

## **18 CHAPTER 18 - CONCLUSIONS**

### **18.1 INTRODUCTION**

This Environmental Statement (ES) has been prepared to accompany the application by Lound Hive Limited (the Applicant), for full planning permission for the Retford Circular Economy Project (the Proposed Development). The ES has been prepared in accordance with the EIA Regulations and is based on the Scoping Opinion received on 4<sup>th</sup> November 2022 from Nottinghamshire County Council (NCC).

The assessment of the Proposed Development presented within the ES has shown that if the identified additional mitigation is implemented during the design, construction and operational stages, it is considered that the identified significant effects can be appropriately mitigated and reduced to a level which is not considered to be significant. This is with the exception of effects on the closest noise receptors, resulting from specific and short-term restoration activities following PFA extraction, and landscape and visual effects on landscape character, residential receptors and footpath users.

Detailed below are the conclusions of topic assessed in the ES, noting the likely significant environmental effects, and the proposed mitigation measures.

### **18.2 LANDSCAPE AND VISUAL IMPACT ASSESSMENT**

Residual significant landscape and visual effects are predicted as a result of the Proposed Development. These significant effects would be reduced through the implementation of mitigation measures as set out in ES Chapter 7. In addition, the phased approach to extraction and restoration means that effects would be localised and temporary in nature.

There would be a residual moderate-major adverse landscape effect during construction on the landscape character within the Site and a residual moderate-major adverse landscape effect during the operational phase on IL10: Ranskill (BDLCA) which coincides with the Site.

There would be residual moderate-major effects on residential receptor R2 and bridleway NT|Sutton|BW4, NT|Sutton|BOAT7 footpath and Lound Low Road, NT|Sutton|FP1 footpath and NT|Sutton|FP2 footpath. These effects would be short-term and temporary in nature, due to the phased approach to the Proposed Development, and would mainly occur during lagoon embankment removal.

Post-restoration as the reed-fringed lakes, wet grassland and woodland planting matures and become functional habitats there would be some benefits at both the Site and local level providing habitat connectivity to the Sutton and Lound Gravel Pits SSSI to the south and east; and improvements to the general landscape setting of Sutton-cum-Lound.

### **18.3 ECOLOGY AND ORNITHOLOGY**

No significant effects are predicted on ecology and ornithology during the construction and operation of the Proposed Development with the implementation of the embedded mitigation and additional mitigation measures set out in ES Chapter 8.

An Outline Monitoring and Mitigation Plan has been drafted which provides assurance that changes in the baseline condition would be identified and advises reactive mitigation under different scenarios. Works would be carried out in accordance with the Construction Environmental Management Plan (CEMP), an outline of which is set out in the Outline Construction Environmental Management submitted as part of the ES, and a Dust Management Plan (DMP) has been produced to reduce or avoid the potential effects of dust emissions on environmental and ecological receptors. The Proposed Development

would also require an environmental permit, which would introduce further stringent management measures.

Mitigation measures such as compensation for loss of habitat and habitat creation as enhancement would lead to likely positive effects at the Local level in respect of habitats, birds, bats, amphibians and reptiles. This would be achieved through the implementation of the Outline Restoration Strategy and associated Biodiversity Net Gain (BNG) Assessment.

Through individual assessment of the qualifying/designated features, consideration has been given to impacts on the Sutton and Lound Gravel Pits SSSI and LWS. No significant effects in terms of the EIA Regulations are predicted on the statutory designation, both alone and in combination.

#### **18.4 HYDROLOGY, HYDROGEOLOGY AND FLOOD RISK**

No significant are predicted on hydrology, hydrogeology and flood risk during the construction and operation of the Proposed Development with the implementation of the mitigation measures set out in ES Chapter 9.

The Water Environmental Management Plan (WEMP) is included as part of embedded design development and sets out measures to avoid or mitigate pollution for all phases of the Proposed Development. As part of the abstraction permit application a hydrogeological assessment would be undertaken to determine the potential impact from dewatering. Once completed any significant effects on hydrology, hydrogeology and flood risk would be identified and additional mitigation measures incorporated into the WEMP/CEMP.

The Proposed Development also includes a comprehensive Drainage Management Plan (DMP). This would be further supplemented by detail in any environmental permit and reserved by suitable planning conditions, as is standard practice when dealing with drainage. The DMP includes measures to adequately manage groundwater, surface water and process water.

In support of the water discharge permit application a hydrogeological risk assessment would also be undertaken to determine the appropriate concentration limits for potential contaminants of concern which would be agreed with the EA, and, if required, potential water treatment options prior to discharge.

#### **18.5 GROUND CONDITIONS AND CONTAMINATION**

No significant effects are predicted on ground conditions and contamination during the construction and operation of the Proposed Development. Extensive embedded mitigation measures would be applied throughout each stage of the Proposed Development, as set out in ES Chapter 10.

