

Hemswell Cliff Food Enterprise Zone (FEZ) Local Development Order (LDO)

Environmental Impact Assessment
Non-Technical Summary

West Lindsey District Council

January 2017

1 Introduction

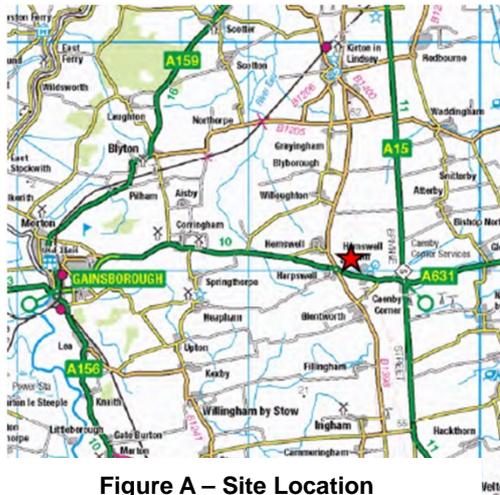


Figure A – Site Location

This Non-Technical Summary (NTS) forms part of the Environmental Statement (ES) that has been prepared to accompany the Local Development Order (LDO) for the Hemswell Cliff Food Enterprise Zone (FEZ) site at Hemswell Cliff, Lincolnshire. The location is shown in Figure A and an aerial photograph of the site is shown in Figure B below.

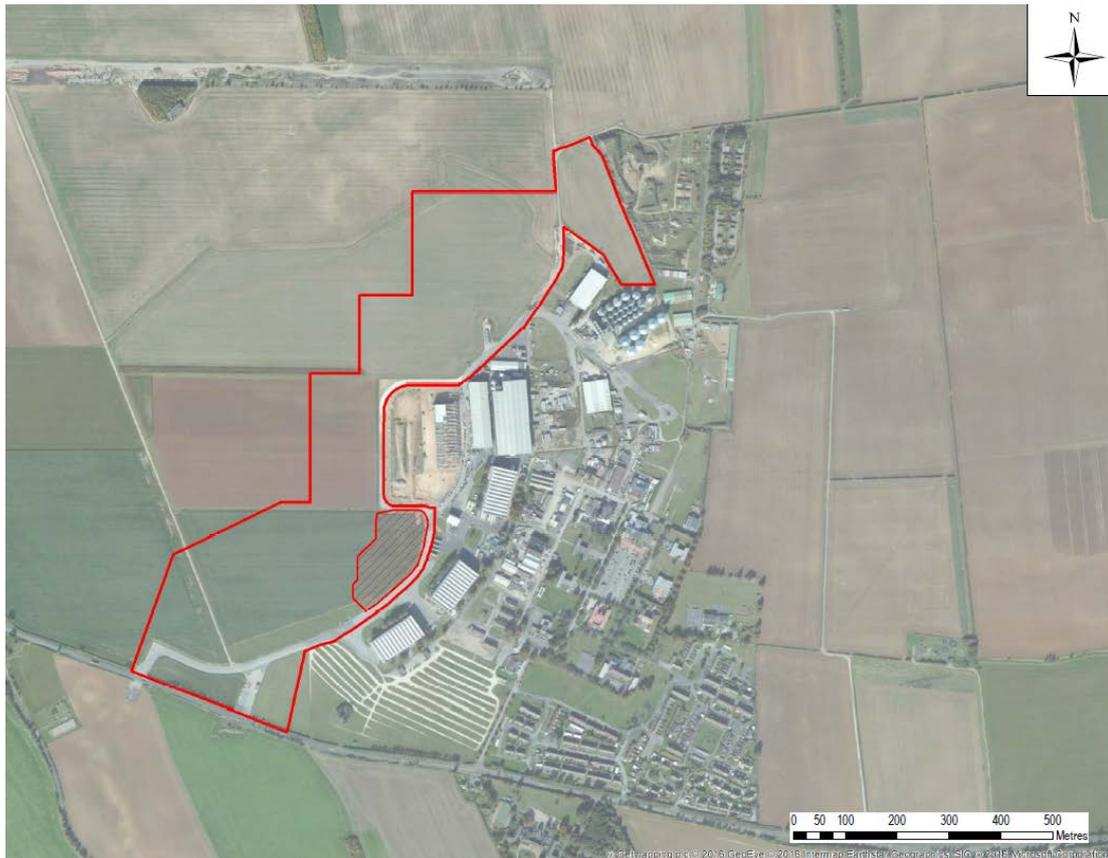
West Lindsey District Council (WLDC) intends to make a LDO to support and encourage development within the agri-food industry at the Hemswell Cliff FEZ site. A LDO simplifies the planning process for developers wishing, in the future, to occupy a site, providing they can show that they can comply with the set parameters of the LDO, when submitting their planning applications.

The Hemswell Cliff FEZ site shown in Figure B is approximately 30 hectares (ha). For comparison, a typical football pitch is just over 1 hectare.

1.1 What is an Environmental Impact Assessment (EIA) and why is one required for the Hemswell Cliff FEZ site?

Environmental Impact Assessment (EIA) is a formal process for identifying the potential environmental impacts (changes) that may happen because of proposed developments. The EIA process helps developers, planning authorities, consultees and the public decide whether any likely environmental effects (the consequences of changes for people or the natural or built environment) would be significant. If significant effects are predicted, ways to avoid, reduce or 'make good' adverse (negative) effects need to be identified as part of the EIA. If any significant effects are predicted to remain after these measures have been implemented, these 'residual' significant effects must be clearly reported in an Environmental Statement (ES) (a document that reports the findings of the EIA). Appropriate 'mitigation measures' can form conditions of planning permissions or, in the case of the Hemswell Cliff FEZ site, the proposed LDO.

EIA is required for certain developments that fall under Schedule 2 of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2011 (as amended 2015) ('the EIA Regulations'). West Lindsey Council adopted a Screening Opinion on 12th April 2016 that confirmed the proposed development may have significant environmental effects and so required an EIA to be undertaken.

Figure B – LDO Site Boundary

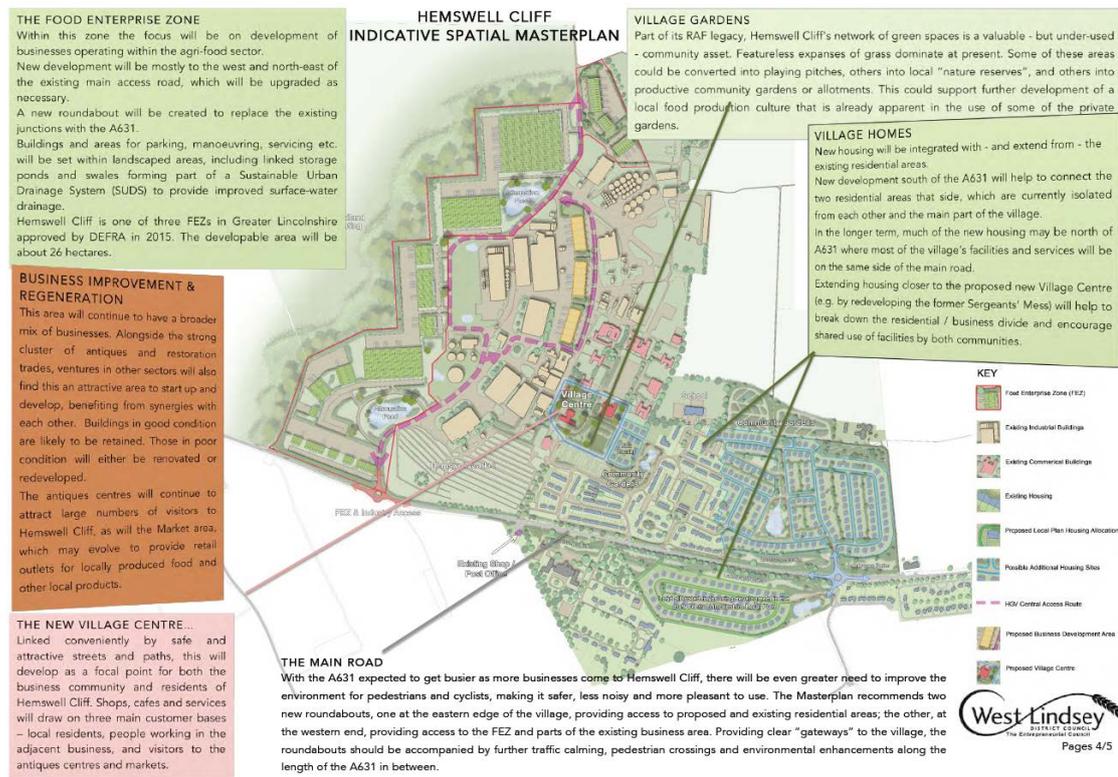
1.2 How does the EIA relate to the Masterplan for Hemswell Cliff?

