

Longwater Gravel Co. Ltd.
William Frost Way
Longwater Business Park
Costessey
Norwich NR5 OJS

tel: 01603 743767
fax: 01603 747302
e-mail: simon@longwatergravel.co.uk
www.longwatergravel.co.uk

Land at Hall Farm, Stanfield Road, Wymondham

PLANNING STATEMENT

to support an application for planning permission

June 2013

CONTENTS:

1.0 INTRODUCTION

2.0 NEED MARKET

3.0 GEOLOGY

4.0 PROPOSED DEVELOPMENT

- 4.1 General
- 4.2 Access and Traffic
- 4.3 Plant and Buildings
- 4.4 Soil Handling
- 4.5 Working Design
- 4.6 Internal Road
- 4.7 Working Hours
- 4.8 Timescale
- 4.9 Water Management

5.0 RESTORATION

6.0 AFTERCARE

7.0 ENVIRONMENTAL IMPACTS

- 7.1 Landscape and Visual Impact
- 7.2 Ecology
- 7.3 Traffic
- 7.4 Water
- 7.5 Flood Risk
- 7.6 Archaeology
- 7.7 Agriculture
- 7.8 Noise
- 7.9 Dust
- 7.10 Rights of Way
- 7.11 Lighting

8.0 POLICY CONTEXT AND ANALYSIS

- 8.1 National Planning Policy Framework
- 8.2 Norfolk Minerals and Waste Development Framework

1.0 INTRODUCTION

- 1.1 Longwater Gravel Company Limited (hereafter referred to as “Longwater Gravel”) is a Norfolk based, independent family run sand and gravel quarrying company established in 1952, operating two sand and gravel quarries producing approximately 150,000 tonnes of sand and gravel per year.
- 1.2 A deposit of good quality sand and gravel (sand to gravel ratio 50/50) extending to 600,000 tonnes approximately has been proved to underlie part of Hall Farm to the south of the B1135 Stanfield Road. The application area extends to 23.8 hectares, with mineral extraction taking place on some 20 hectares with the balance of the site being used for environmental bunds, undisturbed protection margins and access.
- 1.3 The application is for progressive extraction of the minerals and restoration of the site, with the minerals being processed by a modern low profile plant which is located in the west of the site within an area that will be reduced in height to help screen the operations. Some 6 hectares of the application area lies east of Bridge Road with the sites being linked along the route of the old railway, now removed. The location of the site is shown on plan reference 0812/A.
- 1.5 Restoration will be progressive taking place in phases with the majority of the area being returned back to farmland. This will require the importation of a limited quantity of inert material in order to achieve an acceptable landform. In the area adjacent to the valley of the River Tiffey, the restoration proposes to construct two small ponds which are designed to provide additional habitat for great crested newts, along native tree and hedgerow planting and the retention of a substantial area of meadow grassland.
- 1.6 The site will provide a local source of supply to market within a 10 - 15 mile radius. This includes the settlements of Wymondham, Hethersett, Attleborough, Watton, the southern and western sector of Norwich as well as Diss and Thetford. An annual output of around 50,000 - 60,000 tonnes is expected giving a life of 10 - 12 years.
- 1.7 Access to the quarry will be via a new “T” junction which will be constructed at approximately the midpoint of the site frontage on the B1135 Stanfield Road. Owing to the close proximity of the site to the junction onto the A11, as well as the identified market, the majority of vehicles will exit and enter from the Wymondham direction.
- 1.8 This Planning Statement sets out the details of the proposals and assesses the environmental issues and the mitigation measures proposed to ensure there will be no unacceptable impacts.

2.0 NEED/MARKET

- 2.1 The principal thrust in planning today is to ensure that developments are considered sustainable and have as low a carbon footprint as possible. This is translated into the supply of minerals by encouraging deposits to be developed where they are close to the principal markets.
- 2.2 The recently adopted Core Strategy for Minerals & Waste recognises the sustainability of locating mineral and waste facilities close to the principal markets. This is reflected in the spatial vision Policy CS2 where the Norwich Policy Area, Thetford, Attleborough, Diss and Watton are among the areas identified where there will be a clear preference for mineral and waste sites that are close or well-related in terms of infrastructure.
- 2.3 The National Planning Policy Framework recognises the importance of maintaining a sufficient supply of minerals and looks to the Mineral Planning Authorities to source mineral supplies indigenously. This is understood to mean that the supply should be close to the market as this will result in fewer mineral road miles which contributes to the objective of reducing carbon footprint.
- 2.4 The site on the land at Hall Farm is ideally located to meet the market of Wymondham as well as supplying the wider local market through its proximity to a junction on the A11 Wymondham Bypass. The company considers that the development of this small but strategically located deposit would provide a sustainable supply of high quality sand and gravel to the south west Norwich area and the markets identified in Policy CS2.