The Proposed Development would provide betterment from a contamination perspective, through removal of the PFA and protection of identified receptors.

The Site would be licensed under an environmental permit, and therefore restoration would be undertaken in accordance with an Environment Agency (EA) Construction Quality Assurance (CQA) plan. Mitigation and management measures are detailed in the OCEMP and WEMP. The Proposed Development also includes the aforementioned DMP, which includes measures to adequately manage groundwater, surface water and process water, in order to prevent contamination.

Operational activities would be subject to environmental permit requirements and controls. This would include ongoing surface water and groundwater quality monitoring, specific drainage designs, surface water and groundwater risk assessments, settlement

and treatment lagoon design, dewatering and pumped water discharges all of which would be addressed through the EA regulatory permit and compliance requirements.

## **18.6 CULTURAL HERITAGE AND ARCHAEOLOGY**

No significant effects are predicted cultural heritage and archaeology during the construction and operation of the Proposed Development with the implementation of the mitigation measures set out in ES Chapter 11, including traffic management during construction, and the landscape strategy during operation and through the restoration phase.

Although the potential impact upon archaeological assets is minor, due to the majority of sand and gravel deposits having previously been removed, there is nevertheless some potential for removal of archaeological deposits within these areas if encountered. An outline design for limited staged archaeological mitigation produced in consultation with NCC is therefore proposed and would comprise a Written Scheme of Investigation (WSI) setting out the approach to be secured by a suitable planning condition.

## **18.7 NOISE**

Some limited residual significant noise effects are predicted on the closest noise sensitive receptors. These significant effects would be short-term and/or temporary in nature and would be reduced through the implementation of the mitigation measures as set out in ES Chapter 12.

During construction, there would be a temporary significant effect on part of the Sutton and Lound Gravel Pits SSSI (ecological receptor). Following mitigation measures through the implementation of the CEMP the residual effect would be reduced to Moderate.

During operation, there would be a significant effect on Wetlands Fisheries and Bellmoor Farm and adjacent properties as a result of embankment removal during restoration, which would be short-term and temporary. Mitigation options in this instance are limited due to the nature of the restoration works; however, a number of additional measures for noise mitigation would be applied. Following the application of these mitigation measures, the residual effects on the receptors would be reduced to Moderate.

## **18.8 AIR QUALITY**

No significant effects are predicted on the local air quality as a result of the construction and operation of the Proposed Development with the implementation of the mitigation measures set out in ES Chapter 13.

The air pollutant concentration modelling has identified that there would be negligible increases in nitrogen dioxide and particulate matter concentrations at ecological and existing sensitive receptors as a result of traffic from the Site. However, there are no sensitive receptor locations where the Air Quality Objectives would be exceeded during construction and extraction.

Dust control measures have been embedded into the design of the Proposed Development and include measures such as: pre-processing areas located >250 m from any residential receptors; no stockpiles of PFA to remain at the end of each working day; enclosed material storage building, kept under negative pressure with extraction system fitted with filters; all processing plant fully enclosed, with the exhaust from the dryers passing through filters prior to release to atmosphere; water availability at all times on site with a dust suppression system utilising a tractor and bowser for all internal roads, stockpiles and surfaces, where practicable; graded and vegetated at the earliest opportunity. All measures are detailed in the aforementioned DMP.

## 18.9 TRAFFIC AND TRANSPORT

No significant effects are predicted on traffic and transport during the construction and operation of the Proposed Development with the implementation of the embedded mitigation measures set out in ES Chapter 14.

The additional traffic due to the operational activities of the Proposed Development would result in small increases of traffic flows, including HGVs, on the surrounding highway network. The effects on driver delay, severance, pedestrian delay, and highway safety would not be significant.

Traffic generation during the construction phase of the Proposed Development is minimal when compared to the operational phase. Therefore, traffic and transport effects for the construction phase of the Proposed Development are also considered not significant.

Best practice measures during the construction phase to minimise traffic impacts upon local highways would be applied through the implementation of a Construction Traffic Management Plan (CTMP). The Operational Traffic Management Plan (OTMP) would mitigate the impact of the operational phase and associated traffic, along with a wheel wash and jet wash option, to minimise traffic impacts during both phases of the Proposed Development.

## 18.10 CLIMATE CHANGE

No significant effects are predicted for climate change during the construction and operation of the Proposed Development. The climate resilience measures identified and adopted by the design seek to minimise climate risks due to future climate change and as such the Proposed Development is resilient to likely climatic changes within its lifetime.

The Proposed Development presents an opportunity to recycle and beneficially use waste PFA by-products derived from the burning of coal in power stations to significantly reduce or replace some of the carbon-intensive construction materials, such as Portland Cement. The Proposed Development has also come forward at a time where the UK construction industries are facing real and urgent shortages of materials due in part to geopolitical conflicts, but also to a lack of available and dwindling supply of some aggregates.