The Masterplan for Hemswell Cliff (OpenPlan 2016) was commissioned by WLDC because in the period since the former RAF Hemswell was sold by the Ministry of Defence (MoD) in the mid-1980s, Hemswell Cliff has become an important employment site for West Lindsey. However its residential community (of about 800 people) lacks facilities and services and suffers high levels of deprivation and isolation. As such, a Masterplan was required in order to guide the future growth and development of Hemswell Cliff as a strategic employment area and establish a more sustainable residential settlement. The masterplan vision includes the creation of a successful Food Enterprise Zone (FEZ), attracting investment and becoming a centre of excellence in the agri-foods sector.

The purpose of the Masterplan was to ensure that requirements and impacts arising from proposed new development would be identified and planned for, so that opportunities for wider social, economic and environmental improvements could be realised.

To help develop the Masterplan, a number of community consultations, including a series of meetings and discussions with key stakeholders took place. These included a Key Stakeholders' Workshop on 17th February 2016 and a Community "Drop-in" on 3rd March 2016.

The EIA has taken into account the vision and proposals set out within the Masterplan and made use of the findings of the Masterplan, in preparing the various EIA technical assessments.

Figure C – Indicative Masterplan prepared by OpenPlan (April 2016)

The parameters plan for the LDO (see Figure E below) takes into account the Masterplan map and builds upon this by designing a Sustainable Urban Drainage Scheme (SUDS) to encompass the drainage from the Hemswell Cliff FEZ site.

1.3 How has the Environmental Impact Assessment (EIA) been undertaken?

The EIA Regulations set-out the broad range of environmental topics that should be considered in an EIA. Scoping forms a key stage in the EIA process, providing a framework to identify likely significant environmental effects arising from a development and deciding which priority issues need to be addressed in an EIA. Scoping also identifies those issues that are not likely to be significant and so do not need to be assessed in detail in the EIA or can be 'scoped-out'.

After Scoping, specialists in a wide range of disciplines carried-out the environmental studies as described in Section 2 of this NTS. But the scoping process concluded that the following technical topics were not relevant to the EIA and could be scoped-out:

- waste (given that there is predicted to be limited quantities of construction waste and because the outline nature of the LDO makes it difficult to assess the specific impacts of future operational waste in detail, it was agreed that these matters can be more appropriately and comprehensively assessed at the subsequent reserved matters application stage); and
- socio-economic effects (because the effects on the local area would be expected to be positive). Job creation and need for the development are described below in Sections 2.5 and 2.6.

1.4 What does the Environmental Statement (ES) contain?

The ES reports the findings of the EIA process and is set-out in three separate ES Volumes.

Within Volume I, 'Chapter 1 – Introduction' includes a description of the EIA process. Details of the developments being proposed are set out, including how they will be constructed and operated (Chapter 2 - The Proposed LDO). An overview of national and local planning policy, including an assessment of whether the proposed Hemswell Cliff FEZ site complies with this policy is also provided (Chapter 3). Chapter 4 - Consultation summarises the consultation process and what has been agreed in terms of each of the technical assessments required. This chapter also sets out draft conditions that should be included in the LDO.

Chapters 5 - 13 of Volume I provide the technical assessments for each of the topics agreed to be within the scope of the EIA. 'Chapter 14 - Cumulative and Combined Effects' presents details of other 'committed' developments that may be happening within the local area and assesses whether effects of the Hemswell FEZ site are significant when these other developments are also taken into account. Chapter 14 - Cumulative and Combined Effects also identifies whether combined effects are significant. Combined effects may happen where several different effects (e.g. increase in noise disturbance and effects on visual amenity) affect a single receptor (e.g. a residential property). 'Chapter 15- Summary of Environmental Effects' presents a summary of significant environmental effects found by the EIA process.

Volume II presents technical reports and information that specialists have either prepared or referred to in their chapters, including a copy of the Masterplan (see Appendix 2.1 in Volume II). Volume III presents the figures and drawings that accompany each chapter of the ES.

1.5 What happens next?

In accordance with the LDO regulations, a draft of the LDO, Statement of Reasons and Environmental Statement will be placed on consultation for a period of not less than 28 days, following approval by West Lindsey District Council. The consultation will be publicised by site notice and local advertisement. The documentation will be available for review at West Lindsey District Council's offices, on its website and, as appropriate, locally to Hemswell Cliff.

If you require further information, or need this document in large print, alternative language, or audio version, then please contact:

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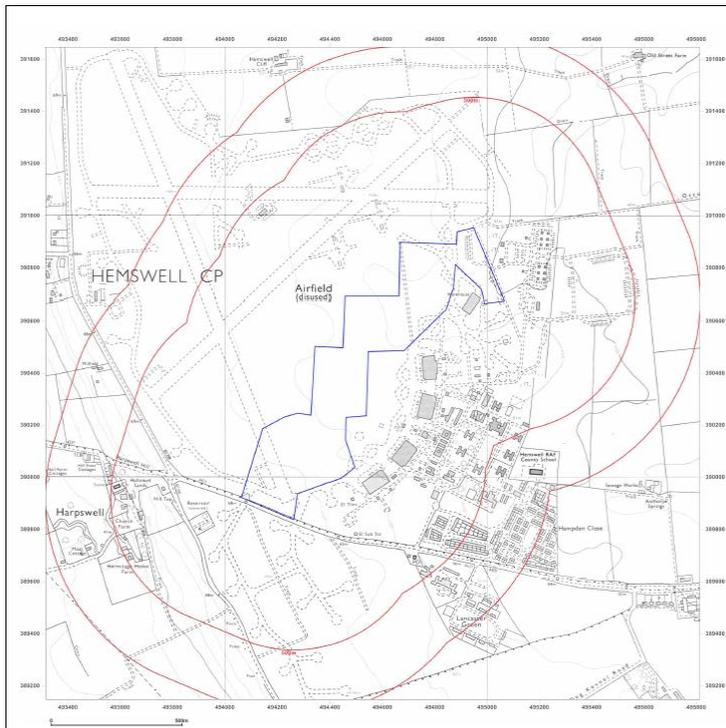
Consultation responses will be taken into account by the Council in considering what modifications should be made to the draft LDO or whether the LDO should be adopted. If adopted, the LDO will be submitted to the Secretary of State.