3.0 GEOLOGY

- 3.1 The geology of Norfolk is dominated by glacial deposits. These are principally boulder clays with some extensive areas of sand and gravel. The majority of the sand and gravel deposits are composed of mainly sand with a very small percentage of gravel. This means they are not ideal to meet the market needs which is broadly 50/50 sand and gravel. Consequently, there tends to be a surplus of sand that is often used in restoration which does not represent the best or most sustainable use (i.e. it has been excavated, processed, handled and then put back).
- 3.2 Whilst the sandy glacial deposits are relatively widespread throughout the county, the difficulty the mineral industry have is locating those parts of the outcrop that have a good proportion of gravel.

3.0 GEOLOGY (CONT.)

- 3.3 Historically this resulted in the workings concentrating in the river valleys, but policy now discourages any further development in these areas. The outcome is that new deposits have to be found within the glacial outcrop where the quality (i.e. gravel content) is acceptable.
- 3.4 Whilst the glacial outcrop of mineral is extensive, in the area south west of Norwich, the deposits are mainly boulder clay with small pockets or areas of sand and gravel. The area around Wymondham is covered by geological sheet reference 161 and an extract is attached at plan reference 0812/G. This shows that much of the surrounding area is underlain by glacial boulder clays with occasional small outcrops of sand and gravel, the majority of which have poor access to the main road network. This demonstrates the difficulty in being able to find deposits of sand and gravel in this locality that can be developed to meet the local demand without giving rise to traffic problems.
- 3.5 The area proposed for development lies on an outcrop of sand and gravel (see plan). Site investigations have proved a deposit of good quality which following processing will produce high quality sand and gravel roughly in the proportion of 50% gravel, 50% sand, the sand being coarse and ideal for concrete use.

4.0 PROPOSED DEVELOPMENT

4.1 General

- 4.1.1 The site comprises open arable farmland which has an undulating surface that generally falls in a south easterly direction to the valley of the river Tiffey (see Site Plan 0812/S). The northern boundary is the B1135 Stanfield Road, there is a small woodland to the west which helps screen an oil storage and distribution yard, with the southern margin being marked by a mature hedgerow and trees. The site is divided by Bridge Road to the east beyond which there is a further field that forms part of the site. The site context plan 0812/SC/1 shows the application area in relation to the surrounding land.
- 4.1.2 As set out in the first section, it is proposed to develop a small sand and gravel operation to produce between 50,000 - 60,000 tonnes annually. Restoration will require the importation of a limited quantity of inert material in order that the site can be restored to a landform that will be in keeping locally as well as returning the majority of the site to productive farmland.

4.0 PROPOSED DEVELOPMENT (CONT.)

- 4.1.3 A small plant and operations area will be established in the west of the site. There is already a small area of lower land and this area will be extended by excavation to provide a 'development' platform some 2.0 - 3.0 metres below the surrounding land. A low profile plant will be installed together with a weighbridge, site office and storage containers.
- 4.1.4 The restored landform in the area to the west of Bridge Road is designed to maintain the existing direction of surface drainage towards the south east of the site where two small ponds are proposed to be constructed. The restoration scheme seeks to strengthen the wildlife corridor along the River Tiffey, with the objective of increasing local biodiversity, in particular habitat for great crested newt. The document 'Habitat Creation Details for Two Ponds' sets out the scheme of restoration for the ponds. Plan number 0812/R/1d shows the restoration scheme for the entire site.
- 4.1.5 The area east of Bridge Road will be restored to agricultural use.