The use of PFA presents the construction industry with a viable and also sustainable alternative. The use of PFA also provides savings in terms of net zero and GHG emissions and would have the potential to save up to circa 5 million tonnes CO<sub>2</sub>e over its lifetime compared to the use of conventional Portland Cement, which is a significant beneficial effect in terms of climate change.

## 18.11 SUSTAINABILITY

The concept of sustainability is defined by the United Nations as *'meeting the needs of the present without compromising the ability of future generations to meet their own needs.'* Sustainability can be defined according to three core pillars: environmental, social, and economic. All three elements need to be balanced and considered to achieve sustainability. It is considered that the Proposed Development would meet this criteria by contributing to reducing environmental damage through the extraction of the PFA and the restoration of the landscape with measures in place to balance a range of ecological, farming and landscape interests and the provision of new job opportunities over 25 years to support local economy.

As discussed in Section 18.11, the Proposed Development presents a unique and beneficial opportunity to recycle and use waste PFA by-products in a highly innovative and sustainable way to significantly reduce or replace some of the current carbon-intensive construction materials used in the sector today, and in doing so provides tremendous savings in terms of net zero and GHG emissions.

In terms of local sustainability, the extensive biodiversity led restoration of the Site post extraction would provide an opportunity to restore the landscape and to redress some of the former industrial activities on the Site. The restoration proposals would also be balanced to conserve existing farming activities by simultaneous extraction and restoration which would lessen economic pressures on the local farmers by enabling them to have access to the land in stages. The life span of the Proposed Development over 25 years would also provide guaranteed jobs to support the local economy.

### **18.12 INTERACTION AND ACCUMULATION OF EFFECTS**

Interrelationship effects on sensitive environments (Sutton and Lound Gravel Pits SSSI, Lound LWS, and the Idle Valley Nature Reserve), and recreational receptors are considered in topic chapters of the ES where they are impacted by one or more effect. The Interaction and Accumulation of Effects chapter (ES Chapter 17) considers other interrelationship effects, principally on individual properties or groups of properties, footpaths and trails, and the local environment as it effects people in the vicinity of the Proposed Development. The majority of the construction impacts would be short-term, temporary, and reversible, due to the phased nature of the Proposed Development, and all operational impacts are short-term and associated with embankment removal during the restoration phase rather than normal operation.

There may be several different effects considered elsewhere in the ES that could change, relative to the baseline, the experience of someone living in the locality, particularly in terms of noise and visual impacts associated with construction and embankment removal during restoration. These effects assessed in combination are a 'detectable but non-material change', and hence are minor and not significant. Furthermore, the significant beneficial impact to the landscape associated with the restoration of the Proposed Development outweighs these minor impacts and provides benefits to the local people through provision of vistas, and a balanced landscape of farming activities and priority habitats.

No additional mitigation has been identified to reduce these effects, beyond that set out in the other technical chapters of the ES.

### **18.13 OVERALL CONCLUSIONS**

The Proposed Development seeks to minimise the construction impacts, such as dust and noise. Mitigation measures have been identified which reduce any effects predicted on the local air quality as a result of the construction and operation to a level that is not significant. The DMP sets out measures to reduce or avoid potential effects of dust and those which aim to minimise air and pollution caused by traffic, such as no road-bound vehicles to access unpaved roads on site and all vehicles exiting site to utilise wheel wash located adjacent to weighbridge. Further details on air quality can be found in ES Chapter 13.

The Proposed Development seeks to minimise noise pollution caused by construction and traffic. Mitigation measures include vehicle and plant to be fitted with exhaust silencers, machines in intermittent use would be shut down between use or throttled down to a minimum and limited use of noisy plant where practicable. While mitigation measures would be put in place, residual significant effects due to construction and operational activities of the Proposed Development remain, although these are temporary and/or short-term. Further details on significant effects and mitigation measures relating to noise can be found in ES Chapter 12.

The Proposed Development seeks to maintain and enhance biodiversity. Mitigation is detailed through the Outline Monitoring and Mitigation Plan, the Indicative Landscape Restoration Masterplan, and an Outline Construction Environment Management Plan, and includes avoiding high value boundary habitats, best practice mitigation, and utilising a

Dust Management Plan. In addition to this, positive local level biodiversity effects are predicted through compensatory habitat and the implementation of the Outline Restoration Strategy.

The Proposed Development seeks to provide new employment opportunities and encourage local employment. It is estimated that around 20-30 direct jobs would be created including site processing and handling staff, admin and welfare, construction machine operators, landscape construction and forestry workers. Also, a number of the direct jobs would be skilled jobs such as project managers and engineers. There would also be indirect job creation, including in the local supply chain and haulage contracts.

Reusing PFA in the construction industries presents an important example of the circular economy where the waste output of one process can be used as a material component to another; reducing the need to extract primary resources. The Proposed Development promotes sustainable development through its application as a cement substitute and would provide an overall beneficial significance in terms of GHG emissions.