2 The Proposed Local Development Order

2.1 The Hemswell Cliff FEZ site

The Hemswell Cliff FEZ site is approximately 30 ha in size and includes about 18 ha that is currently used for growing crops. A further approximately 10 ha is occupied by grassy fields and there are also areas of hardstanding which form the access road into the Hemswell Business Park from the A631, as well as small areas of hedgerow along the A631. The Council is working with the landowners to bring forward the development using a partnership approach.

Figure D – 1977 edition map extract to show the former RAF Hemswell Cliff airfield/ base (disused) at its greatest extent



2.2 Surrounding Land-Uses

The Hemswell Cliff FEZ site lies immediately to the west of Hemswell Cliff, which includes a community of approximately 800 people living predominantly in former RAF housing, and a mix of industrial, agricultural, commercial / retail businesses occupying former RAF hangars and other buildings.

The nearest residential properties are over 300 m from the Hemswell Cliff FEZ site on Gibson Road. Other residential properties are located to the north and south of the A631 and further afield in the villages of Harpswell and Hemswell. Hemswell Cliff Primary School, including Pre-School and Children's Centre is present to the north of the A631. Blenheim House residential care home for up to 80 residents is also present, to the east of Hemswell Business Park.

2.3 Description of LDO Developments

The proposed LDO, once made, will grant outline planning permission for the development that is associated with agri-food industries as follows.

- Offices, research and development facilities, light industry, industrial processing units and storage and distribution facilities associated with agri-food industries, including supply chain industries.
- Within the 'industrial' use, the industries to be permitted will include; manufacture of vegetable and animal oils and fats; packing and canning of animal and vegetable products; manufacture of dairy products; brewing and malting; confectionery and syrup manufacture; and industrial starch manufacturing installations.

Since the LDO grants outline planning permission, individual developers wishing to take up plots will have to submit their own planning applications to address 'reserved matters', and will need to set-out their proposed layout, scale or size, appearance and landscaping. Developers will also be required to demonstrate that they have used high quality materials that are appropriate to the building's function and location.

The LDO will not prevent other types of development from being built within the site, but separate planning consents would be required for development that falls outside of the parameters set out in the LDO.

Buildings and operational open areas (for parking / manoeuvring / servicing) within the Hemswell Cliff FEZ site will be set within landscaped areas, which will function as part of a Sustainable Urban Drainage System (SUDS), with permeable open spaces and an attenuation storage pond, if required, to provide improved surface water drainage.

A landscape planting buffer strip will be provided along the western boundary of the Hemswell Cliff FEZ site, in order to provide screening of views from the A631 corridor.



Plate 1 - Existing hedgerow along A631 to be strengthened

Hedgerows along the southern side of the Hemswell Cliff FEZ site, which form part of the A631 road corridor screening, will be maintained and strengthened, to help to reduce how visible the proposed LDO development will be from the A631. The strategy will bring about habitat improvements for nesting birds, small mammals, invertebrates and bats.

LDO Development Parameters

The following development parameters within the LDO will limit the scale and nature of the development that is allowed, including by requiring that:

- buildings will be no higher than 18 m above their finished ground level (approximately the height of 2 No. two-storey-houses stacked above each other);
- design and use of development within the safeguard zones (shown purple and yellow) to be approved by the Health and Safety Executive (HSE);
- enabling works, including a dedicated right turn lane and necessary traffic calming measures will be provided to maximise safety. The existing spine road will be used but

enhanced and new / upgraded utilities (e.g. gas / electricity) services will be provided within this. A further reserved matters application will be made for this, once the LDO is in place; and

- a surface water attenuation system will be provided, prior to the opening of the Hemswell Cliff FEZ site.

The layout, taking into account the above measures, is shown in Figure E. This layout could be subject to change at the Reserved Matters stage. If it is, any associated changes to the EIA conclusions will need to be considered at that stage.

Figure E: Indicative LDO developments layout



2.4 Construction of the LDO Developments

Due to the outline nature of the proposed LDO, it is not possible to accurately predict how long the LDO site will take to construct. However, for the purpose of assessment, it has been assumed that construction will be undertaken over a fifteen year period, between 2017 and 2031. Landscaping and plot preparation are likely to be completed on a phased basis from 2017 onwards, as the development progresses, whilst the spine road upgrades and services / utilities will be constructed up-front or ahead of the development parcels that they will serve.

After this, different LDO development elements may not all be constructed at the same time (because how fast units are constructed will depend on market demand). It is likely that the construction period for the LDO developments may continue until 2031, by which time the Hemswell Cliff FEZ site will (it has been assumed in the assessment) be fully built.

Details of construction methods and materials will not be available until the detailed design stage. However, for the purposes of assessment, the following construction activities are assumed likely:

- site preparation;
- construction of internal roadways;
- excavations and installations for drainage and services;

- construction of buildings (which may include some piling activities);
- laying of hardstanding or other surfaced areas; and
- landscaping and fencing.

It is assumed that construction compounds will be located within the Hemswell Cliff FEZ site. Construction activities are expected to take place during normal working hours (08:00-18:00 hrs Monday to Friday and 08:00-13:00 hrs on Saturdays), with no work on Sundays or Bank Holidays. Lighting may be required and is likely to be low level, as required for each task.

2.5 Opening and Operation of the LDO Developments

Due to the outline nature of the LDO, the specific operational activities that will take place across the site are not yet known. It is likely that some of the buildings will be used for raw material and final product storage, manufacturing / processing and distribution operations associated with the food / agri-business sector, together with associated offices and research and development activities.

It is possible that associated activities will include, for example, energy and steam generation, refrigeration and cooling plant, chemical and fuel (e.g. oil) storage, capturing and treating waste water and storage / recycling of food and / or packaging waste. However, the precise nature of any uses or processes that may take place at the site is not known or identifiable at this stage.

Activities such as staff parking, Heavy Goods Vehicles (HGVs) / Light Goods Vehicles (LGVs) loading / unloading and raw material / final goods storage are also likely to take place in open areas of the Hemswell Cliff FEZ site. Storage and loading / unloading activities may include the use of fork lift trucks moving goods around the Hemswell Cliff FEZ site.

It will be a requirement of the LDO that all HGVs accessing the Hemswell Cliff FEZ site for logistics, supply and distribution will do so from one of the existing accesses using a dedicated right-turn lane off the A631. The A631 provides access onto the A15 (linking to the Humber ports at Immingham and Grimsby for import and export) and *via* this onto the M180/M18 (providing access to the M1 South (and ultimately the M69, M6 and M42 giving access to the West Midlands). The A15 South also serves to connect to the A46 to Newark (and thus the A1 south to London and East Anglia) and to Sleaford and beyond (through the heart of the arable sector to Peterborough).

Low level lighting is likely to be used in all operational external areas. All lighting will direct light downwards, using focussing lanterns to limit spillage outside the Hemswell Cliff FEZ site.

The operational assessment considers the impacts and effects from all proposed LDO developments operating at the same time, as a worst case assumption, and assumes that the LDO site will operate 24 hours a day, seven days a week, with staff working in shifts.

It is anticipated that employment numbers could be in the range of 1,000 jobs, depending on the nature of the development(s) brought forward within the site.

2.6 Need for the Hemswell Cliff FEZ site

Greater Lincolnshire Local Enterprise Partnership (GLEEP) has produced a Strategic Economic Plan (SEP) which sets out ambitious targets for job creation, business support and increasing the value of the local economy by £3.2 million. WLDC has a role to play in meeting these targets, and as part of its role has therefore allocated employment land, established

employment policy, and is proposing to simplify the planning regime within the Hemswell Cliff FEZ site by using an LDO to attract local businesses.