4.2 Access and Traffic

- 4.2.1 Access to the quarry from Bridge Road was originally considered and rejected following serious concerns relating to HGV traffic which were raised by local residents. It is now proposed to construct a new 'T' junction to allow the site to be accessed directly from the B1135 Stanfield Road – see plan number 03/007 and 03/008 which accompany the Transport Statement (prepared by Create Consulting Engineers Limited). The location of the new 'T' junction was selected following consultation with Norfolk County Council Highways Officers. Additional improvements to highway visibility at the site entrance will be required, this includes the relocation of the hedgerow and horse track on the northern side of Stanfield Road to improve the visibility of vehicles turning into the quarry from both directions. As the land, hedgerow and horse track are all within the same ownership as the site, no agreement with a third party landowner will be required to enable these highway improvements.
- 4.2.2 Longwater Gravel are a long established Norfolk company whose success is in part based on the reputation they have built up in the service they provide to the local market. The Company expects that around two-thirds of the annual output will be transported by 10 to 20 tonne capacity HGVs with the remainder transported by small vehicles, e.g. pick-up truck, car + trailer, etc.

4.0 PROPOSED DEVELOPMENT (CONT.)

- 4.2.3 The Transport Statement assesses the likely HGV movements associated with the development which will be split between vehicles transporting sand and gravel from the site and vehicles delivering inert material for restoration.
- 4.2.4 Based upon the expected annual production and the number of small vehicles using the site, the maximum number of HGV movements required to transport sand and gravel is expected to be around 6 per hour (3 in / 3 out) although the average number is likely to be less than this.
- 4.2.5 The proposed restoration scheme requires the importation of inert material to achieve the restored landform. The amount required will vary as the site is developed. The estimated volume imported annually will be approximately 15,000m³ with this material also being transported by HGVs. Assuming that each lorry carries around 9 m³ per load, the average daily number of HGV movements will be around 14 (7 in / 7 out).
- 4.2.6 The Transport Statement provides a more detailed breakdown and concludes that that the maximum daily number of HGV movements will be 60 (30 in / 30 out) with the average being around 40 (20 in / 20 out).
- 4.2.7 The principal markets for sand and gravel and sources of inert material for restoration are located such that the majority of the vehicle movements will use the junction on the A11 to the west of the site. Deliveries eastwards along Stanfield Road are likely to be mainly light vehicles.

4.3 Plant and Buildings

- 4.3.1 The original proposal as set out in the Request for Screening Opinion was to locate the plant area on the land to the east of Bridge Road. As a result of feedback from discussion with local residents, the proposals were amended.
- 4.3.2 The location now proposed for the processing plant and operation area and which forms part of the application is in the west of the site as shown on plan 0812/CO/1c. An internal road will be constructed to the existing small area of lower lying land (believed to be the result of previous mineral extraction) which will be increased in size to accommodate the processing plant. This is shown on Phase 1a on plan 0812/CO/1c.

4.0 PROPOSED DEVELOPMENT (CONT.)

- 4.3.3 A modern sand and gravel processing plant based on modular units will be installed where the height is in the order of 7.5 - 8.0 metres (see plan 0812/PP/1). As well as reducing the level of the plant site to approximately 42 metres a.o.d. (i.e. 2.0 - 3.0 metres lower than the surrounding ground), screening bunds will be constructed around the northern and eastern boundaries of phases 1 & 2. These will be built using the soils stripped from the site, they will be up to 3.0 metres in height and will be grassed. They are designed to reduce the visual impact of the site from the north and west (see plan 0812/CO/1c and Illustrative Cross Sections 0812/CS/2).
- 4.3.4 The southern boundary of the site has a well established hedge with a number of mature trees. This vegetation provides a strong visual filter which will be strengthened by planting up any gaps and extending the bund along the southern boundary (see plan 0812/CO/1c).
- 4.3.5 The type of plant is shown on plan reference 0812/PP/1 which is the engineering drawing for the plant operated by Longwater Gravel Co. Ltd at their Horstead Quarry which has similar levels of output (it should be noted there will be an in circuit crusher at Wymondham). This illustrates the limited visual impact of modern modular processing plant. The surface of the operations and stockpiling area will be consolidated using large gravel and will be regularly cleaned/dressed to keep the wheels of lorries clean.
- 4.3.6 Site buildings will comprise two single-storey "Portakabin" type buildings which will provide welfare facilities for the staff and offices for the weighbridge operator and quarry manager. A surface mounted weighbridge is proposed which will be adjacent to the office. Plan references 0812/OW/1 and 0812/OM/2 shows an illustrative layout of the buildings and weighbridge. Also on site will be a security container store, bunded tanks for fuel and waste oils and a further container for electrics/generator as well as a car park for site personnel.
- 4.3.7 The plant and buildings will be painted in a colour agreed with the County Council to further mitigate any visual impact.
- 4.3.8 Mobile plant used on site will comprise a crawler excavator, an articulated dumptruck and two wheeled loaders to carry out material handling duties both in feeding the gravel to the plant for processing and managing the processed stockpiles and loading the vehicles (for excavation and in quarry haulage see section on Working Design).

