank westwards and around the meander to Stanley Ferry Bridge. An adjoining soil bund (S2) would commence from Stanley Ferry Bridge to Altofts Bridge and then continue for approximately 100m along the west bank of the Aire and Calder Navigation. At Smalley Bight, a soil bund (S3) would extend clockwise from approximately half way along the southern boundary with the River Calder in the vicinity of the settlement lagoon. It would then run along the boundary with public footpath SFP24 (see paragraph 5.5.2), along the western boundary next to the Trans Pennine Trail SFP12 and finish half way along the northern boundary with the Stanley Waste Water Treatment Works.

- 2.4.3 At Birkwood, a 5m high overburden screen mound would be formed to the south side of the plant compound to provide visual and noise attenuation. This would be seeded and stay in place throughout P1 to P10 when the processing plant is in operation. An overburden mound OB1 of around 5,000m² and maximum 5m height would be located at the north eastern tip of the Smalley Bight site for the duration of the five and a half years extraction at Smalley Bight (P6 to P10). It would also be seeded to provide assimilation into the wider landscape.
- 2.4.4 During P1 to P5, the excavation of sand and gravel would be undertaken by a backhoe excavator² which would load up two waiting dump trucks with the excavated mineral. This would then be transported for processing via the internal haul road to the raw feed stockpile in the north of Birkwood adjacent to the plant compound.
- 2.4.5 The plant compound area at Birkwood would comprise of a washer, crusher and screens of maximum 5m height over an area of 1,600m². There would also be an amenity cabin and office at Birkwood approximately 3.7m x 10m x 2.4m height. A smaller amenity cabin would be located on the river bank at Smalley Bight of approximately 6.3m x 2.6m x 2.4m height.
- 2.4.6 At Birkwood, the extracted material would be cleaned by the washer to remove the remaining silt from the river deposits, and then crushed, screened and separated into different grades. Once processed the aggregate would be stockpiled in different grades of product to the north of the plant compound. There would be three settlement lagoons of 20m² located next to the bend in the river at the western end of the site. The lagoons would service the wash plant and would be in operation for the full 11 year excavation period.
- 2.4.7 The conveyor bridge would be installed at Birkwood before the end of P5 ready for P6 at Smalley Bight. At an overall height of 2.4m, the conveyor bridge would comprise of a lattice bridge framework 5m in width spanning the river for a distance of 60m. The conveyor bridge would be supported on each side of the river by concrete platforms located on either sides of the river.
- 2.4.8 During P6 to P10 at Smalley Bight, dump trucks would transport sand and gravels extracted by the backhoe from each working phase along the internal haul road on the west bank of the river to the as-dug stockpile. This area would be approximately 500m² and located close to the conveyor bridge on the west bank of the River Calder. The minerals would then be loaded into the conveyor bridge hopper to travel across the river via the conveyor bridge running in the centre of the bridge, before being fed into the wash plant at Birkwood.
- 2.4.9 When required, stockpiled product would be conveyed to a proposed wharf area on the west bank of the canal at Birkwood with the conveyor discharging directly into a waiting barge. The new wharf facility would be constructed to a design to be prepared in conjunction with the Canal and Rivers Trust. The exact location of the wharf area and conveyor would be selected to cause minimum damage to the existing vegetation with

² A backhoe is a type of excavator consisting of a digging bucket on the end of a two-part articulated arm. It is typically mounted on the back of a tractor or front loader and digs by drawing earth backwards, rather than lifting it forwards with the bucket configured to face backwards like a hoe.

the bank reinforced by piling. The wharf area would feature a small area of hardstanding and mooring bollards to accommodate two barges. On average, five barges a day would transport five loads of maximum 80 tonnes westwards for a distance of 20km to the client's concrete batching plant (operated by subsidiary Newlay's Concrete Ltd) on the canal at Calder Road, Ravensthorpe, Dewsbury. In the longer term, loads (maximum 140 tonnes) may also be transported to Leeds when the construction of a planned new wharf is completed.

- 2.4.10 As the haulage is internal to site, additional vehicular traffic on the local highways would be limited and comprise of two to three operator's cars per day for each site plus weekly visits by a fuel bowser and a fitters van. Small parking areas would be located next to the amenity cabins.
- 2.4.11 Access to Birkwood would be obtained from an existing gated field access off Ferry Lane just east of the Stanley Ferry Bridge. The access onto Ferry Lane would be subject to temporary widening to enable plant items to be brought in with low loaders. This access would be used for plant, equipment and employees only. Access for employees to Smalley Bight would be via the existing A642 Aberford Road access to Smalley Bight Farm.
- 2.4.12 The excavation areas would not be lit. There would be lighting at night at the Smalley Bight loading point for the conveyor bridge hopper and at the Birkwood plant compound with lighting designed to minimise external light spillage.
- 2.4.13 The sites would be secured by 2.4m high security fencing likely to be a paladin style variable mesh fencing system with anti-climb properties in green. This would feature on the boundary except where there is already a fence i.e. against the Stanley Waste Water Treatment Works at Smalley Bight and where there is no public access along the river bank i.e. along the northern and eastern boundaries of Birkwood.
- 2.4.14 Working hours would be 07:30 to 17:30 on weekdays and 07:30 to 13:00 on Saturdays. There would be no working on Sundays or public holidays. The site would employ a total of four to five full time personnel.

2.5 Proposed scheme of working

Set up

- 2.5.1 The set up period would take around three months and commence with the construction of the plant compound in the northern most corner of Birkwood. This location constitutes the greatest distance from residential properties thus limiting the impact of adverse noise effects from processing operations.
- 2.5.2 In the area of the proposed wharf on the Aire and Calder Navigation, piling would take place to reinforce the canal bank for the installation of the wharf hardstanding and bollards. The wharf conveyor from the plant compound to the wharf would be installed.
- 2.5.3 At Birkwood, the settlement lagoons area would be stripped of soils to form soil bunds S1 and S2 along the boundary with the canal and river. The soil bunds would be constructed to a maximum height of 3m and formed as working proceeded through the phases. They

would be seeded with a low maintenance grass mix and kept weed free throughout the lifetime of the development. Overburden would be stored at a screen mound up to a height of 5m which is to be located to the south of the plant compound to create noise and visual attenuation.

- 2.5.4 The three settlement lagoons at Birkwood would then be excavated and the extracted mineral stored in the raw feed stockpile south of the overburden screen mound.

Operation

- 2.5.5 The natural level of land at Smalley Bight is around 17.6m AOD (above ordnance datum) with Birkwood generally on slightly higher ground at around 18.3m AOD. Sand and gravels from both sites would be worked from above and below the natural water table to a depth of around 11m below AOD by pumping the excavation dry.

Birkwood P1 to P5

- 2.5.6 Soil stripping would commence at Birkwood with both the topsoil and the sub soil layers carefully scraped off in the areas of P1 to P5 by the backhoe excavator. The soils would be used to form soil bunds S1 and S2 along the river and canal. The aim would be to strip the area required for one year's extraction only, however as depths of soil are limited a larger area may be stripped in the early phases to ensure there is enough material to form the soil bunds required to provide a noise and visual screen.
- 2.5.7 Extraction would then commence at Birkwood for a period of five and a half years (P1 to P5). Silty water from the wash plant would be pumped to the three on site lagoons for settlement of the fines contained in the water. Water would flow through the three lagoons in sequence, with the final clean water lagoon recycling clean water back to the wash plant for ongoing washing operations. The lagoons would also be used to settle water pumped from the excavation prior to discharge to the river.
- 2.5.8 As extraction proceeds through the phases and once the perimeter soil mounds had been completed, stripped soils would be placed back on the lake banks in previous phases to progressively restore the banks.
- 2.5.9 Before the end of P5, the conveyor bridge would be constructed over the River Calder to the north east of the site from Birkwood to Smalley Bight.
- 2.5.10 The overburden screen mound on the south site of the plant compound at Birkwood would remain throughout the 11 year period that the plant would be in operation.

Smalley Bight P6 to P10

- 2.5.11 Stripping at Smalley Bight would commence in the location of P6 with the soils used to form soil bund S3 to a maximum of 3m height around the western perimeter of the site. The soil strip would continue in turn over the remaining areas of P7 to P10 before each phase. Overburden would be deposited at the overburden mound OB1 to a maximum height of 5m to the north east of the site.

2.5.12 Once P6 at Smalley Bight was complete, soils and overburden from P7 would be placed onto P6 and the lake banks whilst P7 was dug out. This method of working would continue until the end of P10 in Y12 when the remaining overburden in OB1 would be placed back into the final excavation and soil from the bunds removed and placed around the edges of the excavation.

Restoration

2.5.13 In Y12, after the restoration profiles had been completed at Smalley Bight, the pumps would be switched off and the void allowed to flood. Final operations would involve the removal of the lagoons and the haul roads prior to the grass seeding, planting of trees and shrubs and planting to the wetland areas and lake margins. The fishing platforms would be constructed and paths surfaced where necessary.

2.5.14 The final restoration of the Birkwood part of the site would also commence in Y12. The conveyor bridge would be removed together with the plant and wharf area. Soils and overburden would be placed to complete the restoration profiles. Once the restoration profiles had been completed, the pumps would be switched off and the Birkwood void allowed to flood.

2.5.15 As with Smalley Bight, final operations would involve the removal of the lagoons and haul roads before planting and seeding commenced. The fishing platforms would also be constructed and paths surfaced if required.

2.5.16 As a precaution against the overtopping of the Birkwood lake, a 1m width stone spillway set in concrete would be located on the south bank of the River Calder near to a culvert headwall as shown at Appendix A Figure 2AC Restoration scheme.

2.5.17 The landscape strategy and restoration scheme proposals for the application site are discussed at Section 2.6 below.

2.6 Landscape strategy and restoration scheme

2.6.1 The landscape strategy provides the basis for the operation, restoration and aftercare proposals for the site in terms of landscape. This should be read in conjunction with Appendix A Figure A2C Restoration scheme.

Principles and aims

2.6.2 The principles of the landscape strategy for the operation proposals are to work the mineral in a phased and sensitive manner that:

- keeps as much land in agricultural production for as long as possible via the implementation of phased soil stripping operations whilst at the same time recognising the need for the noise and visual screening offered by the soil bunds
- minimises landscape and visual impacts by the sensitive siting of plant, limited used of lighting and construction of overburden screen mounds and bunds

- protects, as far as possible, residential amenity by the sensitive siting of plant, limited use of lighting and construction of overburden screen mounds and bunds
- protects the water environment and wildlife via the implementation of best practice during the works and the operation of settlement lagoons

2.6.3 The aims of the landscape strategy for the restoration scheme and aftercare proposals are to:

- restore the site in a phased manner as soon as possible following operations to a beneficial after use that complements and enhances the landscape character, visual amenity and the amenity and accessibility value of the site within the wider Calder Valley
- enhance the range and diversity of habitats and species responding to current guidance on mineral planning and land use policies along with national, regional and local initiatives (see Sections 4.3 and 6.5) including the Wakefield Local Biodiversity Action Plan (see paragraph 4.3.13)

2.6.4 This aims of the restoration scheme would be achieved by:

- creating two areas of private angling lakes with landscaping for amenity use
- creating new habitats and plant communities around the lakes which are appropriate to the natural ecology of the area
- establishing plant communities which are not currently present or have been lost from the area
- creating new features which will act as wildlife corridors linking habitats within the site and around its periphery to other natural features such as existing woodland within Stanley Waste Water Treatment Works
- creating new footpaths on site with connections to the existing rights of way network and the Trans Pennine Way, thereby enhancing recreation within the wider countryside
- providing additional flood storage

Restoration scheme

2.6.5 As shown at Appendix A Figure A2C Restoration scheme, the lake at Birkwood would become an angling lake to complement the existing commercial angling provision owned by Birkwood Farm and Fisheries to the east of the Aire and Calder Navigation. The restoration of Smalley Bight would also feature an angling lake which would be managed by a separate private operator. The lakes would provide additional flood storage in times of flood but capacity would vary in volume according to the season and the levels of the River Calder. The depth of water in the lakes will vary summer to winter but is likely to be around 6m in depth.

- 2.6.6 A series of fishing platforms of 1.8m² would be provided for the anglers. These would be set on a 3-4m wide grassy ledge below the top of the excavated lake area and above the anticipated winter water level of the lakes. At the water's edge there would be a short steep 1:1 slope beyond which would be a shallow 1:20 slope stretching out into the lake for approximately 3m. At this point the slope would steepen again to around 1:1.5 towards the base of the excavation at around 11m depth. A typical section of the lakes profile is shown at Appendix A Figure A2D Bank profile for angling.

Landscape

- 2.6.7 A variety of naturalised habitats is proposed to surround the lakes at Birkwood and Smalley Bight as shown at Appendix A Figure A2C. These aim to maximise landscape character, amenity and biodiversity value to deliver the landscape strategy principles and aims. The restoration scheme is designed to complement the valley landscape by maintaining the open nature of the green belt in which the site is located. The habitats have been carefully selected to be appropriate to the surrounding area and take account of the Wakefield Biodiversity Action Plan (BAP) priority habitats reviewed in the LVIA (see paragraph 4.3.52). They provide a backdrop of informal woodland, scrub and marginal planting to provide all year round interest to users whilst at the same time enhancing local biodiversity and promoting connectivity between the sites and to other sites of wildlife value in the valley. This also promotes resilient ecological networks in line with the aims of the Wakefield Wildlife Habitat Network (see paragraphs 4.3.24, 4.3.42 and 5.10.9), with overall connectivity around the sites and to the wider countryside improved as a result.
- 2.6.8 The Environment Agency does not authorise planting on the river banks or levees outwith the site boundaries due to the need to keep these grass areas cut and free of obstructions to water flow in times of flood,
- 2.6.9 For details of the proposed planting and seed mixes and aftercare requirements, see Appendix D.

Oak and birch woodland

- 2.6.10 It is proposed to establish oak and birch woodland with a woody understorey as part of the restoration scheme. These new plantations would provide sustainable wildlife links to the existing woodland habitat within the adjacent Stanley Waste Water Treatment Works.
- 2.6.11 Woodland planting in the north eastern corner of Smalley Bight and to the north of Smalley Bight Farm would provide screening to Water Lane House³ and the farm. A planting stand-off would be required for the pylon line to the north of the farm. At Birkwood, woodland planting to the south eastern corner of the site is proposed to screen views into the site from Calder House within Stanley Ferry boat yard.
- 2.6.12 Woodland species selected for the restoration scheme are consistent with those which occur naturally in the Calder Valley such as pedunculate oak *Quercus robur*, rowan *Sorbus aucuparia*, silver birch *Betula pendula*, downy birch *Betula pubescens*, alder

³ The formal name for this property is unknown so "Water Lane House" has been utilised for the purposes of the LVIA

buckthorn *Frangula alnus*, holly *Ilex aquifolium* and guelder rose *Viburnum opulus*. The mix promotes robust, rapid establishment and habitat gain via the balanced use of pioneer species such as the birch which would provide a nurse to the climax species in their early growth stages and assist in the long term development of the woodland.

- 2.6.13 In accordance with the Wakefield Biodiversity Action Plan (BAP) Species Action Plan (SAP) 18 Woodland and woodland edge plants objective (see paragraph 4.3.57), a small percentage of wild service tree *Sorbus torminalis* and spindle tree *Euonymus europaea* would also be included in the mix to help establish a new community of these plants. Alder buckthorn *Frangula alnus* has been included in the mix as it is relatively rare in West Yorkshire and is an important food plant for the brimstone butterfly *Gonepteryx rhamni* the habitat of which is promoted in SAP 11 Butterflies: Woodland and hedgerow (see paragraph 4.3.57). Lowland mixed deciduous woodland comprising species such as this, is a habitat of principal importance listed in Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006⁴.
- 2.6.14 Where possible, the inclusion of a serrated woodland edge would add to the structural diversity and visual appearance of the new woodland compartments. The use of seed bearing species such as the rowan would provide a valuable food source for birds and small mammals. The extra cover afforded by a high proportion of shrub species in the understorey would also assist in providing food and shelter.

Wet (carr⁵) woodland

- 2.6.15 Supplementary planting of wet (carr) woodland is proposed to enhance the biodiversity of the existing riparian vegetation along the boundary with the River Calder and Aire and Calder Navigation and also to help soften the engineered edges of the lakes. It is also proposed in areas where the land is likely to be damp and marshy such as around the permanent settlement lagoons to the western end of the Birkwood site. The northern end of Birkwood could also be dug out to create some shallow level areas for wet woodland planting.
- 2.6.16 Typical native wet woodland species such as common alder *Alnus glutinosa*, goat willow *Salix caprea*, grey willow *Salix cinerea*, osier *Salix viminalis*, downy birch *Betula pubescens* and alder buckthorn *Frangula alnus* are proposed which would also add to the diversity of the proposed woodland on site and provide a transitional habitat between the open water and the proposed oak and birch woodland. Wet woodland is a habitat of principal importance listed in Section 41 of the NERC Act 2006. Wet woodland is also a candidate priority habitat in the Wakefield BAP as Habitat Action Plan (HAP) 15 Wet woodland (see paragraph 4.3.56).

Individual trees

- 2.6.17 Small groups of individual willows are proposed as features alongside the river and the canal to also help enhance the existing riparian vegetation. The species proposed would be a mix of large willow species such as crack willow *Salix fragilis*, white willow *Salix alba*

⁴ <http://www.legislation.gov.uk/ukpga/2006/16/section/41>

⁵ A type of marshy waterlogged woodland typically dominated by alder or willow

and common alder *Alnus glutinosa*. This would be in accordance with the priorities of Wakefield BAP HAP 2 Rivers and streams which seeks to restore riparian vegetation on bare sections of river banks (see paragraph 4.3.55). The frothy habit of these species would help to soften the hard edges and angles of the lake edges and also frame views out across the lakes and river.

Scrub

- 2.6.18 Scattered scrub habitat planted in small parcels is proposed to maximise the amount of edge habitat. This would benefit a range of wildlife from birds and bats to invertebrates and small mammals. The mix would comprise small native trees such as crab apple *Malus sylvestris* and shrub species including hawthorn *Crateagus monogyna*, goat willow *Salix caprea*, blackthorn *Prunus spinosa*, elder *Sambucus nigra*, guelder rose *Viburnum opulus* and dog rose *Rosa canina*. Blackthorn *Prunus spinosa* is included as it forms dense thickets which is good for nesting birds. Scrub is a priority habitat in the Wakefield BAP as described in HAP 12 Scrub (see paragraph 4.3.55).

Marginal/aquatic vegetation

- 2.6.19 There would be an opportunity to plant up much of the shallow sloped (1:20) 3m width shelf of the lake edges with common reed *Phragmites australis* as plug plants. This would present a foundation habitat for other marginal species to colonise naturally.
- 2.6.20 Marginal and aquatic planting is also proposed in areas where the land is likely to be damp and marshy such as around the permanent settlement lagoons to the western end of the Birkwood site and to the northern ends of Birkwood and Smalley Bight.

Ponds and scrapes

- 2.6.21 The restoration scheme proposes areas of ponds and scrapes (shallow, temporary water bodies) to create amphibian breeding sites for native newts, frogs and toads. This would be in the northern most point of the Smalley Bight site where the area would not be fully excavated and possibly the northern tip of Birkwood. Shallow depressions would be formed to maximise the bare muddy margins exposed as water levels recede after flooding. The scrapes would become naturally colonised by both terrestrial and aquatic species as it settled. If required, the development of aquatic vegetation could be speeded up by planting a selection of low marginal plants including water forget-me-no *Myosotis scorpioides*, lesser pond sedge *Carex acutiformis*, water mint *Mentha aquatica* agg. and marsh marigold *Caltha palustris*.
- 2.6.22 Such waterbodies already feature within the local landscape at the nearby Stanley Ferry Flash Local Wildlife Site (LWS) and sites in the Southern Washlands Nature Corridor (see paragraph 5.9.9) as well as the Stanley Marsh Local Nature Reserve (see paragraph 5.9.8) where they also form part of the historical and cultural heritage of the Calder Valley.

Wet grassland

- 2.6.23 The inclusion of wet grassland on the edges of the lakes between areas of wet (carr) woodland and marginal / aquatic vegetation would create a margin that would enhance

the biodiversity of the sites. It would also assist in reversing habitat loss within the district as wet grassland is identified as very restricted habitat in the Wakefield BAP.

- 2.6.24 A suitable mix for such areas could be Emorsgate EM8 Meadow mixture for wetlands which comprises a rich mix of 80% of grasses including meadow foxtail *Alopecurus pratensis*, crested dogstail *Cynosurus cristatus* and common bent *Agrostis capillaris* and 20% of wild flowers including yarrow *Achillea millefolium*, oxeye daisy *Leucanthemum vulgare*, cowslip *Primula veris* and meadow buttercup *Ranunculus acris* and yellow rattle *Rhinanthus minor*.

Rough meadow grassland

- 2.6.25 A rough grassland margin would be developed between the woodland and marshy areas using a mix such as Emorsgate EM2 Standard general purpose meadow mix. This mix contains species that are characteristic of typical meadows and includes a mix of 80% of grass species such as crested dog's tail *Cynosurus cristatus*, common bent *Agrostis capillaris* and strong creeping red fescue *Festuca rubra* and 20% of wild flowers including yarrow *Achillea millefolium*, selfheal *Prunella vulgaris* and ox-eye daisy *Leucanthemum vulgare*.
- 2.6.26 A mowing regime would be specified where woodland margins would be cut on a 1 in 3 year rotation throughout the aftercare period. This would promote the development of rough, tussocky grassland providing cover for insects, birds and small mammals. The grassy areas near the fishing platforms would be mown more regularly to enable safe access.

Establishment grass sward

- 2.6.27 Following the restoration of the lake face profiles and soil establishment around the lakes, all woodland and scrub areas would be sown with a mixture of fine grasses to stabilise the soil and to allow effective weed control prior to ground preparation and spraying out for the woodland planting. The initial seed mix could be Emorsgate EG25 Basic old fashioned grazing mixture which doesn't include any unwanted or invasive agricultural species. The mix includes a selection of grasses to complement each other to produce a productive sward. It includes crested dog's tail *Cynosurus cristatus*, common bent *Agrostis capillaris* and strong creeping red fescue *Festuca rubra*.
- 2.6.28 The grass sward would be mown and pre-planting woodland ground preparation would be carried out before planting as specified.

Access

- 2.6.29 At Smalley Bight, private access for anglers would be from the west via the existing Smalley Bight Farm track from the A642 Aberford Road. Palladin fencing and lockable gates would be installed along the boundary with the Trans Pennine Trail to prevent unauthorised entry.
- 2.6.30 At Birkwood, there would be pedestrian access for fee paying anglers from the north via the existing track that leads from Birkwood Bridge over the canal via Birkwood Farm and Fisheries off Birkwood Road. There would be no public access. Palladin fencing and

lockable gates would be installed along the boundary with Ferry Lane to prevent unauthorised entry.

Aftercare

- 2.6.31 The applicant would be responsible for the restored site for a statutory aftercare period of five years after restoration in order to ensure that the land is returned to an acceptable condition. Careful planning and management during the aftercare period would ensure enhanced establishment thereby delivering longer term environmental benefits and greatly improving the potential for wildlife to inhabit and move around the site and adjoining land.
- 2.6.32 Aftercare requirements for the proposed landscape elements for the site are detailed at Appendix D.

3.0 Methodology

3.1 Guidelines for landscape and visual amenity assessment

- 3.1.1 The landscape and visual impact assessment (LVIA) has been carried out in accordance with the principles set out in the 'Guidelines for Landscape and Visual Impact Assessment' Third Edition (GLVIA3) updated 2013, published by the Landscape Institute⁶ and the Institute of Environmental Management & Assessment (IEMA)⁷. It is supplemented by guidance contained within the 'Design Manual for Roads and Bridges (DMRB) Volume 11 Section 3 part 5' 1993⁸ as updated by the Highways Agency 'Interim Advice Note IAN 135/10 Landscape and Visual Effects Assessment' November 2010⁹ and WebTAG 'Unit A3 Environmental Impact Appraisal Chapter 6' December 2019¹⁰ and pending updates. The assessment of landscape character reflects the guidance in the 'Landscape Character Assessment for England and Scotland' published by the Countryside Agency and Scottish Natural Heritage April 2002.
- 3.1.2 In accordance with GLVIA3, the LVIA examines the baseline landscape and visual resources, the sensitivity of such resources, the potential magnitude of effect (change) to these resources because of the proposed development and the consequent significance of effect. Where appropriate, mitigation or enhancement measures are considered.
- 3.1.3 Landscape and visual effects have been assessed separately, although the procedures for assessment are closely related. The following distinctions have been drawn:
- Landscape effects are derived from changes in the physical fabric of the landscape, which may give rise to changes in its character and quality (or condition) and how this is experienced.
 - Visual effects relate to the changes that arise in the composition of the view of the landscape and townscape experienced by people and the overall effect on visual amenity.
- 3.1.4 The full LVIA methodology is detailed at Appendix B.

3.2 Assessment scenarios

- 3.2.1 Aligned to the EIA regulations, DMRB guidance and as explained below, the LVIA process has considered both temporary and permanent impacts:
- during the set up period, mineral extraction operations and restoration scheme
 - during year 1 after restoration
 - at year 15 after restoration

⁶ <https://www.landscapeinstitute.org/>

⁷ <https://www.iema.net/>

⁸ <http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/section3/11s3p05.pdf>

⁹ <http://www.standardsforhighways.co.uk/ha/standards/ians/pdfs/ian135.pdf>

¹⁰ <https://www.gov.uk/government/publications/tag-unit-a3-environmental-impact-appraisal>

Baseline scenario

3.2.2 The baseline is the situation as it would exist immediately before the extraction proposals at Birkwood and Smalley Bight are implemented. Therefore the effect of the proposals would be any change from the baseline scenario that the proposals might cause. For LVIA, the baseline year is the year when impacts are predicted to be caused by start of the construction/operation of the proposals during set up (2021).

Duration of effects

3.2.3 Following guidance in DMRB Volume 11, short or medium term permanent or temporary impacts are those that would last less than 15 years. Long term impacts are those that would last for 15 years or longer.

Operation effects

3.2.4 Operation effects will be predicted by comparing the period that the application site would be disturbed by the proposals against the baseline scenario without the development. The indicative development programme at Stanley Ferry identifies a set up period of three months, followed by an extraction period of 11 years and a restoration period of 12 months - see Section 2.3 for more details. The LVIA will therefore assess temporary and medium term operation effects over 11 years based on the following:

Set up - three months

- Erection of the palisade fence on the application site boundary
- Construction of the plant compound (5m high and approximately 1,600m²), canal wharf (approximately 20m²) and wharf conveyor (approximately 12m length) at Birkwood
- Implementation of lighting at the plant compound at Birkwood
- At Birkwood, topsoil stripped in the area of the settlement lagoons by backhoe and formation of the 3m high soil bund S2 using the excavated soils
- Formation of the overburden screen mound up to 5m height to the south side of the plant compound at Birkwood
- At Birkwood, excavation of the three settlement lagoons and storage of the excavated mineral in the raw feed stockpile to the south of the overburden screen mound
- Dump trucks traversing Birkwood between the settlement lagoons and the plant compound via the internal haul roads
- At Birkwood, seeding of soil bund S2 and gradual 'greening up' over P1

Birkwood extraction P1 to P5 - five and a half years

- Soil strip commencing to P1 to P5. Soils used to form 3m high soil bund S1. If possible, soil bund S1 would be progressively seeded as formed to speed up 'greening' over P1 to P2.
- The sequence of working out the first five phases would expose an increasing footprint of the extracted void and diminishing area of remaining arable land between 2021 and 2026. Increase in height of the overburden screen mound to a maximum height of 5m with the mound staying in situ for the duration of P1 to P10 to provide attenuation for the plant compound.
- Intermittent periods of internal haulage by dump trucks ferrying extracted material across the site from the extraction phase to the overburden screen mound and the raw feed stockpile.
- Mineral product stockpiled north of the plant compound and conveyed via the wharf conveyor to a barge waiting at the canal wharf.
- The conveyor bridge (2.4m high x 5m width x 60m length) installed across the River Calder between Birkwood and Smalley Bight before the end of P5.

Smalley Bight P6 to P10 – five and a half years

- Soil strip commencing to the small settlement lagoon at Smalley Bight and to P7 to P10. Soils used to form 3m high soil bund S3 which would be progressively seeded as formed to speed up 'greening' over P6.
- Overburden deposited at mound OB1 to a maximum height of 5m over an area of approximately 5,000m² for the duration of 5 years operation at Smalley Bight.
- The void footprint increases and the remaining area of arable land on Smalley Bight decreases between 2027 and 2033. The void would reach maximum size by the end of P10 extraction operations.
- Intermittent periods of internal haulage by dump trucks ferrying extracted material across the site between the extraction phase, the overburden mound OB1 and the 'as dug' stockpile.
- Material extracted at Smalley Bight transferred across the river to Birkwood, processed and the product stockpiled at Birkwood and then conveyed to a waiting barge east of Birkwood.
- Overburden and soil spreading of the Smalley Bight void during P6 to P10 with the size of the overburden mound OB1 gradually decreasing.
- Overburden and soil spreading of the Birkwood void at the end of P10 with the size of the overburden mound quickly decreasing.

Restoration – twelve months

- At the end of P10 when all soil restoration had taken place the pumps would be turned off and both voids at Smalley Bight and Birkwood would be flooded.

- Seeding and planting and seeding would commence around both lakes to create naturalised landscaping and planting (see Section 2.6).
- On completion of restoration at Smalley Bight, the conveyor bridge would be removed.
- On the completion of the restoration at Birkwood, the plant compound, canal wharf and wharf conveyor would be dismantled.

Residual effects

- 3.2.5 Long term or residual effects will be considered in the assessment. These are defined as landscape and visual effects arising from the development during the first winter 15 years after final restoration which equates to 2033 + 15 years i.e. 2048. Long term or residual effects will be assessed in the LVIA on this basis.

Cumulative effects

- 3.2.6 In accordance with the LVIA methodology described at Appendix B, cumulative landscape and cumulative visual effects caused by the proposals in conjunction with 'in construction' developments within the study area are considered within this LVIA as this may increase the overall scale of disturbance. The potential for cumulative effects with other developments is considered at Chapter 9.0.

3.3 Distances and measurements

- 3.3.1 Every effort is made to provide accurate data however all distances provided in the LVIA should be considered as approximate. Measurements are taken from the nearest point on the perimeter of the application site boundary to the edge of the receptor or feature under discussion. Heights in metres above and below AOD are also approximate.

3.4 Assumptions and limitations

- 3.4.1 This LVIA is conducted on the assumption that the mineral extraction operations will proceed as described and bases the assessment on the indicative extraction programme presented. However, the programme is likely to vary as demand in the regional economy fluctuates which would have subsequent effects to the extraction proposals. Thus it is possible that completion dates and the estimated of date of restoration could be extended.

4.0 Desktop review

4.1 Introduction

4.1.1 The desktop review was conducted to understand planning context, landscape and other designations, nature conservation, cultural and historical background and interests, land usage and recreational destinations/routes in relation to the study area. In addition, relevant landscape character assessments including historic landscape character assessments were also reviewed. This has provided a background to the baseline studies and assists in identifying the value of the landscape.

4.2 Data sources

4.2.1 A review of key data from the planning application and other various recognised local and national sources was examined including the following:

- 'National Planning Policy Framework' February 2019¹¹
- 'Planning Policy Guidance - Advice on the role of the Green Belt' July 2019¹².
- 'National Planning Policy Guidance for Minerals' October 2014¹³
- 'National Planning Policy Guidance for Natural Environment' January 2016¹⁴
- West Yorkshire Combined Authority 'West Yorkshire Local Aggregate Assessment' 2018¹⁵
- WMDC 'Local Development Framework Local Plan, Core Strategy'¹⁶ adopted April
- WMDC 'Local Development Framework Local Plan, Development Policies'¹⁷ adopted April 2009
- WMDC 'Local Development Framework Local Plan, Site Specific Policies'¹⁸ adopted September 2012
- WMDC 'Leisure, Recreation and Open Space Local Plan' adopted January 2017¹⁹
- WMDC 'Local Plan 2036 Initial Draft' January 2019²⁰

¹¹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf

¹² <https://www.gov.uk/guidance/green-belt>

¹³ <https://www.gov.uk/guidance/minerals>

¹⁴ <https://www.gov.uk/guidance/natural-environment>

¹⁵ <http://www.wakefield.gov.uk/ldp2036/WY%20Local%20Aggregate%20Assessment%202018.pdf>

¹⁶ <http://www.wakefield.gov.uk/Documents/planning/planning-policy/local-plan/core-strategy/core-strategy.pdf>

¹⁷ <http://www.wakefield.gov.uk/Documents/planning/planning-policy/local-plan/development-policies/development-policies.pdf>

¹⁸ <https://www.wakefield.gov.uk/planning/policy/local-plan/site-specific-policies>

¹⁹ https://consult.wakefield.gov.uk/portal/spatial_policy/lros/lrosadopt/lrosadopted?pointId=s1486982318298#ID-4414586-SITE-LA-1

²⁰ <https://www.wakefield.gov.uk/planning/policy/emerging-local-plan-2036/local-plan-2036>

- WMDC 'Local Development Framework Local Plan, online proposals map'²¹
- WMDC 'Rights of Way online map'²²
- WMDC 'Landscape Character Assessment of Wakefield District' October 2004²³
- WMDC 'Wakefield Local Biodiversity Action Plan' 2014²⁴
- WMDC datasets²⁵
- Natural England 'National Character Area No. 38 Nottinghamshire, Derbyshire and Yorkshire Coalfield'²⁶
- Archaeology Data Service 'West Yorkshire Historic Landscape Characterisation' 2018²⁷
- OS Explorer Map 289 'Leeds including Harrogate, Wetherby & Pontefract' 1:25,000
- Planning and environmental designation notices (statutory and non-statutory) as shown on the Magic²⁸ website
- Aerial representations on Google Earth website
- National Library of Scotland Georeferenced Map Images website²⁹
- Stanley History Online³⁰
- Mastdata.com³¹

4.3 Planning context

4.3.1 There are a range of planning policy considerations pertinent to the proposed development which include directives, legislation, regulations and policies arising from the European level to the local level as discussed below. Key planning policies in relation to the study area are shown at Appendix A Figure A3 Planning context.

National policy and guidance

²¹http://map.wakefield.gov.uk/connect/analyst/mobile/#/main?mapcfg=LDFadopted&zoom=6&x=438482&y=423305&overlays=WMDC_Boundary_Natural%20Environment%20and%20Open%20Land

²²<http://www.wakefield.gov.uk/roads-and-transport/rights-of-way/rights-of-way-map>

²³<http://www.wakefield.gov.uk/Documents/planning/planning-policy/information-monitoring/ldf-landscape-assessment.pdf>

²⁴<http://www.wakefield.gov.uk/Documents/sports-leisure/parks-countryside/biodiversity-action-plan.pdf>

²⁵<https://data.gov.uk/search?filters%5Bpublisher%5D=Wakefield+Metropolitan+District+Council>

²⁶<http://publications.naturalengland.org.uk/publication/4743624>

²⁷https://archaeologydataservice.ac.uk/archives/view/west_yorkshire_hlc_2017/index.cfm

²⁸<https://magic.defra.gov.uk/MagicMap.aspx>

²⁹<https://maps.nls.uk/geo/explore/#zoom=13&lat=53.6661&lon=-1.5065&layers=1&b=1>

³⁰<https://www.stanleyhistoryonline.com/default.html>

³¹<https://www.mastdata.com/>

4.3.2 The proposals have been examined in relation to the Department for Communities and the Local Government (DCLG) National Planning Policy Framework (NPPF) 'Achieving Sustainable Development' February 2019³² and the 'National Planning Practice Guidance (NPPG) for Minerals' October 2014³³ and 'NPPG for Natural Environment' January 2016³⁴. These documents set out the government's overarching planning policies for the delivery of sustainable development and mineral development policy in England.

National Planning Policy Framework February 2019

Several policies within the NPPF promote the need to protect and enhance the natural and historic environment, the quality and character of the countryside and existing communities.

4.3.3 NPPF Section 13 Protecting Green Belt Land has been supplemented by 'Planning Policy Guidance (PPG) 'Advice on the role of the Green Belt' issued in July 2019. The contents of the PPG are focussed on the following three issues.

- What factors can be taken into account when considering the potential impact of development on the openness of the Green Belt?
- How might plans set out ways in which the impact of removing land from the Green Belt can be offset by compensatory improvements?
- How can the strategic policy-making authority ensure that compensatory improvements to the environmental quality and accessibility of the Green Belt will be secured?

4.3.4 The factors identified in the PPG as having an impact on openness are as follows:

- Openness is capable of having both spatial and visual aspects – in other words, the visual impact of the proposals may be relevant, as could its volume;
- The duration of the development, and its remediability – taking into account any provisions to return land to its original state or to an equivalent (or improved) state of openness; and
- The degree of activity likely to be generated, such as traffic generation

4.3.5 NPPF Section 13 Protecting Green Belt Land also supports mineral working as not inappropriate development providing it does not harm the openness of the green belt as below:

Paragraph 146

³² https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf

³³ <https://www.gov.uk/guidance/minerals>

³⁴ <https://www.gov.uk/guidance/natural-environment>

“Certain other forms of development are also not inappropriate in the Green Belt provided they preserve its openness and do not conflict with the purposes of including land within it. These are:

a) mineral extraction . . .”

4.3.6 In February 2020, an important precedent was set for mineral working in the ‘openness’ of the green belt via a judgement made by the Supreme Court on an extension to Jackdaw Crag Quarry³⁵, near Tadcaster, North Yorkshire. The appeal by North Yorkshire County Council (NYCC) and Darlington Quarries was found in the appellant’s favour with regard to NYCC’s understanding of the meaning of the word ‘openness’ when reviewing mineral working in the green belt. In the context of the quarry extension of 6ha it was ruled that the impacts did not themselves detract from the openness in Green Belt. It was also stated that it was a matter of planning judgement and not law.

4.3.7 NPPF Section 16 seeks to conserve and enhance the historic environment as below:

Paragraph 193

“When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset’s conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance.”

Paragraph 194

“Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification . . .”

Paragraph 197

“The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.”

4.3.8 NPPF Section 17 promotes the sustainable use of minerals as stated below:

Paragraph 205

“In considering proposals for mineral extraction, minerals planning authorities should:

b) ensure that there are no unacceptable adverse impacts on the natural and historic environment, human health or aviation safety, and take into account the cumulative effect of multiple impacts from individual sites and/or from a number of sites in a locality.

³⁵ <https://www.supremecourt.uk/cases/uksc-2018-0077.html>

e) provide for restoration and aftercare at the earliest opportunity, to be carried out to high environmental standards, through the application of appropriate conditions . . . ”

Minerals Guidance October 2014

4.3.9 The ‘Restoration and aftercare of minerals sites’ section of National Minerals Guidance outlines requirements relevant to the development as follows:

- Paragraph 36 states that the responsibility for the restoration and aftercare of mineral sites lies with the minerals operator and defaults to the landowner.
- Paragraph 37 requires that “*worked land is reclaimed at the earliest opportunity and that high quality restoration and aftercare*” takes place.
- Paragraph 45 notes that possible uses of land once minerals extraction is complete include “*creation of new habitats and biodiversity*” and “*recreational activities*”.
- Paragraph 53 states that “*Where sites are subject to progressive restoration, the aftercare period for each part of the site will begin once the restoration condition for the relevant part of the site has been met*”.
- Paragraph 55 requires that “*An aftercare scheme should be submitted to the mineral planning authority at least 6 months prior to the start of aftercare on all or part of the mineral site*”. Paragraph 56 requires “*an outline strategy of commitments for the 5 year aftercare period (or longer if agreed between the applicant and the mineral planning authority); and at the start of aftercare, and in each year of the aftercare period, a review of the previous years’ management and a detailed programme for the forthcoming year*”.
- Paragraph 59 requires that “*A site-specific landscape strategy to accompany applications for either a new site or any significant extension to an existing working site should include:*
 - *defining the key landscape opportunities and constraints;*
 - *considering potential directions of working, significant waste material locations, degrees of visual exposure etc;*
 - *identifying the need for additional screening during operations;*
 - *identifying proposed afteruses and options for the character for the restored landscape*”.

Local policy and guidance

WMDC Local Development Framework 2009

4.3.10 As the application site sits within the county of West Yorkshire and the metropolitan district of Wakefield, the local planning framework is provided by WMDC via the ‘Local Development Framework’ (LDF). This includes strategies, policies and proposals to guide the use of land and new development throughout the district for the period to 2026.

It is being prepared under government legislation for development plans³⁶ and has replaced the 'Unitary Development Plan' (UDP) adopted January 2003. The LDF consists of a number of separate documents which are emerging over time with those relevant to this LVIA including:

- 'Core Strategy'³⁷ adopted April 2009
- 'Development Plan Policies'³⁸ adopted April 2009
- 'Site Specific Proposals'³⁹ adopted September 2012
- 'Leisure, Recreation and Open Space Local Plan'⁴⁰ adopted 2017
- Online proposals map⁴¹

4.3.11 Core Strategy policies, Development Plan policies and Site Specific policies that are relevant to this LVIA are discussed below.

Core Strategy policy CS10 – Design safety and environmental quality

4.3.12 This policy notes that WMDC is committed to protecting and enhancing the natural and historic environment and to creating safe, well designed places in order to improve the quality, character and amenity of the district.

4.3.13 It makes specific mention of Wakefield's numerous and extensive historic and natural assets and WMDC's commitment to protect and enhance these assets. It sets out the aims of the Wildlife Habitat Network (see paragraphs 4.3.24, 4.3.42 and 5.10.9) which will link ecological and geological conservation sites, woodland and watercourses and areas of open space throughout Wakefield District and into adjoining districts.