The aim of the Food Enterprise Zone at Hemswell Cliff is to attract food and agricultural manufacturing companies and associated supply chains to the site, to create an 'agri-food business cluster', and in doing so, grow the local economy and create employment opportunities within the food processing and supply chain. As Hemswell Cliff is a relatively deprived community, creating these high value jobs will particularly benefit local people.

2.7 Alternatives Considered

Alternative sites were considered within the Local Plan Proposed Submission site selection process. This resulted in a total of seven strategic employment sites, including the Hemswell Cliff site, being proposed throughout the area. Criteria for selection included location on a strategic highway network and / or good public transport links. Hemswell Cliff meets these criteria because it is close to the A15, but in addition, has a sizeable area to host strategic development proposed within the FEZ.

During the masterplanning process, a small number of site shapes and layouts were tested (*i.e.* closer to the main road, squarer shape *etc.*). The site boundary shown on the masterplan was chosen because it minimised how far out into the countryside the site would reach and how visible it would be from surrounding areas (by tracking the existing Hemswell Business Park site boundary), whilst also providing regular shaped plots accessible from the service road.



The Masterplan illustrated and broadly described proposals for a new roundabout to access the site from the A631. The Transport Assessment has shown that an upgrade of the junction to a roundabout will not be necessary, but instead, it is proposed that a dedicated right turn lane is provided to maximise safety at or close to the existing Business Park access points. However, the LDO will not prevent upgrade of the access to a roundabout if deemed necessary in the future.

Plate 2 - The site will be accessed from a right turn lane off the A631.

The presence of 'safeguarding' zones in the north-eastern portion of the site, associated with the Dracon Trading Ltd fireworks factory, has influenced the layout of the final proposed LDO. No development is allowed in the Health and Safety Executive's (HSE's) 'yellow zone' (Figure E above) except for landscaping and infrastructure *e.g.* the attenuation pond, where people are not present. Development in the 'purple zone' is allowed, but all buildings will have to meet design and construction standards set out by the HSE, relating to how they would perform in the event of an explosion at the Fireworks Factory.

A detailed topographical survey shows that the lowest point of the Hemswell Cliff FEZ site is located at the northernmost part of the site, and so this has been proposed for an attenuation pond, if required, capable of storing up to 10,000 cubic metres of surface water (equivalent to about 4 Olympic-sized swimming pools) in a storm event. This pond will also provide opportunities for nature by creating wetland habitats next to areas of tree / scrub and grassland planting, as part of the landscape scheme.

The 'do nothing' option would mean the FEZ would be less attractive to potential businesses considering locating themselves within the area. The 'do nothing' option was therefore discounted.

3 What actions are planned to manage the Hemswell Cliff FEZ site's environmental effects?

A draft of the LDO and Statement of Reasons has been prepared using the findings of the Environmental Statement. The LDO conditions are required to ensure that the Hemswell Cliff FEZ development will be acceptable in planning terms. The conditions are used to:

- set limits on the scale of development permitted;
- ensure development is designed to reduce impacts on the environment, people and the road network; and
- require the submission of reserved matters applications, and that certain actions are taken prior to undertaking development permitted by the LDO.

4 Summary of Main Environmental Effects

This section sets out the main environmental effects of the Hemswell Cliff FEZ site. Effects can be positive or negative and the EIA uses a scale to show whether effects are significant or not.

- Negligible means that effects would not be noticed or barely noticed;
- Minor means effects would be slight, very short or very local and there wouldn't be any real consequences;
- Moderate means an effect would be more than a slight, very short or very local effect and this may be considered 'significant'; and
- Major means that an effect would be considerable, over a long time, over a large area and perhaps result in a breach of legislation or recognised standards to protect human health or the environment. This would be considered 'significant'.

Where significant environmental effects are identified in an EIA, measures to mitigate or make good these effects are proposed and any remaining residual effects are identified. This specifically includes any residual effects that remain significant.

4.1 Soils and Agricultural Land-Use

Soils

Soils can play an important part in sustainable development and local authorities are required to take into account economic and other benefits of the best and most versatile (BMV) agricultural land when making planning decisions. A detailed assessment of soils and agricultural land-use was requested as part of the Scoping Opinion because the Hemswell Cliff FEZ site would result in the loss of approximately 28 ha of possible Grade 2 BMV agricultural land.

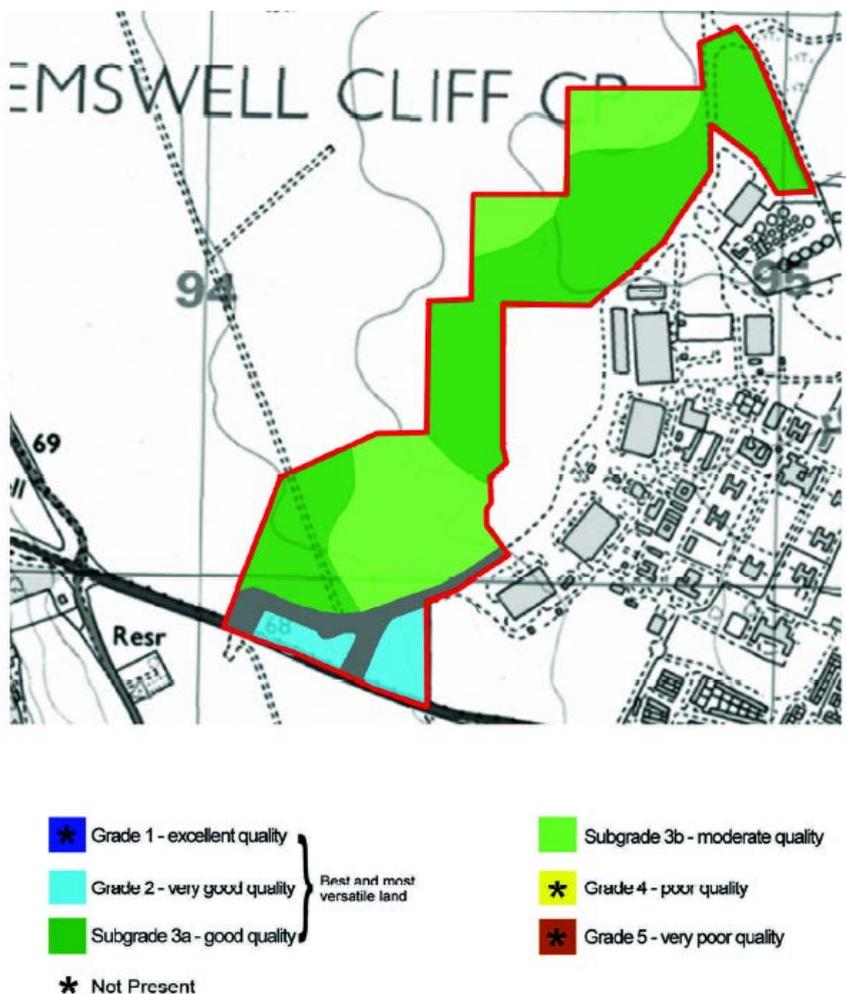
A detailed 'agricultural land classification' (ALC) survey of the soils was undertaken across the Hemswell Cliff FEZ site. This found that the soils are shallow clay / sandy loams, lying on top of limestone bedrock. Since they are shallow, they are often dry ('droughty').

The ALC system classifies land into five grades, with Grade 3 subdivided into Subgrades 3a and 3b. The BMV land is defined as Grades 1, 2 and 3a by national policy guidance. The soils survey found that a small area (approximately 5% of the site) in the south is classified as very good quality Grade 2 land as shown in Figure E below. Most of the Hemswell Cliff FEZ site is classified as good quality land in Subgrade 3a. Approximately one-third of the Hemswell Cliff FEZ site is classified as moderate quality land in Subgrade 3b.