4.0 PROPOSED DEVELOPMENT (CONT.)

4.3.9 These measures, combined with the location should ensure that the plant and associated stockpiles and operational area are well screened in the locality and do not result in any unacceptable visual impact. The nearest properties are Hall Farm Cottage and Hall Farmhouse to the east (some 400 metres away), the views from which will be protected by the soil screening bund and general landform.

4.4 Soil Handling

4.4.1 It is recognised that the soils that lie above the sand and gravel represent an important resource that needs to be carefully handled, conserved and used in restoration. All soil handling will follow good practice as set out in the Soil Handling Guides produced by DEFRA/MAFF. This requires soil to be handled only when in a dry and friable condition and that topsoil is stripped separately from subsoil and is also stored separately.

4.4.2 Because of the small size of the site much of the topsoil will need to be temporarily stored before it is required in the final restoration. By careful location of these storage bunds they will also provide both visual and noise screening. The principle of the working design is to locate these bunds to provide maximum screening without the bunds being obtrusive.

4.4.3 All the soil storage bunds along the northern part of the site will have an outer slope at 1 vertical to 3 horizontal to avoid the appearance of looking steep. The inner slope will be nearer 1 in 1. All bunds will be smoothed to ensure good water shedding to reduce/avoid the stored soil becoming waterlogged. They will be grass seeded and kept tidy and weed free.

4.4.4 The development is in phases which enables the mineral to be excavated and the void reclaimed using imported inert materials and supplemented by naturally occurring material from the mineral processing operation, e.g. silt, loam, loamy sand, etc. In view of the suitability of the loam and loamy sand as a subsoil, this material will be spread over the surface of the imported inert material before the topsoil is replaced.

4.4.5 The phasing of the working is shown on plan 0812/CO/1c which is a 'composite' plan showing how all the phases fit together. The development is 'progressive' so the land is required in stages and this is shown on the smaller scale 'snapshots' shown on plan 0812/PO/2.

4.0 PROPOSED DEVELOPMENT (CONT.)

4.4.6 The first stage of the working only requires land in the west of the site to be developed with the rest of the site remaining in agricultural use. The next stage is the central area with the final stage being the land east of Bridge Road.

4.4.7 The size of the phases is partially dictated by the requirement of soil to construct the perimeter bunds and by the need to deliver progressive restoration. In addition, soils from the environmental bund can only be 'released' when the protection provided by the bund is no longer needed (see section on restoration).

4.5 Working Design

4.5.1 The area surrounding this good quality deposit has little natural screening in the form of hedges etc. although only Hall Farm Cottage and Hall Farmhouse has views across the site. Views of the operations will be effectively screened through the use of grassed environmental bunds around the perimeter of the site which use the natural landform combined with the established hedgerows and trees to the south and the general lie of the land.

4.5.2 Mineral extraction will be carried out using a crawler excavator (or wheeled loader) that will load an articulated dumptruck for internal transport to the plant. In view of the low annual volume the use of a field conveyor is not economic due to its high capital cost. Also, a conveyor system still requires to be fed by dumptrucks so there is no financial saving. In addition, to restore the site lorries have to deliver inert material to the excavation area so a good internal road is needed.

4.5.3 The development has been divided into four phases to help explain the development, but the boundaries of each phase are illustrative as the operations have to remain flexible to allow adjustment to reflect the geological conditions.

4.5.4 Phases 1 and 2 are combined as at this initial stage to provide sufficient soil to construct the screening/environmental bunds to reduce any impacts (see plan 0812/CO/1c and Illustrative Cross Sections 0812/CS/2). The area of the plant and operations will be excavated to create the lower platform on which the plant will be constructed. The excavated material will be temporarily placed on the low lying area of Phase 2c (see plan 0812/CO/1c).