4.3.14 The policy acknowledges the value of trees, woodland and hedgerows with priority given to the protection and enhancement of trees and woodland throughout the district. WMDC supports the planting of new woodland in urban and rural areas where this is sympathetic to local topography, enhances ecology and contributes positively to landscape character. WMDC wishes to promote the planting of native woodlands and associated scrub species in an appropriate planting scheme.

4.3.15 The policy notes that landscape is an important element of the district's environment and its local character which needs to be protected and enhanced with due cognisance made to the 'Landscape Character Assessment of Wakefield District' 2004⁴². This document forms the basis for ensuring that the character of the countryside and other open landscapes throughout the district is protected and enhanced (see paragraph 4.4.6).

³⁶ The Planning and Compulsory Purchase Act 2004 <https://www.legislation.gov.uk/ukpga/2004/5/contents>

³⁷ <https://www.wakefield.gov.uk/Documents/planning/planning-policy/local-plan/core-strategy/core-strategy.pdf>

³⁸ <https://www.wakefield.gov.uk/Documents/planning/planning-policy/local-plan/development-policies/development-policies.pdf>

³⁹ <https://www.wakefield.gov.uk/Documents/planning/planning-policy/local-plan/site-specific-policies/site-specific-policies-local-plan.pdf>

⁴⁰ https://consult.wakefield.gov.uk/portal/spatial_policy/lros/lrosadopt/lrosadopted?pointId=s1486982318298#ID-4414586-SITE-LA-1

⁴¹ http://map.wakefield.gov.uk/connect/analyst/mobile/#/main?mapcfg=LDFadopted&zoom=6&x=438482&y=423305&overlays=WMDC_Boundary_Natural%20Environment%20and%20Open%20Land

⁴² <https://www.wakefield.gov.uk/Documents/planning/planning-policy/information-monitoring/ldf-landscape-assessment.pdf>

Core Strategy policy CS12 – Green Belt

- 4.3.16 The policy states that *“Only in exceptional circumstances where there is an overriding need to accommodate what would otherwise be inappropriate development, which cannot be met elsewhere and where Green Belt land offers the most sustainable option, will land be taken out of the Green Belt.”* See also paragraph 4.3.5 for NPPF statement which supports mineral working in the green belt providing it does not harm the openness.

Core Strategy policy CS16 - Minerals

- 4.3.17 The policy notes that the ‘NPPG for minerals’ (see paragraph 4.3.2) requires the district to contribute to the regional supply of aggregates and provide an adequate and steady supply of other minerals. These primary minerals are described as important to the local economy providing essential raw materials for industry and employment. WMDC acknowledges that such mineral reserves are relatively scarce in the district and that there is a reliance on imports from other areas for the majority of aggregate minerals used.
- 4.3.18 The policy states that known mineral resources of economic value will be identified as mineral safeguarding areas (see paragraphs 4.3.17, 4.3.48 and 5.10.10) including known remaining unworked deposits of alluvial sand and gravels identified in the Lower Calder Valley to the north of Stanley Ferry.
- 4.3.19 Land reclamation requirements are as follows:

“10:69 Policy CS16 establishes the broad approach to the protection of mineral resources and support for mineral production. National minerals planning statements provide detailed criteria for assessing proposals for mineral extraction to ensure that any proposal for extraction is acceptable environmentally, that controls are in place to minimise disturbance whilst extraction is in progress and that a satisfactory restoration scheme is agreed before work begins, with particular attention given to creating new wildlife habitats, geological conservation, the need for public access and extended aftercare . . .”

Development Plan policy D4 – Sites designated for biological or geological conservation

- 4.3.20 The policy states *“Within the district are a number of sites designated for biological or geological conservation of international, national, regional and local importance. Where the Council considers that any designated site or any species of principal importance for conservation may be affected by a development proposal, an ecological assessment to be required to be submitted with the planning application.”*
- 4.3.21 The policy also makes specific reference to Wakefield Nature Areas now listed as Local Wildlife Sites (see paragraphs 4.3.41 and 5.10.7) as follows:

“6.5 The Council has designated Wakefield Nature Areas which are sites of local wildlife value containing habitats and species identified in the Wakefield District Local

Biodiversity Report⁴³. Some of these are candidate Local Nature Reserves, details will be given in the Site Specific Proposals document.”

Development Plan policy D5 – Ecological protection of watercourses and waterbodies

4.3.22 The policy states *“The Wakefield District Local Biodiversity Report identifies watercourses and water bodies as important ecological assets. Development on or adjacent to watercourses and water bodies will not be permitted unless it can clearly be demonstrated that there will be no significant harm to any ecological features. Where development is permitted proposals shall include:*

- a. environmentally sensitive engineering methods;*
- b. appropriate wetland features and landscaping; and*
- c. appropriate management schemes for the planning and use of areas of water.”*

4.3.23 The policy also makes reference to a requirement for an assessment of river bank treatments for proposals affecting watercourses as well as river bank buffer strips.

Development Plan policy D6 – Wildlife Habitat Network

4.3.24 The policy states *“Development that would adversely affect the integrity and value of the Wildlife Habitat Network across the district or the movement of flora and/or fauna species will only be permitted in if it can be demonstrated that reasons of public interest for the development clearly outweigh any significant harm. Proposals for development shall make provision for the retention of the network and protection of its wildlife links and ecological conservation value. Where development is permitted the Council will require developers to:*

- a. minimise disturbance;*
- b. protect and enhance the site's ecological conservation value;*
- c. contribute towards the objectives of the Wakefield District Biodiversity Action Plan;*
- d. ensure appropriate management; and*
- e. create new or replacement habitats equal to or above the current ecological value of the site if damage or loss is unavoidable.”*

Development Plan policy D7 – Protection of trees and woodland

4.3.25 The policy states *“The district's woodland, hedgerows and trees are important ecological assets identified in the Wakefield District Local Biodiversity Report. Where the Council considers that trees or woodland may be affected by a development proposal, it will require an appropriate tree survey to be submitted with the planning application.*

⁴³ Now known as Wakefield Local Biodiversity Action Plan (BAP) <https://www.wakefield.gov.uk/Documents/sports-leisure/parks-countryside/biodiversity-action-plan.pdf> (See Section 4.3.52)

- 4.3.26 The policy specifies requirements if there is a loss of Ancient Woodland from the development and/or if the development damages or results in the loss of trees, woodland or hedgerows. The policy also makes specific reference to requirements for the protection of veteran trees and groups of trees or woodland under a tree preservation order (TPO).

Development Plan policy D8 – Landscape character

- 4.3.27 The policy states *“Landscape is an important and highly valued environmental resource within Wakefield District. Development within the countryside, on the edge of settlements or within areas of open urban green space shall contribute towards the protection, maintenance and enhancement of the character of the district's landscape, its biodiversity, and where appropriate, the recreational quality of the area. The Council may require an evaluation of the impact of development on the landscape to be submitted with development proposals. Impact upon the landscape will be assessed having regard to the extent to which development would:*

- a. adversely affect landscape elements which contribute to landscape character such as landform, field boundaries, or settlement patterns;*
- b. adversely affect vegetation and trees which are characteristic of that landscape type;*
- c. cause unacceptable visual intrusion; and*
- d. introduce or remove incongruous landscape elements.”*

- 4.3.28 The policy also states that the ‘Landscape Character Assessment of Wakefield District’ will be used as a basis for determining the appropriateness of development proposals which might have an impact upon the landscape character of the district. It requires that *“Proposals for development should not only respect local character, but should incorporate appropriate measures to preserve, enhance or improve the character of the locality.”*

Development Plan policy D9 – Design of new development

- 4.3.29 The policy requires all new development to *“make a positive contribution to the environment and amenity of its locality by virtue of high quality design, layout and landscaping”* including in particular requirements that proposals:

- “a. respect, and where appropriate enhance the character of the locality in terms of design, scale, massing, height, density, layout, materials and colour;*
- b. provide a quality setting within the development;*
- c. retain, and where appropriate enhance important ecological and landscape features;*
- d. respect, and where appropriate enhance existing natural and built features, skyline, landmarks or key views that contribute to the character and local distinctiveness of the area;*

- e. *incorporate high quality landscaping and boundary treatment;*
- k. *have no significant detrimental impact on the amenity of neighbouring users or residents and existing or prospective users”*

Development Plan policy D11 – Waterfront design

4.3.30 The policy states *“Development adjacent to the River Aire, River Calder, the district's canals and other bodies of water . . . must be designed to enhance the water's edge and biodiversity. The Council will require that public access and recreational opportunities are provided where compatible with the proposed development and the capacity of the site to accommodate them. In particular development along rivers and canals shall:*

- a. *enhance the architectural quality and character of the waterway;*
- b. *improve the visual and physical relationship between the development site, the waterway and any adjoining public areas;*
- c. *improve access along and across the river or canal corridor where appropriate;*
- d. *be orientated and designed to promote surveillance of the river or canal frontage;*
- e. *enhance the public amenity value of the waterway*
- f. *enhance important views outward from the river or canal corridor; and*
- g. *enhance recreational opportunities of the waterway, where appropriate.”*

Development Plan policy D12 – Landscape design

4.3.31 The policy states *“Landscape is an important and highly valued environmental resource within Wakefield District. New development shall be designed so that important existing landscaping features such as water bodies, trees, hedgerows, stone walls and other elements identified in the Landscape Character Assessment together with any new features are incorporated as an integral part of the proposal. In particular development proposals shall:*

- a. *conserve and integrate existing natural features;*
- b. *use new landscape features such as planting, shelter belts, and green spaces to integrate development with the wider landscape;*
- c. *integrate new and existing development at the boundaries of the site through the continuity of landscape;*
- d. *create areas of valuable habitat for wildlife by additional planting of native species rather than by using purely decorative planting; and*
- e. *where appropriate allow public access and/or provide opportunities for recreation.”*

Development Plan policy D17 – Development affecting archaeological sites

- 4.3.32 The policy states specific requirements relating to likely effects to Scheduled Monuments and other archaeological assets with planning permission requiring *“adequate assessment of the nature, extent and significance of the remains present and the degree to which the proposed development is likely to affect them.”*

Development Plan policy D18 – Development affecting historic locations

- 4.3.33 The policy states requirements for development proposals within or likely to affect the district’s historic parks and gardens, historic landscapes, conservation areas and sites of historic battles and requires an assessment of the impact of the proposal on any features of architectural, archaeological and historic interest of the area.

Development Plan policy D20 – Pollution control

- 4.3.34 This policy makes specific reference for requirements for development proposals that include external lighting as follows:

“3. Development proposals that include external artificial lighting which would cause unacceptable light pollution in the form of sky-glow, glare or intrusion onto other property and land will only be permitted if the Council is satisfied that adequate and reasonable controls can be put in place to protect dwellings and other sensitive property, the rural night-sky, observatories, road users, and designated sites for conservation of biodiversity or protected species from the intrusive effects of the light pollution”

Development Plan – Green belt

- 4.3.35 WMDC’s green belt policy emulates NPPF policy and Core Strategy policy CS12 as follows:

“6.140 The main purpose of the Green Belt is to keep land open by providing a strong presumption against inappropriate development, which would, by definition, be harmful to the Green Belt. This essentially limits uses to those that are rural in nature or require extensive areas of land and will, above all, retain the open character of the Green Belt. Occasionally very special circumstances may justify some inappropriate development if the harm to the Green Belt is clearly outweighed by other planning considerations. Developers will be required to justify their proposals.” (See also paragraph 4.3.5 for NPPF statement which supports mineral working in the green belt providing it does not harm the openness).

Development Plan policy – Mineral extraction

- 4.3.36 The policy states as follows:

“7.41 It is recognised that the extraction of all types of mineral can cause environmental damage and disturbance to neighbouring properties either through the extraction process itself or from traffic generation. It is necessary to ensure that any proposal for extraction is acceptable environmentally and that controls are in place to minimise disturbance whilst extraction is in progress. It is also necessary to ensure that a satisfactory restoration scheme is agreed before work begins.”

Site Specific policy – Special policy areas

- 4.3.37 Most of the ‘special policy areas’ (SPAs) within the Wakefield district contain large deliverable and developable areas which are suitable for residential and employment development. Comprehensive development proposals will be encouraged in these areas and the Council will work with public and private sector partners to help bring forward development proposals which take into account the cumulative benefits and impacts within these areas and associated infrastructure. SPAs have been allocated in accordance with national planning policy and Core Strategy policies CS1, CS3 and CS8.

Site Specific policy – Ancient woodland

- 4.3.38 ‘Ancient woodland’ is defined as an area that has been wooded continuously since 1600 AD. National policy requires WMDC to identify and protect ancient woodlands which do not have statutory protection. Ancient woodland is particularly valuable for its biodiversity because of its longevity and is identified in the Wakefield Local Biodiversity Action Plan. Sites have been designated in accordance with national policy and policy CS10 in consultation with Natural England and ecologists. Policy D7 sets out WMDC's policy for protecting trees and ancient woodland. Policies D4 and D6 shall also be applied where appropriate.

Site Specific policy – Sites of special scientific interest

- 4.3.39 ‘Sites of special scientific interest’ (SSSIs) are wildlife and geological sites of national importance. They are afforded legal protection under Wildlife and Countryside Act 1981⁴⁴, as amended by the Countryside and Rights of Way Act 2000⁴⁵ and the Natural Environment and Rural Communities Act 2006⁴⁶. Policy D4 sets out WMDC’s policy towards SSSIs and policies D5, D6 and D7 shall also be applied where appropriate.

Site Specific policy – Local nature reserves

- 4.3.40 ‘Local nature reserves’ (LNRs) are designated by WMDC in consultation with Natural England under Section 21 of the National Parks and Access to the Countryside Act 1949⁴⁷. Policy D4 sets out the WMDC’s policy for protecting LNRs. Policies D5, D6 and D7 shall also be applied where appropriate.

Site Specific policy – Local wildlife sites

- 4.3.41 WMDC has designated a number of Wakefield ‘local wildlife sites’ (LWSs) formerly known as sites of scientific interest and Wakefield nature areas. These are sites of local wildlife value containing habitats and species identified in the Wakefield Local Biodiversity Action Plan. The sites have been designated in accordance with national policy and Core Strategy policy CS10 in consultation with Natural England and

⁴⁴ <http://www.legislation.gov.uk/ukpga/1981/69>

⁴⁵ <http://www.legislation.gov.uk/ukpga/2000/37>

⁴⁶ <http://www.legislation.gov.uk/ukpga/2006/16>

⁴⁷ <http://www.legislation.gov.uk/ukpga/Geo6/12-13-14/97>

ecologists. Policy D4 sets out WMDC's policy for protecting Wakefield's LWSs. Policies D5, D6 and D7 shall also be applied where appropriate.

Site Specific policy – Wildlife habitat network

- 4.3.42 The 'wildlife habitat network' (WHN) has been designated in accordance with national policy and Core Strategy policy CS10. Development policy D6 sets out WMDC's policy for protecting the WHN. Development policies D4, D5 and D7 shall also be applied where appropriate.

Site Specific policy – Archaeological sites

- 4.3.43 There are a number of scheduled monuments and other unique archaeological assets within the district. West Yorkshire Archaeological Advisory Service⁴⁸ maintains the County Historic Environment Record of archaeological remains and sites of archaeological interest and are WMDC's retained professional advisors on all aspects of the historic environment. The policy identifies scheduled monuments as 'archaeological site class I sites'. Areas of special archaeological value are identified as 'archaeological site class II sites' where evidence exists to indicate the presence or strong probability of remains of particular archaeological importance that are worthy of preservation in-situ. Development policy D17 sets out WMDC's policy for protecting sites of archaeological importance.

Site Specific policy – Historic parks, gardens, landscapes and battle sites

- 4.3.44 Historic England maintains a national register of historic parks and gardens, and historic battlefields. Whilst historic parks, gardens and battlefields have no statutory protection, policy D18 within the Development Policies document sets out WMDC's policy to protect historic locations from inappropriate development which may be detrimental to their historic elements and character.

Site Specific policy – Conservation areas

- 4.3.45 The NPPF requires WMDC to have special regard to the preservation and enhancement of the character or appearance of conservation areas. The demolition of buildings and works to trees in conservation areas require the consent of WMDC who exercise strict control over the siting and design of new development within conservation areas. Policy D18 sets out the Council's policy to protect conservation areas from inappropriate development which may be detrimental to their historic elements and characters.

Site Specific policy – Green belt

- 4.3.46 The main purpose of the Wakefield green belt is to keep land open and free from permanent development, to maintain the character and identity of individual settlements, and to make a clear distinction between town and country. The spatial development strategy aims to create sustainable communities by concentrating new development in urban areas and local service centres. In accordance with the NPPF, the green belt's

⁴⁸ <https://www.wyjs.org.uk/archaeological-services/>

role is to help reinforce this strategy by strictly controlling development in the open countryside.

Site Specific policy – Protected areas of open land in urban areas

- 4.3.47 Within some settlements in the district there are areas of open land which need to be safeguarded from urban encroachment, to preserve the identities of settlements and amenity of their communities. These may consist of parks and public recreational space or open areas of green space of amenity value. Proposals for development that would detract from the open character or amenity value of the landscape will not be supported by WMDC unless exceptional circumstances of community benefit can be demonstrated. Proposals for recreational and amenity uses may be acceptable, providing that the open character of the land remains substantially unaffected.

Site Specific policy – Mineral safeguarding areas

- 4.3.48 Mineral reserves are relatively scarce in the district, and Wakefield relies on imports from other areas for the majority of aggregate minerals used. It is important that known mineral resources are not sterilised by other forms of development. Policy CS16 of the Core Strategy establishes WMDC's approach to the protection of minerals resources and minerals extraction. The LDF will protect permitted reserves (mineral reserves) and also safeguard known economically viable deposits of minerals from sterilisation for future working known as 'mineral safeguarding areas'.

Leisure, Recreation and Open Space Local Plan policy – Leisure opportunity areas

- 4.3.49 Within the areas identified as 'leisure opportunity areas', uses for leisure, sport, outdoor recreation and countryside activities will be supported by WMDC providing that development does not have a significant detrimental impact on the open character of the Green Belt and does not conflict with the purposes of including land within it. In addition facilities and activities must be of appropriate scale, design and intensity which respect the character and amenity of the surrounding area.

Leisure, Recreation and Open Space Local Plan policy – Strategic leisure corridors

- 4.3.50 WMDC has allocated 'strategic leisure corridors' where it aims to prioritise the enhancement of existing routes and creation of new links to improve access and outdoor recreational activities. Development within or adjoining strategic leisure corridors should maintain public access, contribute to enhancement of the corridor and where appropriate, provide new links and recreational opportunities.

WMDC Local Development Plan 2036

- 4.3.51 WMDC is undertaking consultation on the 'Initial Draft Wakefield District Local Plan 2036'. The Initial Draft Plan sets out WMDC's planning policies for securing growth, investment, sustainable development and improving the environment in the district. It will cover the period to 2036 and will provide a comprehensive, updated planning framework of policies, site allocations and designations. The Initial Draft Plan consultation took place in January and February 2019 with comments made informing the next stage of

preparing the Local Plan. To date, there are no additional, replaced or saved policies that concern this LVIA but this will be monitored forthwith.

Wakefield Local Biodiversity Action Plan 2014

- 4.3.52 The 'Wakefield Local Biodiversity Action Plan'⁴⁹ or Wakefield BAP is intended to provide a sound local basis to conserve, protect and enhance the biodiversity of the district as well as contributing to the sub-regional and regional improvements across Yorkshire and Humberside and national targets outlined in UK Biodiversity Action Plan (UK BAP)⁵⁰. The plan is the product of the combined commitment, expertise and experience of many of the district's conservation organisations collectively known as the Wakefield District Biodiversity Group (WDBG).
- 4.3.53 The Wakefield BAP notes that the majority of protected sites are in the south west of the district or along the River Calder corridor to the east and north of Wakefield. Its objectives are in accordance with the relevant WMDC LDF Development Plan policies D4, D5, D6 and D7 (see paragraphs 4.3.20 to 4.3.25).
- 4.3.54 The Wakefield BAP states that there are approximately 2100ha of semi-natural habitats including those on reclaimed land which are greater than 0.1ha in size, with the majority in the south-west of the district. This association is mainly dependent on woodland and wetland habitats which are generally scarce elsewhere, especially in the east. Other habitats tend to be fragmented and often under pressure for housing and industrial development as well as neglect from a management perspective.
- 4.3.55 Habitats to be prioritised for action in Wakefield are those present which are of UK importance, plus others occurring within the district deemed to be of importance where action would be worthwhile. These are specified within local Habitat Action Plans (HAPs) which identify "proposed local actions" and "2023 targets" to enhance and conserve these habitats within the district. Those which could be relevant to the restoration of the application site are as follows:

HAP 1 Deciduous woodland

- Increase area of native deciduous woodland habitat by 2ha

HAP 2 Rivers and streams

- Identify target areas for habitat enhancement, particularly the restoration of riparian vegetation on bare sections of river bank
- Improvement of habitats along 5km of river/stream

HAP 3 Lakes and ponds

- Creation of new waterbodies within flood prevention projects, reclamation schemes etc

⁴⁹ <https://www.wakefield.gov.uk/Documents/sports-leisure/parks-countryside/biodiversity-action-plan.pdf>

⁵⁰ <https://jncc.gov.uk/our-work/uk-bap/>

- Further new and enlarged waterbodies within flood control works
- Work with angling clubs, sailing clubs and other water users to ensure biodiversity is promoted at all sites
- Seek further areas where open standing water can be created; with an emphasis on the creation of clean water ponds

HAP 5 Unimproved neutral grassland and HAP 6 Unimproved acid grassland

- Creation of new sites
- 5 new neutral/acid grassland sites (minimum 0.5ha) created
- 7ha increase in area of species-rich neutral/acid grassland and neutral/acid grassland mosaics

HAP 8 Hedgerows

- Encourage landowners to plant new hedgerows and re-establish hedgerow networks where feasible
- Encourage and assist landowners to 'beat up' and manage existing poor quality hedgerows for wildlife
- 5km new/replacement hedgerows planted, with emphasis on hedgerow networks rather than individual hedgerows
- 10km hedgerow brought back into wildlife-friendly management

HAP 12 Scrub

- Ensure scrub is given due weight when formulating management plans
- Ensure that built development does not result in the loss of wildlife-rich scrub
- Where development is essential, ensure appropriate mitigation for scrub creation and management is secured
- Prescribe species-rich scrub mixtures
- Identify natural areas of self-generating scrub
- Manage habitat to ensure retention of scrub where not adversely affecting other habitats

4.3.56 Candidate Priority Habitats for which HAPs (cHAPs) are currently being prepared but which should also be given special consideration during development planning are:

- cHAP 13 Reedbeds
- cHAP 14 Marsh

- cHAP 15 Wet woodland

4.3.57 The Wakefield BAP also has a number of Species Action Plans (SAPs) Those which may be relevant to the LVIA in terms of specific species, 'proposed local actions' and 'targets for 2023' are as follows:

SAP 11 Butterflies: Woodland and hedgerow

- Identify 5 new potential sites for woodland creation as part of woodland strategy to reduce distance between existing butterfly populations
- Maintain habitat networks to ensure opportunities for migration and reduce effects of climate extremes

SAP 18 Woodland and woodland edge plants

- Promote wild service tree (*Sorbus torminalis*), spindle tree (*Euonymus europaea*), large flowered wintergreen (*Pyrola grandiflora*), wood small-reed (*Calamagrostis epigejos*) and bluebell (*Hyacinthides non-scripta*) in proposed planting and/or seeding mixes
- Identify new potential sites for woodland creation as part of woodland strategy to reduce distance between existing habitats
- Seeding and planting to produce more varied structure in plantations
- Planting up of 10 sites alongside existing woodlands

4.4 Landscape character and guidance

National

Natural England National Character Areas September 2014

- 4.4.1 As established by Natural England, National Character Areas⁵¹ (NCAs) divide England into 159 natural areas. Each is defined by a unique combination of landscape, biodiversity, geodiversity, history, and cultural and economic activity. Their boundaries follow natural lines in the landscape rather than administrative boundaries.
- 4.4.2 The study area falls within the profile of 'Yorkshire and the Humber NCA 38: Nottinghamshire, Derbyshire and Yorkshire Coalfield' as shown at Appendix A Figure A4 National and county landscape character. The NCA is defined by underlying shallow Coal Measures and consists of relatively low-lying land to the east of the Pennine chain bounded by the Peak District National Park and the wool and engineering towns of the Yorkshire Pennines to the west. The long narrow NCA 38 stretches from west of Nottingham through South Yorkshire to Rotherham and Barnsley and into West Yorkshire extending across Wakefield and Leeds towards Leeds Bradford International Airport. The landscape is sandwiched between the slim 'NCA 30: Southern Magnesian

⁵¹ <https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making/national-character-area-profiles>

Limestone' to the east and 'NCA 37: Yorkshire Southern Pennine Fringe' to the west. Extracts from the description of NCA 38 are as follows:

- The NCA is an area that has seen great change over the past few centuries. The geological deposits of coal and iron, along with the water supply, brought mass industrialisation to the area to exploit these resources. The impact of widespread industrialisation and development on the landscape and settlement pattern within the NCA is clear, influencing the visual and ecological landscape.
- Rivers and waterways are an important feature in the landscape, often linking rural and urban areas and increasingly providing green corridors and tranquil settings for both people and wildlife. Several rivers flow into the NCA from the west, notably the Aire, Dearne, Erewash, Don and Rother. They rise outside the NCA in the Southern Pennines and flow through the Southern Pennine Fringe, linking the NCA to the more upland areas to the west and then to easterly NCAs as the rivers continue their course to ultimately drain into the River Humber catchment.
- A number of canals provide linkage into other NCAs notably the Leeds–Liverpool Canal and the Cromford Canal, which also connects the NCA with the Derbyshire Peak Fringe and Lower Derwent NCA. The canals have a very strong historical and recreational focus and are becoming increasingly important to local communities for recreation.
- The NCA is generally a low-lying area, with hills and escarpments above wide valleys embracing major industrial towns and cities as well as villages and countryside. Many of the larger cities and towns, notably Leeds, Wakefield, Sheffield and Nottingham have striking urban centres dominated by the grand 19th century architecture of their municipal buildings, built with the wealth generated from mining, manufacturing and engineering. Industrial benefactors were responsible for many of these notable civic buildings, all constructed from local sandstones, as were some of the factories and mills.
- Older traditional villages in the NCA are built of local stone, generally Coal Measures sandstones and Millstone Grit found to the west. The majority of settlements were subject to rapid industrial expansion in the 19th century when some completely new mining villages were also built. The once-active coal mining industry has now largely closed, with colliery sites and spoil tips graded out and restored to woodland and pasture, so that just a few tips are still in evidence.
- Settlement expansion has continued and dominates the landscape over wide areas in the north of the NCA. The result is a complex intermingling of rural and urban, of modern commerce with occasional industrial dereliction, the whole creating a mosaic of disparate land uses with fragmented semi-natural habitats dispersed throughout.
- In urban fringes there are often small fields of degraded pasture, horse grazing and other varied uses. The pressure of fragmentation and degradation in these areas can give an appearance of neglect. Sites that are left undisturbed can provide a refuge for wildlife with areas of bare ground and rubble found in former quarries,

clay pits associated with former brickworks, industrial sites and railway sidings supporting pioneer plant species and often an abundance of invertebrates as well as important exposures of the bedrock geology. Restored spoil heaps and open cast areas provide opportunities for creating new areas of habitat, such as heathland and grasslands, with tree planting often used to help stabilise sloped sites.

- Semi-natural habitats, including woodland, grassland, important remnant lowland heaths, open water and river valley wetland habitats, tend to be fragmented and scattered, their scarcity giving them greater significance. The coal mining history of the area has resulted in areas of subsidence where low lying fields become inundated with water, with *ings*⁵² being a common occurrence, often supporting important species owing to their unusual water chemistry. The river valleys in rural areas provide corridors of wetland habitat and the creation of new habitat within them offers important sites for wading birds and overwintering wetland birds.
- Tree cover is variable but generally low and present as small woodlands. In some areas broadleaved woodland creates a robust framework of calm, green backdrops to otherwise poor-quality development. Woodland is most notable on poorer soils on steeper slopes and in areas where concentrated planting has taken place.
- Overall field size and pattern is very variable, reflecting medieval clearance from woodland, the piecemeal enclosure of medieval strip fields, subsistence plots and in contrast, late 18th and early 19th-century enclosure of commons. As a result of the expansion of farms there are some areas where the field patterns remain intact, with thick hedges including oak and ash hedgerow trees, while elsewhere the field pattern has broken down, with more post and wire and rail fences and few trees.
- Over half of the NCA is currently designated as green belt land. This maintains some distinction between settlements and represents areas that are often under pressure for development and changes in land use. Very little of the NCA is designated for geology or nature conservation, but designations are often located on land that was once worked for minerals or occupied by major industry.
- More recent engineering, manufacturing and light industrial uses, as well as commercial and retail sites, have extended out from the urban areas. As a result there is a dense network of roads, including the M1 running north–south and the M62 running east–west, which co-exists with the older system of canals and railways. Warehousing development around motorway junctions is a recent feature throughout and has a significant impact on the overall character of the landscape. In addition, the many railway lines which pass through the NCA include now disused former mineral lines, many of which have been reclaimed to form new multi-user trails.

4.4.3 Key NCA characteristics relevant to the study area are summarised as:

⁵² *Ings* is a word of Norse origin referring to water meadows and marshes including those that were part of the Humber flood plain. The term appears in place names in Yorkshire (such as Fairburn Ings RSPB reserve) and in York (Clifton Ings) as well as in Cumbria and Lincolnshire.

- *“A low-lying landscape of rolling ridges with rounded sandstone escarpments and large rivers running through broad valleys, underlain by Pennine Coal Measures.*
- *Local variations in landscape character reflecting variations in underlying geology.*
- *Several major rivers flow through the rural and urban areas of the NCA, generally from west to east in broad valleys.*
- *A mixed pattern of built-up areas, industrial land, pockets of dereliction and farmed open country.*
- *Small, fragmented remnants of pre-industrial landscapes and more recent creation of semi-natural vegetation, including woodlands, river valley habitats and subsidence flashes, with field boundaries of clipped hedges or fences.*
- *Many areas affected by urban fringe pressures creating fragmented landscapes, some with a dilapidated character, separated by substantial stretches of intact agricultural land in both arable and pastoral use.*
- *A strong cultural identity arising from a history of coal mining, steel making and other heavy industry which resulted from the close relationship between underlying geology and resource availability, notably water power, iron ore and coal.”*

4.4.4 The NCA profile suggests ‘Statements of Environmental Opportunity’ (SEOs) which offer guidance on the critical issues and aim to achieve sustainable growth and a more secure environmental future. These are as below:

“SEO 1: Restore and enhance existing areas and create new landscapes through the inclusion of woodland and networks of green infrastructure to raise the overall quality of design and location of new developments. Regeneration and restoration of industrial sites should seek to create green infrastructure that links fragments of the natural environment, leading to a functioning network for wildlife and access and recreational amenities for people.

SEO 2: Protect and manage the archaeological and historical environment to safeguard a strong sense of cultural identity and heritage, particularly mining heritage, and use the area’s distinctive sense of place to inspire interpretation and new development. Engage local communities with their past by enhancing the early, industrial and mining landscapes through restoration of key features of sites and improving access and interpretation.

SEO 3: Conserve, enhance and expand areas and corridors of semi-natural habitat such as grasslands and woodlands to create a functioning ecological network that links the fragmented patches of habitats through urban and sustainably farmed environments, thus assisting species and habitat adaptation to climate change, reducing soil erosion and diffuse pollution.

SEO 4: Manage, enhance and extend wetland habitats associated with the rivers Aire, Calder, Dearne, Don, Rother and Erewash and their tributaries to increase the landscape’s ability to naturally and sustainably manage flooding, improve water quality

and increase the resilience of these habitats, the riverine landscape and associated species to climate change.”

4.4.5 The NCA profile also identifies ‘Landscape Opportunities’ to support the SEOs. Those considered relevant to the study area are as follows:

- Reclaiming and restoring areas of contaminated and degraded land to create new post-industrial landscapes through the creation of habitats to strengthen local habitat networks and provide opportunities for recreation for local populations, while retaining links to industrial heritage.
- Creating new landscapes that are sympathetic to the local landscape character and incorporating habitats that will contribute to biodiversity and climate change mitigation, through careful planning of green infrastructure.
- Realising the potential for canals and rivers to provide sustainable travel and access corridors alongside other green infrastructure benefits.
- Creating new permissive access routes and links to long-distance routes such as the Trans Pennine Trail and ensuring that some surfaced paths are provided for use by people of all levels of ability.
- Managing and restoring traditional field boundaries, particularly where they are most visible in the landscape, form regular patterns and enclose coherent survivals of historical fields.
- Managing and interpreting disused quarries and other mineral workings to provide opportunities for geodiversity, recreation and education for schools, universities and people who are interested in the influence of the underlying geology on the history of the area, and for scientific research.
- Widening the range of habitats in arable areas, particularly in the low-lying east of the NCA and in valleys, including the introduction of permanent grassland field margins and linking these to the wider grassland resource where possible.
- Managing and restoring traditional field boundaries, particularly where they are most visible in the landscape, form coherent patterns and enclose historical fields, respecting differences in local styles.
- Encouraging uptake of land management practices to support farmland bird populations, especially near to valley wetland habitats.
- Increasing the planting of native trees and shrubs, and extending biodiversity networks, responding to the ‘Yorkshire and Humber Green Infrastructure Framework’⁵³ and the ‘6Cs Green Infrastructure Strategy’⁵⁴.

⁵³https://webarchive.nationalarchives.gov.uk/20140605112209/http://www.naturalengland.org.uk/regions/yorkshire_and_the_humber/ourwork/vandhgreeninfrastructuremappingproject.aspx

⁵⁴http://www.melton.gov.uk/downloads/download/831/6_cs_green_infrastructure_strategy

- Avoiding further fragmentation of agricultural land and semi-natural habitats.
- Increasing areas of native woodland within the landscape for recreational use, providing local sources of wood fuel and incorporating new development, while strengthening the ecological habitat network.
- Restoring and extending fens and flushes to enhance biodiversity. This will help to improve water quality by filtration.
- Increasing semi-natural habitats to help to slow down the volume of water entering the river system during and after storms and periods of heavy rain. (This has been trialled upstream of Leeds in the Upper Aire Valley).
- Restoring natural river dynamics and profiles, re-connecting rivers to their flood plains and restoring relic water features, and creating and expanding marginal habitats such as wet woodland, scrub and permanent grassland, seeking ways to mitigate the heavily modified courses and urban influences in order to relieve water flow in the river systems.
- Encouraging buffers of permanent grassland around wetlands, streams and rivers to enhance ecological quality and reduce diffuse pollution from agriculture, such as through the lower river valleys of the Aire and Dearne.
- Promoting land management practices to reduce erosion and pollution.
- Maintaining undeveloped flood plains to store water, and seeking opportunities to expand washlands and water storage in flood plains.
- Ensuring that the restoration of previous mining sites aids water flow regulation and, through their management, contributes towards flood management. Controlling and managing the presence and introduction of non-native species within wetland habitats.

District

Landscape Character Assessment of Wakefield District October 2004

- 4.4.6 Under the framework of the NCA, a district level assessment was undertaken in October 2004 as part of the UDP process to provide a planning and land management tool for the sustainable management of the Wakefield district landscape. The 'Landscape Character Assessment of Wakefield District'⁵⁵, now adopted by the LDF divides the district into six broad Landscape Types with the application site falling within the 'Calder Valley Landscape Type'. Stanley and Wakefield to the west and Altofts, Normanton, Heath and Sharlston to the east and south all lie within the 'Northern Coalfield Landscape Type'. The location of both landscape types is shown at Appendix A Figure A4 National and county landscape character.

⁵⁵ <https://www.wakefield.gov.uk/Documents/planning/planning-policy/information-monitoring/ldf-landscape-assessment.pdf>

4.4.7 Key features of the 'Calder Valley Landscape Type' that are relevant to the application site and study area are as follows:

- The valley consists of a flat flood plain of varying widths through which the River Calder meanders. The river is cut by the Calder and Hebble and the Aire and Calder Navigations. The valley bottom widens significantly at Pugneys and Welbeck to the east of Wakefield, and opens out at the confluence with the River Aire north of Castleford.
- The valley has distinctly steep sides and terraces at the western side at Ossett and Kirkthorpe which gradually diminish as the river passes eastwards.
- The valley bottom has large areas of open water, many as a result of mineral extraction. There are also a significant number of smaller natural flashes⁵⁶, wetlands and some oxbows⁵⁷. Some pockets of unused land between the canal and river contain wetlands and scrub.
- In the areas of washlands⁵⁸ a few meadows have survived which are used for grazing. The valley sides are also used for rough grazing and there is arable agriculture in the western part of the valley. Moving eastwards intensive arable use predominates on the gentler slopes and valley floor.
- The Calder Valley is a corridor of considerable ecological importance. To the east of Wakefield the valley contains important wetland sites, many of which are local wildlife sites and/or local nature reserves.
- There is a little woodland in the valley. It tends to survive around escarpments such as at Kirkthorpe or in abandoned quarries and coal workings. There are few hedgerows - those which survive are in decline and largely unmanaged.
- The Calder Valley has significant recreational value. There are expanses of publicly managed open space which are linked by a network of footpaths including the Trans Pennine Trail, cycle routes and the canal towpath.
- The Calder Valley is also a major transport corridor and important in terms of employment having industrial areas alongside the river. The M1 cuts the Calder Valley between Horbury and Wakefield. A number of abandoned mineral lines linking into the railways that dissect the valley. The valley bottom contains a significant number of old mills and diverse industrial uses including sidings.
- Significant areas of open land have been blighted by coal workings and tips such as Welbeck.

4.4.8 The 'Northern Coalfield Landscape Type' covers part of the wider study area. Key features that are relevant to the LVIA are as follows:

⁵⁶ A flash is a water-filled depression parallel to a river.

⁵⁷ An oxbow is a U-shaped lake that forms when a wide meander of a river is cut off creating a free-standing body of water.

⁵⁸ A washland is land that is periodically flooded by a river or stream.

- The northern part of the district consists of large urban areas, surrounded by intensively farmed countryside. A significant area can be classed as urban fringe. Wakefield City and Castleford are centred at crossing points of the River Calder and Aire respectively. The towns of Normanton, Pontefract, Featherstone and Knottingley expanded largely as a result of the coal industry in the late 19th century.
- The highest land is to the western side of the district and gradually falls away to the east forming gently undulating lowland. The landscape consists of large open fields that are intensively farmed, with few areas of trees and a decreasing cover of hedgerows and hedgerow trees. Many hedgerows have been removed as a consequence of intensifying agriculture and mining. Surviving hedgerows are in decline and ancient landscape patterns have virtually been obliterated.
- Arable agriculture is dominant, particularly cereals and oilseed, whilst vegetables and rhubarb are common on the rich soils around Wakefield.
- There are significant areas of common land at Heath, Warmfield and Sharlston which comprise of rough grassland and scrub giving these areas a distinctive character. Heath Common and village are protected as a historic landscape and conservation area. The smaller villages of Heath, Kirkthorpe and Warmfield have retained their rural character.
- There are large areas of recreational land on the urban fringe such as the playing fields and golf course on the former Lofthouse Colliery site.
- The area is bisected by the Calder Valley and M1 corridor running north-south and the M62 corridor which runs east-west. The motorways are dominant features and act as significant barriers between settlements.
- Much of the area has been mined for coal and there are still some large areas of land in need of restoration and regeneration. There have also been a number of opencast workings which have been restored back to agricultural and recreational uses.

The West Yorkshire Historic Landscape Characterisation project

4.4.9 Historic Landscape Characterisation (HLC) is an historic environmental management tool which was developed by English Heritage (now Historic England) in the early 1990s and subsequently applied across England and then the whole of the UK. The aim was to recognise the historic character of a landscape rather than just landscape features, to enable it to be better managed and protected within spatial planning processes.

4.4.10 The West Yorkshire Historic Landscape Characterisation (WYHLC)^{59 60} project was undertaken by the West Yorkshire Archaeology Advisory Service (WYAAS) between 2011 and 2017. The project covers the five local authorities that make up the West Yorkshire region: Bradford, Calderdale, Kirklees, Leeds and Wakefield. It is an online mapping tool illustrating areas within the region which have common characteristics such

⁵⁹ https://archaeologydataservice.ac.uk/archives/view/west_yorkshire_hlc_2017/index.cfm

⁶⁰ <https://www.wyjs.org.uk/media/69834/wakefield-historic-landscape-characterisation-project-report.pdf>

as landscape patterns and layout of settlements. It was produced by a desk-based process using current and historic maps and aerial photographs and aims to have identified landscape types that are interchangeable and comparable to other HLC studies carried out in the country.