Impacts on soils will be avoided using a Soil Resources Plan, which will confirm the soil types on site; the most appropriate re-use for the different types of soils; and proposed methods for handling, storing and replacing soils on-site. The Soil Resources Plan will aim to re-use as much of the surplus soil resources on or near to the site in the detailed design of the development as possible, so that the soils can continue their functions.

Features within an Environmental Stewardship Agreement (located on land at Hall Farm within the Hemswell Cliff FEZ site) would be lost as a result of the development (see Figure E). These will therefore be re-created on adjacent land within the same farm holding, with the agreement of the Local Planning Authority.

Figure E: Agricultural Land Classification Map of Soils within Hemswell Cliff FEZ site



The permanent change of use of 18.3 ha of BMV land at the Hemswell Cliff FEZ site in Grades 2 and 3a is assessed as a minor adverse effect, which is not considered to be significant.

Farm Holdings

The Hemswell Cliff FEZ site comprises bare agricultural land, mainly in arable use and used for growing crops. There are no farm buildings, dwellings or other significant items of fixed farm equipment (e.g. irrigation systems) within the site. The only impacts on the farms are the loss of small proportions of land from the edge of each farm holding. The effects on farm holdings identified are not considered to be significant.

4.2 Traffic and Transportation

National Planning Policy recognises that, *“The transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how they travel”* although recognises that *“opportunities to maximise sustainable transport solutions will vary from urban to rural areas”*. It goes on to state that, *“All developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment.”* A Transport Assessment (TA) and a Framework Travel Plan was requested in the Scoping Opinion, and have therefore been provided.

A detailed Scoping exercise and further consultation with the Highway Authority (Lincolnshire County Council) has been undertaken. Existing conditions on the road network surrounding the Hemswell Cliff FEZ site have been established from existing traffic data obtained from Lincolnshire County Council, nearby recent planning applications, and traffic surveys on the A631, A15 and B1398.

During construction, it has been estimated that 59 construction worker vehicles will arrive / depart the site per day, and whilst it is difficult to predict heavy good vehicle (HGV) construction traffic, as a worst case it is estimated that a maximum of 50 HGV two-way movements per day (25 HGV arrivals, 25 HGV departures) will occur. Construction effects on the capacity of the highway network are predicted to be significantly less than those when the site is operational.

The transport impacts arising during the operational phase have been assessed for the ‘Forecast Assessment Year’ of 2031, when the Hemswell Cliff FEZ site is expected to be fully built-out. The Hemswell Cliff FEZ site will result in an additional 2,466 two-way vehicle movements on the local road network on an average day, of which 303 will be HGV movements. An estimated 46% will access the site from the A631 west of the junction with the proposed Hemswell Cliff FEZ site access road, the majority of which continue on the A631 towards Gainsborough. An estimated 54% will access the Hemswell Cliff FEZ site from the east, towards the A15.

As requested in the Scoping Opinion, the Transport Assessment is a ‘cumulative assessment’ (i.e. it includes for traffic growth due to a number of ‘committed developments’ that either have planning permission or are proposed within the wider area). These include traffic growth due to the proposed Gainsborough Northern and Southern Urban Extension areas, the Riverside Gateway LDO in Gainsborough, proposed residential developments to the south of the A631 in Hemswell Cliff and expansion of the Hemswell Biogas AD Plant and Parkacre Development Ltd site within the Hemswell Business Park.

An assessment has been undertaken that assumes all traffic will arrive and depart using the existing western access point from the A631. This is the existing main entrance to the Hemswell Business Park. The junction has been ‘tested’ using detailed capacity modelling to see if it can accommodate the traffic from the Hemswell Cliff FEZ site, plus other committed developments described above, or whether it will reach its ‘capacity’ and therefore need a new junction to be built.

The assessment demonstrates that all junctions within the study area operate within their design capacity, without the need to upgrade the existing junction to a roundabout. No off-site highway improvements are therefore required as a result of the Hemswell Cliff FEZ site although from a safety point of view it is proposed to create a dedicated right-turn lane into the site from the A631, using the eastern access point.

The assessment has concluded that all traffic and transport impacts are negligible in magnitude and therefore not significant. No specific mitigation has been identified as being required, apart from a Framework Travel Plan requested in the Scoping Opinion, to provide future occupiers with a framework structure for their site Travel Plan.

4.3 Noise and Vibration

The National Planning Policy in England states that '*Planning policies and decisions should aim to avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development*' but recognises that '*development will often create some noise*'. The Policy is accompanied by a Noise Policy Statement for England which provides guidance on avoiding and minimising noise levels within certain limits.

The Scoping Opinion agreed that the level of work proposed for construction noise (a qualitative assessment) was appropriate to address any significant impacts associated with the construction phase. It was agreed to scope out the noise effects associated with the operational activities on site as these matters would be controlled *via* later reserved matters applications when the details of operational activities were available. Instead, it was agreed to establish baseline noise levels in the vicinity of the site *via* a noise survey and use these to set indicative operational noise limits from the proposed FEZ / LDO once operational. An assessment of noise at local properties, due to traffic coming to the site, was also agreed.

The potential for noise and vibration impacts associated with the construction and operation of the LDO developments to affect people has been assessed. At this stage, no specific details are available on the construction activities, programme or number / type of construction plant, or the nature of operational activities inside and outside of buildings, so it has been necessary to make assumptions.

A noise monitoring survey has been undertaken to establish the existing background noise levels at the closest noise sensitive locations to the site. The results of the noise monitoring survey show that noise is currently generated from road traffic, including HGVs accessing and leaving the Hemswell Business Park and Antiques Centre in the daytime. At night-time, there is no one dominant source of noise at local properties, with sources including noise from the Hemswell Business Park and traffic on the A631, both being noticeable.

Best practice will be employed during construction to minimise noise from construction plant, and working hours will be limited (see Section 2.4). Following implementation of these measures, noise limit values will be achieved to ensure that noise due to construction activities at local residential properties results in no worse than minor adverse effects that would not be significant.

Noise effects from road traffic are anticipated to not be significant in the construction or operational stage. However where any significant vibration producing operations are proposed, the Main Contractor will be asked to prepare a strategy to minimise vibration effects at all neighbouring commercial / industrial premises that may be sensitive to such disturbance.

In order to avoid significant adverse effects on people, operational noise limits have been agreed for daytime and night-time. By achieving these set limit values, noise levels at the nearby properties will be at or below the level above which any negative effects on health or quality of life would be detected. Effects would therefore not be significant.

4.4 Air Quality and Dust

There are both national and local policies for the control of air pollution, and local action plans for the management of local air quality within the West Lindsey District Council (WLDC) area. National Policy states that, "*Planning policies should sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas.*"

The Scoping Opinion agreed that the level of work proposed for Air Quality was appropriate and that the inclusion of a construction dust assessment should address any significant impacts associated with the construction phase of the proposed development. It was agreed to scope-out the air quality effects associated with the operational activities on site because these matters would be controlled *via* later reserved matters applications, when details of operational activities will be available.

The assessment has considered the potential effects on air quality receptors due to the construction of the Hemswell Cliff FEZ site. The air quality assessment has also looked at predicted changes in concentrations of two pollutants (nitrogen dioxide and fine particles called PM₁₀ and PM_{2.5}) from road traffic emissions using traffic information from the Transport Assessment.

Existing air quality at the Hemswell Cliff FEZ site was established using published data provided by Defra. This showed that nitrogen dioxide and fine particle concentrations in the area are well within the Government's air quality objectives and there are no Air Quality Management Areas within WLDC's boundary. As such, air quality is generally good.

Construction activities could give rise to emissions of dust, but standard dust reduction measures will be used and no significant negative effects are predicted at any nearby sensitive residential receptors.

Emissions of nitrogen dioxide and fine particles from construction traffic and road traffic associated with the operational Hemswell Cliff FEZ site will result in a negligible change in air quality pollutant concentrations at local receptors and will remain well below the air quality objectives set to protect human health.

The good standard of air quality in the vicinity of the Hemswell Cliff site means that the impact of any new source of industrial emissions would be unlikely to exceed relevant air quality standards. Although it was agreed that operational process emissions would not be assessed, in order to protect future residential amenity, draft conditions of the LDO have been proposed to maintain future air quality.

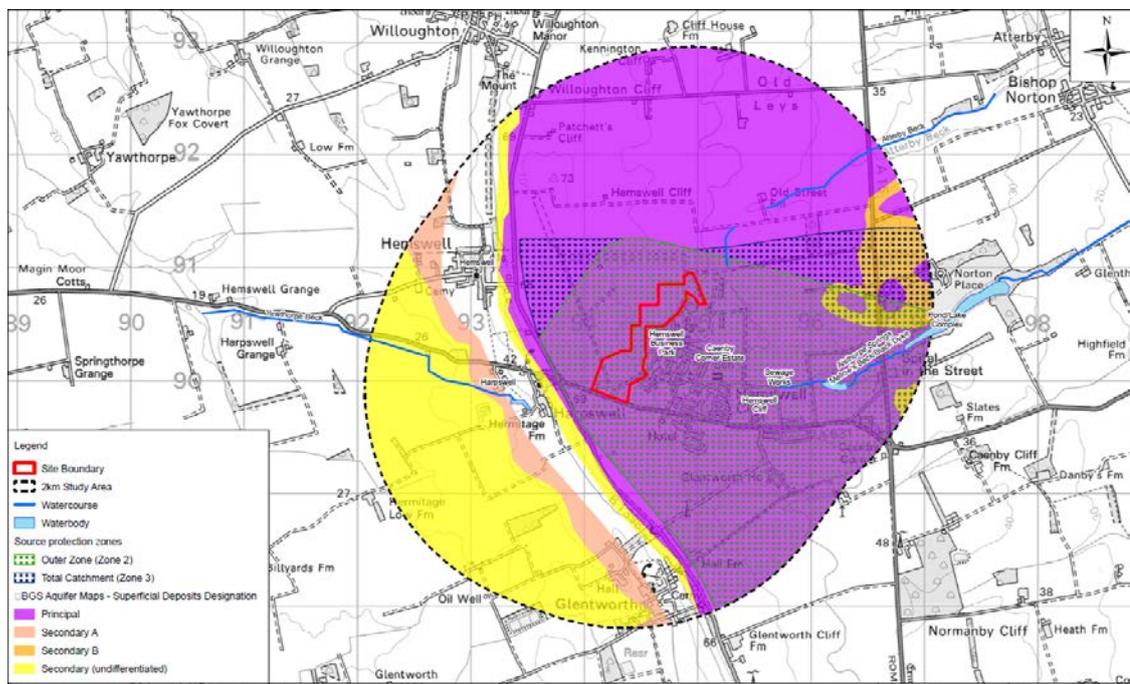
4.5 Water Quality, Flood Risk and Drainage

There are both national and local policies for the control of surface water, flood risk and drainage. National Policy relating to water quality is as set-out in Section 4.9 below. For flood risk, national policy states that "*Planning applications for development proposals of 1 ha located in Flood Zone 1 (which present the lowest risk of flooding) should be accompanied by a flood risk assessment (FRA) that identifies and assesses all forms of flooding to and from the development.*" The Hemswell Cliff FEZ site is 30 ha and is located in Flood Zone 1 so an FRA has been produced.

The effects of the Hemswell Cliff FEZ site developments on surface water quality, flood risk and drainage have been assessed, with reference to relevant policy and legislation, including the Water Framework Directive (which requires all waterbodies to achieve a 'good' future status). The existing conditions at the site and within local watercourses have been

determined by a desk-based study, using data from a range of sources including the Environment Agency. The main watercourses in the vicinity of the site are shown on Figure F.

Figure F: Watercourses and Treatment Facilities



The nearest surface water feature to the site is Atterby Beck, located approximately 330 m to the north-east of the northern Hemswell Cliff FEZ site boundary. Yewthorpe Beck is located approximately 585 m to the south-west of the site at Moat House. Both of these watercourses have not been considered in detail in the assessment because there is no pathway to connect the site to these watercourses.

Aisthorpe Springs, approximately 1.1 km to the east of the Hemswell Cliff FEZ site, is the source of Mellow's Beck / Black Dyke and connects to two further pond / lake features, before becoming an Environment Agency Main River, approximately 5.4 km north-east of the site. The local sewer network discharges into Aisthorpe Springs from the Anglian Water Foul Water treatment facility to the east of the site (labelled 'sewage works' on Figure F above). These water features have therefore been included in the assessment.

Potential impacts during construction include contaminated runoff entering watercourses, pollution of surface water by accidental leakage / spillages, presence of high levels of suspended sediments in runoff and accidental pollution from foul drainage and waste storage. Pollution prevention measures to be put in place will mean that these events are very unlikely to occur. In the unlikely event that impacts were to occur, residual effects would be minor and negative, but localised within the watercourse *i.e.* not significant.

During operation, accidental leakages from the foul drainage system, contamination from site runoff, accidental leakages or spillages of pollutants on-site could happen, but these risks will be managed by using and storing materials appropriately and maintaining the drainage system correctly so that the risk of pollution occurring will be very low and effects would be negligible.

The potential impacts of the Hemswell Cliff FEZ site on flood risk, both on and off the site, have been assessed and measures included ensuring that there is no increased risk of flooding because of the developments. The site has a low risk of flooding and risks in the future will remain low.

Taking into account predictions associated with climate change, higher rainfall events are expected in the future and this will mean that increased surface water flow is likely. The site drainage system has therefore been designed to deal with 'peak' water levels in a 1 in 100 year rainfall event, including a 30% climate change allowance.



Plate 3 - Surface water will be managed using 'Sustainable Urban Drainage System' features such as swales.

It is expected that clean surface water from rainfall will be managed using 'infiltration', which means that rainfall will be allowed to soak into the ground using a combination of features like swales, balancing ponds, channels, pipe network and underground storage within each development plot. Soakaway tests will be undertaken to ensure that infiltration can be

achieved, however, in the unlikely event that infiltration cannot be achieved, surface water runoff will be attenuated in a 10,000 m³ pond which will outfall, *via* a piped network and new outfall into Aisthorpe Springs. The rate of discharge will be restricted to what it would be if the site were still a 'greenfield' (equivalent to approximately 9 No. ten-litre buckets per second) over the developed site area. To manage the low risk posed to site due to flooding, finished floor levels will be raised by 300 mm (1 ruler height) above existing ground levels.

4.6 Ecology and Nature Conservation

National Planning Policy requires WLDC to minimise impacts on and improve features of nature conservation interest where possible. This includes a duty to protect designated sites and protected species and take into account impacts on such sites and species when making planning decisions.

The Scoping Opinion stated that because the Hemswell Cliff FEZ site is currently a greenfield site and arable grassland, the potential effects on ecology and nature conversation should be scoped-in to the EIA and the ES should consider the potential for promoting biodiversity measures within the Hemswell Cliff FEZ site and as potential mitigation in adjacent areas.