- 4.4.11 The LVIA refers to the dataset presented on the Magic website for the study area which shows the historic landscape character of England at a national level in a 250m scale grid format. This has been extracted from a dataset of merged sub-regional HLCs with the original polygon boundaries removed. The data is presented at up to three levels – Dominant Broad Type (DBT), Dominant Type (DT) and if appropriate, Enclosure Type Group (ETG) with a specific set of attributes.
- 4.4.12 The application site and much of the Birkwood Farm land and river valley to the north of the site falls into the DBT ‘enclosed agriculture’, DT “reclaimed land” and ETG “enclosed agricultural land (typically pre modern form)”. Stanley Waste Water Treatment Works falls into DBT ‘industry’ and DT “utilities” whereas the area south of the Stanley Marina and across the extent of Newland within the Welbeck site area falls within DBT ‘industry’ and DT “extractive” from the early 1900s. The area of Stanley Ferry is categorised as DBT ‘communications’ and DT “harbour” since 1750 and Stanley Ferry Flash LWS is DBT ‘unimproved land’ and Dominant Type “marsh” from the post-war years. Birkwood Farm is DBT “settlement”, DT “farmstead” whilst the urban areas to the west and north are DBT “settlement” and DT “housing”. Stanley Marsh and Normanton Golf Club area are categorised as DBT “recreation” and DT “park and garden” and “sports” from the later 20th century, with the fields around the golf club mainly DBT “enclosed agriculture”, DT “amalgamated fields” and ETG “enclosed agricultural land (typically modern form)” from the inter-war years. The area of the former Newmarket Colliery spoil tip is DBT “industry” and DT “derelict industrial land” dating from the late 20th century to the early 21st century.

5.0 Baseline

5.1 Introduction

5.1.1 The baseline situation is the existing landscape and views as experienced at the time of survey as described below, reinforced by the desktop study. The assessment of landscape and visual effects compares the predicted changes to the landscape character and visual amenity arising from the gravel and sand extraction proposals at Stanley Ferry with the baseline. The baseline for the future scenarios takes account of any potential future changes to the existing landscape such as the increased height and maturity of adjacent woodland and vegetation.

5.2 Site visits

5.2.1 Site visits are conducted to record and survey key landscape features including topography and natural assets, the landscape character, visual context, geographical context, historical influences, the physical condition of features and assets, the rarity and representativeness of features, land use, aesthetic and perceptual factors and evidence of recreational activity.

5.2.2 After a period of heavy rain, a preliminary site visit was undertaken on 8 October 2019 with the day's weather featuring sunny intervals and good visibility. This was followed up by another visit on a day with light cloud but good visibility on 20 October 2019. A third visit was made on 8 January 2020 during a break in the winter weather. Surveys were conducted by car and by foot from highways and public rights of way. Landscape receptors were noted and those forming visual barriers and restricting views towards the application site were evaluated with significant screening such as landform, settlements, woodland, trees and hedgerows identified. This enabled a study area and Zone of Theoretical Visibility (ZTV) to be drafted as discussed in detail at paragraph 5.13.24. Visual detractors within the landscape were also noted.

5.3 Study area

5.3.1 Following the desktop study and the site visits, a broad study area was defined for the purposes of informing the assessment of the wider context of the landscape and visual amenity of the application site. The study area is thus defined as extending to the M62 corridor to the north west, north and north east, to the edges of Altofts and Normanton in the east, to the Hallam railway line to the south east and south, and to the suburban edge of Wakefield to the south west and to Normanton Golf Club, Lofthouse Gate and Lee Moor to the south west, west and north west. This does not negate the potential for exceptions to this boundary, particularly to the north and south. The study area is shown at Appendix A Figure A1 Site location and study area.

5.4 Site context

5.4.1 The application site comprising Smalley Bight (10.07ha) and Birkwood (11.96ha) lies in the floodplain of the Calder Valley. The sites are separated by the River Calder with the eastern boundary of the Birkwood site adjacent to the western bank of the Aire and Calder Navigation and the south and east bank of the river and the Smalley Bight site to

the north and west of the river. Both sites are within the WMDC local authority boundary. Birkwood is also located within the parish council boundary of Normanton.

- 5.4.2 The application site is set in the meadows of the wider Calder valley beyond which lie scattered farmsteads, hamlets, villages, towns and the conurbations of Wakefield, Leeds and Castleford. Birkwood Farm lies 300m across the Aire and Calder Navigation to the east of the site boundary and Smalley Bight Farm lies immediately to the south west. The site lies 900m south of the small village of Bottom Boat, 1.4km west of the village of Altofts, directly north west of Stanley Ferry at the Aire and Calder Navigation crossing with the River Calder (including Calder House), 140m north east of the former Ship Inn on Ferry Lane, 400m north east of the Stanley South settlement on Ferry Lane, 700m south west of Lake Lock, Stanley and 300m south west of Stanley village.
- 5.4.3 Within a 5km radius of site there are many other outlying villages and towns. To the north lie Rothwell, Oulton and Woodlesford, all at around 4.5km from site. To the north east lies Methley at 4.3km from site and Mickletown at 4.6km. Beyond the village of Altofts to the east, the small town of Normanton is 2.7km from site. Outwith the study area to the south east and south, lie the small villages of Kirkthorpe, Warmfield, Goosehill and Streethouse and the larger villages of Sharlston Common, Crofton, Walton and Sandal Magna all between 3.5km and 5km from site. The suburbs of Wakefield (East Moor, Newton Hill, Snow Hill and Wrenthorpe) lie between 1.2km and 3.5km to the south west and west. Outwood and Lofthouse Gate lie around 2km north west of the site.
- 5.4.4 The centre of the city of Wakefield lies 4km to the south west. The city of Leeds is located 10km to the north and the towns of Castleford and Pontefract lie at around 7.5km and 10.5km to the east. The boundary with Leeds Metropolitan district is 2km to the north of the site at junction 30 of the M62.

5.5 Site description

- 5.5.1 The site is shown at Appendix A Figure A5 Application site and comprises areas of land at Smalley Bight and Birkwood. The Smalley Bight⁶¹ site is a largely flat area of irregular shaped arable land at around 17m to 18m AOD. At the time of the first site visit, it had been planted up with winter barley. It is bounded to the north by the 1.5m high metal palisade boundary fencing around Stanley Waste Water Treatment Works. Between the water works and the boundary fence, there is a dense, mature deciduous tree and shrub planting screen which continues for most of the shared boundary with the application site with some gaps in the vegetation cover towards the eastern end. Smalley Bight is lined to the east and south east by a 0.8km length of the River Calder west bank levee which rises above the adjacent arable fields of Smalley Bight by up to 0.5m to the north and by more than 1.3m further south.
- 5.5.2 A short 20m section of the south eastern site boundary with the river bank is shared with public footpath SFP24⁶² which turns westwards away from the river, across the southern tip of the site. A wooden post and rail fence on the field boundary marks the short 60m length of the southern site boundary with Smalley Bight Farm, which lies 110m to the

⁶¹ "Smalley" means narrow clearing; "Bight" means bend in the river

⁶² Footpath number prefixes: SFP Stanley parish footpath

south. The western boundary is defined by the Trans Pennine Trail (also public footpath SFP12 in part) which runs north-south from Bottom Boat to Stanley Ferry.

- 5.5.3 The Birkwood site is also arable with the crop recently harvested when the first site visit was undertaken. It is located across the River Calder immediately south east of the Smalley Bight site. It is also largely flat with the contours at around 17.55m AOD in the east and 18.44m AOD in the west, rising also slightly to 18.02m AOD in the north. The short 45m length of unmarked northern boundary stretches between the east bank of the river and the west bank of the canal. The eastern site boundary aligns the west bank of the Aire and Calder Navigation for 380m with a bank at a height 2 to 3m. A short 115m section of Ferry Lane between Altofts Bridge over the canal and Stanley Ferry Bridge over the River Calder follows the site boundary. The site boundary to the south and west comprises a 1.2km meander of the east bank of River Calder featuring a levee height between 0.5 and 2m.

5.6 Hydrology and pedology

- 5.6.1 As shown on the National Soils Map 'Map of England and Wales'⁶³, the application site is located in an area which has "ID12 Freely draining floodplain soils" which have moderate to high fertility. The water protection issues section of the map notes that groundwaters are shallow in this location and therefore vulnerable to leached pollutants such as nitrate and pesticides. Flooding of cultivated fields can scour top soil and increase silt in the river. Soils are typically loamy⁶⁴ and stoneless and have the potential for a wide range of crops including cereals, roots and potatoes, although flooding can limit land use to grass.
- 5.6.2 The Natural England 'Yorkshire and The Humber (ALC003) Agricultural Land Classification Map' 1:250,000⁶⁵ indicates that the application site has Grade 3 soils. A more detailed soils assessment has been conducted for the ES. The survey confirms that the site falls within ALC subgrade 3b. Land with this subgrade is regarded as moderate quality agricultural land capable of producing moderate yields of a narrow range of crops principally cereals and grass, or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.
- 5.6.3 The River Calder is well known for flooding and consequently this section of the river has flood banks constructed along much of the length, often to both sides as described in paragraphs 5.5 and 5.5.3. The Environment Agency 'Flood Map for Planning'⁶⁶ demonstrates that the application site is in different Flood Zones. Smalley Bight is located in Flood Zone 2, an area with a medium probability of flooding. Areas deemed to be in Flood Zone 2 have been shown to have between 1:1000 and 1:100 chance of flooding from rivers in any year. Birkwood is located in Flood Zone 3, an area with a high probability of flooding i.e. as having a 1:100 or greater annual probability of river flooding. Most of the Birkwood site is also identified as a 'flood storage area' which is defined as

⁶³ National Soil Map <http://www.landis.org.uk/data/natmap.cfm> and <http://www.landis.org.uk/soilsmap/> and <http://www.landis.org.uk/mapviewer/>

⁶⁴ Loamy soil is a rich and friable soil which contains a lot of decayed organic matter but does not contain too much sand, silt and clay. It is ideal for growing crops.

⁶⁵ <http://publications.naturalengland.org.uk/publication/130043>

⁶⁶ <https://flood-map-for-planning.service.gov.uk/>

an area that acts as a balancing reservoir, storage basin or balancing pond. Its purpose is to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel. It may also delay the timing of a flood peak so that its volume is discharged over a longer time interval. Flood storage areas do not completely remove the chance of flooding and can be overtopped or fail in extreme weather conditions.

- 5.6.4 Most of the valley to the north and south of the application site and to the west of the Aire and Calder Navigation is identified as being in either Flood Zone 2 or 3. Settlements and farmsteads are largely located out with these Flood Zones other than properties at Stanley Ferry. A large flood storage area is also located in the meander of the River Calder near Birkwood Lock, to the north of the application site between the River Calder and the Aire and Calder Navigation. The Southern Washlands Nature Corridor and Local Nature Reserve to the south of the site is also a controlled flood storage basin for the River Calder (see paragraph 5.9.9).

5.7 Topography

- 5.7.1 The topography of both areas of the application site is largely flat with the contours varying only slightly at between 17m to 18.5m AOD. A levee up to 1.3m in height lies along part of the Smalley Bight east boundary with the River Calder (see paragraph 5.5). A levee up to 3m in height is located along most of the Birkwood west boundary with the river and also along the east boundary with the Aire and Calder Navigation (see paragraph 5.5.3). Beyond the river, to the south of the Birkwood site lies a vegetated section of the "Nagger Line" (see paragraph 5.8.7), part of which is also the Trans Pennine Trail, which is elevated at around 1.5m above the fields to the north. The adjacent broad valley floodplains to the north east towards Bottom Boat and the M62, and to the south of Stanley Ferry remain at a similar level, with the exception of the reclaimed Newmarket Colliery spoil tip area of 20ha to the south east of Bottom Boat which rises to 30m AOD.
- 5.7.2 The landform to either side of the Calder Valley is undulating and rises generally to the north west and west and to the east and south east. To the north west of the site, Aberford Road climbs steadily from 25m AOD at the Ferry Lane junction to 45m AOD at Bottom Boat Road junction. At the bottom of Bottom Boat Road, Bottom Boat village to the north is located above the flood plain on contours at around 25m AOD. Further to the north west the land rises steadily to 70m AOD towards Lofthouse Gate and Lee Moor Gate, 1.5km from site with contours still climbing in the direction of Lofthouse Hill at 90m AOD, 2.6km from site.
- 5.7.3 Landform also rises more gently westwards beyond Stanley towards Newton Hill at 58m AOD on Ouchthorpe Lane before rising more steeply to peak at Robin Hood Hill in Outwood at 75m AOD, 2.8km from site.
- 5.7.4 To the south west towards Wakefield, the land rises to a highpoint near to Fieldhead Hospital at 84m AOD before gently declining towards the centre of Wakefield and Wakefield Bridge over the River Calder at 24m AOD.
- 5.7.5 To the east of the site, the landform rises steadily in an eastwardly direction away from the River Calder towards Birkwood Farm on Birkwood Hill at around 40m AOD and then

to Hill Top Farm on the edge of Altofts at 50m AOD. To the east of the River Calder within the Newland estate, the landform rises to 60m AOD near Newland Park House, 1.1km to the south east of site. To the south of the River Calder beyond the Welbeck landfill site to the south of the Hallam railway, the topography rises steeply from the valley floor towards Kirkthorpe Lane at around 50m AOD. It then becomes undulating, rising to a number of local highpoints: Black Hill at 67m AOD, Mount Tarry by it at 80m AOD, Peas Hill at 75m AOD and Plump Hill at 81m AOD, all around 2.5km from site.

- 5.7.6 Further afield, out with the broad, flat Calder valley running broadly south west to north west, the landform continues to undulate but on higher contours to the north, west and south west. The landform towards the M62 corridor to the north west has the highest contours: To the north, a highpoint of 80m AOD is located across the M62 near Royds Green Farm, south of Oulton Park near Rothwell, 3.3km from site. To the west, contours rise to 100m AOD at Kirkhamgate reservoir 5km from site, 102m AOD at Jaw Hill to the west of the M1 and higher still at 125m AOD between West Ardsley and East Ardsley over 6km from site. To the east and south the contours are generally at a lower level although there are a number of high points. At a distance of 8km to the east, the contours on the western edge of Pontefract in the vicinity of Park Hill water tower and King's Mead estate are around 80m AOD. At a similar distance from site, the Red Hill area of Castleford has a highpoint of 75m AOD. To the south over 5km from site Sandal Castle is 73m AOD and Charlston is 80m AOD at around 6km from site.

5.8 Land use

Application site

- 5.8.1 Smalley Bight and Birkwood are situated in the rural urban fringe. The local land use is arable farmland interspersed with farmsteads with large scale field systems contained by the meanders of the River Calder and straight banks of the Aire and Calder Navigation. There are also a number of smaller paddocks on the periphery of some of the local farms and larger dwellings off Aberford Road. The wider landscape beyond the floodplain is dominated to the west and east by a myriad of often merging settlements ranging in size from tiny hamlets and large villages to urban city edge. Mostly these comprise a mix of residential housing styles and ages adjacent to large scale commercial development, much of which has emerged in the last 50 years.
- 5.8.2 Smalley Bight Farm lies at 20m AOD to the west of the River Calder. It is located on the Trans Pennine Trail just north of the "Nagger Line" (see paragraph 5.8.7) and 110m to the south west of the application site boundary. Accessed from Aberford Road via a long driveway across the fields, the arable farm comprises a large farmyard with an unoccupied rendered farmhouse and a number of barns, both new and derelict and a newly built red brick dormer bungalow. A telecommunications mast is located in a field close to the farm. A couple of lorry trailers are located on the west bank of the river meander just north of the farmyard.
- 5.8.3 Smalley Bight House is built in red brick and set within gardens to the north west of the Smalley Bight farm yard. It is approached from Aberford Road via a private lane and is located 85m west of the site boundary. The newly constructed stone built Bungal House and stables with adjacent paddocks is located at the Smalley Bight Farm entrance on

Aberford Road, 210m west of site. Water Lane House, a single red brick property, lies on the Trans Pennine Trail 50m north of the site at the entrance to Stanley Waste Water Treatment Works. The water works is set within a large area of 11.5ha immediately to the north of the Smalley Bight site. The site features sludge ponds, two green circular settling tanks, settling ponds and other associated infrastructure set within perimeter vegetation.

- 5.8.4 To the east of the canal, the arable fields of Birkwood Farm and Fisheries rise steadily towards the farmhouse constructed in red brick which is largely hidden in woodland at 40m AOD around 300m from the site. Accessed from Birkwood Road, Birkwood Farm and Fisheries includes a series of man-made lakes and also offers nearby river and canal fishing. Roots Nursery and Garden Centre is situated on Birkwood Road, to the east of the farm access road. Semi-detached properties nos. 5 and 7 Birkwood Road are located to the west of the access road, 620m east of the site. Further north on the west bank of the canal at Birkwood Lock is Birkwood Lock House, a dwelling in white render. It lies 500m north east of site and is accessed via Birkwood Bridge from Birkwood Farm.
- 5.8.5 To the south east of site, Ferry Lane travels over the River Calder via Stanley Ferry Bridge and over the canal via Altofts Bridge. To the south of Ferry Lane on the west bank of the canal lies Calder House in red brick within Stanley Ferry boat yard. Beyond the yard is the Stanley Ferry Aqueduct scheduled monument dating from the 1830s (see paragraph 5.10.16).

Settlements

Stanley

- 5.8.6 Stanley is a 'scattered' village at a distance of 4km north-east of Wakefield city centre. It lies to the north west, west and south west of the site. It comprises an array of settlement areas such as Lee Mount, Lake Lock, Stanley Lane Ends, Stanley South and Stanley Ferry. The village has a number of commercial premises, public houses, take-away outlets and corner-shops. It is also home to three primary schools, a health centre and a library and community centre. Stanley Marsh Local Nature Reserve is located on the site of the former Deep Drop Pit at Victoria Colliery to the west of A642 Aberford Road adjacent to Hatfeild Hall and Normanton Golf Club. Stanley has a Zion Christian Centre and a Methodist Church. The large 19th century Anglican parish church of St. Peter's was demolished in 2014 with services relocated to St Peter's Church Centre.

Stanley Ferry

- 5.8.7 Stanley Ferry lies to the south east of the Birkwood area of the site and south east of Ferry Lane. It is the site of an historic ford that crossed the River Calder before the waters were deepened for navigation. The deeper water required a ferry crossing which was replaced in 1879 by the first wooden toll bridge. In the 1840s, a section of local tramline known locally as the "Nagger Line" (Navigation Line), an elevated part of which now forms a section of the Trans Pennine Trail, ran from Lofthouse Colliery to the north west of Stanley to the former Lofthouse Basin at Stanley Ferry. Between 1863 and 1985,

Tom Pudding⁶⁷ tub boats at the basin were loaded with coal from Lofthouse Colliery and other local collieries before travelling in long trains upstream to Goole via the Aire and Calder Navigation.

- 5.8.8 The Stanley Ferry aqueducts are located on the Aire and Calder Navigation 100m south east of the site. They provide a means of navigating across the River Calder. The original aqueduct to the west is a scheduled monument. It was constructed in cast iron between 1836 and 1839 but is no longer in use (see paragraph 5.10.16). The additional wider concrete aqueduct was constructed in 1981. To the east of the aqueducts, Stanley Ferry Trash Screen Bridge provides pedestrian access over the river. To the south west of the aqueducts, Stanley Ferry Marina hosts 81 mooring berths within the Calder Navigation Basin (formerly Lofthouse Basin). The old Newland Basin which was located on the east bank of the canal between Ferry Lane and the aqueducts, has since been infilled.
- 5.8.9 Aire and Calder Cottages on Calder Row (six brick properties, odd nos. 3 to 13) are situated on the east bank of the canal between the aqueducts and Ramsden's swing bridge and the dis-used Ramsden's footbridge, 240m from site. A small canal operational building – a sluice and pump out station - is located on the west bank of the canal. Aqueduct Cottage (Grade II listed) the former canal office/cottage, now disused is located on the west bank between the Calder Navigation Basin and the aqueducts, 140m from site. Further south there are another two small bridges across the canal: Harrison's Bridge opposite the site of Parkhill Colliery and Blue Bridge at East Moor. The derelict site of Old Park Farm lies off Welbeck Lane to the north of Harrison's Bridge in close proximity to Welbeck landfill site.
- 5.8.10 Ferry Lane travels over the modern Stanley Ferry Bridge across the River Calder and then over Altofts Bridge across the Aire and Calder Navigation. From here to Altofts village, Ferry Lane becomes Birkwood Road. Stanley Reclaimed Timber yard is located to the south on the east bank of the canal in the area of the former Newland Basin. Between the two road bridges and south of Ferry Lane, Stanley Ferry boat repair yard owned by the Canal and River Trust backs onto the canal. The Stanley Ferry workshops include two large (one 3 storey and one 1.5 storey) white painted adjoining workshops with steel profile roofs and large doors facing onto Ferry Lane.
- 5.8.11 West of Stanley Ferry Bridge there are two areas of car parking located to the south of Ferry Lane. One area is private parking for Stanley Ferry Marina, whilst the latter services the large area of mixed converted warehousing and new buildings which form Stanley Ferry public house and Wacky Warehouse amusement centre which is set back off the road on the south side of the Calder Navigation Basin. Further west no. 186 Ferry Lane (formerly The Ship Inn) lies at 19m AOD, 140m south west of the site. Ward Lane, to the west of the former public house provides vehicular access to the Aire and Calder Navigation. Sawmill Timber Direct yard is located to the west of the lane adjacent to five terraced properties (even nos. 10 to 18) which lie 280m south west of site. At the end of Ward Lane overlooking the canal, are three cottages (odd nos. 19 to 23), 345m south of the site.

⁶⁷ "Tom Pudding" was the name given to the tub boats on the Aire and Calder Navigation. The name derives from their resemblance to a string of black puddings or perhaps Yorkshire puddings and the first name of original constructor.

5.8.12 To the west of Ward Lane and south of Ferry Lane is Dunbrik Flues which supplies domestic flue and chimney systems. To the north of Ferry Lane is Ferry Lane playing fields (formerly the site of Wakefield Waterworks Supply Reservoir circa 1851 and also one of the Victoria Colliery pits in the later 1800s) beyond which is the Nagger Line, a small arable field and the application site. Two sets of terraced cottages dating from the late 1800s/early 1900s overlook the playing fields: a row of five (even nos. 168 to 160) 240m south west of the site and then a separate row of four (even nos. 154 to 148). To the west of the newly constructed Nellie Spindler Drive, a short row of terraced cottages lies perpendicular to Ferry Lane (even nos. 138 to 132). Adjacent to this, five terraced cottages face the road (even nos. 130 to 122) at 320m south of site.

Stanley South

5.8.13 The area to the west of St Swithin's Drive forms the southern part of Stanley village. Between St Swithin's Drive and the junction with A642 Aberford Road, the housing is more recently constructed and mixed in style. This includes St Swithin's Court sheltered housing, St Swithin's Grove, Calder Gate, Balk Crescent, Balk Avenue, the Riverdale estate, Ash Street, Ash Grove and Ashlea, all located between 400m and 780m from site. To the north of Ferry Lane, 14 bungalow style properties are located on Moncalm Crescent, 460m south west of site. A total of 30 properties align the north side of Ferry Lane with no. 83, the nearest to site located 380m to the south west.

Aberford Road and Lake Lock, Stanley

5.8.14 The site boundary is close to a number of other properties which align Aberford Road on the outskirts of Stanley village. In the vicinity of the Aberford Road/Lime Pit Lane junction, there are five detached properties to the east of the road (even nos. 282 to 288 and Bungal House with stables). These properties lie at around 21m AOD and 200m from the western site boundary. Stanley Grove Primary and Nursery School is south of these properties, around 140m from site. To the south of the school there is a long row of terraced cottages (even nos. 150 to 280 Aberford Road) and a Chinese take-away between 240m and 490m from site. Stanley Grove allotment gardens are located across the road.

5.8.15 Opposite the school to the south of Lime Pit Lane are six properties on Aberford Road (odd nos. 287 to 297). The former Grove Park public house, once both Stanley Victoria Working Men's Club and the Deep Drop Colliery offices is located at 299 Aberford Road now houses eight flats. All properties are around 270m west of the site. To the north west of Lime Pit Lane junction, to the west of Aberford Road is a playing field with mature trees. An area of scrubby woodland is located opposite the playing field to the east of the road.

5.8.16 Beyond this point, Aberford Road begins to climb steadily up the contours. On the east side of the road, between the scrubby woodland and the Water Lane access to Stanley Waste Water Treatment Work, there are three large detached properties nos. 396, 398 and 400 at 21m AOD, 220m from site. Beyond an arable field and paddock which slope down from the road towards the Trans Pennine Trail and beck, there are a number of large detached properties of mixed ages and style, mostly set in large grounds. Approached from a driveway shared with public footpath SPF14, there are three

properties (even nos. 412 to 416) clustered around the former Glebe Farm at between 380m to 490m north of the site and around 25m AOD.

- 5.8.17 Another seven dwellings (418 with rear terrace overlooking the valley, 420 Grade II listed, 422, 426, 428, 434a and 434b) are located on Aberford Road prior to Lake Yard. The properties are located within private wooded grounds from between 29m AOD and 35m AOD on land which falls away steeply from Aberford Road towards the river between 470m and 630m north of site. The Thatched House public house circa 1920 is located between properties 428 and 434b overlooking the valley.
- 5.8.18 On the west side of Aberford Road beyond the playing fields are the estates of Beech Avenue, Oak Avenue and Ash Crescent populated by 1950s semi-detached brick dwellings at around 25m AOD. In the vicinity of Intake Lane, six detached properties of mixed age and style (odd nos. 375 to 385) front Aberford Road on rising land at around 29m AOD. Further east the gable ends of 11 chalet style bungalows on Beaumont Street (even nos. 22 to 42) back onto Aberford Road at 30m to 35m AOD. A further 18 properties on Beaumont Street (even nos. 34 to 42 and odd nos. 33 to 57) overlook the valley from above Aberford Road. Between the site of the former St Peter's Church and Lake Lock Road is a row of 17 properties (odd nos. 389 to 417) which are all semi-detached Edwardian villas apart from 3 bungalows (nos. 403a, 405 and 405a). These properties are between 300m and 680m from site at around 40m AOD. A hair dressers, Salon 156 is located behind no. 417 Aberford Road at 156 Lake Lock Road.
- 5.8.19 At the Aberford Road junction with Lake Lock Road, the former Stanley cinema, now Gordons Tyres garage lies to the east of the junction at 35m AOD. Branded Sportswear Ltd is located in the adjacent building at no. 444. No. 436 Aberford Road is just south of the garage and connected to no. 1 Lake Yard at the top of the lane at around 35m AOD.
- 5.8.20 On Lake Yard (also public footpath SFP14), a pair of stone cottages (odd nos. 3 and 5) are located behind no. 436 Aberford Road. The lane falls steeply south to a detached dwelling with rear terrace (no. 7) at 30m AOD. Lake Yard Hanging Baskets at no. 12 is located on the corner of Lake Lock Yard at around 22m AOD. It is both a dwelling and small holding with polytunnels and greenhouses selling bedding plants and market produce. Further along Lake Yard, the former canal navigation stone cottages and workshops, now five grand townhouse terraced properties (nos. 12a 14, 16, 18 and 20 - all Grade II listed) at 20m AOD overlook the mown grass flood bank to the River Calder, 690m north of the site.
- 5.8.21 At Lake Lock, north of Lake Lock Road junction and west of Aberford Road, properties front onto the road on land rising from 35m AOD to The Chase at 39m AOD. Most are stone or brick built 19th and 20th century villas apart from the bungalow at no. 443a and no. 447 Preservation House (formerly Stanley Institute). They are a distance of around 790m north of the site. All properties overlook the arable fields to the east of Aberford Road towards the wider Calder Valley and the blackened Welbeck landfill mound to the south. Nos. 449, 451 and 453 Aberford Road are part of The Chase, formerly the site of Stanley railway station, which comprises 38 prefabricated terraced bungalows and two-storey properties (odd nos. 425 to 453).

- 5.8.22 At Lake Lock to the east of Aberford Road and north of the arable fields is the Zion Chapel now known as the Zion Christian Centre which dates from 1876. It is located at around 38m AOD and 860m north of the site. Either side of the chapel are nos. 466 and 468 Aberford Road, with a newly built property beyond at 468a and a bungalow behind at no. 462. Three large properties are located behind the Chapel (no. 464, The Poplars and Beechfield House) on lower ground at 25-30m AOD at around 850m north of site. The properties on higher land have elevated rear views through vegetation across the Calder Valley. North east of these properties on land sloping down to the river is a small arable field.
- 5.8.23 Roman Station Farm is located on high ground at 58m AOD, 230m to the west of Aberford Road, 1.1km from site. At the junction with Bottom Boat Road, to the west of Aberford Road and next to no. 465 Aberford Road, is the former Spindle Tree public house (previously The Railway Hotel dating from circa 1860), now a private dwelling. It lies at 45m AOD, 1.1km north of the site. To the south of the junction on the east side of Aberford Road is a triangular area of woodland and scrub which marks the location of the former Parsons Pit shaft and a section of the Methley Joint Railway.
- 5.8.24 Beyond the junction with Bottom Boat Road and to the west of Aberford Road towards the top of the hill, lie four semi-detached properties (odd nos. 499 to 505) and four detached dwellings (odd nos. 507 to 513) at around 48m AOD. To the east of Aberford Road are St Peter's Crescent and Holmfield Chase, both accessed from Bottom Boat Road. St Peter's Crescent is made up of 85 semi-detached 1960s style brick houses and 20 pre-fabricated flats and bungalows. Holmfield Chase comprises ten detached new build brick houses. Kingsland Primary School is located to the north of St Peter's Crescent and accessed off Aberford Road. Beyond the school lies the large Moorhouse estate comprising short rows of town houses and semi-detached dwellings mainly from the 1960s. A corner shop is located on the junction with Aberford Road. To the west of Aberford Road lies a cluster of mixed style and age dwellings (nos. 545 to 561) including a take-away outlet. West Farm lies off Aberford Road at 50m AOD. Collectively these properties form the urban extent of Stanley with the A642 Aberford Road then continuing through farmland for 700m to join the M62 at junction 30.

Bottom Boat

- 5.8.25 Further east down Bottom Boat Road and to the south of the dismantled Methley Joint Railway lies Bottom Boat village at around 900m north of the site. Sometimes considered part of Stanley village, it lies north of the Old Canal/Canal Cut⁶⁸ and the River Calder and west of the original ford crossing the River Calder. This was replaced by a ferry crossing which was still in use in the 1920s. The ferry contributed to the name "Bottom Boat" as this area became known as the Stanley side of the ferry crossing, whereas the Altofts side was known as "Top Boat".
- 5.8.26 The village was largely created for the mine workers of the Newmarket Colliery which was located to the north east of the village before closing in 1983. Of the many small

⁶⁸ The Canal Cut of around 1km in length was started in 1821 and funded privately. Its purpose was to bypass some 2.7km of dangerous bends in the River Calder which slowed down the passage of boats and allowed silt to build up, thereby reducing the loads which could be carried. Work commenced on the canal without consultation with the Navigation Company, who during the latter stages of construction refused to allow water to be drawn from the river into the new cut. As such the project was abandoned and most sections filled in.

streets and rows only around 100 of the original houses survive with most of these along Bottom Boat Road. Approaching the village from Aberford Road, Bottom Boat Road drops steeply from 42m AOD to 26m AOD. Beyond the junction to Holmfield Chase where the slope becomes more gentle, two rows of traditional terraced cottages (odd nos. 1 to 25 and 27 to 39) lie to the north of road which is now at around 23m AOD. To the south there are two detached properties, Ardtarmon (the converted and extended former Bottom Boat infants school) and the newly built Hartes Cottage, both of which lie off the sloped delivery access to William Lamb Group footwear. On this lower level at around 21m AOD is a further row of four terraced cottages (even nos. 24 to 30) and a semi-detached 20th century new-build dwelling (nos. 1 and 2) all located in the area known as Hartes Garden and also approached via the factory delivery access. These properties are located behind a row of 11 traditional terraced cottages to the south of Bottom Boat Road (even nos. 2 to 22) beyond which lies the reception building for William Lamb Group⁶⁹. The large factory building lies behind two short terraces of eight dwellings (even nos. 36 to 40 and 42 to 50).

- 5.8.27 Opposite the William Lamb Group reception building is a short row of three 20th century build houses (odd nos. 43 to 47), behind which there are ten properties (all terraced bar one new build) located on Nettleton Street and Barker Street. Further east to the north of Bottom Boat Road, a row of six cottages (odd nos. 49 to 59) is located prior to no. 63, a traditional stone building and formerly the Masons Arms inn. Two rows of terraces are beyond, six fronting Bottom Boat Road (odd nos. 79 to 89) and seven behind (odd nos. 65 to 77). Adjacent are two pairs of semi-detached houses (odd nos. 91 to 97) and a detached property (no 99), the latter three properties all newly constructed. Red brick terraces continue (odd nos. 103 to 113). Between the terrace and Bottom Street playground are four properties – a newly constructed detached dwelling (no. 117), two semi-detached traditional dwellings (119 and 121) and a large property set back from the road (no. 125) behind the site of the demolished Primitive Methodist Chapel.
- 5.8.28 On the south side of the road and to the east of the disused factory access, two detached dwellings (no. 52 and The Moorings) lie behind a couple of new build semi-detached properties facing Bottom Boat Road (flats 1 to 4 at no. 52a). Beyond are six terraces (even nos. 54 to 64.). The former Bottom Boat Working Men's Club built in 1911 is being converted into three private dwellings (nos. 66, 66a and 66b).
- 5.8.29 There are two traditional semi-detached cottages to the north of the road (odd nos. 131 and 133) prior to the former stone built Rising Sun public house, now a private dwelling. A group of 14 1950s red-brick semi-detached properties (odd nos. 139 to 165) are located beyond the former public house. The property styles and ages become more eclectic further east with three stone cottages (odd nos. 199 to 203), a large detached 1990s build (no. 205) and semi-detached bungalows (nos. 207 and 209). Opposite these properties and down the bank to the south of Bottom Boat Road are five properties set amongst a series of yards and sheds (even nos. 68 to 72 and semi-detached 72a and 72b). Adjacent is a detached house set in large wooded grounds (no. 74).

⁶⁹ William Lamb Group was formed in 1887 as a clog manufacturer providing for the West Riding woollen industry as well as for mine workers and farm workers. During the Second World War the company manufactured army boots, before moving into sportswear. After a period of expansion in the 1970s, manufacturing at Bottom Boat declined until it ceased all together. Operations are still managed from Bottom Boat with the company importing over 10 million pairs of shoes per annum.

- 5.8.30 The site of the former Ship Inn is an unmanaged area of land featuring an abandoned static caravan. A large yard is beyond, belonging to a former car repair business. Prior to the junction with the back lane track, there are nine properties to the north side of the road: semi-detached bungalows (nos. 233 and 255), a detached house (no. 237) and a traditional stone terrace (odd nos. 239 to 249). A large new house (no. 215) with outbuildings of various sizes is located on the back lane track adjacent to the redundant car repair site. Across the back lane track from no. 215 is a large area strewn with old cars and scrap, part of which is on the site of the former Bottom Boat Quarry. This area of the village feels a little run down as a result.
- 5.8.31 Bottom Boat Road now becomes a track vegetated on both sides which descends from 20m AOD towards the former site of the ferry crossing of the River Calder at around 15m AOD. The track passes the site of the former Bottom Boat Farm and Ferry Inn now both demolished. A large detached property (no. 251 Backwater Bungalow) is located 400m from the junction with the back lane track. The large reclaimed tip created from the spoil excavated from the nearby former Newmarket Colliery rises to around 30m AOD to the south. Covered in emerging scrubby vegetation, it is located at the end of Bottom Boat Road between the former site of Bottom Boat Farm and the River Calder at Bottom Boat Reach. The gigantic 10 storey NewCold storage and distribution centre is located 1.8km north east of site. Its white façade is prominent on the northern horizon at around 44m AOD. From Bottom Boat Reach, Bottom Boat Road continues as a track for 1km to join the B6135 Newmarket Lane at Methley Lanes.

Altofts

- 5.8.32 Altofts is a village with a population of around 6000. It is located on undulating ground to the south and east of the River Calder and Aire and Calder Navigation and west of the M62, 1.4km to the east of site. Many former and existing residents worked in the local coal mines, but are now employed in neighbouring towns and cities or on the various local industrial estates including Wakefield Europort and Whitwood Freight Centre to the east of the M62. The village has several public houses and shops, two infant schools and a junior school, two churches, a Working Men's Club and The Brigg community and sports centre.
- 5.8.33 On the approach to Altofts, Top Farm and stables and Hill Top Farm are located at the top of the hill at 51m AOD, 1.1km east of site. The detached property of West Garth lies off Birkwood Road on the edge of the village at 1.2km from site. A number of mid to late 20th century build estates are located to the west of the village on lower ground. At 45m AOD, Garforth Drive comprising brick semis and bungalows is the closest to site at around 1.4km. Altofts Lodge Drive and Altofts Lodge Farm on Patience Lane leading down to Astingley allotments are at 41m AOD, 1.7km from site.

Newland estate

- 5.8.34 The Newland estate lies in the Calder Valley on the east bank of the river between Altofts and Stanley Ferry. Established in 1213 by King John, the estate has now largely disappeared under the Welbeck landfill site (see paragraphs 5.8.38 and 5.8.81). The former Newland Hall, built around 1740 was demolished after a fire in 1917. The Grade II listed stone stable block/coach house built at around the same time as the hall was

converted into a house but is now in ruins. The estate also featured various outbuildings, a chapel, brewhouse, icehouse, pigeon cote, piggery, gatehouse and summerhouses. Some of these buildings can be identified by their foundation stones but others are completely demolished. More details can be found at paragraph 5.10.16. Yorkshire Field Sports / Hook and Gun Events are located within the estate and accessed from a lane off Birkwood Road.

- 5.8.35 Newland Park House, a single detached property within the Newland estate is currently boarded up and unoccupied and accessed from Altofts via Newland Lane. It is set on rising topography within arable fields with views out largely contained by localised groundform, field boundary vegetation and woodland within the estate.

Normanton

- 5.8.36 Normanton is a small town with a population of around 21,000 which is located to the south east of Altofts at around 2.7km from site. Originally the site of a Norman settlement, Normanton thrived when it became the focus of several railway lines during the mid-19th century serving as an important part of the transport infrastructure for national and local industries including coal and bricks. Most local men were employed in the many surrounding collieries so the town suffered decline in the years following the pit closures and miners' strike of 1984-1985.
- 5.8.37 Normanton has become a growing commuter suburb of the Leeds city region, with relatively cheap housing and efficient transport links. The town is still accessible via Normanton railway station and served by the three nearby major motorways - the M62, the M1 and the A1(M).

Welbeck landfill site

- 5.8.38 The area once occupied by the St Johns/Newland Colliery, Welbeck opencast coal site and part of the Newland estate, now forms part of the Welbeck landfill site. Situated 640m south east of site on the site of a former sand and gravel works in the floodplain of the River Calder, the landfill is a large scale site over an area of 50ha which takes the form of a blackened hillside.

Wakefield

- 5.8.39 Wakefield is a cathedral city located on the north bank of the River Calder, 4km to the south west of site. It has good access to the motorway network with the intersection of the M1 to the west, the M62 to the north and the A1(M) further east. Initially a centre for wool, Wakefield traded corn, coal and textiles in the 18th and 19th centuries using the navigable river as an inland port. Today the economy is based on manufacturing and service industries with ongoing regeneration projects underway including the waterfront.
- 5.8.40 The closest Wakefield suburb to site is the large estate of East Moor 1.2km to the south west, comprising largely 1950s style semi-detached properties. Newton Hill featuring early 20th century terraced housing is in the vicinity of A61 Leeds Road with newer estates towards the A650 Bradford Road and off Bar Lane, 2.5km from site. Pinderfields Hospital is located to the west of Aberford Road, 1.9km south west of site. Fieldhead Hospital, a psychiatric and learning disability hospital is located on Ouchthorpe Lane

1.8km from site. Wakefield Hospice is located on Aberford Road 1.2km to the south west.

Outwood and Lofthouse Gate

5.8.41 Outwood is a district to the north of Wakefield, 2km north west of site. Centred on the A61 Leeds Road south of Lofthouse, it developed as a pit village and was only a small settlement until the 1970s. After this the construction of new houses caused it to grow and merge with neighbouring settlements such as Snow Hill and Wrenthorpe. It has a railway station on the East Coast Main line beyond which lies Wakefield 41 Industrial Park. Nearby Lofthouse Gate has a similar background. Originally a small village dominated by the adjacent railway lines, it saw rapid expansion in the mid to late 20th century and has merged with the adjoining settlements of Outwood and Stanley village.

Special Policy Area SPA2 City Fields, Wakefield

5.8.42 To the east of Wakefield is Special Policy Area SPA2 City Fields (formerly known as Wakefield East) which is located 390m south of site. The site is a part brownfield/part greenfield sustainable urban eastern extension to the city of Wakefield. The allocation is one of the key proposals within the development strategy for Wakefield and the wider district.

5.8.43 The City Fields masterplan proposes a range of developments and uses including residential, employment (mix of light industrial, warehousing and office uses) and recreational, environmental and community facilities. A relief road linking Doncaster Road to Aberford Road - the Wakefield Eastern Relief Road (WERR) (see paragraph 5.8.48) - has already been constructed to serve the development and mitigate the level of congestion experienced on nearby routes into and out of Wakefield. Footpath, bridleway and cycleway connections along the riverbank and canal route are to be created or enhanced. A public right of way linking the River Calder and the Trans Pennine Trail runs through the site which will also be maintained and improved.

5.8.44 The SPA is within flood zones 2, 3a and 3b and flood risk is a significant issue in this area with housing units not located in flood zone 3. Wildlife corridors are to be preserved and buffer zones created between development and the bank of the River Calder. Due to the close proximity of the Southern Washlands Local Nature Reserve and the presence of hedgerows and arable farmland on site, a breeding birds survey will be required. Settings of listed buildings and the conservation area at Heath must also be protected.