Ecological information was gathered through a combination of desk-based study (gathering available data on protected species, habitats and designated areas) and site-specific field surveys.

There are no statutory protected sites within 1 km of the Hemswell Cliff site boundary. The nearest such site is the Humber Estuary some 22 km north. As a consequence of its distance from the Hemswell Cliff FEZ site, impacts on this feature have been discounted. There are 2 No. non-statutory sites of nature conservation importance (Hall Farm and Hemswell Grassland) within 1 km of the site, but there are no pathways by which the Hemswell Cliff FEZ site could affect these sites. As such, the assessment focussed on the Hemswell Cliff FEZ site itself and information on its nature conservation interest was gathered by conducting a Phase I Habitat survey, breeding bird survey and a survey of scarce arable plants.

The Hemswell Cliff FEZ site is made up of arable and grassland habitat, which supports locally important populations of breeding farmland birds. The loss of this habitat will result in the loss of breeding bird territories within the footprint of the development, for ground nesting species such as reed bunting, yellow wagtail, grey partridge, linnets and skylark. Small numbers of birds would be affected, resulting in a moderate negative effect which would be locally significant. However, it is not expected that this will result in effects on the overall county populations of breeding birds that would be significant.

Plates 4 & 5 - The site will create new habitats to attract bats and invertebrates such as butterflies



The creation of woodland, scrub and waterbodies within the development footprint as part of the landscape and surface water drainage strategy will create nesting opportunities for a range of bird species, as well as creating habitat suitable for land and water loving invertebrates, small mammals and bats within the Hemswell Cliff FEZ site boundary. At present, the Hemswell Cliff FEZ site is of low ecological value for most species, except nesting birds, because it is used intensively for agriculture. Therefore, the newly created habitats will help to achieve no loss of biodiversity overall, in accordance with national planning policy.

4.7 Landscape and Visual Amenity

The National Planning Policy Framework (NPPF) encourages good design as part of promoting sustainable development. It states that planning policies and decisions should address the connections between people and places and the integration of new development into the natural, built and historic environment. National policy stresses the need for development to respond to local character and be visually attractive, as well as emphasising the integration of the development into the environment.

The effects of the Hemswell Cliff FEZ site on the surrounding landscape and sensitive visual receptors (locations such as residential properties and footpaths with views of the development) have been assessed, as required in the Scoping Opinion.

The site is currently open agricultural farmland, heavily influenced by the adjacent Hemswell Business Park, which contains the hangars and other operational buildings that were associated with the former RAF airbase, as well as newer industrial units and structures built in more recent years.

Landscape Character

There are currently few features of landscape value present on the site. Views to the site from local properties and the wider area are limited because of distance, landform in between, small woodland blocks, hedgerows and hedgerow trees along roads.

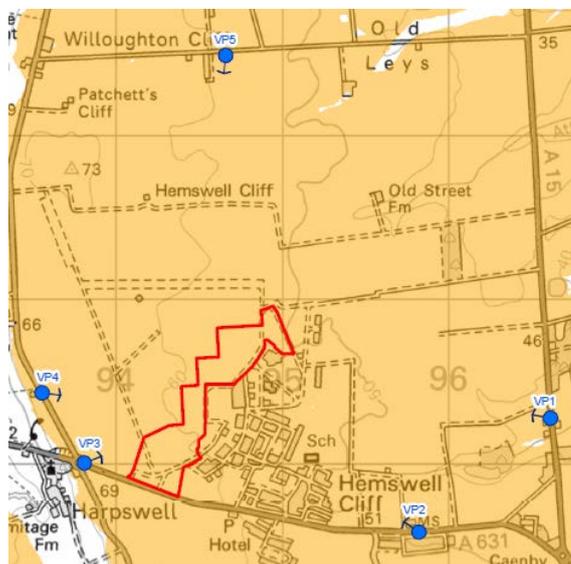
When the site is developed, it will be regarded as an extension of the existing light industrial landscape of Hemswell Business Park. A moderate negative effect on landscape character at a site level is expected during construction which would be significant. However once the proposed landscape screen planting matures, this will reduce to a minor adverse effect at opening and a minor beneficial effect in the long term. Effects after construction are therefore not significant.

Visual Amenity

Six viewpoints (VPs) were chosen within the area that Hemswell Cliff FEZ site might be visible from in the future. These viewpoints are representative of residential properties, footpaths and road users located within the local area. Of these, five were taken forward for assessment as shown on Figure G below (VP6, from a public right of way, was discounted because the site wasn't visible from it).

- VP1 from the A15 (residents / road users);
- VP2 from Canberra Crescent / A631 (residents / road users);
- VP3 from A631 / B1398 Roundabout (road users);
- VP4 from B1398 Middle Street / PRow (Hems/ 787/ 2) (users of the PRow and road users); and
- VP5 from Old Leys Lane (road users).

Figure G: Viewpoint locations



Tree belt planting as part of the landscape scheme, and infill planting and management of existing hedgerows along the A631, will help to screen views of the Hemswell Cliff FEZ site in the long term. The assessment showed that longer range views e.g. VP1 and VP5, will blend the Hemswell Cliff FEZ site into the backdrop of the existing Hemswell Business Park, which is often visible on the horizon and they would experience a negligible adverse to negligible beneficial (not significant) effect in the long term.

Plate 6 - Views towards the site from Canberra Crescent / A631



Receptors around Canberra Crescent / A631 and Middle St / PRow (Hems/ 787/ 2) may experience minor adverse effects during construction, opening and year 15 of operation which would not be significant.

Road users and receptors around the B1398 / A631 roundabout are likely to experience minor adverse effects during construction and operation, reducing to negligible beneficial effects when proposed mitigation planting matures. As such, no significant effects on visual amenity have been identified.

4.8 Cultural Heritage

The preservation and enhancement of heritage assets forms an important part of National Planning Policy, stating that planning should: *'conserve heritage assets in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of this and future generations.'* It also states that planning applications must *'describe the significance of assets that may be affected by a development, to a level of detail that is proportionate to their importance and that is no more than sufficient to understand the potential impact on their significance; this should also include assets where their setting may be affected by a proposal.'*

In the Scoping Opinion, Lincolnshire County Council recommended a full archaeological evaluation to inform the heritage impact statement. Historic England asked for particular attention to be paid to designated Grade I and Grade II Listed Buildings locally and the Hemswell Conservation Area in the assessment. Potential impacts from the Hemswell Cliff FEZ site on cultural heritage features have therefore been assessed. Cultural heritage includes historic buildings and structures and archaeological sites.

The existing cultural heritage conditions have been established through a review of available information sources, including the relevant National Heritage List, Sites and Monuments Records, local planning authorities' historic maps and aerial photographs, as well as site visits by experienced cultural and built heritage specialists.

Designated Assets

No listed buildings or structures are present within the Hemswell Cliff FEZ site. One Scheduled Monument (Harpwell Hall), 2 no. Conservation Areas (Hemswell and Glentworth) and 22 no. listed buildings, including 1 no. Grade I (Church of St Chad, Harpswell) and 3 no. Grade II* (Church of All Saints, Hemswell; Church of St Michael, Glentworth; Glentworth Hall, Glentworth) have been identified within the 2 km study area around the site boundary. Other Listed Buildings identified are Grade II (see Figure 12.1 in Volume III of the ES).

Figure F: Potential effects on local heritage, including Hemswell Conservation Area, have been assessed



Spital on the Street, because the site will be visible from the front of the gate lodges, but the significance of these features will not be harmed.