Highways

5.8.45 The application site is adjacent to a complex network of local highways providing easy access to the motorway corridors of the M62 at 2km to the north (junction 30) and to the M1, 3.5km to the west (junctions 40 and 41). The M62 junction 30/M1 junction 42 Lofthouse interchange at Lofthouse is 3.6km to the north west. The M62 junction 33/A1(M) junction 41 Ferrybridge interchange is 11.5km to the east. Wakefield is crossed by the A61 (Derby to Thirsk), A638 (A1 Markham Moor to M62 junction 26) and A642 (Huddersfield to Aberford, Leeds) highways and is the starting point of the A636 highway to Denby Dale and A650 to Keighley.

- 5.8.46 Close to site, the presence of the wide River Calder restricts highway access to the east. Ferry Lane at Stanley Ferry Bridge immediately south of site provides the only local public highway crossing. West of the river, Ferry Lane connects to A642 Aberford Road, 600m from site. To the east, after crossing Altofts Bridge over the Calder and Aire Navigation (single lane with traffic signals), Ferry Lane becomes Birkwood Road climbing eastwards to Altofts.
- 5.8.47 On the edge of Stanley, the A642 Aberford Road is 240m to the west of the site. It runs north-south connecting the centre of Wakefield to M62 junction 30. At 970m across the valley to the north, Bottom Boat Road extends from the A642 Aberford Road through Bottom Boat village becoming a track as it approaches the river. Both Lime Pit Lane and Lake Lock Road extend westwards from Aberford Road to the centre of Stanley at Stanley Lane Ends.
- 5.8.48 On A642 Aberford Road, 360m south of the junction with Ferry Lane, the north west spur of the new A6194 WERR (part of the SPA2 City Fields - (see paragraph 5.8.42) extends south as Neil Fox Way to join the main highway along the Aire and Calder Navigation towards the A638 Doncaster Road to the south east of Wakefield. Nellie Spindler Drive links the new relief road to Ferry Lane. The new junction is located in the vicinity of the old Balk Lane junction east of St Swithin's Drive, 350m south of site.

Railways

Railways

- 5.8.49 The local railway network is similarly complex. A section of the Hallam railway line extends east from Kirkgate Station, Wakefield traversing the Calder Valley 2km south of the site. The line then runs between Altofts and Normanton and travels across the M62 before crossing back over the River Calder to follow the River Aire Valley either north westwards to Leeds or eastwards towards Castleford. Normanton Station on the Hallam railway line is 2.5km east of site.
- 5.8.50 To the west of the site, the Wakefield Line travels between Leeds and Sheffield via Westgate Station, Wakefield. Outwood Station on the Wakefield Line lies 2.6km west of site.

Disused railways and tram lines

- 5.8.51 There are a number of dismantled railway and tram lines in the study area. The Methley Joint Railway, now dismantled opened in 1865 and ran for 8km between Lofthouse and Methley via the former Stanley Station on Aberford Road. Initially connecting the local collieries the line ran just north of Lake Lock and Bottom Boat, 890m north of site. It was closed to passengers in 1964 and closed completely in 1981. To the west and south of the site, Nagger Line coal tramway (see paragraph 5.8.7) ran from the Methley Joint Railway at Lofthouse Gate to Stanley Ferry via the former Victoria Colliery. St Johns Colliery railway ran east along the River Calder from Newland Basin at Stanley Ferry to St Johns Colliery and the former Midland Railway (now Hallam railway line) near Goosehill. A mineral railway also extended between Parkhill Colliery and St Johns Colliery at 1.3km south of the site.

High Speed Rail

5.8.52 The site lies very close to the route of the proposed High Speed Rail⁷⁰ (HS2) Phase 2b between Birmingham and Leeds which now has a delayed opening estimated to be between 2035 and 2040. In the study area, the surface level route runs northwards from Sharlston, between Warmfield and Kirkthorpe and through the Newland estate to the east of the Calder Valley skirting the western edge of Altofts via Top Farm 1km east of site. It then crosses the valley just east of Bottom Boat before diverging north of the M62 to form two separate routes, north westwards to Leeds and north eastwards to connect to the East Coast Main Line near York.

Air travel

5.8.53 The application site lies near to the flight path for Leeds Bradford airport which is located 21km to the north east. Although the airspace is frequently travelled, the aircraft are at a high level with limited audibility on the ground.

Public rights of way

5.8.54 There is a network of informal tracks, public footpaths, bridleways, cycle routes and long distance trails within the study area.

Trans Pennine Trail

5.8.55 The Trans Pennine Trail is a national coast to coast route accessible to walkers, cyclists and horse riders. It links the North and Irish seas, passes through the Pennines, alongside rivers and canals and through some of the most historic towns and cities in the north of England.

5.8.56 A section of the Trans Pennine Trail north-south route connecting Leeds and Chesterfield passes through the study area. From the south the Trail emerges from Heath 2.6km south of the site, passes under the Hallam Railway and crosses the River Calder via Broadreach footbridge. It then runs along the towpath on the east side of the Aire and Calder Navigation crossing over the canal at Harrisons Bridge. It continues on the western edge of the canal to Stanley Ferry, turns west at the marina and follows the old Nagger Line to Smalley Bight Farm. From here the remaining section of Nagger Line to Aberford Road is unclassified as a public right of way although it is used locally as a footpath and cycleway.

5.8.57 The Trans Pennine Trail route runs through Smalley Bight farmyard and past the farm bungalow. It then runs north along the west boundary of the Smalley Bight area of the application site and past the Stanley Waste Water Treatment Works. It continues along the west bank of the river, passing Lake Lock to join the track west of William Lamb Group at Bottom Boat. The Trail then climbs part way up Bottom Boat Road before turning east along the disused former Methley Joint railway towards Methley.

Paulinus Pilgrimage and Heritage Way

⁷⁰ <https://www.hs2.org.uk/>

5.8.58 The Paulinus Pilgrimage and Heritage Way⁷¹ is a long distance path⁷² which starts in Todmorden on the Yorkshire/Lancashire border. It retraces the steps of Saint Paulinus until it reaches the historic city of York where he was the first Bishop. A section of the route passes through the centre of Wakefield and turns east along Park Lodge Lane through the East Moor estate to join the west bank of the Aire and Calder Navigation. Turning north it follows the route of the Trans Pennine Trail from Harrisons Bridge all the way to Leeds.

Towpath

5.8.59 On leaving Wakefield, the Aire and Calder Navigation towpath extends along the east bank of the canal passing 40m from site north of Stanley Ferry. The towpath is accessible to vehicles, cyclists, walkers and animals.

Byways

5.8.60 A byway is a public right of way open to all traffic. A section of byway/footpath (SFP26⁷³) extends from Park Lodge Lane at East Moor along the west bank of the Aire and Calder Navigation. It leaves the canal to run west through the woodland to the south and west of Stanley Ferry Flash via Balk Lane to the A6194 WERR, 520m south west of site.

Public bridleways

5.8.61 Within the study area, there are sections of WMDC public bridleways on higher ground to the south and south west some distance from site. In the Warmfield cum Heath parish, two sections of bridleway (WBW10⁷⁴ and WBW9) extend from the villages of Heath and Kitkthorpe outwith the study area to connect to a local footpath (WFP11) close to Welbeck landfill site. Other sections of bridleways south of the Hallam railway line connect to bridleway WBW12 to cross an area of restored land to the former St John's brickworks. This section of bridleway then joins bridleway NNBW1 within the Newland with Woodhouse Moor parish to Newlands Lane. Further north where it enters the Normanton parish, it becomes bridleway NBW2 and travels across the hillside to Top Farm on Birkwood Road on the edge of Altofts.

Public footpaths

5.8.62 There are many WMDC public footpaths in the study area. In the Stanley parish, SFP24⁷⁵ runs from Stanley Ferry Bridge along the west bank of the River Calder cutting across a narrow section of the Smalley Bight site to join SFP12. The alignment of the section of SFP24 along the river is currently under dispute due to the erosion of the bank of the River Calder. SFP12 runs south through Smalley Bight Farm to join Ferry Lane adjacent to no. 83. From this point it also runs north to follow a section of the Trans

⁷¹ <https://britishpilgrimage.org/portfolio/paulinus-way/>

⁷² https://www.ldwa.org.uk/ldp/public/what_is_an_ldp.php

⁷³ Footpath number prefixes: SFP Stanley parish footpath

⁷⁴ Bridleway number prefixes: WBW Warmfield cum Heath parish bridleway; NNBW Newland with Woodhouse Moor parish bridleway; NBW Normanton parish bridleway

⁷⁵ Footpath number prefixes: SFP Stanley parish footpath; NFP Normanton parish footpath; NNBW Newland with Woodhouse Moor parish footpath; WFP Warmfield cum Heath parish footpath; LFP Leeds parish footpath

Pennine Trail along the western edge of Smalley Bight, passing Lake Yard to the west and ending at Bottom Boat Road. SFP23 extends from between nos. 41 and 43 Ferry Lane to join the Trans Pennine Trail on the Nagger Line.

- 5.8.63 A number of public footpaths (SFP17 Water Lane, SFP14 between nos. 412 and 416 Aberford Road and SFP13 Lake Yard) extend west from the Trans Pennine Trail (also SFP12 at this point) near the site to join the A642 Aberford Road. SFP11 extends from no. 443b Aberford Road westwards towards Mount Road. To the north of Roman Station Farm, SFP9 runs north westwards from Aberford Road towards Lee Moor.
- 5.8.64 On higher ground and further north of Bottom Boat 1.8km from site within both the Stanley and Rothwell parishes, there are a number of public footpaths in the vicinity of Newmarket Lane between the A642 Aberford Road, the M62 and the River Calder.
- 5.8.65 North east of site within the Normanton parish, there a short section of NFP4 runs from Altofts Ings to cross the River Calder at King's Road Bridge to Foxholes Lane, Altofts. NFP1 and NFP5 extend south from the towpath into Altofts. There are a number of footpaths within the village (NFP12, NFP9 and NFP7) including those that provide access to Normanton (NFP10, NFP11) and the Newland estate (NFP3) and the site of former St Johns Colliery (NFP13).
- 5.8.66 Within the Newland with Woodhouse Moor parish there are four footpaths in the area of the Newland estate – NWFP5, NWFP6, NWFP3 and NWFP2. Beyond the estate, NWFP4 extends south from the disused brickworks along the east bank of the River Calder to join WFP11 in the Warmfield cum Heath parish.
- 5.8.67 West of the canal south of Stanley Ferry, footpath SFP25 extends from the byway (SFP26) to Balk Lane and follows the route of the Trans Pennine Trail to the junction of Ward Lane and Ramsdens Bridge, ending at Ferry Lane 190m south of site.
- 5.8.68 Further afield, on higher ground to the west of the A642 Aberford Road there are many public footpaths spreading across Normanton Golf Club (SFP20, SFP31, SFP30, SFP21 and SFP20) with some climbing up the contours to Pinderfields Hospital (SFP28, SFP29, SFP36) around 1.2km from site. Beyond Lofthouse Gate, around 2km to the north west of site, LFP29 within Leeds parish crosses the hill towards the M62.

Leisure and amenity

Leisure Opportunity Areas

- 5.8.69 WMDC Leisure, Recreation and Open Space Local Plan 2017⁷⁶ has designated Ferry Lane playing fields as LA1 Ferry Lane leisure opportunity area, Stanley. The playing fields include a pitch belonging to the Stanley Rangers amateur rugby club. It is located 130m from site, just south of the Trans Pennine Trail on the Nagger Line and links to Stanley Ferry and SPA2 City Fields (see paragraph 5.8.42).

Strategic Leisure Corridors

⁷⁶ https://consult.wakefield.gov.uk/portal/spatial_policy/lros/lrosadopt/lrosadopted?pointId=s1486982318298#ID-4414586-SITE-LA-1

5.8.70 The Plan has also designated a number of Strategic Leisure Corridors (SLCs) including LC2 Aire and Calder Navigation, LC3 River Calder, LC6 Trans Pennine Trail. Many local footpaths and bridleways networks are also designated Leisure Corridors i.e. LC13 Normanton-Altofts, LC14 Normanton-Sharlston-Nostell-Crofton and LC18 Newland-Normanton-Goosehill-Wakefield.

Aire and Calder Navigation

5.8.71 The Wakefield branch of the Aire and Calder Navigation is 12km in length. As well as being a designated SLC, the canal has the appearance of a tree-lined, gently twisting river and is a popular leisure route between Wakefield and Castleford whilst connecting to the wider national canal network. Boaters can utilise the facilities, car parking and moorings at Stanley Ferry Marina with additional space on both sides of the canal.

Other leisure attractions

5.8.72 There are a two golf courses in the area - Normanton Golf Club 420m west of site within the study area and Lofthouse Hill Golf Club near the M1/M62 Lofthouse Interchange 2.3km to the north east. Hatfield Hall, adjacent to Normanton Golf Club serves as a wedding and conference venue. Diggerland theme park is located to the north east of Whitwood Freight Centre, 5km from site. Pugneys Country Park, Walton Colliery Country Park, Newmillerdam, Anglers Country Park and Nostell Priory are all located approximately 5-6km to the south of site.

Collieries, mines and aggregate extraction

Collieries and opencast coal

5.8.73 The local landscape is peppered with the sites of former collieries. The larger pits include as follows:

- The site of Pope and Pearson's West Riding Colliery, east of Altofts. Now an area of grassland within Wakefield Europort 3.6km north east of site.
- Ferry Lane Pit part of Victoria Colliery located to the north of Ferry Lane opposite Dunbriks and across the River Calder from site. Now Ferry Lane playing fields which includes a pitch belonging to the Stanley Rangers amateur rugby club.
- The site of Newmarket Colliery south of Bottom Boat Lane. Now part of the NewCold distribution centre, 1.8km north east of site.
- The former Parkhill Colliery is 1.3km south of the site to the west of the Aire and Calder Navigation.
- The Deep Drop Pit and other working pits that formed Victoria Colliery is now Stanley Marsh Local Nature Reserve (see paragraph 5.9.8), 450m west of site.
- Shires Pit was located near 19 Intake Lane close to the former St Peter's Church, 530m north west of site⁷⁷.

⁷⁷ Subsidence from Shire Pit allegedly led to the damage and subsequent demolition of St Peter's Church.

- The site of the former Bottom Boat Colliery lies to the north of the dismantled Methley Joint Railway near Meadowfield Rise, 1.2km north of site.
- Parsons Pit lay at the top of Bottom Boat Hill off Aberford Road, 1km north of site.
- The large site of the former St Johns Colliery lies 1.8km to the south east, north of the Hallam railway line at Goosehill. It closed in 1973 and is now restored.
- Welbeck opencast coal site located to the south west of St Johns Colliery extracted from the coal seams at surface level from the 1970s to the 1990s. Some of the site is now restored whilst the remainder is part of Welbeck landfill.

5.8.74 A reclaimed spoil tip from the former Newmarket Colliery rises to 30m AOD to the south east of Bottom Boat in a meander of the River Calder 840m north east of site.

Brick and fireclay

5.8.75 Both brick and fire clays have been extensively worked at many locations in the coal measures of Wakefield including at a brickworks site to the south of Newland Hall. However since 1986, the West Yorkshire brick industry has contracted with a significant number of brickworks and associated clay pits closing. Rudd Quarry clay workings off Newland Lane, Normanton, 2km east of site, is still in operation although the large area of former workings at Altofts Brickworks to the east has now been restored leaving only the chimney stack in situ.

Sand and gravel

5.8.76 As reported by the West Yorkshire Combined Authority 'Local Aggregate Assessment' 2018⁷⁸, river terrace sand and gravel deposits are present along the river valleys of the Aire, Calder and Wharfe and some tributaries.

5.8.77 The Assessment states that "River terrace deposits – Inferred Resources" have been identified in the area of the application site by the British Geological Survey (BGS)⁷⁹ 2009 study however the study also reports that the extent and depth of deposits is variable with much lower than previously estimated areas viable for extraction. The BGS surveys also state:

- Only sites containing 1 to 1.5 million tonnes of sand and gravel (taking up 10 to 25ha of land) would be likely to be economically viable. Much of the potentially viable sand and gravel resource within West Yorkshire is divided by rivers, canals, railways and roads therefore there are only likely to be a very small number of viable sites.
- The industry have identified five to ten potential sites for sand and gravel extraction within West Yorkshire; however issues relating to access, environmental, hydrological, and/or planning restrictions are considered too problematic relative to

⁷⁸ Source: BGS, 2009. West Yorkshire sand and gravel resources: Investigating the potential for an increased sub-regional apportionment <http://www.wakefield.gov.uk/ldp2036/WY%20Local%20Aggregate%20Assessment%202018.pdf>

⁷⁹

<https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=5&ved=2ahUKEwj1tobo4frkAhXGVsAKHWb8DC0QFjAEegQIARAC&url=https%3A%2F%2Fwww.bgs.ac.uk%2Fdownloads%2Fstart.cfm%3Fid%3D1&usq=A0vVaw0zCdY169R4ndnQwA5IQDwW>

the volumes and quality of reserves to merit developing any of them. West Yorkshire's remaining sand and gravel extraction industry is now limited to one small site in Kirklees.

- The picture of low sand and gravel West Yorkshire resource viability depicted above appears to be being borne out by the current relatively rapid contraction of the sand and gravel extraction industry within West Yorkshire, with the only extraction site which had previously remained in Leeds, at Methley, being worked out in summer 2013 and no apparent interest in any renewed extraction in Leeds, Bradford, Wakefield or Calderdale.

5.8.78 There were a number of former sand and gravel works in the study area. OS mapping from 1953 to 1957 shows works in the area contained by the Aire and Calder Navigation and the River Calder to the south east of the Stanley Ferry aqueducts, 1km south of site. An aerial cable and conveyor across the canal to an area of land behind nos. 148 to 154 Ferry Lane is also shown. These former works are now part of the Welbeck landfill site (see paragraphs 5.8.38 and 5.8.81). An area of sand and gravel works was also located further south in the parcel of land to the north east of the junction where the Wakefield Cut of the Aire and Calder Navigation leaves the main River Calder. This area has been reclaimed and is now the Southern Washlands Local Nature Reserve (see paragraph 5.9.9).

5.8.79 The only sand and gravel quarry remaining in West Yorkshire is in Dewsbury. It is operated by one of the applicant's subsidiary companies and will be exhausted in the next two years.

Stone quarries

5.8.80 There are a few sites of former sandstone quarries in the study area but none now in production. As shown on OS mapping from 1851 to 1855, the former site of Birkwood Quarry, now the site of Birkwood Farm and Fisheries is located 300m the east of site. Mapping also show sandstone quarries located north of Lake Lock Road near Stanley Library and north of Canal Hill, near Lee Moor Gate.

Landfill sites

5.8.81 Welbeck landfill site off Boundary Lane, Normanton is operated by FCC Environment. It is located 1km to the south of the site on the western side of the River Calder on the site of a former gravel pit and Welbeck opencast coal site. Reclamation commenced in 1997 initially with the importation of colliery spoil. Operating as a landfill site since 1998, the site is the primary waste disposal facility for the West Yorkshire region including the Wakefield, Kirklees, Leeds, Bradford, Calderdale and Barnsley areas. The landfill is permitted to accept up to 200,000 tonnes of inert waste per year and up to up to 800,000 tonnes of non-hazardous household, commercial, and industrial wastes. It is also permitted to import waste to support landfill restoration requirements. The site has a composting facility that processes 10,000 tonnes of green waste per year. Electricity generation from landfill gas at Welbeck aims to contribute 8MW of electricity to the national grid each year – enough electricity to support the needs of more than 8,000 homes.

5.8.82 Restoration proposals reclaiming approximately 100ha of derelict land for public benefit were to be completed by 2018 however a Section 73 application (18/00754/WAS) for the variation of planning conditions to extend the lifetime and amend the restoration proposals of the scheme was made to WMDC in April 2018 and approved under permission reference 12/02120/FUL in September 2018. The permission states that operations shall have ceased by 31 December 2025 in accordance with the approved restoration scheme (see also paragraph 9.2.3).

Commercial and industrial

- 5.8.83 The presence of the nearby national transport network has given rise to the addition and expansion of large commercial parks and the distribution depots of national and multi-national corporations.
- 5.8.84 Wakefield 41 Industrial Park is located in Outwood to the east of the M1 junction 41 within a parcel of land contained by the M1, A650 and Wakefield Line, 2.7km west of the site. It is a large, well maintained estate of light industrial units established in the 1980s employing over 5,000 people. It is home to over 45 businesses including CCE Wakefield, a large soft drinks factory owned by Coca-Cola Enterprises UK, a distribution centre for Morrisons and Ideal Bathrooms.
- 5.8.85 Wakefield Europort is a rail-connected warehousing and industrial estate, located 2.7km to the east of site near Castleford and accessed from M62 junction 31. It opened in 1996 in anticipation of increased international rail freight due to the construction of the Channel Tunnel. The large site is bounded by the M62 to the south and the Aire and Calder Navigation to the north and trisected by two sections of the Hallam railway line which branches at Gilcar. The site employs over 3,000 persons and contains many distribution depots for large national companies including Asda, Royal Mail and Kuehne & Nagel. Whitwood Freight Centre predates the Europort and is located on the eastern boundary. It is home to a number of distribution centres of well-known companies including Argos Ltd and TK Maxx.
- 5.8.86 NewCold distribution centre is the largest of its kind in the UK employing over 200 people. It is located on part of the site of the former Newmarket colliery to the south of Newmarket Lane, 1.8km north east of site. Opening in spring 2018, the large ten storey building has a white façade and is set within a 6.5ha site strategically located south of the M62 junction 30.

Utilities: Water, energy/power and communications

Water

- 5.8.87 Stanley Waste Water Treatment Works comprising four sludge beds, settling ponds and associated infrastructure is located off Water Lane west of the River Calder, immediately north of the Smalley Bight site. Outwith the study area, at a distance of 2.6km to the south of site and to the west of the river, Calder Vale Waste Water Treatment Works serves the bulk of the metropolitan area of Wakefield.

Power

- 5.8.88 The former Wakefield Power Station comprised two coal-fired stations which were situated on the River Calder at Agbrigg, south east of Wakefield outside the study area. It was decommissioned and demolished in 1991 and is now a new area of housing with a link road to the north. An Electricity Distribution Site is located south of the River Calder, adjacent to the former power station and west of Heath.
- 5.8.89 There are a number of sets of overhead power lines within the study area. To the north of site, the first set of high voltage power lines extend on lattice style pylons from the direction of Lofthouse Gate eastwards across A642 Aberford Road north of Lake Lock to Bottom Boat before turning south east across the Calder Valley 550m from site towards Normanton. A second set of high voltage powerlines and pylons also extends from Lofthouse Gate to the south east boundary of the Smalley Bight area of site. These then turns south crossing the Nagger Line and Ferry Lane to follow the west bank of the Aire and Calder Navigation. A set of smaller scale powerlines on wooden poles extends from the M62 to Bottom Boat junction with the A642 Aberford Road under the first high voltage powerline, crosses the River Calder, then turns south west to follow the east bank of the river to Water Lane and then double backs westwards over Aberford Road, under the second set of high voltage powerlines following the west side of Aberford Road southward before heading off across Normanton Golf Club.

Communications

- 5.8.90 There are a number of telecommunication masts in the study area. Closest to site at 120m is an O2 mast at around 21m in height (check 01/99/61587 planning application) located on the Nagger Line/Trans Pennine Trail to the east of Smalley Bight Farm. A joint EE/T-mobile mast is located on Birkwood Farm access road off Birkwood Farm, 500m east of site. To the north east of site at a distance of 680m, two masts (EE/Three and T-Mobile) are located on Lake Lock Road. There are also two masts at Normanton Station (CTIL) and at Newland Road where it crosses the railway line (O2).

5.9 Landscape receptors

Natural features

Watercourses

- 5.9.1 The two main watercourses in the study area are the River Calder and the Aire and Calder Navigation. The River Calder rises on the eastern slopes of the Pennines and flows through green countryside, former woollen-mill villages, towns and the city of Wakefield before joining the River Aire near Castleford 7.5km north east of site. Within the study area, the river is around 40m wide with vertical banks up to 1.5m high topped with intermittent vegetation. It flows north eastwards from Wakefield meandering north of Kirkthorpe and west of Newland Park in a wide valley around 1km in width. Passing by Stanley Ferry Marina and under the aqueducts (see paragraphs 5.8.8 and 5.10.16) where the valley narrows to around 500m and the river banks are more open and less vegetated. The river then creates deep meanders to the west and then east to encompass both the Birkwood and Smalley Bight areas of the site and the Stanley Waste Water Treatment Works. It then flows broadly east to meander south of Bottom Boat and around the reclaimed Newmarket Colliery spoil tip creating deep turns and

bends north of Altofts, prior to flowing under the M62 and north of Wakefield Europort where the valley widens again towards Castleford.

- 5.9.2 The river has a history of flooding, mainly due to the high sides of its banks in its earlier stages, which cause rapid runoff of water following heavy rain. There are a number of flood defences in the study area as described at paragraph 5.6.3. Two weirs regulate the water level at Kirkthorpe Weir and Stanley Ferry.
- 5.9.3 Canalisation was developed in the 18th century to improve navigation and enable trading of goods such as woollen cloth, coal and aggregate. The river is not navigable adjacent to the application site, however artificial 'cuts' such as the Aire and Calder Navigation link to the short sections of the river elsewhere that are navigable. As such the canal still fulfils its original purpose of connecting Leeds and Wakefield with York and the Humber (and thence the Trent), although the routes by which this is achieved have changed significantly. Large loads of goods can be carried from the Humber ports. It is also a popular route for pleasure boats, leading to the vibrant redeveloped waterfront area in Leeds. It is now a vital link in the English and Welsh connected inland waterway network.
- 5.9.4 The Wakefield 'Cut' (branch) of the Navigation starts east of Wakefield at East Moor around 1.9km south of site and runs due north at around 1km west of the River Calder and over the aqueducts at Stanley Ferry. Staying to the south of the river it follows the route to the east, passing under the M62 and north of Wakefield Europort where the cut branches into the Calder Cut and the Fairies Hill Cut to connect back to the River Calder. The combined river/Wakefield branch joins the Aire and Calder Navigation mainline branch from Leeds at Castleford Ings where the River Aire then flows eastwards towards the River Ouse in the East Riding.
- 5.9.5 There are three locks in the study area: Broadreach Lock to the east of East Moor where the Wakefield Cut separates from the river; Birkwood Lock is located east of Birkwood Bridge (accessed via private track from Birkwood Farm and Fisheries), 490m north east of site; and Kings Road Lock west of Foxholes Lane (Kings Road Bridge), 1.8km north east of site. A towpath is located on the east bank of the canal. For details of the marina at Stanley Ferry, see paragraphs 5.8.8 and 5.8.71. A disused section of canal known as the Old Canal/Canal Cut is located to the south of Bottom Boat 770m north of site, see paragraph 5.8.25.
- 5.9.6 There are no other significant rivers or streams in the study area however a number of springs and small man-made drains flow towards the river valley from higher ground. This includes a drain flowing across the fields to the west of Smalley Bight from the Stanley Marsh Local Nature Reserve to enter the river north of Stanley Waste Water Treatment Works and a spring which arises near the Birkwood Plantation travelling via a pond to a sink point on Birkwood Road before draining into the canal further north.

Waterbodies

- 5.9.7 There are a variety of waterbodies in the study area mostly in the form of ponds and pools on reclaimed pit works. A remnant pond from the former sand and gravel works in the floodplain behind Calder Row is located within the Welbeck landfill site boundary, 480m south east of site. Other man-made ponds within Welbeck and which form part of

Ferryboat Fields (see paragraph 5.9.9) lie 890m to the south of site to the west of the landfill mound. A large pond is located within the site of the former St John's brickworks south east of the former Newland Hall, 1.6km from site. To the south of the canal, a number of man-made ponds feature as part of Birkwood Farm and Fisheries, 300m east of site.

- 5.9.8 The large pond at Stanley Marsh Local Nature Reserve (LNR1 and LWS1) 360m from site lies on the site of the former Deep Drop Pit which was part of Stanley Victoria Colliery. Previously derelict land with a water logged swamp following pit closure, the area now forms a series of four ponds with mini islands that attract nesting birds. There are also three ponds located within the grounds of Normanton Golf Club next to the nature reserve.
- 5.9.9 The Southern Washlands Nature Corridor comprises four countryside sites linked by the Trans Pennine Trail and featuring four areas of waterbodies within the Calder Valley (see also paragraph 5.10.4).
- Stanley Ferry Flash LWS2 within the study area is located to the south west of Stanley Ferry accessed via Balk Lane off Nellie Spindler Drive, 470m south of site. It takes the form of two marshy ponds formed in agricultural land as a consequence of both flooding and mining subsidence.
 - The Southern Washlands LNR2/LWS3 is located in the study area within the Calder Valley 1.4km south of site. It comprises two lakes, one used for fishing by Eastmoor Angling Club and the other left undisturbed for wildlife. The area was worked for sand and gravel from the early 1950s until 1976 and reclaimed in 1987. The nature reserve is also a controlled flood storage basin for the River Calder.
 - Ferryboat Fields is located within the study area. It features several ponds and grassland to the north of Southern Washlands to the east of the Aire and Calder Navigation, 830m from site. It was agricultural land before becoming part of the Welbeck landfill site, where phases are now being restored and reopened to the public. It does not have a formal local designation.
 - Ashfields and Half Moon LWS4 is located 2.2km south of site, outwith the study area. Half Moon Pond is a cut-off section of the River Calder formed in 1838 during the development of the Northern Railway line, now Hallam railway line. Ashfields was formerly a lagoon into which pulverised fuel ash was piped from Wakefield Power Station. There is another pond in Kirkthorpe in the grounds of Warmfield House near St Peter's Church, outwith the LWS.
- 5.9.10 Within the study area at Altoft Ings, 1.4km north east of site, there are waterbodies within two LWS areas located either side of the River Calder at Bottom Boat Reach. Part of the former Newmarket Colliery Stanley LWS55 is located in the area of the reclaimed spoil tip and features man made contours with emerging woodland and scrub to 30m AOD and a pond near the river. Opposite the LSW55 spoil tip area, in the meander of the river, Altoft Ings LWS34 features native scrub and a pond. A further pond lies to the south between the river and the Aire and Calder Navigation, outwith the LWS boundary.

5.9.11 Further to the east, Foxholes/Altofts Ings Normanton LWS25 to the west of the M62 features a pond.

Woodland

- 5.9.12 There is no woodland on site and very little formal deciduous woodland of any size and scale within the study area. Despite this the landscape feels well vegetated due to the scattered nature of many small areas of trees and scrub which populate property boundaries, road corridors, a former country estate, former colliery sites, watercourses and waterbodies.
- 5.9.13 Close to site, the area of Stanley Waste Water Treatment Works is well wooded particularly on the southern boundary. Small areas of scrubby woodland exist to the north east of the Aberford Road junction with Lime Pit Lane, to the north of Water Lane and at the corner of the Aberford Road junction with Bottom Boat Road.
- 5.9.14 There are remnant areas of formal woodland planting on the Newland estate including Birkwood Plantation, Ruddings Wood and Birkwood Whin and areas of woodland around the Old Stables. Normanton Golf Club features patches and drifts of plantation mixed woodland across an area of 58ha.
- 5.9.15 There are large areas of naturalised trees and scrub within Stanley Marsh LNR, Stanley Ferry Flash LWS and Southern Washlands LNR. Smaller areas of scrubby woodland are located around Old Park Farm north of the Southern Washlands LNR and also around the edges of Welbeck landfill site, on the reclaimed areas of the former colliery sites at Parkhill Colliery, St Johns Colliery and the former Newmarket Colliery spoil tip, to the north of Bungal House east of A642 Aberford Road and in the meanders of the River Calder. Outwith the study area, Low Wood (partly ancient woodland, see paragraph 5.10.12) and an adjacent area of scrubby woodland is to the south of the Hallam railway line, between The Half Moon and River Calder and Old Hall Wood north of Heath Old Hall at Kirkthorpe. Goosehill Plantation lies to the south of the Hallam Railway, east of Goosehill.
- 5.9.16 Intermittent, linear deciduous and naturalised vegetation features as part of the Calder and Aire Navigation towpath, along sections of the River Calder, along the disused Methley Joint railway line north of Bottom Boat, along the Nagger Line at Stanley Ferry, along St Johns tramline to Newland and also along the Hallam railway line.

Rhubarb Triangle

- 5.9.17 The Rhubarb Triangle is a 23km² triangular area of West Yorkshire which is located between Wakefield, Morley and Rothwell. Famous as the area for producing early forced rhubarb⁸⁰, it currently includes Kirkhamgate, East Ardsley, Stanley, Lofthouse and Carlton although originally it was spread over a much larger area.

⁸⁰ Rhubarb is a native of Siberia but also thrives in the wet cold winters of West Yorkshire which once produced 90% of the world's winter forced rhubarb from the forcing sheds that were common across the fields. Yorkshire Forced Rhubarb is the 41st British product to be added to the list of legally protected food names.

5.9.18 Stanley lies at the heart of the once great rhubarb empire. Stanley farmers grew the crop making a good living with the demand so high that trains carrying only rhubarb were sent to all corners of the country from Stanley Station. Many areas of land where new housing now stands were used to grow the crop. Old rhubarb forcing sheds still stand today including down by the river at Bottom Boat and up until recently on Smalley Bight Farm. Rhubarb is still grown in Stanley, but on a much smaller scale and outside in the fields in summer months.

5.10 Designations

5.10.1 The application site is not part of a sensitive landscape of natural, historical or cultural significance and does not have any statutory designations. There are no international or European designated sites located within the study area. Designations relating to the study area are shown at Appendix A Figure A3 Planning context.

Statutory designations – land and ecological

Sites of Special Scientific Interest

5.10.2 There are no statutory designated Sites of Special Scientific Interest (SSSIs) in the study area. The closest is Mickleton Ings SSSI in the Lower Aire Valley at over 5km from the application site. It features an area of subsidence flashes forming a linear wetland comprising shallow areas of open water fringed by marsh.

5.10.3 Based on the distance from the application site and the lack of ecological connectivity, it is considered that there will be no significant direct or indirect impacts resulting from the proposals. Therefore it is not considered further in the LVIA.

Local Nature Reserves

5.10.4 There are two statutory Local Nature Reserves (LNRs) within the study area:

- LNR1 Stanley Marsh (also LSW1, see paragraph 5.10.7) is a small wetland area 450m west of site created by mining subsidence and part of the former site of the Deep Drop Pit at Stanley Victoria Colliery. Restoration commenced in 1983 and the site now features woodland and a hay meadow with dragonflies, frogs and newts and a good variety of flowering plants.
- LNR2 Southern Washlands (also LWS3) in the Calder Valley forms part of the flood basin for the River Calder. Located 1.4km from site, the area was worked out as a sand and gravel pit in the 1950s before being restored in 1987. It features a variety of habitats - open water, swamp, marshy grassland, willow and hawthorn scrub – which support a variety of wildflowers, birds and amphibians. It forms part of the Southern Washlands Nature Corridor as promoted for recreational purposes by WMDC. It has both terrestrial and ecological connectivity with LWS2 Stanley Ferry Flash to the north and Ferryboat Fields and LWS4 Ashfields and Half Moon to the south (see paragraph 5.9.9).

Non statutory designations – land and ecological

Green belt

5.10.5 The application site is located within an extensive area of green belt as designated by WMDC which extends along the Calder Valley to the south and north east, northwards to the M62 corridor and west across Normanton Golf Course to Outwood and Newton Hill.

Common land

5.10.6 There are areas of registered common land⁸¹ at Kirkthorpe, Goosehill, Warmfield and Shrlston to the south of the study area, between 2-5km from site. Due to their distance from site they are not considered in the LVIA.

Local wildlife sites

5.10.7 There are a number of non statutory local wildlife sites (LWSs) within the study area as designated by the West Yorkshire Wildlife partnership and WMDC. LWSs which may have a possible aquatic and terrestrial ecological connection with the site due to their proximity to the Calder Valley watercourses are as follows:

- LWS1 Stanley Marsh, Wakefield 450m west of site, also noted as a LNR1 (see paragraph 5.10.4)
- LWS2 Stanley Ferry Flash, Wakefield is wetland habitat comprising a mixture of open water, swamp, marchland and grassland with areas of willow carr and variety of wildflowers, birds, butterflies and dragonflies, 470m south of site.
- LWS34 Altofts Ings, Normanton is located on a disused tip site in a meander of the River Calder adjacent to the former Newmarket colliery spoil tip, 1.4km north east of site.
- LWS24 and LWS25 Foxholes/Altofts Ings, Normanton are located in meanders of the River Calder either side of the M62, further to the north east.
- LWS55 Former Newmarket Colliery, Stanley. The LWS includes three areas of land, one of which is the former colliery spoil tip which is located 840m north east of site in a meander of the River Calder. The other two areas are located either side of the NewCold distribution centre, 1.8km north east of site.
- LWS3 Southern Washlands, Wakefield, also noted as LNR2 (see paragraph 5.10.4)
- To the south of the Hallam Railway Line on the edge of the study area are parts of LWS32 Goosehill Common Normanton and LWS70 Hell Lane Railway Cutting Warmfield.

⁸¹ Common land is land owned collectively by a number of persons, or by one person, but over which other people have certain traditional rights, such as to ride their animals over it, allow their livestock to graze upon it, to collect wood, or to cut turf for fuel. See also <https://common-land.com/lands/show/Wakefield> and https://data.gov.uk/data/map-preview?e=-1.19816909&n=53.74308628&s=53.57528698&url=http%3A%2F%2Finspire.misoportal.com%2Fgeoserver%2Fwakefield_metropolitan_district_council_commland_polygon%2Fwms%3Frequest%3DgetCapabilities&w=-1.62614719

5.10.8 Outwith the study area, LWS4 Ashfields and Half Moon, Kirkthorpe is located on the River Calder, 2.2km south of site. It is included within the Southern Washlands Nature Corridor and features species-rich areas of open grassland and willow, birch and oak scrub. Common spotted orchids and bee orchids grow in the ashy soil.

The Wildlife Habitat Network

5.10.9 The Wildlife Habitat Network (WHN) covers an extensive area including the application site and the Calder Valley floodplain to the north and north east and south taking in all of the nearby LWSs. It also covers LNR1 Stanley Marsh, Welbeck landfill site, an area of the Newland estate and the disused and existing railway corridors to the south of site.

Mineral safeguarding area

5.10.10 All of the Birkwood area of the application site and most of the Smalley Bight area bar the north east tip and a small area to the south are within designated mineral safeguarding area MSA5 Stanley Ferry Wakefield for the extraction of sand and gravel. The remainder of MSA5 is made up by a small parcel of land to the south of the site between the River Calder and the Nagger Line and areas of land contained within the River Calder meander to the north and to the west of the Newmarket Colliery spoil tip. MSA2 and MSA3 are two safeguarding areas for clay on St Johns Field at Newland and off Greenfield Road, Normanton.

Mineral reserve

5.10.11 There are two mineral reserves for sand and gravel in the study area. MR1 Foxholes North of Altofts and MR2 Penbank Castleford are located either side of the M62 Nordens Bridge within meanders of the River Calder. MR3 Newland Lane, Normanton is a clay reserve located between MSA2 and MSA3.

Ancient woodland

5.10.12 To the south of the study area, LP1300 Low Wood Kirkthorpe is designated as ancient woodland as well as a woodland with a tree preservation order (ANCWOOD/5).

Tree preservation orders

5.10.13 There are a number of groups of trees with tree preservation orders (TPOs) within the study area as follows:

- WMDC-TPO-187 W1 Mixed woodland north of Bottom Boat
- WMDC-TPO-75 W1 Mixed woodland extending southwards from Birkwood Road to include Birkwood Plantation and the woodland around the site of the former Newland Hall.
- WMDC-TPO-75 W2 Mixed woodland on the Newland estate
- WMDC-TPO-75 W3 Mixed woodland at Ruddings Wood on the Newland estate

- WMDC-TPO-120 Various groups of trees and individual trees in the grounds of nos. 418, 420 (Grade II listed) and 422 Aberford Road, Stanley
- TPO/19/00130/E Trees in the grounds of no. 379 Aberford Road, Stanley

Ecology assessment

5.10.14 For more information on statutory and non-statutory ecological designations in relation to the application site, please see the ecology assessment section of the EIA.

Statutory designations – historic

5.10.15 There are a number of national cultural designated sites located within the study area. In addition LDF Site Specific policy (see paragraph 4.3.43) identifies scheduled monuments as Class I Archaeological Sites (ASs) as follows:

Scheduled monuments (WMDC Archaeological sites Class I)

5.10.16 There are two scheduled monuments⁸² located within the study area as follows:

- Stanley Ferry Aqueduct scheduled monument⁸³ (also AS6 Class I) located 100m south of site. Built in 1837-1839 and designed by George Leather junior, the aqueduct carried the Calder Cut of the Aire and Calder Navigation over the River Calder. Made of cast iron with stone abutments and arched suspension construction.
- Newland Preceptory scheduled monument⁸⁴ (also AS8 Class I) lies 1km south east of site on the Newland estate. The monument is situated on the banks of the River Calder and includes the remains of a preceptory⁸⁵ established in about 1180 by the Knights Hospitallers.

5.10.17 Earthworks on Birkwood Common⁸⁶ (also AS7 Class I), located 900m east of site on the hillside between Birkwood Farm and Altofts are also technically scheduled as these were previously interpreted as a possible henge monument of late Neolithic or early Bronze Age date. However the earthworks are now considered to be the result of coal mining operations which date to the early 20th century and as a result have been omitted from the LVIA - see the archaeology assessment for more details.

Listed buildings

⁸² A scheduled monument is a nationally important archaeological site or historic building, given protection against unauthorised change. The protection provided to scheduled monuments is given under the Ancient Monuments and Archaeological Areas Act 1979 with listings held by Historic England

⁸³ <https://historicengland.org.uk/listing/the-list/list-entry/1261690>

⁸⁴ <https://historicengland.org.uk/listing/the-list/list-entry/1012153>

⁸⁵ A preceptory is a monastery of the military orders of Knights Templars and Knights Hospitallers (also known as the Knights of St John of Jerusalem). Newland is one of only two preceptories established in West Yorkshire and was the only one established by the Knights Hospitallers.

⁸⁶ <https://historicengland.org.uk/listing/the-list/list-entry/1005774>

5.10.18 There are many listed buildings⁸⁷ of national importance (Grade I and Grade II*) and regional importance (Grade II) within the study area. Those which are located within a 2km radius from centre of site are as follows:

Grade I (national)

- Stanley Ferry Aqueduct (also scheduled monument and AS6 Class I), 100m south

Grade II* (national)

- Clarke Hall, 1.6km south west. Late 17th century red brick house with sandstone mullions and diagonal shaft chimneys.

Grade II (regional)

- Aqueduct Cottage between River Calder and the Aire and Calder Navigation Basin, 140m south. Canal office or cottage constructed in ashlar circa 1839 for the Aire and Calder Navigation Company in classical style. Partially derelict.
- Milepost outside no. 220 Aberford Road, 380m west. Dating from mid to late 19th century with cast iron triangular front on stone post with rounded top and raised letters marking the route of the Wakefield and Aberford turnpike road created 1788/9.
- Aire and Calder Navigation Birkwood Lock, 490m north east. Opened 1839 and constructed in sandstone with quadrantly curved entrances at each end. (Kings Lock further to the east, Broadreach Lock and Kirkthorpe weir and sluice gates to the south are also Grade II listed.)
- No. 420 Aberford Road Stanley, 500m north. 17th century stone house with slate/tiled roof.
- Church of St Peter Stanley, 570m north. Constructed in ashlar between 1821-4 and partially rebuilt in 1911-13. Features twin west octagonal towers, vaulted roof, buttresses, gargoyles and large stained glass windows. Demolished 2014.
- Nos. 12A, 14, 16, 18 and 20 Lake Yard including attached gate piers to left, 690m north. A symmetrical arrangement of cottages, workshops and cart sheds constructed in coursed square stone in 1802 for the Aire and Calder Navigation Company. Now five dwellings.
- Hatfeild Hall, 820m west. Large house built circa 1600 and remodelled in circa 1775. Ashlar symmetrical frontage with bays, rendered elsewhere with Welsh slate roof. Now a hotel and conference centre.
- No. 23 and 25 Finkin Lane, 920m south west. Pair of cottages with painted stone walls, four bay frontage and pantile roof.

⁸⁷ Listing is undertaken via the Planning (Listed Building and Conservation Areas) Act 1990. It celebrates a building's special architectural and historic interest, and brings it under the consideration of the planning system so that it can be protected for future generations.

- Old stables at site of former Newland Hall, 1.2km south east. Stables or coach house, then house constructed in sandstone ashlar in the 18th century and altered in the 19th century. Features seven bays in classical style with pedimented central bays now derelict.
- Farm buildings to former Newland Hall, 1.3km south east. Stone buildings dating from the 17th century enclose a rectangular yard on three sides and include stables or cow house, a large barn and cart shed.
- Stanley Hall, 1.3km south west. Former residence of a successful railway contractor constructed in 1804-7. Symmetrical five bay entrance front with central round arched doorway and portico. Now a hostel for nurses at Pinderfield Hospital.
- Forecourt walls to north of Clarke Hall and mounting blocks dating from the 17th/18th centuries, 1.6km south west.

Non statutory designations - historic

Conservation areas and historic landscapes

5.10.19 There are no conservation areas or locally designated historic landscapes within the study area.

Areas of special archaeological value (WMDC Archaeological sites Class II)

5.10.20 In accordance with LDF Site Specific policy (see paragraph 4.3.43), areas where evidence exists to indicate the presence or strong probability of remains of particular archaeological importance within the study area include as follows:

- AS82 Land adjacent to aqueducts, Stanley Ferry, 100m south
- AS9 Track near Top Farm, Altofts, Normanton, 850m east
- AS81 Clarke Hall, Aberford Road, Wakefield, 1.6km south west (also Grade II* listed)
- AS11 Land adjacent to Newland Hall, Normanton, 2.1km south east

Cultural heritage assessment

5.10.21 For more information on statutory and non-statutory historical designations in relation to the application site, please see the cultural heritage assessment section of the EIA.

5.11 Landscape detractors

5.11.1 A landscape detractor is defined as a visual feature within the landscape that ‘takes away’ from or undermines the quality or value of the landscape resource. In the immediate location of the application site there are a number of landscape detractors contributing varying degrees of negative influence to the landscape value as follows:

Key visual detractors

- NewCold distribution centre – located off Newmarket Lane, north of Bottom Boat is the newly constructed 10 storey warehouse, 1.8km north east of site. Its white façade is prominent on the northern horizon at around 44m AOD and it is visible in views from Ferry Lane, Aberford Road, from Bottom Boat Road track, from the towpath and footpaths in the valley floodplain and from the higher contours of Field Head near Pinderfields Hospital. It is a significant landscape detractor in terms of its cuboid form, white façade and large scale.
- Welbeck landfill site – this blackened hillside is situated 640m south of site over an area of around 50ha is a significant detractor within the landscape particularly in elevated views from Aberford Road, East Moor and the new estates currently being constructed off the new A6194 WERR as part of the SPA2 City Fields development on the eastern edge of Wakefield.
- Pylons and overhead power lines – the local views of the sweeping floodplain of the Calder Valley edged by undulating hillsides are dominated by the significant number of mostly lattice pylons. This includes a set which criss-cross the valley from Aberford Road rising on higher ground near Hilltop Farm, Altofts and Newland Park towards Normanton. Pylons and cabling also feature prominently on the skyline above Bottom Boat. The scale, liner and vertical nature of these structures are a visually detracting, urbanising factor within the otherwise largely rural urban fringe.

Minor visual detractors

- Telecommunication masts – the siting of individual masts within the study area creates visually obtrusive and incongruous infrastructure highlights within the valley which exacerbates the detracting urbanising effect created by the pylons and associated cabling. In particular the mast off the Nagger Line to the east of Smalley Bight Farm is prominent.
- Stanley Waste Water Treatment Works – the area of the works provides only a very minor detracting element in the valley as most of the infrastructure is screened by extensive mature vegetation leaving only the circular, green settling tanks partially visible. The degree of detracting factor is mostly offset by the positive screening contributed by the extensive woodland habitat within the site boundary.
- Newmarket colliery spoil tip – also a designated Local Wildlife Site (LWS55) located 840m north east of site near the river. This large mound of spoil over an area of around 20ha has been restored and features emerging vegetation which compensates for its unnatural form within the valley setting.
- Vehicular traffic – traffic on the A642 Aberford Road is visible and audible during the day providing a busy thoroughfare for commuters between Wakefield and the M62 and localised school run traffic. In addition, Ferry Lane/Birkwood Road provide the only river and canal crossing for some distance, and as a consequence the road is particularly busy during the week with waiting traffic queuing at the signals over Altofts Bridge.

- Stanley Ferry workshops - the sequence of workshops at Stanley Ferry boat yard including the large 3 storey white painted shed on Ferry Lane creates more of a local landmark than a landscape detractor.
- Degraded land – there are some small areas of degraded land on the fringes of settlements which create localised feelings of neglect and dereliction despite some still being in use. Such areas include the wood yard to the east of Stanley Ferry and derelict land to the east of Bottom Boat village. Smalley Bight farmyard has a number of derelict farm buildings and two lorry trailers abandoned on the west bank of the River Calder.

5.12 Landscape value

- 5.12.1 Following the baseline study detailed at sections 5.0 to 5.11, this section seeks to determine the value or importance of the local landscape and its condition or quality in order to understand its sensitivity of the landscape to change. As detailed at Appendix B, the analysis is largely subjective, but based on a summary of the character, condition, aesthetic appeal and acknowledged importance of the landscape that has been established within the baseline study. Assessment of landscape value is aided by the application of Appendix B Table 1 Determination of landscape value.
- 5.12.2 The landscape character is generally an attractive and open arable valley landscape flanked by undulating hillsides which mostly feature settlements and urban development fringed by vegetation. There is some diversity in landscape elements including a variety of scale of field sizes with mostly large, irregular arable fields in the floodplain and smaller field systems on the valley slopes at Birkwood. However hedgerows are limited and intermittent when present with the fields often bounded by ditches thus restricting connectivity to wildlife corridors.
- 5.12.3 Areas of woodland including ancient woodland are scarce however the estate character is still retained at Newland by the few remaining plantations. Despite the lack of formal woodland, the landscape is populated by areas of scrubby and marshy woodland often associated with the former collieries and opencast workings and sometimes linear in nature such as the heavily vegetated former tram/rail lines of the Nagger Line and the Methley Joint Railway. Woodland vegetation also features within the Stanley Waste Water Treatment Works, along roadsides, within gardens and around outlying farmsteads including Birkwood Farm and Fisheries which is well screened from most of the surrounding area. This promotes a well vegetated feel and pleasant rural character of some quality.
- 5.12.4 The key landscape elements in the study area are the two dominant but contrasting watercourses, often edged by trees and shrubs which together provide a means of navigation and leisure resource in the landscape. Both also provide a signal for change as the nature of the seasons, weather and intensity of rainfall create an ever shifting valley environment.
- 5.12.5 Accessibility across the valley is limited to the bridges on Ferry Lane/Birkwood Road however there is an extensive network of public footpaths, bridleways, byways, trails and the Aire and Calder Navigation towpath. These promote recreational value locally by

providing connections throughout the study area between the urban fringe and the valley landscape. The network of footpaths across the Newland estate link well to the surrounding settlements providing accessibility to the countryside.

- 5.12.6 There is one statutory LNR at Stanley Marsh within 500m of the site whilst Southern Washlands LNR is located within the Calder Valley 1.4km to the south. There are no nationally important designated areas of landscape or areas of nature conservation value in the study area or close to the application site although many locally designated LWSs with important connecting wetland habitats do exist within the Calder Valley. The study area is located within green belt which celebrates the openness of the valley to the north and south.
- 5.12.7 Conservation interests adjacent to the application site add further to the landscape value by their historic associations. These include the 'Stanley Ferry Aqueduct' 100m south of site and 'Newland Preceptory' 1km to the south east. The Stanley Ferry Aqueduct is also Grade I listed. In general, the number of listed buildings close to the application site are limited with only a few having an influence on the Calder Valley landscape. These are all grade II listed and include Aqueduct Cottage on the canal 140m south of site, Birkwood Lock 490m to the north east, the stone cottages at Lake Yard, 690m to the north, and a number of structures on the Newland estate. The other listed buildings in the study area are visually separate from the application site and therefore do not add to the general scenic, landscape or perceptual qualities.
- 5.12.8 In its broader sense, the study area has no perceptual qualities of wildness although peace and seclusion can be felt amongst the woodland surrounding the former Newland Hall. The Calder Valley landscape is dominated by man-made elements such as the Aire and Calder Navigation, farmed intensively and enveloped by urban development. There is a limited sense of tranquillity promoted by the peaceful presence of the River Calder and the canal however this can be disturbed by the presence of landscape detractors which dominate the landscape. These include the plethora of power lines and pylons in the valley and the busy traffic on the local highways including Ferry Lane to the immediate south of site. Feelings of tranquility are also disrupted by the proximity of built development, regular overhead aircraft, distant views of the Welbeck landfill mound and the NewCold distribution centre which is visually intrusive on the skyline in terms of scale and finish. The open nature of this area of green belt is thus influenced by encroaching development with the panoramic views from the study area to the north and north east across the increasingly urbanised Calder Valley. The condition of natural elements that survived industrialisation is however beginning to thrive in the valley within the protected areas of LNRs and LWSs within the valley which facilitate further the value of the landscape.
- 5.12.9 Taking into account the contribution of the individual landscape receptors and designations identified at Sections 5.9 and 5.10 and detractors noted at Section 5.11, and with reference to Appendix B Table 1, the landscape is described as being relatively unimportant nationally and regionally, but valued locally due to its valley landscape and areas of ecological restoration and enhancement. However, given the presence of the landscape detractors, the overall landscape resource is defined as having **low to medium value**.

5.13 Visual baseline

Introduction

- 5.13.1 The visual baseline was established via a combination of desktop reviews and site visits. The site visits enabled both an appraisal of views out from the application site and also views into the application site from key locations, and a consideration of the landscape detractors identified in Section 5.11 above.
- 5.13.2 For the purposes of this LVIA which has been undertaken within the relatively open nature of the study area, the distance of view is defined as follows:
- Near/close/short-range views i.e. from receptors within 750m radius of the centre of the application site
 - Middle distance/mid-range views i.e. from between 750m and 1km radius from the centre of the application site
 - Far/long distance views i.e. beyond 1km radius of the application site

Visual context

Views out from the application site

- 5.13.3 From Smalley Bight and Birkwood, views are largely screened to the north by mature tree and shrub planting around Stanley Waste Water Treatment Works. From the south west side of Birkwood near Ferry Lane, there are views across the site towards the riparian vegetation along the Calder and Aire Navigation, up to Birkwood Hill and also to NewCold distribution centre on the skyline.
- 5.13.4 There are channelled middle distance views from the proposed overburden area in the north east of Smalley Bite and from the proposed stockpile area at Birkwood northwards across the meadows towards Bottom Boat. Properties within the village and on the higher contours above the village at St Peter's Crescent, Meadowfield Rise and the Moorhouse estate are visible in the middle to far distance. These long range views are also possible from the southern part of Birkwood.
- 5.13.5 To the north west of Smalley Bight, there are close range views of Water Lane House adjacent to the north west corner of the site. To the west, the outlook from Smalley Bight is across arable fields towards Aberford Road and Bungal House, but these views are curtailed by vegetation north of Water Lane and scrubby vegetation north east of the Aberford Road junction with Lime Pit Lane. Further to the north west, through the intervening vegetation, there are middle distance, oblique, intermittent views of traffic and property on Aberford Road and far distance views of property on the higher contours of Stanley village on Canal Lane. Standing back from the River Calder levee towards the middle and western edge of the Birkwood site, there are similar middle and long distance north western and west from across the top of the levee and through intermittent riparian trees and shrubs.

- 5.13.6 To the south west and south of Smalley Bight, across the adjacent field and paddock, Smalley Bight House and garden and Smalley Bight Farm, farmyard sheds and nearby telecommunication mast are visible in the near distance against the backdrop of trees and shrubs that align the elevated Nagger Line. There are also middle distance glimpses through the trees of the terraced housing on Aberford Road south of Stanley Grove Primary and Nursery School and far distance views of property on the hillside beyond towards Field Head. From within the Birkwood site the views to the south west are similar but partially screened by the heights of the levees, vegetation on the top of the levees, trees and scrub around Smalley Bight Farm and vegetation along the Nagger Line.
- 5.13.7 From Birkwood, there are middle distance views across the canal bank and intermittent vegetation across the arable fields on the hillside of Birkwood Farm and Fisheries. The farmhouse is barely discernible and screened by the tree belts on the hillside. Within Smalley Bight, standing back from the levee along the River Calder on the eastern boundary, there are similar albeit more distant views of the hillside west of Birkwood Farm. To the south east, Birkwood Road is visible from the eastern edges of Birkwood and the central and eastern edges of Smalley Bight as it climbs the hillside to Altofts. The largest Stanley Ferry workshop is partially visible in the middle distance through intermittent vegetation. Views between the Birkwood and Smalley Bight sites are partially screened by the heights of the levees and vegetation on the banks of both sides of the river with inter-site views clearer when at a distance from the river.

Views towards the site from the study area

- 5.13.8 The application site is not visible from the Calder Valley immediately to the south of Stanley Ferry, however to the north of Stanley Ferry the application site is an integral part of the valley landscape.
- 5.13.9 From the Aire and Calder Navigation towpath from north of Altofts Bridge, there are westerly views towards the areas of Birkwood and Smalley Bight. Views of the fields are screened by the bank on the west side of the canal and by the intermittent trees and shrubs on top of the bank. The location of the proposed wharf is visible on the west bank of the canal. From Birkwood Lock, Birkwood Lock House and Birkwood Bridge, there are no views into the site.
- 5.13.10 Birkwood Farm and Fisheries is located on the top of Birkwood Hill to the east of the site. It has middle distance glimpses across the site through the hillside tree belts from the upper storey windows on the gable end of the farmhouse. One of the semi-detached properties at the entrance to Birkwood Farm and Fisheries has middle distance views over the valley towards the site from an upper storey window. There are no views into site from Top Farm and Hilltop Farm on the edge of Altofts due to the intervening landform and vegetation. Travelling west down Birkwood Road from the farm entrance, views to the north and north west are curtailed by the roadside hedgerow. To the south, Welbeck landfill site is visible over the trees of Birkwood Plantation. Views ahead are channelled by vegetation to both sides of the road, across the Calder Valley and towards the site although glimpses of the fields within Birkwood are barely visible over the canal side vegetation. Visibility of the site is lost when the contours flatten on approach to Altofts Bridge.

- 5.13.11 Close range glimpses of the Birkwood site are possible through the lattice pipe bridge next to the parapet on the northern side of Altofts Bridge. Calder House within Stanley Ferry boat yard has a single upper storey window and two windows on the ground floor overlooking the site, with close range views through vegetation to the north of Ferry Lane. From Ferry Lane, near views of Birkwood and across to Smalley Bight are possible though the vegetation with a clear view at the field gate to Birkwood. Views open up again at Stanley Ferry Bridge with a panorama of the Birkwood site visible from the bridge deck through the lattice pipe bridge. From here, views extend across the valley to the housing estates above Aberford Road and towards property on Canal Hill near Lee Mount. There are also open, close range views from Ferry Lane opposite the entrance to the Stanley Ferry public house where there is no roadside vegetation for a short section. Beyond the Nagger Line, views towards the site from Ferry Lane and roadside dwellings are across Ferry Lane playing fields with visibility largely obscured by the dense, linear deciduous vegetation along the Nagger Line and by individual tree planting to the north side of Ferry Lane. Properties within Stanley South along the remainder of Ferry Lane up to the Aberford Road junction have no rear views of the site due to the screening provided by intervening vegetation along the Nagger Line, the Smalley Bight farmyard buildings and garden vegetation around Smalley Bight House.
- 5.13.12 From the elevated Nagger Line (Trans Pennine Trail) there are intermittent glimpses into the Birkwood site through the dense vegetation. There is no hedgerow for a short section near Ferry Lane from where there is a clear view across the adjacent arable field and over the levee into the Birkwood site and beyond to Birkwood Hill. From a break in the hedge near to Smalley Bight Farm, the view also extends to the north. Dominated by the derelict buildings of the farmyard in the near distance, the view is towards a small section of Smalley Bight site and the extensive area of trees within Stanley Waste Water Treatment Works. Power lines and pylons are visible spanning the skyline between housing on the hillsides above Bottom Boat and Lake Lock. NewCold distribution centre is also visible on the horizon.
- 5.13.13 Approaching Smalley Bight Farm, the farmyard buildings screen views out towards the site. A telecommunications mast east of the farm is also prominent in the general outlook. From the Trans Pennine Trail footpath that passes through the farmyard, there are close range partial views of the western edge of the Smalley Bight site and adjacent pylon which marks the south east corner. These views are replicated from the ground floor and upper storey dormer windows of the farm bungalow. Smalley Bight House has three upper storey windows overlooking the Smalley Bight site and pylon at close range. From Bungal House which is set in the fields off Aberford Road, there are open views across the fields and paddocks to Smalley Bight, the pylon and beyond to Birkwood with the properties of Smalley Bight Farm, Smalley Bight House and Water Lane House also in the panorama. Both properties have far distance views of the Birkwood hillside with the steel roof of the largest Stanley Ferry workshop also visible over the trees. The top of the black landfill mound at Welbeck is also visible on the skyline.
- 5.13.14 From Water Lane House on the site boundary, there are views south along the perimeter edge of the Smalley Bight site. Wider views are curtailed by garden vegetation and woodland within the adjacent water works. At the top end of Water Lane, there are clear views from the first floor rear windows of three properties (even nos. 396 to 400) with

some partial views also possible over boundary hedgerows and fences from ground floor windows and rear gardens.

- 5.13.15 South of the junction with Lime Pit Lane, there are a cluster of properties with middle range views into the site. To the east of Aberford Road, these include partial, rear views from properties nos. 282 to 288. To the west of Aberford Road, no. 299 Aberford Road has partial views across the road through dense vegetation from upper storey windows as do nos. 297, 295, and 291 to the south. There are no views from Stanley Grove Primary and Nursery School.
- 5.13.16 On Aberford Road between Lime Pit Lane and Water Lane, there are very limited views out from the highway towards the site due to the scrubby intervening vegetation. At the junction with Water Lane, views across the Calder Valley to the east are more elevated and take in the dense woodland around Stanley Waste Water Treatment Works which screens most of the internal site infrastructure. Birkwood Hill is on the skyline and the rooftops of Stanley Ferry workshops are visible over the massing of intervening vegetation, set against the backdrop of the blackened landfill at Welbeck.
- 5.13.17 Further to the north along Aberford Road to the west of the road, nos. 379 and 381 have partial views of the site, mainly into Birkwood area. Middle distance views are from upper storey windows across the vegetation north of Water Lane. There are also broad views across the valley from property at higher elevations to the west of Aberford Road. This includes semi-detached houses on Beaumont Street and Beaumont Close which face across the valley at around 35m AOD. Across the road, just north of Water Lane, two properties set in woodland at nos. 418 and 422 Aberford Road also have extensive valley upper storey views.
- 5.13.18 Further north along Aberford Road on higher ground at over 500m from site, a number of properties aligning the east of the road have upper storey, panoramic, rear views across the valley and water works woodland. The site is partially visible in the far distance forming a small part of the overall vista against the hillside of Altofts and Welbeck landfill. Properties with these views extend from between no. 426 Aberford Road to those at the top of Lake Yard and include the Thatched House public house. Properties across the road between nos. 389 to 417 share these views from upper storey windows, but visibility is obscured by passing traffic and intervening vegetation and buildings. Further up the hillside to the west of Aberford Road, terraced housing on Lake Lock Grove and Lake Lock Road have similar elevated views out across the valley towards the site.
- 5.13.19 From the roadside pavement in the gaps in development between Gordons Tyre Garage and the Zion Christian Centre, there are far distance, elevated glimpses of the site mostly obscured by the water works. A number of properties around the centre on either side of Aberford Road, also share these views.
- 5.13.20 There are unlikely to be any views of the site from property on lower ground including the listed properties at Lake Yard and those on the lower contours off Aberford Road due to intervening garden vegetation and the screening provided by the woodland around the water works. Prior to the junction of Aberford Road with Bottom Boat Road, there are elevated panoramic views over the wide Calder Valley from the grassed areas within the

Parsons Pit shaft woodland. The north east corners of the site are just visible, although difficult to discern given the long distance nature of the view.

- 5.13.21 Between the top of Bottom Boat Road and the village below, views out across the valley are screened by vegetation. In the village at around 1km from site, the terraced properties to either side of road have an outlook across the broad Calder Valley towards the site in the far distance. As they are on lower ground, views of the site from these houses are limited by the screening provided by the merging of the woodland within the waterworks with canal side vegetation or by adjacent buildings within the village. However the north east corner of the site is visible in the gap between the water works woodland and the vegetation along the canal and river. Properties above the old railway line have similar elevated views across the valley but from a higher vantage point at around 40m AOD. These properties include those situated on Holmfield Chase, St Peter's Crescent and Meadowfield Rise.
- 5.13.22 To the north of Bottom Boat there were no direct views out to site from the Trans Pennine Trail along the elevated Methley Joint Railway which rises above the 30m AOD contours due to the wooded nature of the old railway. There are no views of the site from the east of the village along Bottom Boat Road where it becomes a track as all views of the adjacent river and valley are screened by vegetation and the nearby reclaimed Newmarket spoil mound. The 10-storey high NewCold distribution centre is prominent on the horizon when looking north from the Trans Pennine Trail to the east of Bottom Boat.
- 5.13.23 Beyond these locations and due to the nature of the valley landscape, the site is also likely to be partially visible in far distance views from properties on higher ground. This includes from housing north west of the site on the hillside between Aberford Road and Canal Lane at Lee Moor, to the west from the vicinity of Ouchthorpe Lane and to the south from the new development at City Fields. Views of the site are possible from public rights of ways on the higher contours in these locations and also from Newland to the south east.

Zone of Theoretical Visibility

- 5.13.24 The Zone of Theoretical Visibility (ZTV) of the application site was established during the site visits by visiting several locations on site and within the surrounding study area. An assessment was made of local visual barriers and horizons and also those further afield to understand the extent to which the proposals would be seen to any significant effect within the surrounding landscape. The site visit observations were supported by an analysis of contour mapping, sightlines and Google Earth. This in turn enabled the identification of the visual receptors and key viewpoints detailed below.
- 5.13.25 Parts of the ZTV that are most distant from the proposal have been omitted from the final ZTV for the LVIA where it has been judged that visibility from this distance would be extremely limited and any consequent effect imperceptible in the context of the wider view. The ZTV for this LVIA is shown at Appendix A Figure A6 Visual analysis and the extents are summarised as follows:

North

- Short range (up to 750m from centre of site): Visibility screened by the water works woodland on the northern boundary.
- Mid range (between 750m and 1km from centre of site): Views from property on the higher contours along Aberford Road, north of the Zion Christian Centre. Also from property in Bottom Boat and from higher ground above the village.
- Long range (beyond 1km from site): Views from public footpath on high ground north of Roman Station Farm

North west

- Short range: Views from Trans Pennine Trail public footpath and Water Lane House. Views from properties on the higher contours of Water Lane south of Aberford Road.
- Mid range: Views from property on the higher contours of Aberford Road between Water Lane and Zion Christian Centre. Also from property on the hillside west of Aberford Road up to Canal Lane.
- Long range: Views largely screened by intervening topography and development.

West

- Short range: Views from Bungal House off Aberford Road and from property to the south of the Aberford Road/Lime Pit Lane junction.
- Mid range: Views screened by settlements and vegetation.
- Long range: Views screened by settlements and vegetation

South west

- Short range: Views into site from Smalley Bight House and Smalley Bight Farm.
- Mid range: Views from public footpath near Field Head.
- Long range: No views due to the urban area of Wakefield

South

- Short range: Views into site from the Nagger Line (Trans Pennine Trail).
- Mid range: No views due to flat topography and vegetation along the Nagger Line
- Long range: Views from the edge of the City Fields development.

South east

- Short range: Views into site from Ferry Lane at Stanley Ferry including from Calder House, Stanley Ferry Bridge and Altofts Bridge.

- Mid range: Views from public footpath on the Newland estate
- Long range: None due to intervening topography and woodland cover on the Newland estate.

East

- Short range: Views towards the site from the Aire and Calder Navigation, Birkwood Farm and Birkwood Road.
- Mid range: None due to intervening topography and vegetation.
- Long range: None due to intervening topography.

Visual receptors

5.13.26 The establishment of the ZTV on site enabled the following potential visual receptors to be identified.

Residential

5.13.27 The urban fringe nature of the study area features a few residential properties on the edges of settlements with close range views into the site. These include dwellings at Smalley Bight, Bungal House, properties on Water Lane and along Aberford Road on the edge of Stanley, property at Stanley Ferry and on Ferry Lane and property at Birkwood Farm.

5.13.28 Due to the local topography there are many properties which have middle distance or far distance views of the application site from higher ground. These include properties within the housing estates on the hillside between Aberford Road and Canal Lane at Stanley, property at Bottom Boat and from the higher contours above the disused Methley Joint Railway. In addition there are far distance views from the edge of City Fields.

Commercial property

5.13.29 Views of the site from commercial property within the ZTV is limited to the Thatched House public house which is situated on higher ground on Aberford Road with rear views overlooking the Calder Valley. No other commercial property is likely to be affected. For assessment purposes, farms are categorised as residential.

Historical features

5.13.30 There are few historical receptors within the ZTV which are visually contiguous with the proposals and which may experience adverse effects to their setting. There may be very slight glimpses of a small section of the Birkwood boundary with the river bank from a short part of the Stanley Ferry Aqueduct scheduled monument and from also from a corner of Aqueduct Cottage (Grade II listed). Views would be extremely limited and restricted to the winter months. Any consequent effect would be imperceptible in the context of the wider view thus they are not included in the ZTV. The Newland Preceptory scheduled monument is outwith the ZTV as are the listed properties at nos. 12 to 20

Lake Yard, Birkwood Lock on the Aire and Calder Navigation, Hatfeild Hall, nos. 23 and 25 Finkin Lane and buildings at Newland.

5.13.31 Receptors in the ZTV that could be affected are as follows:

- Clarke Hall, 1.6km south west. Grade II* listed.
- Clarke Hall forecourt walls to north and mounting blocks, 1.6km south west. Grade II listed.
- No. 420 Aberford Road Stanley, 500m north. Grade II listed
- Stanley Hall, 1.3km south west. Grade II listed

Publicly accessible areas

5.13.32 There are a number of publicly accessible areas within the ZTV including:

- Stanley Ferry playing fields (also LA1 leisure opportunity area)
- Aire and Calder Navigation (also LC2 leisure opportunity area)
- Playing fields west of Aberford Road

Public rights of way

5.13.33 The application site is visible from many public rights of way in the study area as follows:

- A section of the Trans Pennine Trail national coast to coast route (also LA6 leisure opportunity area) which lies within the ZTV between Stanley Ferry to Bottom Boat. Also the section of trail along the former Methley Joint Railway above Bottom Boat.
- The Paulinus Pilgrimage and Heritage Way long distance path, a section of which shares the route with the Trans Pennine Trail as described above.
- The section of towpath between Stanley Ferry and Birkwood Lock.
- A section of public bridleway NBW2 in the Normanton parish on the hillside west of Altofts
- There are a number of public footpaths within the parish of Stanley with sections of the route that would have views into the proposals:
 - SFP24 section on the south bank of the River Calder from Stanley Ferry to north of Smalley Bight Farm (alignment currently disputed)
 - SFP12 which shares the same route as the Trans Pennine Trail and the Paulinus Pilgrimage and Heritage Way from Smalley Bight Farm to Bottom Boat.
 - SFP25 on Ward Lane where it ends at Ferry Lane
 - SFP14 between nos. 412 and 416 Aberford Road

- The higher sections of SFP13 on Lake Yard
- SFP9 near Roman Station Farm
- SFP20, SFP28 and SFP29 climbing the higher contours near Normanton Golf Club
- A section of public footpath NWFP5 within the Newland with Woodhouse Moor parish to the south of the Birkwood Plantation would have views into the proposals from the higher contours.

5.13.34 The remaining public footpaths are either out with the ZTV or have views of the site which are screened by intervening vegetation, topography or built development.

Highways

5.13.35 Highways which are likely to have sections of route with views of the proposals are as follows:

- Ferry Lane
- Birkwood Road
- A642 Aberford Road
- Bottom Boat Road
- A6194 WERR

5.13.36 Glimpses of the site are also possible from a number of minor roads within estates and housing developments on higher ground to the north, west and south.

Key viewpoints

5.13.37 Considering the baseline visual analysis, the broad ZTV described above and consultation with WMDC planning officers, the viewpoints which have been considered when appraising potential visual effects for this LVIA are thus identified as follows:

- Key viewpoint 1 - Close range view north west across Birkwood from Stanley Ferry workshops, Ferry Lane
- Key viewpoint 2 - Close range view west towards Birkwood from Aire and Calder Navigation towpath
- Key viewpoint 3 - Close range view north east from the Trans Pennine Trail on the Nagger Line between Stanley Ferry and Smalley Bight Farm
- Key viewpoint 4 - Close range view south east across Smalley Bight from Trans Pennine Trail public footpath SFP12 south of Stanley Waste Water Treatment Works

- Key viewpoint 5 - Far distance view north west from public footpath NWFP5 in Newland Park
- Key viewpoint 6 – Far distance view north east from public footpath SFP20 adjacent to Normanton Golf Club

5.13.38 Photomontage showing key viewpoints are appended at Appendix A Figure A7.

6.0 Mitigation

6.1 Introduction

6.1.1 This chapter outlines the mitigation elements within the extraction proposal for Stanley Ferry with reference to the development outline as detailed at Chapter 2.0 and the landscape strategy and restoration scheme presented at Section 2.6.

6.2 Best practice

6.2.1 Mitigation of the landscape and visual effects of the temporary effects of the proposals would also include best practice for construction projects which would include but not be limited to:

- a well-managed and tidy site
- limited stockpiles of mineral product albeit this would be subject to the fluctuations of economic conditions
- deliveries to site on an as needed basis wherever possible, currently proposed as two vehicles a week.
- the large scale plant compound to be positioned in the least visually intrusive location as possible as proposed in the north east corner of site
- plant, temporary offices and boundary fencing (proposed as green) to be in a colour that would aid integration with the surrounding landscape where possible
- limited use of lighting wherever possible to restrict night time impacts, with proposals to light only the Birkwood plant compound and the Smalley Bight loading point for the conveyor bridge
- prevention of damage to roots, stem and branches of existing trees to be retained in the area of the wharf conveyor and canal wharf or elsewhere, with tree protection fencing in line with BS 5807:2012 Trees in relation to design, demolition and construction - Recommendations⁸⁸

6.3 Mitigation during operation

6.3.1 Mitigation proposals during the extraction of the site would be implemented during the early phases of the extraction process on each site as described below.

Soil bunds and seeding

6.3.2 The soil bunds would be maximum 3m in height and be constructed from the soils stripped from the lagoons and extraction areas as detailed at paragraph 2.4.2. They would be located along sections of the site boundary to mitigate the potential for adverse landscape, visual and noise effects to sensitive receptors arising from the plant

⁸⁸ BS 5837:2012 provides recommendations relating to tree care, with a view to achieving a harmonious and sustainable relationship between new construction/existing structures and their surrounding trees.

compound at Birkwood and the extraction operations on site. In addition the soil bunds would aim to soften the overall appearance of the operations on site and integrate the proposals better with the character of the surroundings. The bunds would be formed initially to provide the necessary screening, and then extended as excavation proceeded. There are three proposed soil bunds as follows:

- S1 Birkwood – This bund would be constructed during P1 at Birkwood. It would extend anti-clockwise from the north east corner of the site and follow the river bank westwards and around the meander to Stanley Ferry Bridge to join soil bund S2. The purpose would be to provide attenuation to landscape and visual receptors in the location of Water Lane, Aberford Road, Smalley Bight Farm, the Trans Pennine Trail, public footpaths, Ferry Lane and Stanley Ferry.
- S2 Birkwood – This bund would be constructed during set up in the first three months at Birkwood. It would commence from Stanley Ferry Bridge to Altofts Bridge and then extend for approximately 100m along the west bank of the Aire and Calder Navigation. It would provide attenuation in the vicinity of Stanley Ferry, the Aire and Calder Navigation and the towpath.
- S3 Smalley Bight – The bund would be formed during the early stages of P6. It would extend around half of the site boundary to the west from the Stanley Waste Water Treatment Works to the River Calder. The bund would attenuate receptors in the vicinity of Water Lane, Aberford Road, Smalley Bight Farm, the Trans Pennine Trail and public footpaths.

6.3.3 The shape and form of the soil bunds would be in accordance with industry best practice. They would be smoothly profiled and have a maximum gradient of 1:2 to enable the establishment of a grass sward to inhibit weed growth and encourage 'greening' of the bunds to promote assimilation within the landscape. The seed mix would be a low maintenance grass mix which would be implemented as soon as possible after their creation but ideally in the optimum months for sowing grass seed i.e. in April or September to October. 'Greening up' could take up to six months depending on time of sowing, soil and weather conditions. Details of the soil bund seed mix can be found at Appendix D9.

Overburden screen mound at Birkwood

6.3.4 As described at paragraph 2.4.3, a 5m high overburden screen mound would be formed on Birkwood from the early stages of set up for the 11 year duration of the extraction phases. It would have graded slopes and be positioned to the south side of the plant compound to provide visual and noise attenuation to receptors to the west, south and east. As with the soil bunds, it would be seeded with Mix D9 to provide a 'green' appearance within the wider landscape

Overburden mound OB1 at Smalley Bight

6.3.5 The 5m high overburden mound OB1 at Smalley Bight would be sited to the north east of the site as far away as possible from sensitive receptors to reduce the visual impact of the mound to the greatest possible extent. It would also have graded slopes and seeded

to provide a 'green' appearance within the wider landscape for the five and a half years duration of the extraction at Smalley Bight.

6.4 Restoration scheme

6.4.1 Landscape proposals for the restoration scheme have been prepared as described in the Landscape Strategy detailed at Section 2.6. A summary of the elements is given below:

- Broadleaved oak and birch woodland with a rich understorey of shrub species
- Wet (carr) woodland providing a mix of willow species with alder
- Scrub to provide habitat and cover
- Individual trees to provide softening of the lake edges
- Marginal vegetation providing a transition between land and water
- Ponds and scrapes to provide temporary habitats in times of flood
- Wet grassland providing wildlife connection between the marginal vegetation and scrub and an opportunity for the introduction of a greater variety of species
- Rough meadow grassland with selected areas mown for access

6.4.2 The planting would take up to 10 to 15 years to mature and assimilate into the valley landscape. Plant and seed mix proposals are outlined in detail at Appendix D.

6.5 Compliance with planning and environmental requirements

Planning

NPPF

6.5.1 The restoration scheme proposals support NPPF Section 13 Protecting Green Belt Land to "*prevent urban sprawl by keeping land permanently open*" which also notes that mineral extraction developments are "*not inappropriate in the Green Belt provided they preserve its openness and do not conflict with the purposes of including land within it.*" The restoration proposals also align with Section 15 Conserving and enhancing the natural environment by "*providing net gains for biodiversity including by establishing coherent ecological networks*" and does not conflict with Section 16 Conserving and enhancing the historic environment or Section 17 Facilitating the sustainable use of minerals. See paragraph 0 for more details.

National Minerals Guidance

6.5.2 The restoration scheme detailed at Section 2.6 supports the National Minerals Guidance as outlined at paragraph 4.3.9.

WMDC LDF

- 6.5.3 The restoration scheme also accords with the WMDC LDF Core Strategy policy ‘CS10 Design safety and environmental quality’ in relation to the aims of the Wildlife Habitat Network and enhancement of woodland and pays due cognisance to the ‘Landscape Character Assessment of Wakefield District’. Policy ‘CS12 Green Belt’ acknowledges the potential for an “overriding need” for development in the green belt in “exceptional circumstances”. Such circumstances could be those as noted in ‘policy CS16 Minerals’ which states that “mineral reserves are relatively scarce in the district” and that the district should “contribute to the regional supply of aggregates”. It specifically designates the area of the application site “in the Lower Calder Valley to the north of Stanley Ferry” as a Mineral Safeguarding Area. Policy ‘CS16’ also requires “*that a satisfactory restoration scheme is agreed before work begins, with particular attention given to creating new wildlife habitats, geological conservation, the need for public access and extended aftercare*” which accords with the proposals. See paragraphs 4.3.12 to 4.3.17 for more details.
- 6.5.4 The proposals also accord with LDF Development Plan policy ‘D5 Ecological protection of watercourses and waterbodies’ as they would not cause significant harm to any ecological features and include “*appropriate wetland features and landscaping*”. The restoration scheme would also contribute to the integrity and value of the WHN by protecting and enhancing the site’s ecological conservation value, creating new habitats and contributing to the objectives of the Wakefield BAP as required in policy ‘D6 WHN’. The proposals also support policies ‘D7 Protection of trees and woodland’, ‘D8 Landscape character’ and ‘D12 Landscape design’ and the relevant sections of policies ‘D9 Design of new development’, ‘D11 Waterfront design’, ‘D17 Development affecting archaeological sites’, ‘D18 Development affecting historic locations’ and ‘D20 Pollution control’ in terms of light pollution. See paragraphs 4.3.22 to 4.3.34 for more details.
- 6.5.5 The restoration scheme meets the requirements of LDF Development Plan paragraph 6.140 as follows “. . . *Even where a Green Belt location is suited in principle to a particular use, it is essential that its character is not adversely affected by development that is out of scale or character by virtue of its visual impact or intensity of use*”. The sustainable haulage proposals via canal also accord with the Development Plan requirements outlined in paragraph 7.41 “*to minimise disturbance whilst extraction is in progress*”. See paragraphs 4.3.35 to 4.3.36 for more details.

Environmental

Wakefield District BAP

- 6.5.6 The proposals are in line with the Wakefield BAP (see paragraph 4.3.52) and associated HAP and SAP biodiversity targets noted at paragraphs 4.3.55 and 4.3.57 particularly in relation to HAP 3 Lakes and ponds which promotes the creation of new waterbodies within reclamation schemes and seeks further areas where open standing water can be created with an emphasis on the creation of clean water ponds.

Yorkshire and Humber NCA

- 6.5.7 As identified at paragraph 4.4.4, environmental opportunities are promoted within the Yorkshire and the Humber NCA 38: Nottinghamshire, Derbyshire and Yorkshire

Coalfield' via SEO1 to SEO4 with the aim of achieving sustainable growth and a more secure environmental future within the character area.