There will be no significant adverse effects on the Harpswell Hall Scheduled Monument, Conservation Areas of Hemswell and Glentworth, or Grade I and Grade II* Listed Buildings as a result of the Hemswell Cliff FEZ site development. Minor negative effects may occur to the setting of Hemswell Court, a Grade II Listed Building, although there will be no direct impact on Hemswell Court and its significance will not be harmed. A similar minor adverse effect is predicted for the Gate Lodges, Gateway and Gates at Norton Place Grade II Listed Building in

Non-Designated Assets

Over 30 No. non-designated assets (including findspots, sites of former structures, existing structures of local historic or architectural interest, and archaeological events) have been identified within a 1 km study area. There is a high potential for non-designated Iron Age and Roman archaeological resources of local value to be present below ground within the Hemswell Cliff FEZ site which if lost, could result in a moderate negative and therefore significant effect. To mitigate this effect, a scheme of archaeological investigation will be undertaken.

Plate 7 – Former RAF Hemswell site



The former RAF Hemswell site itself is a non-designated asset. There will be a minor negative effect on the former hangar and administrative buildings which would not be significant. However, the former Hemswell Airfield will be affected. Although already disturbed in the past by removal of runways and the loss of a hangar, this is assessed as a moderate negative and significant effect. A report documenting the history of the airfield will be produced to compensate and reduce the effect to be not significant.

The programme of archaeological investigation for both of these features will be subject to draft LDO conditions to ensure any impacts on important resources are managed appropriately.

4.9 Geology, Ground Conditions and Groundwater

National Planning Policy states *'that planning policies and decisions should ensure that the site is suitable for its new use taking account of ground conditions and land instability, including from natural hazards or former activities, pollution arising from previous uses and any proposals for mitigation including land remediation or impacts on the natural environment arising from that remediation.'* In relation to groundwater, the Planning Practice Guide states that *'Where water quality has the potential to be a significant planning concern, an applicant should be able to explain how the proposed development would affect a relevant water body ... and how they propose to mitigate the impacts.'*

The Scoping Opinion confirmed that there are no known baseline conditions for the site therefore it was appropriate for Geology, Ground Conditions and Groundwater to be scoped-in to the EIA and that an assessment of impacts on groundwater should be included in the Geology, Ground Conditions and Groundwater chapter of the ES because the site lies over a Principal Aquifer. In relation to groundwater, the Environment Agency wished to see assessment of impacts on groundwater during operation (as well as construction) within the EIA, to cover the potential risks if drainage is not managed properly.

The potential impacts associated with geology, ground conditions (including potential for unexploded ordnance) and groundwater have therefore been assessed. The assessment has considered potential sources of contamination, receptors (*i.e.* people, water bodies and buildings) and pathways (*i.e.* the routes that any contaminants could potentially take to reach a receptor). In common with all other specialist environmental topics assessed, effects are

only possible where a source, receptor and pathway are all present. A desk-based study has been undertaken, including a preliminary unexploded ordnance (UXO) assessment.

Soils at the Hemswell Cliff FEZ site are classified as being of high leaching potential, meaning that they easily allow liquid discharges and pollutants. Beneath the soils is the Lincolnshire Limestone, classified as a Principal Aquifer by the Environment Agency. Principal Aquifers are very sensitive to potential pollution because they usually store a lot of groundwater and support water supplies. The closest licensed water supply borehole from groundwater is approximately 1.4 km south-east of the site and is used for farming and domestic uses.

The site is currently used for agriculture, with small areas of hardstanding where former runways were present, including the existing access road. Before this, RAF Hemswell occupied and surrounded the site. Potential sources of contamination include former buildings and activities associated with this (and the earlier WW1 training area). More recent industrial developments to the south and east on the Hemswell Business Park also have the potential to bring contaminants onto the site.

No ground investigations have taken place at the Hemswell Cliff FEZ site, but because of the historic and current land uses on and off-site, there is potential for risks from land contamination. The risks range from very low to moderate to human health and environmental receptors. Significant adverse effects on the health of construction workers and groundwater quality could occur. This includes a moderate risk of encountering unexploded ordnance (UXO) and / or ordnance containing chemical agents.

Because of these risks, mitigation measures (including a ground investigation, detailed desktop UXO assessment and any necessary remediation and / or design measures needed) will be put in place and secured by draft LDO conditions. This will reduce effects during the construction and operational phases to neutral or neutral / minor adverse (*i.e.* not significant).

4.10 Cumulative and Combined Effects

The Scoping Opinion highlighted the potential for a number of developments to have 'cumulative effects' with the Hemswell Cliff FEZ site development. Cumulative effects can arise when impacts from two or more proposed developments affect the same environmental receptor, for example traffic from several proposed developments affecting the local highway network between the development sites. It is only possible to consider the effects of other proposed developments when the assessment of these effects (or data allowing the assessment of potential effects) has been published. Existing developments are not considered because they are already taken into account as part of the existing baseline conditions for each topic.

The term 'combined effect' is used to refer to when two or more types of impact from the same development affect the same environmental receptor in a particular way *e.g.* effects of noise and dust on nearby residents.

Committed Developments

A number of other developments are proposed in the vicinity of the Hemswell Cliff FEZ site and further afield within Gainsborough that could give rise to cumulative effects with the Hemswell Cliff FEZ site. The following developments have therefore been assessed.

- Enabling works for the LDO developments to be constructed in advance of the LDO developments opening;
- Gainsborough Southern Urban Extension, for which outline planning consent has been granted, reserved matters applications are expected and construction is due to commence in autumn 2016, with 1,400 homes over the plan period 2012 - 2036;

- Gainsborough Northern Urban Extension, which is allocated for 750 No. homes in the plan period, but no planning applications have yet come forward;
- Riverside Gateway LDO, comprising up to 245 homes and for which a formal LDO was adopted in July 2016;
- Expansion of the Parkacre Site, Hemswell Business Park, for which permission was granted in April 2016;
- Increased throughput from 40,000 to 90,000 tonnes per annum at Hemswell Biogas Ltd, which received consent in November 2016;
- Development of 40 No. residential dwellings on land west of Lancaster Green, Hemswell Cliff, for which outline planning permission was granted on appeal in June 2016; and
- Development of 180 No residential dwellings at land south of A631, for which the decision to grant outline planning permission was made in December 2016.

The only potentially significant adverse cumulative effect would occur for Soils and Agricultural Land-Use. The Hemswell Cliff FEZ site, when viewed in isolation, results in a low magnitude impact, with the loss of 18.3 ha of best and most versatile agricultural land resulting in a minor adverse effect that is not significant. But when set within the local area context, the loss of another 7.6 ha of potentially best and most versatile agricultural land on land south of Hemswell Cliff results in a higher magnitude impact (medium) at a local level. This gives rises to a moderate (adverse) and therefore potentially significant cumulative effect. However, this land is already allocated within the Proposed Submission Local Plan April 2016 for residential end-use and the site has recently received planning permission for the development of residential properties. As such, the loss of this agricultural land has already been accepted by the Local Planning Authority.

No significant combined effects are identified.

4.11 Conclusion

The loss of habitat for small numbers of breeding birds will result in a long term effect, which is significant at a local level. However, newly created habitats within the Hemswell Cliff FEZ site will ensure that there is no net loss of biodiversity overall. The effect on on-site landscape features due to the change of land-use, loss of existing vegetation and soils on-site will be significant in the short term, during construction. However once the proposed landscape planting matures, this effect will not be significant. The EIA has identified no other residual environmental effects that are significant. As such, the proposed LDO is considered to be acceptable in terms of environmental effects, with the mitigation secured by conditions of the LDO.

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