- 6.5.8 SEO1 encourages developers to *“Restore and enhance existing areas and create new landscapes through the inclusion of woodland and networks of green infrastructure . . . Regeneration and restoration of industrial sites should seek to create green infrastructure that links fragments of the natural environment, leading to a functioning network for wildlife and access and recreational amenities for people”*. SEO4 promotes the management, enhancement and extension of wetland habitats associated with the River Calder *“to increase the landscape’s ability to naturally and sustainably manage flooding, improve water quality and increase the resilience of these habitats, the riverine landscape and associated species to climate change”*.
- 6.5.9 The NCA profile identifies ‘landscape opportunities’ to support the SEO aims described at paragraph 4.4.5. The restoration scheme aims to create new landscapes that are sympathetic to the local landscape character by incorporating habitats such as wetlands, marginal habitats, grassland and native trees and shrubs that will contribute to biodiversity and promote green networks. The landscape design provides internal footpaths which provide links to the Trans Pennine Trail and St Paulinus Way. The proposals promote sustainable travel by implementing haulage proposals by canal thereby keeping additional road traffic over the working period of the site to a minimum.
- 6.5.10 The proposals also promote networks of natural and semi-natural features in line with the ‘Yorkshire and Humber Green Infrastructure Framework’ and the ‘6Cs Green Infrastructure Strategy’ as described at paragraph 4.4.5.

7.0 Landscape effects

7.1 Introduction

- 7.1.1 This chapter considers the potential effects to landscape character resulting from the extraction proposals at Stanley Ferry during operations, after restoration and 15 years after the restoration is complete in 2033. Landscape effects are considered with respect to the operation effects on site summarised at paragraph 3.2.4, the landscape strategy and restoration scheme proposed at Section 2.6 and the mitigation summarised at Chapter 6.0.
- 7.1.2 The process of determining significance of the likely landscape effects is established by combining the evaluation of the potential effects on the sensitivity of the landscape receptor with an analysis of likely magnitude of effect to those landscape elements. The sensitivity of the landscape is defined by combining an assessment of the value of the landscape established in the baseline assessment as being low to medium (see Section 5.12) with the susceptibility of the landscape receptors to change.
- 7.1.3 The assessment of the sensitivity of the landscape is then combined with an analysis of the likely magnitude of effects to produce the potential significance of landscape effects arising from the proposals.

7.2 Landscape sensitivity

- 7.2.1 The application site itself is not part of any statutory or non-statutory designated site of landscape, nature conservation or historic interest. However it is within green belt and has a prominent location in the open rural landscape of the Calder Valley.
- 7.2.2 Within the study area, the valley bottom and sides are largely used for agriculture but there are also areas of grazing on the levees and a number of paddocks on the gentler slopes. The intensification of arable farming has led to the loss or under-management of field boundary hedgerows and hedgerow trees and some fragmentation of field pattern with the structure of the landscape partially eroded and becoming more open as a result. Despite this, the water works woodland, the remnant areas of trees, scrub and plantation woodland, riparian and tramway vegetation, garden vegetation and roadside hedgerows come together to make a valuable contribution to the well vegetated feel of the study area.
- 7.2.3 As noted in Section 4.4, the NCA has established that the study area has seen a great change over the past few centuries with the mass industrialisation of part of the area exploiting the natural resources of coal, clay and water. The landscape has largely recovered from the many local opencast and colliery workings however it still shows signs of emergent regeneration in some areas such as the site of the former Newmarket Colliery spoil tip, and significant workings are still ongoing in others i.e. at Welbeck.
- 7.2.4 Despite its industrial past, the Calder Valley now has significant recreational value with the fast flowing River Calder and the leisurely pace of the Aire and Calder Navigation providing leisure corridors for walking, cycling and boating. The Calder Valley is also an important ecological corridor linking together the urban areas. The valley features

numbers of washlands and associated wetlands many of which are valued locally as LWSs and which have been created from the ashes and wastes of colliery workings. Within the study area, a number of these have been locally designated in recognition of their biodiversity including four LWSs to the north of the site, one to the west and four to the south, two of which are also nationally designated as LNRs. This value of this resource is reinforced by the local WHN designation which includes the application site and the Calder Valley floodplain to the north, north east and south. As past features from the 18th and 19th centuries, the disused Nagger Line and Methley Joint Railway line have now become wildlife corridors and recreational routes providing linkages for both the nature and humans. The ecological value of the landscape is further supported by a small number of national, regional and locally important cultural features that also add to the sensitivity of the study area in particular the scheduled monuments and listed features at Stanley Ferry and within the Newland estate.

- 7.2.5 The 'Landscape Character Assessment of Wakefield District' notes that the Calder Valley is a major transport corridor and important in terms of employment with industrial areas alongside the river. The M1 and M62 corridors and large scale industrial areas of Wakefield Europort and Wakefield 41 Industrial Park are largely out with the study area, however the recent construction of the NewCold distribution centre on Newmarket Lane marks a departure from the status quo. Twentieth century development is much in evidence on the surrounding hillsides by the plethora of high density housing interspersed with pylons.
- 7.2.6 The proposals at Stanley Ferry continue the traditional of mineral extraction workings in the valley that was a familiar sight in the last century. The proposals are medium scale given their setting within the Calder Valley and small scale in terms of the wider green belt with the magnitude of effect reduced by the other man-made elements. Furthermore, the landscape has demonstrated its ability to accommodate the residual effects from the destructive nature of the coal industry over the years with appropriate restoration which can remedy and sometimes enhance the baseline landscape character.
- 7.2.7 On this basis, the landscape has been assessed as having a distinctive local character of low to medium value. The analysis above demonstrates that the landscape has some capacity to accommodate change. This helps to conclude an understanding of the landscape which is thus classified as having **medium sensitivity** in accordance with Appendix B Table 3 Landscape: Determination of sensitivity.

7.3 Magnitude of effect

- 7.3.1 The magnitude of effect on the landscape resource is evaluated in terms of the size or scale of the proposals, the geographical extent of the areas influenced and the duration and reversibility. Similarly, the duration of cumulative effects will also be considered together with potential reversibility.
- 7.3.2 The proposals for the mineral extraction works at Stanley Ferry are set within existing arable farmland which is worked on a regular basis by local farmers using typical farm machinery. The proposals would be temporary operations commencing in 2021 and ending in around 2033 after final restoration is complete. They constitute a direct change from the current land use with the existing arable elements lost although these are

determined to be of limited value (see Section 5.12). However the proportion of this loss is a moderately large area totalling 22.31ha set within an open rural valley landscape. The effect of the loss of this rural land would be at a scale which would influence the immediate landscape character area within which the proposal lies.

- 7.3.3 The change in use from arable to a landscape which features waterbodies and leisure activities is however in keeping with habitat elsewhere in the Calder Valley and offers a number of landscape benefits. Biodiversity would be enhanced by the proposed wetland habitats which would promote aquatic and ecological connectivity to habitat within LWSs to the north and south of site. These benefits would be further enhanced by the landscape assets created by woodland planting on site which would increase the availability of wildlife corridors. There would also be landscape character and ecological value added from the establishment of species rich grassland habitats.
- 7.3.4 The duration of effects within the landscape arising from the mineral extraction proposals is considered permanent and non-reversible, however the adverse effects to landscape character would be mitigated in part by the restoration scheme which offers a viable alternative wetland landscape which emulates both natural and recovering areas of former mining along the river corridor. The woodland planting would help to assimilate the lakes into the landscape in the much longer term, however the open nature of the valley and the green belt is retained overall.
- 7.3.5 In determining magnitude of effect to a landscape receptor or setting within the landscape assessment at Section 7.4, reference is made to Appendix B Table 4 Landscape: Determination of magnitude of effect.

7.4 Landscape effects

- 7.4.1 Significance of effect and cumulative effects on the landscape resource considers the loss of landscape elements, features and characteristics and the subsequent effects on character arising from the proposals prior to combining judgements made regarding sensitivity and magnitude of effect. During this process, due cognisance is made of the restoration scheme detailed at Section 2.6, planning and environmental requirements described at Sections 4.3 and 4.4, and accordance with these requirements as explored at Section 6.4.2. Appendix B Table 5 Determination of significance of landscape effects and Table 6 Determination of significance of landscape effects – descriptive is also referred to, to aid the judgement of significance.

On-site landscape assets

- 7.4.2 The proposals require a permanent loss of 22.31ha of arable land with ALC subgrade 3b soils from removed from an area of the Calder Valley which is dominated by arable production. The soils scraped from site would be stored temporarily on site in the form of soil bunds for screening the operations and then used to landscape the edges and sides of the lakes during restoration prior to planting and seeding.
- 7.4.3 There are no hedgerows or mature existing trees on site and thus none would be removed to accommodate the extraction of the sand and gravel. The site is ideal for agricultural production but offers very little in terms of biodiversity value. The loss of over

22ha of arable land within the agricultural floodplain of the Calder Valley is assessed as slight adverse however this would be compensated by the increase in landscape elements and successive biodiversity created by the restoration scheme.

- 7.4.4 A small area of river bankside vegetation including scrub and grassland on the east bank River Calder levee may have to be cleared to make way for the conveyor bridge. There would be some small loss of woody vegetation on the west bank of the Aire and Calder Navigation for the wharf conveyor. Effects to the landscape assets within the site application boundary are therefore assessed as negligible.
- 7.4.5 The restoration scheme proposals to plant native woodland in areas around the waterbodies and to provide marginal planting and areas of naturalised scrub habitat would enhance green infrastructure links between the site and other wildlife sites within the valley. This would create a moderate beneficial magnitude of landscape effect in the long term. On this basis, effects to the landscape resource within the application site boundary are assessed as moderate beneficial in the longer term.

Green belt

- 7.4.6 The moderate beneficial residual landscape effects to the application site as noted at paragraph 7.4.5 would extend benefit and value to the wider setting of the green belt. The magnitude of landscape effect would however be slight beneficial given the comparative small scale of the site within the large scale setting of the receiving green belt landscape. Effects to the green belt are assessed as temporary minor adverse during operations and minor beneficial in the longer term.

Publicly accessible areas

- 7.4.7 The proposals would not have any direct landscape effects on the setting of Stanley Ferry playing fields or the playing fields to the west of Aberford Road due to the screening provided from intervening vegetation. There may be very slight adverse landscape effects to the Stanley Ferry playing fields during the winter months due to the possibility of glimpses into the site through the vegetation, however effects are not considered to be significant.
- 7.4.8 The setting of the publicly accessible area of the Aire and Calder Navigation within arable farmland contrasts with the busier canal section south of Altofts Bridge next to the boat yard and activities of the marina at Stanley Ferry. There would be adverse landscape effects to the peaceful setting of this section of the canal due to its proximity to the eastern site boundary. In addition the canal side wharf and wharf conveyor would be apparent for the duration of the operations. However the nature of the canal as a working waterway should be taken into account with the addition of a commercial wharf and subsequent activity perceived as acceptable. It may be possible to see the ongoing extraction activities during P1 to P5 over the canal bank and vegetation at Birkwood. Upper parts of the overburden screen mound and plant compound during P1 to P10 would also be intermittently perceptible from this landscape resource with an overall moderate to slight adverse magnitude of effect. The significance of landscape effect is therefore considered to be moderate adverse from P1 to P5, minor adverse from P6 to

P10 and negligible minor beneficial in the longer term due to the increase in vegetation adjacent to the canal bank .

Public rights of way

- 7.4.9 There are a number of public rights of way within the ZTV which have sections of route which would experience a direct change to their setting in the landscape as a result of the proposals.
- 7.4.10 The Trans Pennine Trail shares its route with the Paulinus Pilgrimage and Heritage Way with part of the trail also aligning SFP12. There are three sections that would be affected as below.

Trans Pennine Trail and Paulinus Pilgrimage and Heritage Way: 480m section along the Nagger Line from Ferry Lane to Smalley Bight Farm, between 110m to 140m south west of site (See Appendix A Figure A7 Key viewpoint 3)

- 7.4.11 This elevated section of the trail is set within the arable fields of Smalley Bight Farm to the north and playing fields to the south. It is peaceful retreat from Ferry Lane and mostly contained by woodland edge vegetation to either side with occasional views out to the north and south through gaps in the hedgerow.
- 7.4.12 Set up operations including the formation of soil bunds at Birkwood would be intermittently perceptible from the gaps in the vegetation with the possibility of additional filtered views through the vegetation during the winter months. More prominent features such as the 5m high overburden screen mound would also be visible over the 3m high soil bunds for the 10 year duration of operations. Some of the extraction and capping activities at Birkwood would be apparent over the bunds during P1 to P5. Extraction within Smalley Bight during P6 to P10 would be slightly less evident given the increase in distance however the overburden mound OB1 and possibly the top of the conveyor bridge would be visible throughout this period against the foreground views of the Birkwood void. 'Greening' of the bunds and overburden would slightly lessen impacts. The flooding and restoration of Birkwood and Smalley Bight at the end of P10 would also be apparent from this section of the trail.
- 7.4.13 The overall magnitude of landscape effect would be substantial adverse leading to moderate beneficial in the longer term. Therefore the significance of landscape effect for this section is assessed as moderate adverse from P1 to P10, minor adverse after restoration and moderate beneficial in the longer term.

Trans Pennine Trail, Paulinus Pilgrimage and Heritage Way and public footpath SFP12: 350m section from Smalley Bight Farm to Water Lane House, between 10m to 120m west (See Appendix A Figure A7 Key viewpoint 4)

- 7.4.14 The section of the trail beyond Smalley Bight farmyard is open and set within the arable fields and paddocks of Smalley Bight Farm. The set up operations and formation of soil bunds at Birkwood would be clearly perceptible across the river from this section of the trail. As the soil bunds were formed most operations during P1 to P5 would be screened however the tops of the 5m high overburden screen mound and the plant compound would be visible over the bunds. During P6 to P10, set up and excavation operations at

Smalley Bight would be undertaken in direct proximity to this section of trail with the changing height of the overburden mound OB1 also visible. 'Greening' of the bunds would slightly lessen impacts. Restoration operations to both sites would be largely evident in the final year.

- 7.4.15 The magnitude of landscape effect would be substantial adverse leading to moderate beneficial in the longer term. Therefore the significance of landscape effect for this section is also assessed as temporary moderate adverse from P1 to P10, minor adverse after restoration and moderate beneficial in the longer term.

Trans Pennine Trail and Paulinus Pilgrimage and Heritage Way: 950m section along the former Methley Joint Railway above Bottom Boat, over 1km north

- 7.4.16 This part of the trail is located on another dismantled railway line high above the village of Bottom Boat. The trail is quite wide in this location and contained by vegetation to both sides. To the west, the northern edge is bounded by the rear gardens of properties on Meadowfield Rise. Further east, the boundary is open to fields which extend northwards towards Newmarket Lane with the NewCold distribution centre dominant on the horizon. To the south are the back yards and paddocks belonging to property within Bottom Boat, often rather untidy and abandoned in character particularly to the east of the village.

- 7.4.17 From this receptor views towards the site are significantly contained by the dense vegetation. However during the winter months it may be possible to obtain far distance glimpses filtered through the trees of the north east corner of the site towards the overburden mound on Smalley Bight and the plant compound at Birkwood. In addition extraction operations along the southern edge of the Birkwood area of the application site may be visible during P1 to P5, as well as restoration activities in the final year. However given the distance from site of this section, the magnitude of landscape effect would be negligible with no significant landscape effects anticipated either during the operations or in the longer term.

720m section of towpath between Stanley Ferry and Birkwood Lock, 40m east (See Appendix A Figure A7 Key viewpoint 2)

- 7.4.18 The landscape setting of this section of the Aire and Calder Navigation towpath would be affected in a similar way to the landscape setting of the canal as a publicly accessible area (see paragraph 7.4.8). The wharf conveyor and canal side wharf would be apparent for the duration of the operations on site. Operations during P1 to P10, and the tops of haulage traffic, the overburden screen mound and plant compound would be intermittently perceptible over the canal bank and vegetation with an overall moderate to slight adverse magnitude of landscape effect. 'Greening' of the bunds over the lifetime of the proposals would slightly lessen impacts. The significance of landscape effect is therefore considered to be temporary moderate adverse from P1 to P5, temporary minor adverse from P6 to P10 and negligible in the longer term.

750m of public footpath SFP24 on the south bank of the River Calder from Stanley Ferry to Trans Pennine Trail north of Smalley Bight Farm, between 10m to 50m south (disputed by landowner),

7.4.19 This footpath is set within the open, arable landscape of the Calder Valley adjacent to the River Calder for most of its route with a short section crossing the site north of Smalley Bight Farm. Set up operations at Birkwood would be clearly visible across the river as would the set up at Smalley Bight which would detract from the setting of the footpath. This would be exacerbated by extraction works within Birkwood from the start of the P1 until the end of P5 with the tops of plant and overburden screen mound visible over the soils bunds. Changes to landscape character at Smalley Bight during P6 to P10 would also be visible from the section of route near to the farm. As a result there would be a substantial adverse magnitude of effect to the landscape setting of this public footpath. The restoration of the site and enhancement of the landscape elements of the site would also be apparent leading to a moderate beneficial magnitude of effect in the longer term. Therefore the significance of landscape effect for this public footpath is assessed as temporary major adverse from P1 to P10, minor adverse after restoration and moderate beneficial in the longer term.

End of Ward Lane public footpath SFP25 at Ferry Lane, 200m south

7.4.20 This section of public footpath is set between the canal and Ferry Lane and provides vehicular access to Sawmill Timber Direct as well as eight residential properties on Ward Lane. The proposals would result in no change to the landscape setting of most of this public footpath along the lane. Where the public footpath joins Ferry Lane, there may be near glimpses of the operations at Birkwood across Ferry Lane through a gap in the Nagger Line hedgerow vegetation. However the magnitude of change to the setting of the section of footpath is assessed as negligible with no likely significant adverse landscape effects.

245m of Water Lane public footpath SFP17, 80m to 315m north west of site

7.4.21 This public footpath extends downhill from A642 Aberford Road along Water Lane to the Stanley Waste Water Treatment Works. Both sides of the track are lined by dense hedgerow or property boundaries. There may be glimpses of the operations within the Smalley Bight area of the site through the hedgerow during the winter with partial views into site from the top end of the lane, however the magnitude of change to the landscape setting of the footpath is assessed as negligible with no likely significant adverse landscape effects.

30m section of public footpath SFP14 between nos. 412 and 416 Aberford Road and 10m section of public footpath SFP13 on Lake Yard, 470m and 680m north respectively

7.4.22 Public footpath SFP14 shares its alignment with a track to the River Calder and access to nos. 412, 414 and 416 Aberford Road. Public footpath SFP13 follows Lake Yard lane downhill from Aberford Road to the rear of riverside properties nos. 12a to 18. It is unlikely that there would be any change to the landscape setting of these public footpaths as a consequence of the proposals. There are glimpses into the southern and eastern edges of Birkwood from the higher elevations of sections of both footpaths where they meet Aberford Road, however these views are seen over the woodland within the water works and against the backdrop of the Welbeck landfill. As such it is considered both magnitude of effect and significance of adverse landscape effects arising from the proposals would be negligible.

150m section of public footpath SFP9 north of Roman Station Farm, 1.4km north

- 7.4.23 This footpath extends from A642 Aberford Road opposite Kingsland Primary School and crosses arable fields on high ground at around 60m AOD to Fenton Road at Lee Moor. The site is only just discernible in far reaching north westerly views of the wider Calder Valley. Therefore it is considered that the magnitude of effect and significance of adverse landscape effects on the setting of this footpath would be negligible.

300m section of public bridleway NBW2 on the hillside west of Altofts, 1.2km east

- 7.4.24 The bridleway extends south to the Newland Estate from Birkwood Road on the western edge of Altofts. There are a few far distance glimpses of the site from a section of the bridleway on approach to the pylon which is situated on top of the hill at around 50m AOD. However the screening provided by the linear woodland along the access track into the estate from Birkwood Road would prohibit any adverse effects to its landscape setting.

200m section of public footpath NWFP5 on the Newland Estate to the south of the Birkwood Plantation, 1km east (See Appendix A Figure A7 Key viewpoint 5)

- 7.4.25 From 25m AOD, this footpath within the Newland Estate is located to the south of the Birkwood Plantation. From the site of the former Stanley Lodge and remaining gate pillar, it climbs the hill north eastwards following a wooded field boundary. On reaching the local highpoint of 55m AOD, the footpath turns 90° south east before joining public bridleway NBW2. For a section of footpath at the corner, there are far distance panoramic views across the wide valley below with the site visible in part over the top of intervening woodland. Long range views extend towards the M62 corridor, the hillside settlements of Stanley and NewCold distribution centre on the horizon. Given the context of the view, there would be no adverse effects to the landscape setting of the footpath arising from the proposal.

100m section of SFP20 from Hillside Farm, 90m section of SFP28 and 80m section of SFP29 near St Andrews Close, all to the south of Normanton Golf Club, 1.2km south west (See Appendix A Figure A7 Key viewpoint 6),

- 7.4.26 The myriad of small tree belts within Normanton Golf Club help to contain views out across the Calder Valley and subsequently the landscape setting of the public footpaths within the golf course. However to the south of the golf course, the open setting of footpaths SFP20, SFP28 and SFP29 within fields on rising ground between Hillside Farm and Stanley Grange enables views out across Stanley South to the Calder Valley and Birkwood Hill beyond. The Stanley Ferry workshop roof tops are clearly visible on the horizon as is the NewCold centre. The site is just visible between the trees in the far distance. Due to the distance from site, there would be no adverse effects to the landscape setting of these footpaths.

Other public rights of way in the ZTV

- 7.4.27 There may also be adverse effects to the settings of more distant public footpaths on the hillsides to the north west, west, south east, east and south of the site during the winter months. However the magnitude of landscape effect in the context of the wider

landscape would be largely negligible which would lead to negligible adverse effects which would not be significant.

Cultural assets

- 7.4.28 There would be no adverse effects to the landscape setting of three historical receptors namely Clarke Hall (Grade II* listed), Clarke Hall forecourt walls and mounting blocks (Grade II listed) and Stanley Hall (Grade II listed) due to the screening afforded by intervening development at City Fields to the east and also due to distance from site i.e. between 1.3 and 1.6km.
- 7.4.29 There are no views of the site from no. 420 Aberford Road (Grade II listed) due to intervening vegetation and aspect of the property to the south west therefore there are no likely adverse effects to its setting.

Landscape character

- 7.4.30 As reviewed at Section 4.4, the application site falls within 'NCA 38 Nottinghamshire, Derbyshire and Yorkshire Coalfield' at national level and at district level within the 'Calder Valley Landscape Type'. The adjacent hillsides to the west, east and south lie within the 'Northern Coalfield Landscape Type'.
- 7.4.31 Key landscape characteristics as noted in both assessments are the low lying nature of the floodplain, the landscape influences of the River Calder and the canal and a strong cultural identity associated with past heavy industry. These are set within a mixed and competing pattern of land use comprising arable farmland, built up areas, urban fringe, declining woodland and hedgerows, fragments of pre-industrial landscapes with pockets of dereliction and recently created wetland habitats. Comments are made on the need for further restoration and regeneration and the fragile nature of the remaining landscape.
- 7.4.32 As evidenced by the WYHLC (see paragraphs 4.4.9 to 4.4.12) the primary significance of the application site in terms of landscape character is its contribution to the long term agricultural setting of the wider Calder Valley which has only recently gained some respite after enduring centuries of mining and industry. Openness is a key component of the value of this rural landscape and these qualities set it apart from the encroaching development of settlements and industry on the adjacent hillsides and commercial expansion within the valley towards Castleford and downstream towards Wakefield and Dewsbury. The landscape also enables locally important panoramic views across the valley from both ground level and higher elevations. Although 'broken' in part by landscape detractors, the valley still bestows a rural setting to Stanley, Altofts and Bottom Boat and provides an accessible, popular and locally valued public right of way network which facilitates recreation and access between settlements and waterways.
- 7.4.33 The proposals would constitute a minor loss of part of the larger rural valley north of Stanley Ferry, however despite the green belt designation, this is a landscape which is at risk from being lost altogether. The restoration scheme would not reinstate the WYHLC characteristics of agricultural land nor promote the arable landscape character, but would instead provide new water features as a private amenity resource with naturalistic landscaping designed to complement the riparian landscape. This would emulate in part

the regenerating man-made pools and washlands which mark the former industrial sites elsewhere in the valley and would in time significantly enhance the landscape character and biodiversity of the site. Overall operations would create a moderate adverse magnitude of landscape effect to the landscape character of the Calder Valley with the restoration generating a minor beneficial magnitude of effect. This would produce a minor beneficial landscape effect in the longer term.

7.5 Overall significance of landscape effects

- 7.5.1 In conclusion, the application site is not part of any statutory or non-statutory designated site of landscape, nature conservation or historic interest. The proposals would cause negligible adverse landscape effects to the limited on-site landscape assets and a residual minor beneficial effect to the character of the green belt in the longer term.
- 7.5.2 Significant adverse landscape effects are restricted to a few landscape receptors. These would be the setting of the Aire and Calder Navigation and sections of a number of public rights of way including the Trans Pennine Trail/Paulinus Pilgrimage and Heritage Way, the towpath and public footpaths SFP12 and 24. Effects would mostly become negligible in the longer term after the implementation of the restoration scheme. For a few of the public rights of way closer to the site, residual effects would be improved to moderate beneficial due to the enhancements to landscape character.
- 7.5.3 The most significant contribution of the application site is to the historic landscape character of the wider rural Calder Valley. The agricultural character would be lost over a period of 11 years and replaced by new water features and landscaping with an open outlook to retain the open nature of the surrounding green belt. In time, the restoration scheme would complement other wetland environments in the valley and create additional biodiversity elements which would enhance the landscape character of the valley. They would also align with the scale, pattern and landform of the Calder Valley and improve the condition and quality of the landscape character of the application site. The restoration scheme also accords with the environmental opportunities and planning requirements as noted in Section 6.4.2.
- 7.5.4 On this basis, **the overall significance of landscape effects is concluded to be temporary moderate adverse from P1 through to the end of the restoration year and residual minor beneficial in the longer term.** This judgement is based upon an overall judgement of a moderate adverse magnitude of effect during operations and restoration and a residual moderate beneficial magnitude of effect to a landscape which is considered to be of medium sensitivity, aided by the application of Table 5 and Table 6 in Appendix B.

8.0 Visual effects

8.1 Introduction

- 8.1.1 This chapter considers the potential effects to visual amenity resulting from the extraction operations and restoration scheme proposed at Stanley Ferry until 15 years after restoration is complete in 2033. Visual effects are considered with respect to the operation effects on site summarised at paragraph 3.2.4, the landscape strategy and restoration scheme proposed at Section 2.6 and the mitigation summarised at Chapter 6.0.
- 8.1.2 The significance of the likely visual effects is determined by an evaluation of the potential effects on the sensitivity of the visual receptors. This is defined by combining an assessment of the susceptibility of the visual receptors to change with the findings related to the value of the landscape. This was established as being low to medium (see Section 5.12).
- 8.1.3 The assessment of the sensitivity of the visual receptors is then combined with an analysis of the likely magnitude of effects to produce the potential significance of visual effects arising from the proposals.

8.2 Sensitivity of visual receptors

- 8.2.1 Potential visual receptors have been identified in the baseline study through both desktop and field observations. The sensitivity of the each of these receptors varies according to its status. The susceptibility to changes in views and visual amenity is mainly a function of the occupation or activity of people experiencing the view at particular locations and the extent to which their attention or interest may therefore be focused on the views. The visual receptors most susceptible to change are generally likely to include residents at home, people engaged in outdoor recreation including users of public rights of way, visitors to heritage assets or to other attractions where views of the surroundings are an important contributor to the experience and communities where views contribute to the landscape setting enjoyed by residents in the area.
- 8.2.2 Visual receptors likely to be less sensitive to change include people engaged in outdoor sport or recreation which does not involve or depend upon appreciation of views of the landscape and people at their place of work where the setting is not important to the quality of working life. Travellers on road, rail or other transport routes tend to be less susceptible to change.
- 8.2.3 The next step is to combine the separate judgements made on the value of each view and its susceptibility to change to conclude how they contribute to an understanding of the sensitivity of the visual receptor. This can be undertaken by using Appendix B Table 7 Visual receptors: Determination of sensitivity. They are categorised in brief below:
- High sensitivity – Residential properties, listed buildings, registered parks and gardens, public rights of way

- Medium sensitivity – Residential properties with limited views (distance, angle or partial), vehicular users of minor or unclassified roads or tracks, those engaged in outdoor work i.e. farmers, users of sports and playing fields
- Low sensitivity – Offices/commercial/industrial property, vehicle users of main roads and/or passengers on public transport

8.3 Magnitude of effect

- 8.3.1 The magnitude of effect takes account of the context of the existing view and the predicted change that would arise for visual receptors from the mineral extraction proposals. This is evaluated in terms of size or scale, geographical extent of the areas influenced and duration and reversibility. Similarly, the duration of visual effects will also be considered together with potential reversibility. For each property and location identified as a visual receptor, a field inspection has been undertaken at the closest possible publicly accessible location. No visits have been made to individual private properties or gardens.
- 8.3.2 The application site at Stanley Ferry is set within existing arable farmland which is worked on a regular basis by local farmers using typical farm machinery. As a result the application site is subject to a sequence of colour changes within the context of the surrounding landscape depending on the season and associated stages of crop development. Therefore its visual perception is 'green' when the crops are growing during spring and early summer, 'yellow' when the crop has been harvested in late summer/early autumn and 'brown' when the fields have been ploughed in the winter.
- 8.3.3 The proposals would be temporary operations commencing in 2021 and ending in around 2033 after final restoration is complete. The visual perception of the character of the site would be lost during the proposals with the existing arable elements on site removed. The proportion of this loss is over a moderately large area totalling 22.31ha set within an open rural valley landscape. The visual effect of the loss would be at a scale which would change the nature of the visual amenity in the valley amounting to temporary views over 11 years of the set up and extraction operations. The views of the works would then be replaced in the final year by views of the emerging alternative landscape presented by the restoration scheme.
- 8.3.4 The duration of visual effects within the landscape arising from the mineral extraction proposals is considered permanent and non-reversible. Adverse effects to visual amenity would be mitigated in part by the restoration scheme which offers a viable alternative wetland landscape which emulates both natural and recovering areas of former mining along the river corridor. The woodland planting would help to assimilate the lakes into the landscape in the much longer term, however the open nature of the valley and the green belt is retained overall.
- 8.3.5 In determining magnitude of effect to the visual receptor within the visual assessment at Section 8.4, reference is made to Appendix B Table 8 Visual receptors: Determination of magnitude of effect.

8.4 Visual effects

- 8.4.1 The assessment of significance of effects to visual receptors considers effects on people particularly sensitive to changes in view, effects on people at recognised and important viewpoints and any additional elements arising from the development which are non-characteristic or discordant within the view. The significance of effect to each receptor is detailed below and summarised at Appendix C Visual effects schedule.

Residential

- 8.4.2 Residential properties with direct views towards the proposals from ground floor and first floor windows should be classed as high sensitivity receptors, whereas those with limited views would have medium sensitivity. Groups of properties which would have similar views of the mineral extraction are assessed together. Mitigation proposals are taken into account for each receptor or receptor group.

R1 Calder House, Stanley Ferry, 20m south

- 8.4.3 This detached house is situated next to Ferry Lane within the Stanley Ferry boat yard and faces across yard towards the Aire and Calder Navigation mooring basin. The rear of the property is 20m south of the site boundary to the north of Ferry Lane.
- 8.4.4 There would be close range views of the set up and extraction operations on site. These would be direct views from a rear first storey window facing towards the site and also oblique views from a first floor window on the gable end. As a result this property has high sensitivity. Views would be across Ferry Lane and over the top of the outgrowing hedgerow vegetation along the north side of Ferry Lane. Views into Birkwood would be close range whereas views of works at Smalley Bight would be at a greater distance of 360m. There may be partial views over the rear wooden fence from the tops of a ground floor window on the rear west side of the property however views from other rear ground floor windows would be obscured by the boundary fence. All views would be across the moving traffic on Ferry Lane and through the vegetation which would be less dense due to loss of foliage during the winter months. Soil bunds would be unlikely to screen all operations and the top of overburden mounds on both sites would be visible although their 'greening up' would soften the massing effect against the background of existing vegetation. The plant compound on Birkwood would be largely screened in views by the overburden screen mound.
- 8.4.5 Changes in magnitude of effect during operations would be slight adverse in the summer months and moderate adverse during the winter with slight beneficial effects in the longer term. This would result in temporary minor adverse visual effects during the summer during P1 to P10 and temporary significant moderate adverse visual effects during the winter. Visual effects would be reduced to minor adverse at Y1 after restoration and would be minor beneficial after Y15 when the new woodland in the south corner of Birkwood would be beginning to provide a vegetative screen into site.

R2 Water Lane House, 50m north

- 8.4.6 This detached property is located 50m north of the site boundary at the end of Water Lane at the entrance to Stanley Waste Water Treatment Works. The property is slightly elevated at 22m AOD with its rear outlook over the back garden with the water works woodland to the west and arable fields and paddocks to the south and east. The P6 area of Smalley Bight is at close range with the lattice style electricity pylon, the discarded HGV trailers and the top of the telecommunications mast off the Nagger Line beyond. Smalley Bight Farm and derelict barns and Smalley Bight House and Bungal House are in the middle distance seen against a backdrop of garden vegetation and woodland along the Nagger Line and Aberford Road.
- 8.4.7 There would be close range views of the set up operations at Smalley Bight and partial close range views over the soil bunds of the extraction operations during P6 from the rear ground floor bay window and from the rear first storey windows. There would be wider views across the site from the back garden with visibility into P7 and over the river to Birkwood.
- 8.4.8 The property has high sensitivity and changes in magnitude of effect would be moderate adverse during set up, excavation and usage of the settlement lagoons on Birkwood and substantial adverse during P6 and P7 operations at Smalley Bight. Soil bunds would alleviate some adverse visual effects especially when 'greened up' but operations would still be partly visible due to the elevated nature of the view. This would result in temporary significant major adverse visual effects during P6 and P7 and temporary moderate adverse visual effects during set up and the remainder of the operations. Magnitude of effect after restoration at Y1 would be slight adverse and slight beneficial at Y15 with visual effects reduced to minor adverse at Y1 and minor beneficial after Y15 after the proposed screening woodland within the site had started to mature.

R3 *Smalley Bight House, 70m west*

- 8.4.9 This property has high sensitivity as it is located 70m west of the site at 20m AOD with close range views into site over garden boundary vegetation. Views are from two first floor windows and one dormer window on the north elevation and from one dormer window on the east elevation. Existing views to the north are of Smalley Bight site against the backdrop of the woodland within the water works. Other components of the view include properties along Aberford Road in particular those off Water Lane, Water Lane House, the electricity pylon near Smalley Bight Farm, the HGV trailers along the river bank and mature willow trees along the River Calder near Smalley Bight Farm. The dormer window on the east elevation overlooks the Birkwood site towards Stanley Ferry workshops and Birkwood Hill.
- 8.4.10 Changes in magnitude of effect would be substantial adverse during set up and excavation operations for the duration of P1 to P10 particularly during operations at Smalley Bight. Soil bunds would not alleviate adverse effects due to the elevated nature of the views but 'greening up' of the overburden mound OB1 on Smalley Bight would partially soften the views. There would also be partial views of the overburden screen mound at Birkwood and possibly the top of the plant compound beyond the screen mound.

8.4.11 Overall, this would result in temporary significant major adverse visual effects during the lifetime of the operations. Magnitude of effect after restoration at Y1 would be slight adverse and slight beneficial at Y15 with visual effects reduced to minor adverse at Y1 and minor beneficial after Y15 due to screening effects gained from the maturing woodland on site.

R4 *Smalley Bight Farm, 110m south*

8.4.12 The farm is occupied by the owner of the Smalley Bight part of the site who has agreed to the use of the land as part of these proposals.

8.4.13 The farmhouse is a detached dormer bungalow, located 110m south of the boundary at 20m AOD. It has high sensitivity as it has close range views of the site over garden boundary vegetation from the garden and paddocks and from the two first floor windows and two ground floor windows in the north elevation of the bungalow. From the bungalow, views are across the paddocks into the P6, P7 and P8 areas of Smalley Bight against a backdrop of the woodland within the water works. Other components of the view include the properties along Aberford Road in particular those off Water Lane, Water Lane House opposite and the electricity pylon and the HGV trailers along the river bank to the foreground. There are partial oblique views from first floor windows across the derelict barns and through the willow trees along the river into Birkwood.

8.4.14 Changes in magnitude of effect would be moderate adverse during set up and substantial adverse during P6 to P8 operations on Smalley Bight. The soil bunds would alleviate most adverse visual effects especially when 'greened up' but the existing open views across into the fields would be curtailed. Extraction operations would be partly visible over the top from the first floor windows with oblique upper storey views of OB1. P1 operations and ongoing usage of the settlement lagoons at Birkwood would also be partly visible in oblique views from the first floor windows through the riverside vegetation with slight adverse changes in magnitude of effect. This would result in temporary significant major adverse visual effects during P6 to P8 and temporary significant moderate adverse visual effects during set up and the remainder of the operations. Magnitude of effect after restoration at Y1 would be slight adverse and slight beneficial at Y15 with visual effects reduced to minor adverse at Y1 and minor beneficial after Y15 due to screening effects gained from the maturing woodland on site.

R5 *No. 186 Ferry Lane (formerly The Ship Inn), 140m south west*

8.4.15 This property is at 19m AOD and has medium sensitivity with a close range view towards the site from an upper floor gable end window, 140m to the south west. The existing view into site is across traffic on Ferry Lane and over the top of roadside vegetation on Ferry Lane where the eastern edge of Birkwood is seen against trees and vegetation along the Aire and Calder Navigation.

8.4.16 Changes in magnitude of effect would be moderate adverse during set up and moderate to substantial during the P1 to P10 particularly during P3 to P5. Perimeter soil bunds would partly mitigate views of the P3 to P5 operations however it is likely that the raw feed stockpile and most of the 'greened up' 5m high overburden screen mound would be visible throughout the lifetime of the project. This would result in temporary significant

moderate adverse visual effects during the lifetime of the development. Magnitude of effect after restoration at Y1 would be slight adverse and slight beneficial at Y15 with visual effects reduced to minor adverse at Y1 and minor beneficial after Y15 when the new woodland in the south corner of Birkwood would be beginning to provide a vegetative screen into site.

R6 Bungal House, Aberford Road, 210m west

8.4.17 This property has high sensitivity as it faces towards the proposals from a distance of 210m from the western site boundary. Located off Aberford Road at 21m AOD, the existing view from three first floor windows and three ground floor windows is across the property boundary post and rail fence and adjacent paddocks and fields directly into the Smalley Bight site with the outlook also including the electricity pylon adjacent to Smalley Bight Farm and the Birkwood area of the site.

8.4.18 Changes in magnitude of effect would be substantial adverse during set up and moderate adverse during excavation operations for the duration of P1 to P10 particularly during operations at Smalley Bight during P6 to P10. Soil bunds would partially screen views into the site from the ground floor including vehicle movements and most of the void but the top of the overburden mound OB1 at Smalley Bight and potentially also the overburden screen mound and part of the plant compound at Birkwood would be partially visible through the existing riverside vegetation. Although the overburden mounds would be 'greened up', this would result in temporary significant major adverse visual effects during set up and P6 to P10 and temporary significant moderate adverse visual effects for the rest of the development. Magnitude of effect after restoration at Y1 would be slight adverse and slight beneficial at Y15 with visual effects reduced to minor adverse at Y1 and minor beneficial after Y15 due to screening effects gained from the maturing woodland on site.

R7 Group of three properties on Aberford Road, off Water Lane (even nos. 396 to 400), 220m north west

8.4.19 These properties off Water Lane have high sensitivity with views into the site from rising ground below Aberford Road at 21m AOD and from a distance of 220m.

8.4.20 At the top end of Water Lane, the large bungalow located at no. 400 Aberford Road has near distance views across the Smalley Bight site, into the Birkwood site and up to the hills and Welbeck landfill beyond. These are from a dormer window with oblique views from a gable end upper storey window. There may also be glimpses over the garden hedge from the ground floor of the adjoining bungalow property at no. 398 Aberford Road. No. 396 Aberford Road also has views towards the site, obscured in part by scrubby vegetation in the adjacent fields.

8.4.21 Changes in magnitude of effect would be moderate to substantial adverse during set up and excavation operations for the duration of P1 to P10 particularly during operations at Smalley Bight during P6 to P10. Soil bunds would partially screen views into the site from the ground floor including vehicle movements and most of the void. The southern edge of the overburden mound OB1 at Smalley Bight and potentially also the overburden screen mound and part of the plant compound at Birkwood would be visible in part through the

existing riverside vegetation from upper storey windows, albeit softened slightly by 'greening up'.

- 8.4.22 This would result in temporary significant major adverse visual effects during set up and P6 to P10 and temporary significant moderate adverse visual effects for the rest of the development. Magnitude of effect after restoration at Y1 would be slight adverse and slight beneficial at Y15 with visual effects reduced to minor adverse at Y1 and minor beneficial after Y15.

R8 Group of four properties (even nos. 282 to 288) to the east of Aberford Road and four properties (nos. 291, 295, 297, 299) to the west of Aberford Road south of Lime Pit Lane junction, between 230m to 275m west

- 8.4.23 These properties have medium sensitivity as the views of the development are limited. At 21m AOD, there are existing close range views from the two first floor gable end windows of no. 282 Aberford Road, the ground floor rear windows of bungalow no. 286 and from the rear dormer window and ground floor windows of no. 288 with possible views also from the rear windows of bungalow no. 284. Views towards the site and adjacent fields and paddocks are across garden boundary vegetation but would be more prevalent during the winter months. There are also existing views of both areas of the site from the first floor front windows of nos. 299, 297, 295 and 291 Aberford Road across the garden vegetation of the houses opposite which would also be more slightly prevalent during the winter months.

- 8.4.24 Changes in magnitude of effect would be slight adverse during set up and during excavation operations for the duration of P1 to P10 particularly during operations at Smalley Bight during P6 to P10. Soil bunds would partially screen views into the site from the ground floor including vehicle movements and most of the void but the top of the overburden mound OB1 at Smalley Bight and potentially also the overburden screen mound and part of the plant compound at Birkwood would be visible over or through the existing riverside vegetation particularly from upper storey windows.

- 8.4.25 This would result in temporary minor adverse visual effects during set up and operations. Magnitude of effect after restoration at Y1 would be slight adverse to negligible and negligible at Y15 with visual effects reduced to minor adverse/negligible at Y1 and negligible after Y15.

- 8.4.26 Other properties further to the south along Aberford Road including the Stanley Grove Primary and Nursery School would be unlikely to experience any significant adverse changes in visual amenity due to the screening bestowed by intervening vegetation along the Nagger Line and Smalley Bight Farm.

R9 Birkwood Farm and Fisheries, 300m east

- 8.4.27 The farm is occupied by the owner of the Birkwood part of the site who has agreed to the use of the land as part of these proposals.

- 8.4.28 The farmhouse sits high on Birkwood Hill at 40m AOD, 300m east of the site. Its outlook is mainly screened by foliage within the narrow tree belt on the slope of the hillside. In the winter months however there are long distance filtered views across the Calder

Valley to Stanley village beyond from four upper storey windows with glimpses into the site below. Due to the limited nature of the view, the property has medium sensitivity.

- 8.4.29 Changes in magnitude of effect would be negligible during the summer months but all operations including the overburden mounds, plant compound and enlarging voids would be partially visible from this elevated position through the foliage during the winter months with a slight adverse magnitude of effect. This would result in temporary minor adverse visual effects in winter months for the duration of the development but negligible visual effects in the summer months. Magnitude of effect after restoration at Y1 would be slight adverse/negligible and negligible at Y15 with visual effects reduced to minor adverse/negligible at Y1 and negligible after Y15.

R10 Group of six properties to the west of Aberford Road near Intake Lane (odd nos. 375 to 385), 390m north west

- 8.4.30 Nos. 375, 377, 383 and 385 Aberford Road are bungalows and dormer bungalows and have limited views of the site with no likely significant magnitude of effect and negligible visual effects. Views out from no. 379 Aberford Road at around 29m AOD are screened by dense vegetation on the boundary with Aberford Road, however there would be the potential for views towards the site over the fields and woodland around the water works from first floor windows through the vegetation during the winter months. No. 381 Aberford Road set slightly above the road, would also have the potential for winter views towards parts of the site. These properties are assessed as having overall medium sensitivity due to the limited nature of the views.
- 8.4.31 Magnitude of effect would be slight adverse during the winter months for the duration of proposals with temporary slight adverse visual effects. In the context of the wider landscape, magnitude of effect after restoration at Y1 would be slight adverse and negligible at Y15 with visual effects reduced to negligible at Y1 and Y15.

R11 Nos. 418 and 422 Aberford Road, 470m north

- 8.4.32 These properties are located on rising ground at 29m AOD off Aberford Road, 470m north of site. No. 418 is a detached stone property set in large grounds featuring TPO woodland. First floor windows facing south west along Aberford Road have partial oblique views of the site over the intervening vegetation, set against the backdrop of Birkwood Hill and Welbeck landfill. It also has a first floor rear terrace facing south east with panoramic views over garden vegetation and the water works woodland and settling tanks towards Birkwood and the hills and landfill beyond. Due to the nature of the views it is assessed as having high sensitivity.
- 8.4.33 No. 422 Aberford Road adjoins no. 420 which is Grade II listed. There are no views from no. 420 due to intervening vegetation and aspect to the south west. However the upper storey windows of no. 422 face across the valley with long distance views of the parts of the site across the water works woodland through a gap in garden vegetation.
- 8.4.34 Changes in magnitude of effect for both properties would be slight adverse during set up and during P1 to P5 with glimpses of the void forming at Birkwood from the first floor windows of both properties and the rear terrace of no. 418. The linear nature of the soil

bunds would highlight the location of the works until 'greened up'. It is possible that the top of the overburden mounds and plant compound plus overnight lighting of the compound may be visible over the top of the water works woodland for the duration of the works which would perpetuate the slight adverse magnitude of effect for the lifetime of the proposals. This would result in temporary minor adverse visual effects. Magnitude of effect after restoration at Y1 and Y15 would be negligible with negligible visual effects in the longer term as the proposals become assimilated into the wider landscape.

R12 Group of 24 properties: 19 properties on Beaumont Street (no. 20, even nos. 34 to 42 and odd nos. 33 to 57) and 5 properties on Beaumont Close (nos. 1 to 5), 490m north west

- 8.4.35 These properties are all located at around 35m AOD on elevated ground off Aberford Road, at around 490m north west of site. The row of detached dormer bungalows on Beaumont Street nearest to Aberford Road have gable end ground floor windows facing the site with views across the valley. From across Aberford Road and the intervening fields, nos. 34 to 42 have middle distance ground floor views into part of the Birkwood area of the site across the water works woodland. The row of semi-detached properties behind at nos. 49 to 57 have similar views from first floor windows. Other properties on Beaumont Street may have similar views. On slightly higher ground, off Beaumont Street, Beaumont Close (odd nos. 1 to 5) also face across the valley. The gable end windows of no. 20 Beaumont Street also share this view. Given the limited nature of the view and the distance from site, these properties have medium sensitivity.
- 8.4.36 Changes in magnitude of effect would be slight adverse during set up and during P1 to P5 with glimpses of the void forming at Birkwood. The soil bunds would screen these elevated views and their linear nature would highlight the location of the works in the broader view until 'greened up'. It is possible that the top of the overburden mounds and plant compound plus overnight lighting of the compound may be visible over the top of the water works woodland for the duration of the works which would perpetuate the slight adverse magnitude of effect for the lifetime of the proposals. This would result in temporary minor adverse visual effects. Magnitude of effect after restoration at Y1 and Y15 would be negligible with negligible visual effects in the longer term as the proposals become assimilated into the wider landscape.

R13 No. 5 Birkwood Road, 620m east

- 8.4.37 This semi-detached house sits high on Birkwood Road on Birkwood Hill at 40m AOD, 620m east of the site. Its outlook is to the south towards the Birkwood Plantation and the Newland estate. A gable end first floor window has long distance views westwards across the site and the wider Calder Valley through deciduous trees on the boundary. Due to the distance and limitations of view the property has medium sensitivity.
- 8.4.38 In the context of the wider valley, changes in magnitude of effect would be slight to negligible during the summer months but all operations including the overburden mounds, plant compound and enlarging voids would be partially visible from this elevated position during the winter months with a slight adverse magnitude of effect. This would result in temporary minor adverse visual effects in winter months for the duration of the development but negligible visual effects in the summer months. Magnitude of effect

after restoration at Y1 would be slight adverse and negligible at Y15 with visual effects reduced to minor adverse at Y1 and negligible after Y15.

R14 Group of 27 properties on Aberford Road between no. 426 and Gordons Tyre Garage: 6 properties to the east of Aberford Road (nos. 426, Laurel Cottage (no. 428), Thatched House public house (no. 434), 434b, 434a and 436 Aberford Road); 3 properties at Lake Yard (odd nos. 1 to 7); 17 properties to the west of Aberford Road (odd nos. 389 to 417), between 560m to 920m north

- 8.4.39 All properties are on elevated ground at 35m AOD at a distance of between 560m and 920m from site. They all have medium sensitivity given the distance from site. Those to the east of Aberford Road have panoramic middle distance views from rear upper floor windows across the wider Calder Valley below with the Birkwood area of the site a small part of the view. Nos. 434a and 434b Aberford Road are bungalows with partial ground floor middle distance views across dense vegetation. The three properties at the top of Lake Yard have oblique partial views of the site from first floor rear or front windows as does no.7 from its rear terrace particularly during the winter months. To the west of Aberford Road, views are from first floor windows across the traffic on the road below and are more obscured by the roof tops of the buildings and boundary vegetation opposite. There may also be a number of other properties in this location which share a similar visual amenity.
- 8.4.40 In the context of the wider valley, changes in magnitude of effect would be slight to negligible during the summer months but all operations including the overburden mounds, plant compound and enlarging voids would be partially visible from this elevated position during the winter months with a slight adverse magnitude of effect. This would result in temporary minor adverse visual effects in winter months for the duration of the development but negligible visual effects in the summer months. Magnitude of effect after restoration at Y1 would be slight adverse and negligible at Y15 with visual effects reduced to minor adverse/negligible at Y1 and negligible after Y15.

R15 Group of 18 properties above Aberford Road above Lake Lock: 15 properties on Lake Lock Road (odd nos. 73 to 83 and even nos. 138 to 154) and 3 properties on Lake Lock Grove (odd nos. 1 to 5), 720m north

- 8.4.41 These houses sit above the properties on Aberford Road at between 36m to 42m AOD and share a similar outlook to dwellings to the west side of Aberford Road (R14). There may be other properties in this location which share a similar visual amenity. All properties are assessed as having medium sensitivity.
- 8.4.42 Middle distance views are from first floor windows and obscured by intervening roof tops and vegetation, however in the context of the wider valley, changes in magnitude of effect would be slight to negligible during the summer months. All operations including the overburden mounds, plant compound and enlarging voids would be partially visible from this elevated location during the winter months with a slight adverse magnitude of effect. This would result in temporary minor adverse visual effects in winter months for the duration of the development but negligible visual effects in the summer months. Magnitude of effect after restoration at Y1 would be slight adverse and negligible at Y15 with visual effects reduced to minor adverse/negligible at Y1 and negligible after Y15.

R16 Group of 21 properties on Aberford Road between Lake Lock Road and The Chase: 9 properties to the west of Aberford Road (odd nos. 427b to Preservation House (no. 447)); 4 properties to the east of Aberford Road (466, 468, 468a and 462); and up to 8 bungalow properties on The Chase (even nos. 2 to 16), 790m north

- 8.4.43 Properties to the west of Aberford Road sit high above the Calder Valley at between 35m and 39m AOD with glimpses from mainly top storey windows across the road into the valley below through intervening properties and vegetation within the water works. Views would be more prevalent during winter months. Views from detached properties to the east of the road around the Zion Christian Centre are mostly set in large grounds and would have more obscured views given the surrounding garden vegetation. Sunnyside/no. 466 Aberford Road is a three storey property with middle distance views into site from four windows on the gable end and oblique views from the dormer windows. These properties are assessed as having medium sensitivity due to their distance from site.
- 8.4.44 Changes in magnitude of effect would be negligible during the summer months. All operations including the overburden mounds, plant compound and enlarging voids may be partially visible from this elevated location during the winter months with a possible slight adverse magnitude of effect. This would result in temporary minor adverse visual effects in winter months for the duration of the development but negligible visual effects in the summer months. Magnitude of effect after restoration at Y1 would be slight adverse and negligible at Y15 with visual effects reduced to minor adverse/negligible at Y1 and negligible after Y15.

R17 Group of properties on Bottom Boat Road, Bottom Boat, 1km north

- 8.4.45 There are long ranging views across the rural landscape of the Calder Valley to the hills beyond from most of the properties on Bottom Boat Road at 23m AOD however their sensitivity is assessed as medium given the 1km distance from site. There is degree of screening provided by the water works woodland and by trees and vegetation along the River Calder and the canal however the gap in vegetation would enable a number of properties to have all year round far distance views of the northern corner of the site with others developing filtered views through the vegetation during the winter.
- 8.4.46 Those properties on Bottom Boat Road with likely all year round views from mainly the first floor into the north of the site would be nos. 37 and 39, odd nos. 49 to 89 and even nos. 36 to 50. There would also be views from the gable end top storey window of no. 11 Nettleton Street. In the winter, views into the site open up with most two storey dwellings in the village along the higher ground on Bottom Boat Road having at least a partial view into the site through the trees.
- 8.4.47 Changes in magnitude of effect would be slight adverse during the summer months with the potential for views of the part of the overburden mound OB1 on Smalley Bight and the product stockpile area, the plant compound and overburden screen mound on Birkwood. Views would be partially mitigated with the 'greening up' of the mounds however all views would be compounded during the winter months for the duration of the operations. This would result in temporary minor adverse visual effects for the duration of the development. Magnitude of effect after restoration at Y1 would be slight adverse and

negligible at Y15 with visual effects reduced to minor adverse/negligible at Y1 and negligible after Y15.

R18 Group of properties above Bottom Boat Road (Holmfield Chase, St Peter's Crescent and Meadowfield Rise) over 1km north

- 8.4.48 There are many properties on higher ground at between 35m to 40m AOD in these locations above Bottom Boat with top floor windows overlooking the wider Calder Valley to the south. Views of the site are similar to those from Bottom Boat Road (R17) but at a greater distance and more prevalent during the winter months.
- 8.4.49 Sensitivity is medium and magnitude of effect is generally negligible/slight adverse due to the visibility of the proposals being limited within the wider context of the valley. This would result in temporary minor adverse/negligible visual effects for the duration of the development. Due to the distance from site magnitude of effect after restoration at Y1 and Y15 would be negligible with visual effects similarly reduced to negligible.

R19 Group of properties along Canal Lane (nos. 60 to 185), over 1km north west

- 8.4.50 There are many properties on higher ground at around 65m AOD to the west of Aberford Road with long range views across the valley from top floor windows. In particular there are 100 plus properties between nos. 62 to 185 to both sides of the Canal Lane on Canal Hill which is located over 1km to the north west of the site on a ridge of high land. Most of these properties have long range views from first floor windows either to the rear or from the front aspect. Their sensitivity is medium given the distance from site and magnitude of effect would be generally negligible even in winter as the perception of the proposals would be largely indeterminable within the wider context of the well vegetated view. Magnitude of effect after restoration at Y1 and Y15 would be also be negligible. All visual effects are therefore anticipated to be negligible.

R20 Group of properties in the new development at City Fields, over 1km south west

- 8.4.51 According to the City Fields Wakefield Masterplan Framework June 2017⁸⁹, development of this new area of housing will be ongoing up to 2031 which would be during the lifetime of the proposals. Many new estates have already been completed on higher ground between 35m to 55m AOD in the area between Clarke Hall, Wakefield Hospice and the A6194 WERR with the potential for panoramic views over the Calder Valley to the north and south as well as towards Birkwood Hill, the Newland estate and Welbeck landfill.
- 8.4.52 All views would be elevated and long range with some oblique and most partial. Most views would be from first floor windows either to the rear or from the front aspect. The sensitivity of these properties is medium given the distance from site and magnitude of effect would generally be negligible as the perception of the proposals would be largely indeterminable within the wider context of the view. During the winter months there may be a very slight adverse magnitude of change to the elevated visual amenity into the site. However due to the distance from site and context of the wide ranging views, magnitude

⁸⁹ <https://www.wakefield.gov.uk/Documents/planning/planning-policy/supplementary-planning-documents/city-fields-wakefield-masterplan-framework.pdf>

of effect during operations, and after restoration at Y1 and Y15 would be negligible. All visual effects are therefore anticipated to be negligible.

Four Listed properties

8.4.53 Listed properties are considered to have high sensitivity. However from a study of the visual baseline, there would be negligible visual effects to those within the ZTV due to the combination of intervening development, landform and vegetation and distance from site. These properties are as follows:

- Grade II* listed Clarke Hall, 1.6km south west. 54m AOD
- Grade II listed Clarke Hall forecourt walls to north and mounting blocks, 1.6km south west. 54m AOD
- Grade II listed no. 420 Aberford Road Stanley, 500m north. 36m AOD
- Grade II listed Stanley Hall, 1.3km south west. 57m AOD

Other residential visual receptors within the ZTV

8.4.54 It is considered that the assessment has identified and reviewed all residential visual receptors which could be significantly affected by the proposals. However given the wide and complex nature of the ZTV and the substantial number of properties overlooking the Calder Valley from the adjacent hillsides, it is anticipated that there are many other properties which may have very slight but mostly imperceptible visibility of the site in the context of the wider view. As such these properties would be unlikely to experience any significant adverse magnitude of effect or adverse visual effects and have been excluded from the assessment.

Commercial

8.4.55 Commercial visual receptors with low sensitivity include offices, retail and industrial units however there are very few in the study area and none in the ZTV that overlook with site. Therefore there are no commercial receptors.

Green belt

8.4.56 The restoration scheme is designed to complement the Calder Valley landscape by maintaining the open nature of the green belt in which the site is located and adding additional landscape value. During operations, the magnitude of visual effect would be moderate adverse due to the temporary loss of 'openness' across the site. As such visual effects to the green belt are assessed as temporary minor adverse during operations and minor beneficial in the longer term.

Publicly accessible areas

8.4.57 The sensitivity, magnitude of effect and significance of visual effect to users of publicly accessible areas within the ZTV is described below.

PA1 Aire and Calder Navigation, 20m east (See Appendix A Figure A7 Key viewpoint 2)

- 8.4.58 Users of the canal have a high sensitivity with an expectation of changing views across the landscape as they travel along the waterway. The water level of the Aire and Calder Navigation fluctuates below the adjacent towpath at around 20m AOD, with boats and vessels on the canal providing a similar viewing level. The canal is in close proximity to the eastern site boundary at Birkwood however visual amenity is mostly contained to the west by the canal bank and also by the intermittent trees and scrub which feature along the bank. To the east, intermittent vegetation along the towpath partially screens views up towards the arable fields on Birkwood Hill.
- 8.4.59 The visual amenity of the canal is considered in the context of a working waterway. The proposed canal wharf and wharf conveyor would be apparent for the duration of the operations on site. During P1 to P5, some extraction activities at Birkwood, and the tops of haulage vehicles and the overburden screen mound and plant compound would be intermittently perceptible over the top of the bank and through the intervening vegetation however the moving angle of view when travelling along would vary the degree of view. An overall slight adverse magnitude of effect is anticipated for the duration of the operations with temporary minor adverse visual effects. Magnitude of effect would be negligible at Y1 after the removal of the canal wharf and conveyor and slight beneficial/negligible at Y15 with the increased vegetative cover. Visual effects at Y1 would be negligible but become minor beneficial/negligible when the tops of the maturing vegetation becomes perceptible from the canal.

PA2 Stanley Ferry playing fields, 160m south

- 8.4.60 As discussed at paragraph 8.2.2, visual receptors likely to be less sensitive to change include people engaged in outdoor sport or recreation. As such users of the playing fields have medium sensitivity.
- 8.4.61 Visual amenity of the users of the playing fields at 21m AOD is contained by the elevated Nagger Line and associated vegetation to the north and individual trees along Ferry Lane and properties along Ferry Lane to the south. As a result, users of the playing fields would have very limited views into the Birkwood area of the site with negligible changes in magnitude of effect likely during the summer months. However if set up and/or P1 to P5 operations were undertaken during the winter months there may be glimpses through the trees of the bunds and overburden screen mound. This would result in temporary negligible to minor adverse visual effects in winter months during set up and P1 to P5 but negligible visual effects for the rest of the development. The restoration scheme would be largely imperceptible therefore magnitude of effect after restoration at Y1 and Y15 would be negligible with negligible visual effects in the longer term.

Public rights of way

- 8.4.62 Public rights of way have high sensitivity and there are a number sections of route within the ZTV. Magnitude of effect depends on distance from the proposals, length of route with available views, and duration and reversibility of effect. The likely significance of visual effect for each path is reviewed below.

F1.1 Trans Pennine Trail and Paulinus Pilgrimage and Heritage Way: 480m section along the Nagger Line from Ferry Lane to Smalley Bight Farm, between 110m to 140m south west of site (See Appendix A Figure A7 Key viewpoint 3)

- 8.4.63 At 21m AOD, this section of the trail on the dismantled Nagger Line is elevated above the fields to the north by up to 1.5m. The first section of trail from Ferry Lane has no hedgerow to the north with wide ranging elevated views out across the farmland to Birkwood and eastwards towards the bridge and workshops at Stanley Ferry. The visual amenity of the remainder of this section to Smalley Bight Farm is mostly contained during the summer months by deciduous vegetation aligning both sides of the Nagger Line, however intermittent gaps in the vegetation to the north enable direct elevated views out across the fields and river. Views out from a large gap in the hedgerow near the farm are dominated in the foreground by a telecommunications mast. To the south there are less gaps in vegetation however there are glimpses through the trees of Stanley Ferry playing fields. At the end of this section of trail views open up to the south across arable fields towards the rear of properties on Ferry Lane and Aberford Road. Views north are contained by the farm buildings and mast. During the winter there is a much greater degree of openness to the north and south with the loss of foliage enabling filtered views out through the dense vegetation.
- 8.4.64 Changes in magnitude of effect would be substantial adverse with elevated views out from the gaps in the hedgerow of the set up operations including in particular the formation of soil bunds and settlement lagoons at Birkwood. More prominent features such as the 5m high overburden screen mound would also be visible over the soil bunds for the 10 year duration of operations. The extraction and capping activities at Birkwood would be apparent over the soil bunds during P1 to P5. Extraction within Smalley Bight during P6 to P10 would be slightly less evident given the increase in distance however the overburden mound OB1 and top of the conveyor bridge would be visible throughout this period against the foreground views of the Birkwood void. 'Greening' of the screen mounds and soil bunds would only slightly lessen impacts. All views would be compounded during the winter months for the duration of the operations. The flooding and restoration of Birkwood and Smalley Bight at the end of P10 would also be apparent from this section of trail.
- 8.4.65 The overall magnitude of effect would be substantial adverse leading to slight beneficial in the longer term as the visual amenity of the outlook would be enhanced by the restoration scheme. Therefore the significance of visual effect is assessed as temporary major adverse from P1 to P10, temporary minor adverse after restoration and minor beneficial in the longer term.
- 8.4.66 There are no views out across the site from the remaining section of unclassified footpath along the Nagger Line between Smalley Bight Farm and Aberford Road and therefore there would be no adverse visual effects.

F1.2 Trans Pennine Trail, Paulinus Pilgrimage and Heritage Way and public footpath SFP12: 350m section from Smalley Bight Farm to Water Lane House, between 10m to 120m west (See Appendix A Figure A7 Key viewpoint 4)

- 8.4.67 This section of the trail is at 20m AOD and at the same level as the adjacent ground. The visual amenity is open with views eastwards across the fields of Smalley Bight against the water works woodland and to the east across the river bank to Birkwood Hill in the far distance. To the west, views are across arable fields and paddocks to Bungal House set against the trees along Aberford Road.
- 8.4.68 Set up operations and formation of soil bunds at Birkwood would be clearly perceptible across the river from this section of the trail. As the soil bunds were formed most operations during P1 to P5 would be screened however the top of the 5m high overburden screen mound and plant compound would be visible in part over the bunds.
- 8.4.69 During P6 to P10, the open nature views across Smalley Bight to Birkwood Hill would be largely screened by soil bund S3 constructed on the boundary next the trail to a height of 3m. The top of OB1 overburden mound may be visible in oblique views when travelling along the trail however the close up nature of the bund would obscure views of the mound from this viewpoint. Views of the soil bunds would be attenuated in part by when 'greened up' which would slightly lessen impacts. Restoration of both sites would be evident in the final year.
- 8.4.70 The magnitude of effect would be substantial adverse leading to slight beneficial in the longer term due to the visual enhancements created by the restoration scheme. Therefore the significance of visual effect is assessed as temporary major adverse from P1 to P10, temporary minor adverse after restoration at Y1 due to the close proximity of the scheme and minor beneficial in the longer term.

F1.3 Trans Pennine Trail and Paulinus Pilgrimage and Heritage Way: 950m section along the former Methley Joint Railway above Bottom Boat, over 1km north

- 8.4.71 This part of the trail is located along a dismantled railway line high above the village of Bottom Boat at 30m AOD. The trail is quite wide in this location and contained by vegetation to both sides. To the west, the northern edge is bounded by the rear gardens of properties on Meadowfield Rise. Further east, views to the north are across open fields towards Newmarket Lane with the NewCold distribution centre dominant on the horizon. To the south, views are contained by a dense hedgerow with glimpses through the foliage into back yards and paddocks belonging to property within Bottom Boat. These are often rather unkept and dilapidated in character particularly to the east of the village.
- 8.4.72 From this receptor, the north east corner of the site may be visible through the hedgerow to the south during the winter months of P1 to P10 with possible glimpses of the overburden mound OB1 on Smalley Bight, the conveyor bridge and the plant compound on Birkwood. In addition extraction operations along the southern edge of the Birkwood area of the application site may be visible during P1 to P5, as well as restoration activities in the final year. However given the distance from site of this section, the magnitude of effect would be negligible with no significant visual effects anticipated either during operations or in the longer term.

F2 720m section of towpath between Stanley Ferry and Birkwood Lock, 40m east (See Appendix A Figure A7 Key viewpoint 2)

- 8.4.73 The Aire and Calder Navigation towpath at around 20m AOD is 40m east of the eastern site boundary at Birkwood. The towpath has similar visual amenity to the canal (Receptor PA1) with views contained by the west bank of the canal and also by the intermittent trees and scrub which feature along the bank. To the east, intermittent vegetation along the towpath partially screen views over the arable fields up on Birkwood Hill.
- 8.4.74 The proposed canal wharf and wharf conveyor would be apparent next to the working waterway for the duration of the operations on site. During P1 to P5 some extraction activities at Birkwood, and the tops of haulage vehicles, the overburden screen mound and plant compound would also be intermittently perceptible through vegetation over the top of the bank.
- 8.4.75 An overall slight adverse magnitude of effect is anticipated for the duration of the operations with temporary minor adverse visual effects. Magnitude of effect would be negligible at Y1 after the removal of the canal wharf and conveyor and slight beneficial/negligible at Y15 with the increased vegetative cover. Visual effects at Y1 would be negligible but become minor beneficial/negligible at Y15 when the tops of the maturing vegetation becomes perceptible from the canal.

F3 750m of public footpath SFP24 on the south bank of the River Calder from Stanley Ferry to Trans Pennine Trail north of Smalley Bight Farm, between 10m to 50m south (disputed by landowner)

- 8.4.76 This public footpath is set at around 19m AOD at the bottom of the west bank levee of the River Calder. To the south, its outlook is open across the arable field to the Nagger line hedgerow. Views to the north are slightly contained by the river levees with partial views into the arable fields of Birkwood. A short section of path abuts the site boundary north of Smalley Bight Farm with views out across Smalley Bight towards the water works woodland.
- 8.4.77 Set up operations at Birkwood would be clearly visible across the river as would the set up at Smalley Bight. There would prominent changes visible within Birkwood from the start of the P1 until the end of P5 with the tops of plant and overburden screen mound visible over the soils bunds in some views. Operations at Smalley Bight during P6 to P10 would also be apparent from the route when near to the farm. As a result there would be a substantial adverse magnitude of effect to the visual amenity of this public footpath. The restoration scheme would also be apparent with a slight beneficial magnitude of effect created in the longer term by the enhanced visual amenity created by the additional vegetation. The significance of visual effect for this public footpath is assessed as temporary major adverse from P1 to P10, temporary minor adverse after restoration and minor beneficial in the longer term.

F4 End of Ward Lane public footpath SFP25 at Ferry Lane, 200m south

- 8.4.78 The section of public footpath on Ward Lane is visually contained to the west by vegetation and property with views across a paddock towards Stanley Ferry public house to the east. There would be no change to the visual amenity along Ward Lane however where the public footpath joins Ferry Lane at 19m AOD, there may be glimpses of the operations at Birkwood across Ferry Lane through a gap in the Nagger Line hedgerow

vegetation. As a result the magnitude of change at the end of the footpath is assessed as negligible to slight adverse throughout the proposals with no likely significant temporary or residual visual effects.

F5 245m of Water Lane public footpath SFP17, 80m to 315m north west of site

8.4.79 From Aberford Road at 22m AOD to Stanley Waste Water Treatment Works at 20m AOD both sides of Water Lane are visually contained by dense hedgerow or property boundaries. There may be glimpses of the operations within the Smalley Bight area of the site through the hedgerow during the winter with partial views into site from the top end of the lane, however the magnitude of change to the footpath is assessed as negligible with no likely significant visual effects.

F6 30m section of public footpath SFP14 between nos. 412 and 416 Aberford Road and 10m section of public footpath SFP13 on Lake Yard, 470m and 680m north respectively

8.4.80 There are glimpses into the southern and eastern edges of Birkwood from the sections of both public footpaths at an elevation of 34m AOD where they meet Aberford Road. The proposals would be seen at distance within the context of the wider valley set against a backdrop of the Welbeck landfill. As such it is considered both magnitude of effect and significance of visual effects arising from the proposals would be temporary minor adverse to negligible.

F7 150m section of public footpath SFP9 north of Roman Station Farm, 1.4km north

8.4.81 This footpath extends across arable fields from A642 Aberford Road opposite Kingsland Primary School. It has medium sensitivity due to the distance from site. From high ground at around 60m AOD, the site is only just discernible in the wide Calder Valley in far reaching north westerly views. Therefore it is considered that the magnitude of effect and significance of adverse visual effects from this footpath would be negligible.

F8 300m section of public bridleway NBW2 on the hillside west of Altofts, 1.2km east

8.4.82 From Birkwood Road on the western edge of Altofts, the bridleway extends south to the Newland Estate at around 1.2km from site and as such it has medium sensitivity. Nearing the pylon which is located on top of the hill at 50m AOD, there are a few far distance glimpses of the site. However views are mostly screened by the linear woodland along the estate track from Birkwood Road which precludes any significant adverse effects to magnitude of effect or visual amenity.

F9 200m section of public footpath NWFP5 on the Newland Estate to the south of the Birkwood Plantation, 1km east (See Appendix A Figure A7 Key viewpoint 5)

8.4.83 This footpath is located within the Newland Estate to the south of the Birkwood Plantation. Following a wooded field boundary, the path climbs up the contours from the site of the former Stanley Lodge and remaining gate pillar. On approaching the turn in the path on high ground at 55m AOD, there are far distance panoramic views across the wide valley below with the site visible in part over the top of intervening woodland. Long range views extend towards the M62 corridor, the hillside settlements of Stanley and NewCold distribution centre on the horizon. Given the complex nature of the view, there

would be no adverse effects to the magnitude or visual amenity of the footpath arising from the proposal.

F10 100m section of SFP20 from Hillside Farm, 90m section of SFP28 and 80m section of SFP29 near St Andrews Close, all to the south of Normanton Golf Club, 1.2km south west (See Appendix A Figure A7 Key viewpoint 6),

- 8.4.84 To the south of the golf course, the open setting of footpaths SFP20, SFP28 and SFP29 on rising ground within fields at around 55m to 60m AOD between Hillside Farm and Stanley Grange enables views out across Stanley South to the Calder Valley and Birkwood Hill beyond. The Stanley Ferry workshop roof tops are clearly visible on the horizon as is the NewCold centre. The site is just visible between the trees in the far distance. Due to the distance from site, there would be no adverse effects to magnitude or visibility.

Other public rights of way in the ZTV

- 8.4.85 Users of more distant public footpaths on the hillsides to the north west, west, south east, east and south of the site during the winter months may be able to glimpse the mineral extraction operations through the trees. However in the context of the wider landscape, the magnitude of effect would be largely negligible which would lead to minor adverse to negligible visual effects which would not be significant.

Highways

- 8.4.86 Five public highways within the ZTV are considered within the LVIA. The sensitivity of their users depends on the highway type and magnitude of effect of each varies due to distance from the proposals, length of road with available views, and duration and reversibility of effect.

H1 300m section of Ferry Lane, from 10m south

- 8.4.87 Ferry Lane is a minor road therefore vehicular users of this highway are classified as having medium sensitivity. The highway is a strategically important route providing the only crossing of the River Calder and Aire and Calder Navigation in the area. Footways align both sides of Ferry Lane from Aberford Road to the Stanley Ferry public house. From this point pedestrian access to Stanley Ferry Bridge is provided by a roadside footway to the south that ends to the east of Altofts Bridge.
- 8.4.88 The visual amenity of the lane to users travelling eastwards and westwards is contained by housing to the north and south from the A642 junction to no. 83 Ferry Lane and out with the ZTV. From this point eastwards, views north for all travellers are filtered through roadside individual tree planting and contained beyond the playing fields by the trees and shrubs along the Nagger Line.
- 8.4.89 From just west of the Nagger Line to Stanley Ferry Bridge at 21m AOD, there are intermittent open views of Birkwood to the north from the road across the low scrubby roadside vegetation. To the south there are views into the Stanley Ferry Marina and Stanley Ferry public house car parks. The crossing of Stanley Ferry Bridge over the River Calder provides slightly raised intermittent views to the north over the river towards

the site through the steel bar parapet, lattice pipe bridge and scrubby vegetation. Views northwards from the roadside footway encounter similar visual obstacles with the addition of moving traffic but are from a higher eye level vantage point and as such more prevalent.

- 8.4.90 Between Stanley Ferry Bridge and Altofts Bridge, all views to the south are screened by the boat yard workshops and Calder House. Between the bridges to the north, an open field access to Birkwood provides a fleeting but direct, close range view into site for vehicular users with similar views from the footway to the south of the road. A deciduous hedge then screens all remaining views north. On crossing Altofts Bridge, views from cars into the Birkwood site and the wider Calder Valley are substantially filtered by the lattice pipe bridge and solid steel parapet. Views are however more evident to users of the footway. Changes in magnitude of effect would therefore be limited to those to the north of this section of Ferry Lane.
- 8.4.91 There would be intermittent elevated views from the gaps in screening along Ferry Lane between the Nagger Line and Altofts Bridge and also from both bridges. Set up operations would be apparent including in particular the formation of soil bunds at Birkwood. More prominent features such as the 5m high overburden screen mound would also be visible over the soil bunds for the 10 year duration of operations. The extraction and capping activities at Birkwood would also be partly apparent over the soil bunds during P1 to P5. Extraction within Smalley Bight during P6 to P10 would be slightly less evident given the increase in distance however the overburden mound OB1 and top of the conveyor bridge would be visible throughout this period with foreground views of the Birkwood void. 'Greening' of the bunds would only slightly lessen impacts and all views would be more prevalent during the winter months. The flooding and restoration of Birkwood and Smalley Bight at the end of P10 would also be apparent from this section of highway.
- 8.4.92 The overall magnitude of effect for the section of Ferry Lane from the Nagger Line to Altofts Bridge would be moderate adverse leading to minor beneficial in the longer term as the restoration scheme would provide screening. Therefore the significance of visual effects is assessed as temporary moderate adverse from P1 to P10, temporary minor adverse after restoration and minor beneficial in the longer term. Adverse visual effects to the remainder of Ferry Lane are not considered to be significant.

H2 240m section of Birkwood Road, from 40m east

- 8.4.93 Vehicle users of Birkwood Road would have medium sensitivity. The section of Birkwood Road within the ZTV is at around 22m AOD from Altofts Bridge to the entrance to the Newland Estate. A roadside footway to the north of the road extends part way from the Birkwood Farm and Fisheries entrance to the Newland Estate entrance.
- 8.4.94 The visual amenity of road users travelling east from Altofts Bridge is contained to the west by a managed roadside hedgerow with limited views over the top of the hedge towards fields on Birkwood Hill. To the east there are intermittent views of fields and woodland through the outgrowing hedge. For travellers moving westwards towards Stanley Ferry from the Birkwood Farm and Fisheries entrance, elevated views open up across the roadside hedgerow to the Calder Valley and the hillside settlements of

Stanley and surrounding towns and villages on the skyline. Views into the site from the elevated section of the road and the footway are mostly screened by the roadside hedgerow, intervening landform and trees near the Newland Estate entrance. Beyond this there are glimpses into the site during the winter months from an elevation of 25m AOD with views through the trees aligning the field boundary with the Aire and Calder Navigation towpath.

- 8.4.95 There would no changes in magnitude of effect and negligible visual effects to road users travelling east from Altofts Bridge. For road travellers travelling west, there would be a slight adverse magnitude of effect during the winter months from the section of Birkwood Road between the Newland Estate entrance and Altofts Bridge where there is no footway. Filtered and fleeting views into the Birkwood area of the site would be possible through the trees during the winter months for the duration of the proposals with operations on site and the overburden screen mound and OB1 overburden mound visible in part. Restoration proposals would be unlikely to be perceptible. The significance of visual effects is assessed as temporary minor adverse from P1 to P10, negligible after restoration and negligible in the longer term.

H3 1.3km section of A642 Aberford Road, from 270m north west

- 8.4.96 Vehicular users of the A642 Aberford Road are classified as having low sensitivity due to the existing nature of the busy main road. The section of highway within the ZTV descends down the hill from 42m AOD just south of the junction with Bottom Boat Road to south of Water Lane at around 21m AOD. There is a footway to the west of the road for the entire length of this section. A footway to the east of the road commences at Bottom Boat Road and ends outside no. 486 Aberford Road, south of the Thatched House public house. To the west of the road views are mostly curtailed by the density of property development on rising ground. To the east, there are gaps in housing and vegetation that enable elevated views out across the fields to the wider Calder Valley to the north and the hillsides of Birkwood, Newland and the Welbeck landfill to the east and south east.
- 8.4.97 For road travellers heading north eastwards up the hill from Stanley, the outlook is focussed ahead with views out through the gaps in development directed forwards towards Bottom Boat rather than across the broader valley. Therefore the magnitude of change and significance of visual effect to the visual amenity of these users would be negligible.
- 8.4.98 For road users travelling south westwards along Aberford Road and users of the footways to both sides of the road in both directions, there are elevated views out across the fields and woodland within the wider Calder Valley from the gaps in the clusters of development. At 42m AOD, a 40m gap between the wooded area around the former Parsons Pit shaft and vegetation along the property boundaries of nos. 468a, 462 and Beechfield House enables far distance channelled views south eastwards across the field towards the canal, pylons and Birkwood Lock House in the wide valley below and then up the hillside opposite to the edges of Altoft, Birkwood Farm and Welbeck landfill. Views would be more open to the south during the winter months enabling clearer views of the water works woodland and the northern corner of the application site.

- 8.4.99 Further down the hill on landform descending from 39m AOD to 35m AOD, there are views out across the valley from a 150m gap in development between the Zion Christian Centre and no. 466 Aberford Road and Gordons Tyre Garage. Views of the site within the valley are similar to those from near to the Parsons Pit woodland but closer and from a longer section of road. Parts of the Birkwood and Smalley Bight areas of the site are also visible over and through the water works woodland with the Stanley Ferry workshops and Welbeck landfill more dominant in the view.
- 8.4.100 Further south, there are views out from a final 430m length gap between nos. 412 and 396 Aberford Road. These are from a lower level at between 34m and 21m AOD curtailing views of the wider valley with the site largely screened by the waterworks woodland, vegetation along Water Lane and vegetation within the grounds of the properties off Water Lane.
- 8.4.101 In the context of the panoramic views across the valley from the two gaps on Aberford Road at higher elevations, the magnitude of change for road users and pedestrians travelling south would be negligible to slight adverse during the summer months for the duration of the proposals and slight adverse to negligible during the winter months. The magnitude of change from the lower section of highway would be negligible for the duration of the development.
- 8.4.102 Overall, the magnitude of change for A642 Aberford Road is assessed as slight adverse to negligible over the lifetime of the proposals and negligible at Y1 and Y15. Significance of visual effects is therefore assessed as negligible.

H4 530m section of Bottom Boat Road, over 1km north

- 8.4.103 Views out from the higher section of Bottom Boat Road towards the wider Calder Valley are screened by the Parsons Pit woodland and by trees and scrub around the Old Canal pond. From the lower levels of Bottom Boat Road at 23m AOD, views of the valley from the road are limited to glimpses from between the short rows of terraced housing and only slightly clearer from the gap in development created by the access to William Lamb Group between Ardtamon and no. 2 Bottom Boat Road. Views beyond no. 74 Bottom Boat Road are screened by the restored Newmarket Colliery spoil mound.
- 8.4.104 Bottom Boat Road users have moderate sensitivity as it is a minor road. Magnitude of change is assessed as negligible for the lifetime of the development given the limited visibility of the site from the road. Significance of effects is therefore also assessed as negligible.

H5 New roundabout at the junction of A6194 Neil Fox Way and A6194 Novale Way and associated sections of highway at City Fields, over 1km south west

- 8.4.105 The development of housing would be ongoing up to 2031 in the vicinity of this new roundabout set at around 40m AOD on the hillside to the south west of the site. Although there are current far distance glimpses from the road of the site above the trees, these would become screened in due course by new housing which will infill most of the area from the roundabout to the existing urban curtilage of Stanley South and Nellie Spindler Way. Although there is potential for some partial views, the magnitude of effect would

generally be negligible as the perception of the proposals would be largely indeterminable. As such it is considered that all visual effects would be negligible.

Other highways in the ZTV

8.4.106 The potential for views of the site from vehicular users on the many other minor roads within the ZTV on higher ground to the north, west and south have also been reviewed but are not considered significant to the assessment.

8.5 Overall significance of visual effects

- 8.5.1 The site lies within an area of the Calder Valley which is generally open with wide ranging views into the valley from hillside settlements. Visual receptors which would be significantly affected by the mineral extraction proposals are restricted to a small number of properties and footpaths. This is partly due to the attenuating visual screening provided by the existing water works woodland and also from careful siting of the more onerous site features of the overburden mounds and plant compound and the mitigation provided by the soil bunds and screening mounds. This is further offset by the presence of the visual detractors within the ZTV including the traffic on the local highways, electricity pylons and NewCold distribution centre.
- 8.5.2 Significant visual effects would be most adverse for nine residential receptors (R1 to R7) and three public rights of way (F1.1, F1.2 and F3) within 220m of the site with eight of these receptors (R2, R3, R4, R6, R7 and F1.1, F1.2 and F3) likely to have temporary significant major adverse visual effects for some or part of the duration of the operation proposals. The many other receptors would experience temporary minor adverse or negligible effects which would not be significant.
- 8.5.3 The new waterbodies at Smalley Bight and Birkwood would be in keeping with the wetland character of the wider Calder Valley. Visibility across the sites and out to the wider landscape would be promoted via key viewpoints to maintain a degree of openness with carefully designed landscaping featuring a wide variety of planting types and species that are appropriate to the setting.
- 8.5.4 In conclusion, although the proposals would cause detriment to a few visual receptors close to the site in the short term, to most receptors they represent small-scale works within a wide expansive landscape where other man-made elements already dominate the view. For the closest visual receptors, adverse visual effects are generally assessed as becoming minor beneficial by Y15 as the site becomes visually assimilated into the valley landscape. For the remaining visual receptors, the restoration scheme would not be perceptible in the wider landscape due to the limited visibility of the site from a greater distance. Therefore for these receptors, visual effects at Y1 and Y15 after restoration are mostly negligible.
- 8.5.5 The overall significance of visual effect is therefore judged to be **temporary significant moderate adverse for the duration of the operations, minor adverse at Y1 and minor beneficial in the longer term**. This is in accordance with Table 9 and Table 10 in Appendix B.

9.0 Cumulative assessment

9.1 Introduction

- 9.1.1 A search of the WMDC planning portal has been undertaken to ascertain the location of any major planning applications and decision notices within the study area to understand the potential for any combined impacts arising from this proposal together with other projects. Applications of a similar nature and scale to the proposed development i.e. mineral, mining and waste applications have formed the focus, however further research has been undertaken on larger scale infrastructure projects including major building proposals. Smaller applications have been excluded including those for residential properties or minor alterations.
- 9.1.2 The period of search covers the last five years from January 2015 to the end of January 2020. This is the time period within which approved schemes would be expected to have been completed or construction begun. Recently validated applications up to the end of January 2020 have also been included.

9.2 Applications within the study area

- 9.2.1 In accordance with the LVIA methodology for cumulative assessment at Appendix B, a number of applications to WMDC which are either awaiting decision or decided, fall within the above criteria and are located within or close to the area of study.

Mineral planning applications and mineral screening opinions

Extension to Rudd Quarry, Greenfield Road, Normanton submitted by Normanton Brick Company Ltd (reference no. 19/01999/MIN)

- 9.2.2 In September 2019, a planning application was made for the winning and working of brick clay and associated minerals from a proposed extension to Rudd Quarry. The extension area is located 1.8km south west of site and out with the ZTV on the edge of the Newland estate, off Greenfield Lane, Normanton to the north of the existing quarry. The application included proposals to restore the original ground levels by imported inert soils and soil-making materials for agricultural after use. The application is currently awaiting decision.

Waste planning applications

Section 73 application for variation of planning conditions to Welbeck landfill site, Boundary Lane, Normanton submitted by FCC Environment (UK) Ltd (reference no. 18/00754/WAS)

- 9.2.3 In April 2018, a Section 73 application was made to WMDC for variation of the planning conditions approved under permission reference no. 12.02120.FUL for Welbeck landfill located 640m south east of site. This included changes to time limits; approved plans, finished levels, phased restoration and details, footpath details, modifications to waterbodies, surface drainage and ecology. It also included changes to the aftercare conditions by landfilling with colliery spoil and controlled waste under approved application 04/99/37555/AF. It requested a revised programme of working and

restoration. The application was approved on 14 September 2018 subject to the a number of conditions as listed in the decision notice⁹⁰. This requested that operations shall cease by 31 December 2025 with the capping of the landfill completed by 31 December 2023. Land is to be restored in accordance with the approved restoration scheme within a period of 6 months from completion i.e. by July 2026.

- 9.2.4 The restoration masterplan WR7346/21/09-1 dated 9 July 2018 shows the proposed restoration surface contours at Welbeck, the proposed landscaping and planting types and also the proposed permissive paths⁹¹. A permissive footpath is shown crossing the restored contours of the landfill from north to south at the high elevation of 62m AOD.

Special Policy Areas

SPA2 City Fields, Wakefield

- 9.2.5 As reviewed at paragraph 5.8.42, this part brownfield/part greenfield sustainable urban extension is located to the east of Wakefield. The northern extents of the City Fields allocation is 390m south of site with housing to be built to the west of Nellie Spindler Way. The whole site it to accommodate around 2,600 dwellings over a residential developable area of approximately 82ha with other uses such as employment, recreational and community uses.
- 9.2.6 City Fields Phase 1 to the north west around Stanley Hall is under consortium ownership. To the west of A6194/Bar Lane roundabout on high ground at 35 to 50m AOD 1km south west of site, the construction of 329 dwellings is currently ongoing with some housing now completed and occupied. A site with 'proposed education use' is allocated to the east of the roundabout.

9.3 Likely cumulative effects

- 9.3.1 As reviewed at Section 9.2, it is considered that there would be no cumulative effects arising from the mineral planning proposals at Rudd Quarry and Normanton Brickworks as the locations for the applications are out with the ZTV and not visually contiguous with site.
- 9.3.2 The proposals at Welbeck landfill are within the ZTV. Capping operations to the restoration contours would end at the end of P2 at Birkwood with the Welbeck restoration scheme complete half way through P5. During this time, the existing black landfill mound will become gradually 'greened up'. From the north, the restored landscape will feature agricultural pasture and amenity woodland to the lower levels and open common with scrub to the higher contours between 30m to 60m AOD. This would be visible within the Calder Valley to the north of Stanley Ferry and also to visual receptors to the west of the site including residential properties on Aberford Road. The operations on site at Smalley Bight and Birkwood would be seen against the backdrop of this emerging landscape with the detracting nature of the landfill within the wider landscape becoming reduced as a

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http://cominoweb.wakefield.gov.uk/Planning/lq/dialog.page?Param=lq.Planning&org.apache.shale.dialog.DIALOG_NAME=gfplanningsearch&SDescription=03/99/38537/J&viewdocs=true

⁹¹ Permissive paths are paths for walkers, riders, cyclists or any combination of these whose use is allowed by the landowner.

result. The cumulative magnitude of effects would be negligible to slight beneficial to both the landscape character and visual amenity but not anticipated to be significant. Cumulative beneficial effects are therefore assessed as negligible.

- 9.3.3 The northern edge of the City Fields development is within the ZTV. Building in this area is likely to be ongoing for the lifetime of the mineral proposals at Stanley Ferry. From the application site, there are long distance views of the new housing and areas yet to be developed on the hillside to the south of the site. This would add to the existing mass of built development in the area but views of City Fields are not visually contiguous with the application site for most visual receptors. As a result the cumulative magnitude of effects would be negligible to both the landscape character and visual amenity with cumulative effects also assessed as negligible.

9.4 Overall significance of cumulative effects

- 9.4.1 Overall it is considered that there are no significant cumulative effects arising from the site in conjunction with the other developments.

10.0 Conclusion

10.1 Summary

10.1.1 An LVIA has been undertaken for the mineral extraction proposals at Stanley Ferry near Wakefield. In accordance with the stated methodology, the LVIA has considered the key features that contribute to the local landscape resource including physical characteristics of the application site, immediate environs and landscape character, and an assessment of the visual context with reference made to local visual receptors and detractors. Relevant local planning policies and guidance documents have been reviewed in order to identify the value of the local landscape resource and context of the proposals in the wider context of the Calder Valley. Temporary and residual effects to landscape and visual receptors have been assessed and the potential for cumulative effects has also been considered.

10.2 Overall effects

- 10.2.1 As concluded at paragraph 7.5.4, the overall significance of landscape effects is concluded to be temporary significant moderate adverse from P1 through to P10 and the end of the restoration year, and minor beneficial in the longer term. This would be due to the new landscape elements and biodiversity value introduced by the restoration scheme, the retention of the open character of the site within the green belt and the assimilation of the proposals within the wider Calder Valley.
- 10.2.2 As outlined at paragraph 8.5.5, the overall significance of visual effects is concluded to be temporary significant moderate adverse for the duration of the operations, minor adverse at Y1 and minor beneficial at Y15. This would be due to the limited number of visual receptors within a wide ranging ZTV, visual interest introduced by the waterbodies and new landscaping and the longer term assimilation of the proposals within the valley landscape.
- 10.2.3 There are no anticipated cumulative effects arising in conjunction with the other developments.

APPENDICES

Appendix A Figures and photos

Figure A1 Site location and study area (A4)

Figure A2A Location plan - MWP 10168/01 (A4)

Figure A2B Scheme of working - MWP 10168-/03 (A4)

Figure A2C Restoration scheme (A3)

Figure A2D Bank profile for angling - MWP 10168/04 (A4)

Figure A3 Planning context (A3)

Figure A4 National, county and local landscape character (A4)

Figure A5 Application site (A4)

Figure A6 Visual analysis (A3)

Figure A7 Key viewpoints (A4)

Appendix B LVIA methodology

Appendix B LVIA methodology

1.0 Introduction

- 1.1 This landscape and visual impact assessment (LVIA) has been carried out in accordance with the principles set out in the Guidelines for Landscape and Visual Impact Assessment Third Edition (GLVIA3) updated 2013, published by the Landscape Institute and the Institute of Environmental Management & Assessment and supplemented by guidance contained within Design Manual for Roads and Bridges Volume 11, Section 3, Part 5 LA 107 Landscape and visual effects September 2019 and WebTAG Unit A3 Environmental Impact Appraisal Chapter 6 December 2015. The assessment of landscape character reflects the guidance in Landscape Character Assessment for England and Scotland published by the Countryside Agency and Scottish Natural Heritage, April 2002.
- 1.2 GLVIA3 requires that the LVIA process is tailored to the specific requirements of each project. It recognises that assessment relies on a balanced, well-reasoned professional judgement about complex inter-relationships. GLVIA3 also recognises that assessment includes some subjective judgement about aesthetics and value but where possible it requires that this should be supported by substantiated evidence and quantifiable fact.

2.0 Baseline studies

Definition of baseline

- 2.1 To identify the landscape and visual effects of the proposed scheme, it is necessary to understand the environment that would be affected by the proposals. These are known as the baseline conditions and thus the first stage of the LVIA process is to describe this baseline in both landscape and visual terms to enable assessment of changes that would be caused.
- 2.2 The 'baseline' for the measurement of effects is not the situation as it exists now, but the situation as it would exist immediately before the implementation of the scheme. This means that the identification of baseline conditions will consider predicted changes that would occur before implementation that are entirely independent of the proposed scheme. The baseline study therefore requires first the identification of the existing situation, and then the prediction of how it is likely to change prior to the implementation of the scheme.
- 2.3 The level of baseline detail collected will be that which is reasonably required to assess the likely significant effects arising from the proposed development. This detail will be appropriate and proportionate to the nature and scale of the proposed development and likely significance of landscape and visual effects. The level of detail may vary according to the specific project and stage of assessment.
- 2.4 The baseline year for effects that would be caused by the proposals is therefore the predicted date when construction would start. For some developments, effects will be

predicted both for the baseline year and for a future year e.g. date of operation (opening), 15 years after opening, or the worst year in the first 15 years of operation. The process involves forecasting the effects by comparing a scenario with the project against one without the project over the time stated.

Definition of study area

- 2.5 The baseline conditions will be defined for a study area which will be defined at the outset as the basis for initial data gathering and field study. It usually comprises the proposed development site, or sites, and the surrounding landscape within which it would be likely to cause significant effects. Any predicted changes to the landscape resource (physical changes, effects upon landscape character or quality) together with visual effects (changes to views or visual amenity) within the defined study area arising from the development will then be assessed. LVIA is an iterative process and thus ongoing assessment may well refine the study area as the assessment progresses.

Landscape baseline

- 2.6 Landscape baseline studies will identify and record key landscape features including topography and natural assets, the landscape character, geographical context, historical influences, the physical condition of features and assets, the rarity and representativeness of features, land use, aesthetic and perceptual factors and evidence of recreational activity. Desktop study will usually review relevant/appropriate National, County and local Level landscape/townscape character assessments, historic landscape character assessments, landscape and other designations, nature conservation interests, designated land usage, cultural context and associations and recreational destinations/routes which will all assist in identifying the value of the landscape.

Landscape value

- 2.7 The value or importance of the landscape and its condition or quality has a bearing on the sensitivity of the landscape to change. Effects on a landscape of national importance would generally have a greater weighting than effects on a landscape which is undesignated. The analysis of landscape value aims to reflect the value of the landscape at a specific geographical scale and identify the user group to which it is important and why, for example an unremarkable landscape may be highly valued by local people because it provides the only area of green open space in a built-up area.
- 2.8 The identification of landscape value therefore takes account of designations and several other considerations including:
- landscape quality
 - scenic quality
 - rarity
 - representativeness

- historical and cultural association
- recreation value
- perceptual aspects and associations
- the presence of any landscape detractors

2.9 The analysis is largely subjective, but it should be structured to be based on character, condition, aesthetic appeal and acknowledged importance. Assessment of landscape value can be aided by the application of Table 1 Determination of landscape value.

Table 1: Determination of landscape value⁹²

Value	Typical criteria	Typical scale	Typical examples
Exceptional	High importance, excellent condition or quality landscapes and/or presence of rare elements or features and/or containing important representative elements. No or limited potential for substitution.	International, national	World Heritage Sites, National Parks, AONBs or key landscape features/elements within them. Area free of disruptive visual detractors
High	High importance, very good condition or quality and/or with part presence of rare and/or representative elements. Limited potential for substitution.	National, regional, district, local	National Parks, AONBs, AGLVs or similar county designation including Special Landscape Areas or Areas of Great Landscape Value, or key landscape features/elements within them. Includes conservation areas, listed buildings, Historic Gardens and TPOs etc. Areas lacking prominent disruptive visual detractors.
Medium	medium importance, good condition or quality and in part unusual or locally scarce elements. Limited potential for substitution.	Regional, district, local	Generally un-designated landscapes/townscape but including potentially valuable local green spaces, village greens and allotments. Value perhaps expressed through literature or cultural associations or demonstrable use. Area has low level of disruptive visual detractors
Low	Low importance, fair or poor condition or quality, commonplace. Can be readily substituted or extensively improved.	District, Local	Individual landscape or townscape features may be worthy of conservation. Areas identified for improvement, restoration and enhancement. Area may comprise of detracting or degraded features.

Visual baseline

2.10 Baseline studies for visual effects should establish the extent of possible visibility of the proposals by differing groups of people and the nature of these views with a descriptive notation. A combination of fieldwork and desktop study will typically identify key visual

⁹² Based on examples given in GLVIA3 Paragraphs 5.19 to 5.30 and GLVIA2 Determination of Value table p144

receptors i.e. residential property, commercial property, highways, public rights of way and public open spaces etc. Fieldwork will be undertaken from publicly accessible locations, supported by views from within the proposed development site looking out to the visual receptors. The type/nature/characteristics of the view including whether at ground level or above will be recorded noting the influence of features that interrupt, partially screen or intervene. Desktop study will typically note the distance of the receptor to the proposed development site together with any recognised value attached to a particular receptor e.g. a cultural heritage asset.

Zone of Theoretical Visibility (ZTV) and Zone of Visual Influence (ZVI)

- 2.11 The visual baseline will map the geographical theoretical extent of the visibility of the development i.e. the Zone of Theoretical Visibility (ZTV). This methodology uses a manual approach to establish the ZTV applying map interpretation, cross sections through the development site in relation to its surroundings and visual envelope mapping on and off-site. This requires visiting various locations within the development and looking out to identify and map the land that is visible as well as touring the local landscape to establish points from which the development would be likely to be visible. This helps to determine the outer limit or visual envelope of the land that may be visually connected with the proposal.
- 2.12 Both ZTV mapping and site survey assumes that the observer's eye level height is 1.6m above ground level, based on the midpoint of average heights for men and women. Parts of the ZTV that are most distant from the proposal are omitted from the final ZTV and visual effects baseline where it is judged that visibility from this distance would be extremely limited and therefore any consequent effect would be imperceptible in the context of the wider view.
- 2.13 The Zone of Visual Influence (ZVI) is different from the ZTV in that it maps the area within which a proposed development could have an influence or effect on visual amenity.

Key viewpoints

- 2.14 GLVIA3 states that the viewpoints selected need to cover as wide a range of situations as is possible, reasonable and necessary to cover the likely significant effects. The emphasis must always be on proportionality in relation to the scale and nature of the development proposal and its likely significant effects, and on agreement with the competent authority and consultation bodies.
- 2.15 Selection of viewpoints should be informed by the ZTV process and they should include both near and more distant views, though not so distant as to be meaningless unless it is useful to demonstrate the influence of distance. They should cover the full range of types of people who may be affected. The detailed location of each viewpoint should be carefully considered and should be as typical or representative as possible of the view likely to be experienced there. The details of viewpoint locations should be accurately mapped and catalogued and the direction and area covered by the view recorded. The

information should be sufficient for someone else to return to the exact location and record the same view.

- 2.16 At each agreed viewpoint, baseline photographs should be taken to record the existing views. The Landscape Institute has published separate technical guidance in the Technical Guidance Note TGN 06/19 'Visual representation of development proposals',⁹³ which will be consulted when taking baseline photographs.
- 2.17 The camera used to take panoramic photographs of the key viewpoints for this LVIA was a Panasonic Lumix DMC TZ60 digital camera, set to 50mm focal length and mounted on a tripod. The photographs were taken at around 1.6m height - equivalent to an average person's eyeline - to best represent what the human eye would see on foot. The photographs taken for each completed panoramic viewpoint were joined together with Microsoft Image Composite Editor⁹⁴.
- 2.18 Key viewpoints selected for inclusion in the LVIA and for illustration of the visual effects will fall into one or other of the following three groups:
- representative viewpoints, selected to represent the experience of distinct types of visual receptor, where larger numbers of viewpoints cannot all be included individually and where the significant effects are unlikely to differ — for example, certain points may be chosen to represent the views of users of public footpaths and bridleways
 - specific viewpoints, chosen because they are key and sometimes promoted viewpoints within the landscape, including for example specific local visitor attractions, viewpoints in areas of particularly noteworthy visual and/or recreational amenity such as landscapes with statutory landscape designations, or viewpoints with cultural landscape associations
 - illustrative viewpoints, chosen specifically to demonstrate an effect or specific issue, which might for example be the restricted visibility at certain locations
- 2.19 The selection of the final viewpoints used should take account of a range of factors, including:
- the accessibility to the public
 - the potential number and sensitivity of viewers who may be affected
 - the viewing direction, distance (i.e. short, medium and long-distance views) and elevation
 - the nature of the viewing experience (for example static views, views from settlements and views from sequential points along routes)

⁹³ https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf

⁹⁴ <https://www.microsoft.com/en-us/research/product/computational-photography-applications/image-composite-editor/>

- the view type (for example panoramas, vistas and glimpses)
- the potential for cumulative views of the proposed development in conjunction with other developments

Value attached to views

2.20 In terms of visual receptors, value is attributed to the quality of views and judgements should be made about the value attached to the views experienced. This should take account of:

- recognition of the value attached to particular views, for example in relation to heritage assets, or through planning designations
- indicators of the value attached to views by visitors, for example through appearances in guidebooks or on tourist maps, provision of facilities for their enjoyment

3.0 Potential effects

Types of effect

3.1 During the LVIA process consideration must be given to whether the likely significant landscape and visual effects:

- result directly from the development itself (direct effects) or from consequential change resulting from the development (indirect and secondary effects) e.g. alterations to a drainage regime which might change the vegetation downstream with consequences for the landscape, which may have further landscape and visual effects
- constitute additional effects when the proposed development is considered in conjunction with other proposed developments of the same or different types (cumulative effects) – see Chapter 9.0 Cumulative assessment
- are likely to be short term or to carry on for a longer period possibly requiring different assessments for effects arising during construction, start of operational period and if relevant de-commissioning and restoration
- are likely to be permanent or temporary, in which case their duration should be considered as above
- are judged to be positive (beneficial), neutral or negative (adverse) in their consequences for landscape or for views and visual amenity

Establishing significance of effects

3.2 Once the key aspects of the proposals have been determined, the study area defined and the baseline condition established, the LVIA proceeds to assess the significance of the effects by undertaking a detailed consideration of the following:

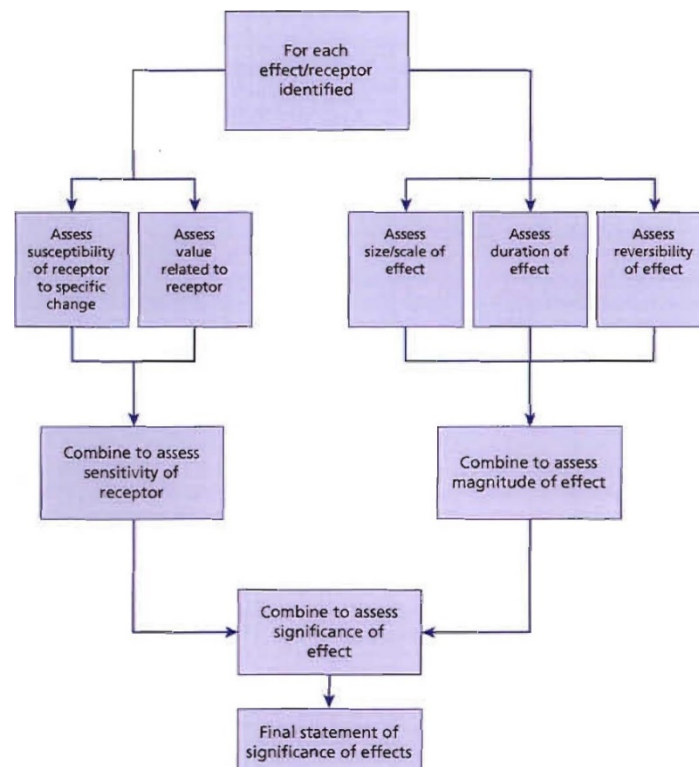
- Landscape effects – the effects on the landscape as a resource and the landscape receptors identified during the baseline studies. As discussed, these are the constituent elements of the landscape, its specific aesthetic or perceptual qualities and the character of the landscape in different areas; and
- Visual effects – the effects on the views and visual amenity as experienced by people (the visual receptors) identified during the baseline studies. These are the people who would be affected by changes in views or visual amenity at separate places.

3.3 A summary of the assessment process is shown at Table 2 Assessing significance of effects.

3.4 GLVIA3 explains that the landscape effects and visual effects should be considered in terms firstly of sensitivity which is based upon an evaluation of each key element likely to be affected. This combines judgements about:

- the **susceptibility to change of the receptors** (landscape and visual) arising from the specific proposal; and
- the **value** attached to the receptor as determined at the baseline stage.

Table 2: Assessing the significance of effects⁹⁵



⁹⁵ From GLVIA3 Figure 3.5

- 3.5 Secondly the magnitude of the effect on the receptor (landscape and visual) should be considered, made up of judgements about:
- The **size and scale** of the effect – for example, whether there is complete loss of a particular element of the landscape (or view) or a minor change;
 - The **geographical extent** of the area that would be affected; and
 - The **duration** of the effect and its **reversibility**.
- 3.6 Lastly the significance of the effect on the landscape and visual resource can be assessed by combining the judgements made regarding the sensitivity and magnitude of effect – see Sections 4.0 and 5.0 for more details.

4.0 Assessment of landscape effects

Sensitivity of Landscape Receptors

- 4.1 Landscape receptors need to be assessed firstly in terms of their sensitivity, combining judgements of their susceptibility to the type of change or development proposed and the value attached to the landscape as established in the baseline studies.

Susceptibility of landscape receptors to change

- 4.2 GLVIA3 defines susceptibility to change as the ability of the landscape receptor (whether the overall character or quality/condition of a specific landscape type or area, or an individual element and/or feature, or a specific aesthetic and perceptual aspect) to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies. In addition, this methodology is also influenced by the criteria for determination of the sensitivity of receptor within Paragraph 7.17 of the GLVIA Second Edition (2002) namely, *its quality, value, contribution to landscape character, and the degree to which the particular element ... can be replaced or substituted*.
- 4.3 Since landscape effects in LVIA are specific to both the specific landscape in question and the specific nature of the proposed development, the assessment of susceptibility must be tailored to the project. It should not be recorded as part of the landscape baseline but should be considered as part of the assessment of effects.
- 4.4 Judgements about the susceptibility of landscape receptors to change are recorded on a four- point scale ranging from very high, high, medium and low and linked back to evidence from the baseline studies.

Determining Landscape Sensitivity

- 4.5 The next step is to combine the separate judgements made on the individual criteria i.e. the value of the landscape and its susceptibility to change to conclude how they contribute to an understanding of the sensitivity of the landscape. This can be undertaken by using Table 3 Landscape: Determination of Sensitivity below.

Table 3: Determination of sensitivity⁹⁶

Landscape sensitivity	Indicative evaluation criteria (value + susceptibility to change)
Very high	Where the landscape is of very high value (i.e. a nationally designated landscape) and/or has very susceptible landscape characteristics, features or perceptual qualities e.g. features that make a strong/positive contribution to landscape character and would take a considerable time to replace.
High	A landscape of high value (i.e. a regionally designated landscape) and/or with susceptible landscape characteristics, features or perceptual qualities e.g. with many features that make a strong/positive contribution to landscape character and would take a considerable time to replace.
Medium	A landscape of moderate value (i.e. undesignated landscape of local value) and/or with moderately susceptible landscape characteristics, features or perceptual qualities e.g. with features that contribute to landscape character but which would be replaceable in the medium term.
Low	Landscape of low value and landscape characteristics, features or perceptual qualities of limited susceptibility e.g. with features that would be easily replaceable in the short term.

Magnitude of landscape effect

4.6 The magnitude of effect (formerly ‘magnitude of change’) consists of an evaluation in terms of the **size and scale** of changes to landscape resources which would arise from the proposed development, the **geographical extent** of the area influenced and its **duration and reversibility**.

Size or Scale

4.7 Judgements are needed about the size or scale of change in the landscape that is likely to be experienced as a result of each effect. This should be described and categorised on a verbal scale that distinguishes the amount of change. The effect of both loss and addition of new features may be judged as major, moderate, minor or none, or equivalent. The judgements should take account of:

- the extent of existing landscape elements that will be lost, the proportion of the total extent that this represents and the contribution of that element to the character of the landscape
- the degree to which aesthetic or perceptual aspects of the landscape are altered either by removal of existing components of the landscape or by addition of new ones. For example, removal of hedges may change a small-scale, intimate landscape into a large-scale, open one, or the introduction of new buildings or tall structures may alter open skylines

⁹⁶ Based on GLVIA3 Chapter 5

- whether the effect changes the key characteristics of the landscape which are critical to its distinctive character

Geographical extent

4.8 The geographical area over which the landscape effects will be felt must be considered. This is distinct from the size or scale of the effect as there may be moderate loss of landscape elements over a large geographical area, or a major addition affecting a very localised area. The extent of the effects will vary widely depending on the nature of the proposal. In general, effects may have an influence at the following scales, although this will vary according to the nature of the project:

- at the site level within the development site itself
- at the level of the immediate setting of the site
- at the scale of the landscape type or character area within which the proposal lies
- on a larger scale thus influencing several landscape types or character areas

Duration and reversibility of landscape effects

4.9 Duration can usually be simply judged on a scale such as short term, medium term or long term, where short term might be 0 to 5 years, medium term 5 to 10 years and long term 10 to 25 years. There is no fixed rule on these definitions and so in each case it must be made clear how the categories are defined and the reasons for this.

4.10 Reversibility is a judgement about the prospects and the practicality of the landscape effect being reversed in, for example, a generation. While some forms of development like housing can be considered permanent, others such as wind energy developments are often argued to be reversible since they have a limited life and could eventually be removed and/or the land reinstated. Mineral workings may be partially reversible in that the landscape can be restored to something similar to, but not the same as, the original. If duration is included in an assessment of the effects the assumptions behind the judgement must be made clear. Duration and reversibility can sometimes usefully be considered together so that a temporary or partially reversible effect is linked to definition of how long that effect will last.

Evaluation of magnitude of effect

4.11 Judgements made about the scale, extent and duration come together to contribute to the evaluation of magnitude of effect. This methodology utilises a seven-point scale ranging from substantial adverse/beneficial, moderate adverse/beneficial, slight adverse/beneficial to no change/negligible as shown at Table 4 Landscape: Determination of magnitude of effect.

Table 4: Landscape: Determination of magnitude of effect⁹⁷

Magnitude of landscape effect	Indicative evaluation criteria (scale + extent + duration)
Substantial adverse	A total loss of, severe damage to, or large-scale alteration to key elements/features/characteristics of the landscape resource and/or the introduction of prominent elements arising from the proposed development considered to be totally uncharacteristic compared to the distinctive attributes of the receiving landscape.
Moderate adverse	Partial loss of or damage to, or moderate-scale alteration which is clearly perceptible to one or more key elements/features/ characteristics of the landscape resource and/or the introduction of elements resulting from the proposed development that may be prominent but may not necessarily be considered as uncharacteristic.
Slight adverse	Minor loss of or small-scale alteration to one or more key elements/features/characteristics of the landscape resource and/or introduction of elements resulting from the proposed development that may be considered characteristic of the receiving landscape.
No change/negligible	No loss, very minor loss or very small-scale alteration to one or more key elements/features/characteristics of the existing landscape resource and/or introduction of elements resulting from the proposed development that are considered to be characteristic of the receiving landscape.
Slight beneficial	Minor improvement/beneficial addition of small-scale alteration to one or more key elements/features/characteristics of the landscape resource and/or introduction of elements resulting from the proposed development that may be considered characteristic of the receiving landscape.
Moderate beneficial	Clear improvement/beneficial addition of moderate-scale alteration which is clearly perceptible to one or more key elements/features/ characteristics of the landscape resource and/or the introduction of elements resulting from the proposed development that may be considered as enhancement of the landscape character.
Substantial beneficial	Large-scale improvements/beneficial addition or repair of substantial existing derelict or damaged landscapes and/or the introduction of elements resulting from the proposed development that may be considered to restore landscape character.

Significance of landscape effects

4.12 The next step is to combine the separate judgements relating to sensitivity and magnitude to inform the assessment of significance of effects on the landscape resource. In the process of assessment, the following general guidance should also be noted:

- The loss of mature or diverse landscape elements, or features, is likely to be more significant than the loss of new or uniform/homogenous elements.
- Effects on character areas which are distinctive or representative may be more important than the loss of areas in poor condition or degraded character which may, however, present greater opportunities for enhancement.

⁹⁷ Based on GLVIA3 Chapter 5

- The loss of landscape elements, features or characteristics should be given greater weight if they are identified as being of high value or importance. Thus, effects on landscape areas or characteristics recognised for their national importance are likely to be of more significance than effects on areas or characteristics of local importance. The judgement is whether the integrity of the landscape and objectives of designation are compromised or not.
- The sensitivity of the landscape is dependent on both the attributes of the receiving environment and the characteristics and effects of the proposed development and can only be established by carrying out the assessment. However, landscapes with a high value and sensitivity to the type of change proposed are likely to be more adversely affected by development than those with a lower sensitivity.

4.13 For the purposes of this methodology, the description of significance is based upon a matrix derived from GLVIA3 that captures the likely overall adverse, neutral or beneficial effect i.e. substantial adverse/beneficial, major adverse/beneficial, moderate adverse/beneficial, minor adverse/beneficial and no change/negligible, see Table 5 Determination of significance of landscape effects below.

Table 5: Determination of significance of landscape effects⁹⁸

Magnitude	Substantial	Minor/Moderate	Moderate	Major	Substantial
	Moderate	Minor	Moderate	Moderate/Major	Major
	Slight	Negligible/Minor	Minor	Minor/Moderate	Moderate
	No change/ Negligible	Negligible	Minor/Negligible	Minor	Moderate
		Low	Medium	High	Very high
		Sensitivity			

4.14 The indicative criteria detailed in Table 6 below also assists in determining significance which will be supported by more detailed text within the LVIA.

⁹⁸ Based on GLVIA3 Chapter 3

Table 6 Determination of significance of landscape effects – descriptive⁹⁹

Significance of landscape effect	Indicative evaluation criteria
Major adverse	The proposed development would be damaging to a valued, high quality landscape or landscape resource and would be at considerable variance with its scale, pattern and landform. It would introduce features that are considered discordant and/or intrusive leading to a loss or substantial deterioration to the distinctive landscape characteristics, features or perceptual qualities. It would not be adequately integrated into the landscape and would be likely to degrade, diminish or even destroy the integrity of a range of characteristics and elements and their setting.
Moderate adverse	The proposed development would be damaging to a landscape or landscape resource of recognised value or good condition. It would be moderately out of scale with the landscape and/or at odds with the local pattern and landform. It would introduce features considered to be discordant and/or intrusive that would not be possible to fully integrate leading to a discernible or partial deterioration to the distinctive landscape characteristics, features or perceptual qualities.
Minor adverse	The proposed development would cause some damage to the landscape or landscape resource and would be slightly at variance with its scale, pattern and landform. It would introduce features that would lead to a slight deterioration to the landscape characteristics, features or perceptual qualities and would not be able to be completely integrated because of the nature of the scheme itself or the character of the landscape where it is situated.
No change/Negligible	The proposed development would incorporate mitigation measures which maintain the existing landscape character and complement its scale, pattern and landform. It would introduce features that would lead to an imperceptible change to landscape characteristics, features or perceptual qualities.
Minor beneficial	The proposed development would fit well with the scale, pattern and landform and would result in minor enhancement of the landscape character or have the potential to improve the condition/quality of the existing landscape enabling some sense of place to be restored.
Moderate beneficial	The proposed development would fit well with the scale, pattern and landform and would result in considerable enhancement or improvements to the appearance and integrity of the landscape through restoration of characteristic features partly lost or diminished because of inappropriate land use, and/or considerable improvements to the condition/quality of the landscape allowing a sense of place to be restored.
Major beneficial	The proposed development would result in substantial enhancement or improvement to the integrity, appearance and value of the landscape character creating a sense of place through removal of dereliction or substantial damage caused by existing land uses, and/or substantial additional benefits and enhancements such as an iconic high-quality feature and/or series of features.

⁹⁹ Based on GLVIA3 Chapter 5 and the overall assessment score criteria in Department for Transport's Transport Analysis Guidance (TAG) TAG Unit A3 Environment, Chapter 6 Impacts on Landscape, Table 4 Dec 2015

- 4.15 Where landscape effects are judged to be significant and adverse, mitigation proposals for preventing/avoiding, reducing or offsetting or compensating for them should be described (see Section 7.0 Mitigation of landscape and visual effects). The significant landscape effects remaining after mitigation (residual effects) should then be summarised as the final step in the process.

5.0 Assessment of visual effects

Sensitivity of visual receptors

- 5.1 Baseline studies will have identified the location of visual receptors and the value of the view. As all visual receptors are people, each visual receptor i.e. the particular person or group of people likely to be affected at a specific viewpoint, should be assessed in terms of both their susceptibility to change in views and visual amenity and the value attached to particular views.

Susceptibility of visual receptors to change

- 5.2 GLVIA3 states that the susceptibility of different visual receptors to changes in views and visual amenity is mainly a function of:
- the occupation or activity of people experiencing the view at particular locations
 - the extent to which their attention or interest may therefore be focused on the views and the visual amenity they experience at particular locations.
- 5.3 The visual receptors most susceptible to change are generally likely to include:
- residents at home
 - people, whether residents or visitors, who are engaged in outdoor recreation including use of public rights of way, and whose attention or interest is likely to be focused on the landscape and on certain views
 - visitors to heritage assets or to other attractions where views of the surroundings are an important contributor to the experience
 - communities where views contribute to the landscape setting enjoyed by residents in the area
- 5.4 Travellers on road, rail or other transport routes tend to fall into an intermediate category of moderate susceptibility to change. Where travel involves recognised scenic routes awareness of views is likely to be particularly high. Visual receptors likely to be less sensitive to change include:
- people engaged in outdoor sport or recreation which does not involve or depend upon appreciation of views of the landscape

- people at their place of work whose attention may be focused on their work or activity and not on their surroundings, and where the setting is not important to the quality of working life (although there may on occasion be cases where views are an important contributor to the setting and to the quality of working life)

5.5 Judgements about the susceptibility of visual receptors to change should be recorded on a verbal scale (for example high, medium or low), but the basis for this must be clear, and linked back to evidence from the baseline study.

Determining visual sensitivity

5.6 The next step is to combine the separate judgements made on the individual criteria i.e. the value of the visual amenity and its susceptibility to change to conclude how they contribute to an understanding of the sensitivity of the visual receptor. This can be undertaken by using Table 7 Visual receptors: Determination of sensitivity below.

Table 7 Visual receptors: Determination of sensitivity¹⁰⁰

Visual sensitivity	Indicative evaluation criteria (value + susceptibility to change)
Very high	<ul style="list-style-type: none"> • Visual receptor locations where people are engaged in an occupation or activity where their attention or interest may be focused primarily upon views or visual amenity e.g. residents, walkers, visitors to heritage assets, etc. • Includes designated viewpoints and views with an emphasis upon the landscape e.g. National Parks.
High	<ul style="list-style-type: none"> • Occupiers of residential properties with views towards the proposed scheme from windows, garden or curtilage. If the view is very restricted, the sensitivity may be reduced. • Users of local and regional tourist trails, heritage assets and recognised viewpoints or beauty spots where the purpose of that recreation is enjoyment of the countryside. • Users of public rights of way (PROW) and non-motorised users of minor or unclassified roads or tracks where a key component of its recreational use is enjoyment of the view (including scenic routes). • Users of outdoor recreation facilities where the purpose of that recreation or a key component of it is enjoyment of the view.

¹⁰⁰ Based on GLVIA3 Chapter 6

Visual sensitivity	Indicative evaluation criteria (value + susceptibility to change)
Medium	<ul style="list-style-type: none"> • Occupiers of residential properties with limited views towards the proposed scheme from windows, garden or curtilage. • Users of schools and other institutional buildings and their outdoor areas. • Vehicular users of minor or unclassified roads or tracks. • Travellers on road, rail or other transport routes where travel involves recognised scenic routes. • Users of PROW and non-motorised users of minor or unclassified roads or tracks where the purpose of that use is utilitarian and incidental to the view, e.g. access to an urban facility. • Users of outdoor recreation facilities where the purpose of that recreation is incidental to the view e.g. sports grounds and the focus is on the activity and not the setting. • Those engaged in outdoor work (e.g. farmers).
Low	<ul style="list-style-type: none"> • People in their place of work e.g. offices, commercial/industrial/retail developments with limited or minimal focus upon views and visual amenity. • Users of main roads or passengers in public transport on main routes. • Both users and spectators of outdoor sport and recreation facilities, where views or the landscape are not a key characteristic.

Magnitude of visual effects

5.7 Each of the visual effects identified needs to be evaluated in terms of its **size or scale**, the **geographical extent** of the area influenced, and its **duration and reversibility**.

Size or scale

5.8 Judging the magnitude of the visual effects identified needs to take account of:

- the scale of the change in the view with respect to the loss or addition of features in the view and changes in its composition, including the proportion of the view occupied by the proposed development
- the degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics in terms of form, scale and mass, line, height, colour and texture
- the nature of the view of the proposed development in terms of the relative amount of time over which it will be experienced and whether views will be full, partial or glimpsed

Geographical extent

5.9 The geographical extent of a visual effect will vary with different viewpoints and is likely to reflect:

- the angle of view in relation to the main activity of the receptor
- the distance of the viewpoint from the proposed development
- the extent of the area over which the changes would be visible

Duration and reversibility of visual effects

5.10 As with landscape effects these are separate but linked considerations. Corresponding categories should be used to describe the duration such as short term, medium term or long term provided that their meaning is clearly stated with clear criteria for the lengths of time encompassed in each case. Reversibility should also be considered to understand whether the effect is likely to be temporary, partially or fully reversible.

Evaluation of magnitude of effect

5.11 The evaluation of magnitude of effect is described within this methodology on a seven-point scale ranging from no change/negligible to substantial adverse/beneficial as detailed in Table 8 Visual receptors: Determination of magnitude of effect below. The assessed change in view or visual amenity from a specific visual receptor is then recorded in tabular format and presented with supporting/explanatory text in the LVIA report itself. Where no view of the proposed development is available from an identified receptor, this is also recorded.

Table 8 Visual receptors: Determination of magnitude of effect¹⁰¹

Magnitude of visual effect	Indicative evaluation criteria
Substantial adverse	The total loss or large-scale alteration to key elements/features /characteristics of the view/visual amenity and/or the introduction of visually prominent elements arising from the proposed development near the receptor and considered to be uncharacteristic compared to the distinctive attributes of the existing view/visual amenity.
Moderate adverse	Partial loss or moderate-scale (clearly perceptible) alteration to one or more key elements/features/characteristics of the view/visual amenity and/or introduction of elements resulting from the proposed development that may be visually prominent (relatively close and/or oblique angle of view) but may not necessarily be considered to be uncharacteristic compared to the distinctive attributes of the existing view/visual amenity.
Slight adverse	Minor loss or small-scale alteration to one or more key elements/features/characteristics of the view/visual amenity and/or introduction of elements resulting from the proposed development that may be considered characteristic of the existing view/visual amenity.
No change/negligible	Very minor loss or barely perceptible alteration to one or more key elements/features/characteristics of the existing view/visual amenity and/or introduction of elements resulting from the proposed development that are considered to be characteristic of the view. Where existing features in the landscape i.e. buildings and/or vegetation intervene to offer a predominantly effective screen.

¹⁰¹ Based on GLVIA3 Chapter 6