4.0 PROPOSED DEVELOPMENT (CONT.)

4.5.5 The initial development over the first 12 - 18 months will extend the lower platform south as the silt and water management area is developed. Following these phases the working will generally follow a clockwise direction through Phases 1 & 2 before developing into Phases 3 & 4. The plan number 0812/PO/2 indicates the general directions of the operations.

4.5.6 The workings are progressive, with suitable inert material being imported as it is required to enable a satisfactory restored landform. The operations, apart from the processing, can be described as three separate but related activities,

Excavation:

The excavation and transport of the minerals, the soils having been previously stripped and are either stored as environmental screening bunds or have been directly used in restoration.

Reclamation:

A combination of placing imported material to reclamation level, earthmoving of indigenous materials and shaping the area ready to receive soils.

Restoration:

The careful replacement of soils following the Good Practice Guides for soil handling.

4.5.7 The progressive nature of the operations and that soil handling can only be carried out in suitable weather and ground conditions means that the boundaries of the phases shown on the plans attached must be viewed as a close illustration of how the excavation and restoration will progress across the site.

4.5.8 The progressive nature of the excavation and restoration is shown as a series of 'snapshots' on plan 0812/PO/2, and again the boundaries should be viewed as indicative. Because of the requirement for an internal road to link the working with the plant site, this 'corridor' will be retreat restored as the last of the mineral is recovered from the base of the plant site.

4.5.9 Plan number 0812/PO/2 shows how the environmental bunds are constructed ahead of each of the phases which is designed to minimise the disturbance before the phase being needed. The perimeter bunds will provide screening to the operations taking place within in the phase until the soils are needed for restoration, by which time the operations will have been completed (see section on restoration).

4.0 PROPOSED DEVELOPMENT (CONT.)

4.6 Internal Road

- 4.6.1 During the day to day working the routes used by the dumptruck will regularly vary to accommodate the operational requirements. All movements/internal routes will be at the 'working' level which is 42 metres a.o.d. This means that the internal road will be some 1.0 - 1.5 metres below the current ground levels in phases 3 & 4. Any views of the truck movements will be screened by the perimeter bunds.
- 4.6.2 As the workings progress eastwards an internal road will be established that links the working area with the plant site. The proposed route of this internal road is shown on plan 0812/CO/1c.
- 4.6.3 The road will be close to the base of the mineral to reduce the risk of impacts (visual, noise and dust) either on unworked mineral or on imported 'hardcore' material that will provide a stable base. It will be regularly maintained by keeping the surface smooth to avoid ponding and any potholes, and will be dressed (or made up) with fresh material when and where necessary. As the road is removed, the void will be infilled and the 'corridor' reclaimed and restored.
- 4.6.4 The access into the reclamation works will be similar to that during mineral extraction, with the day to day routes changing within the reclamation area as required by the operations. The movements will be below the level of the surrounding land so vehicle movements should not be visible. However, when placing the final upper layer, there may be some visual impact although the perimeter bunds are designed to provide a strong screen.

4.7 Working Hours

- 4.7.1 The working hours for the development will be

0700 - 1800 Monday to Friday

0700 - 1300 Saturday

- 4.7.2 There will be no quarry operations carried out on Sundays or Bank Holidays.
- 4.7.3 These are the recognised working hours for the construction sector, which includes quarrying.

4.0 PROPOSED DEVELOPMENT (CONT.)

4.7.2 The industry is also principally a daylight activity and while there may be some activity in the hours of darkness at either end of the day, it is very limited (mainly on safety grounds) and generally restricted to the plant and operations area. This has the added benefit of reducing the potential impact on local wildlife and residents.

4.7.3 The geological investigation showed there is limited groundwater present and it is not envisaged that there will be a need for dewatering pumps to operate outside these hours. Should there be a need, it is likely to be very short term and this aspect can be covered by a suitable condition. As referred to elsewhere, any dewatering pump will be electronically powered so will not give rise to any issues with noise.

4.8 Timescale

4.8.1 Mineral extraction is a 'service' industry which means that minerals are produced to meet the demand which is generated by factors outside the control of the mineral company, i.e. housing and industrial development, general construction activity, repairs and maintenance, etc. Attention is drawn to this as the anticipated rate of extraction is based upon current and historic experience as well as the general economic climate.

4.8.2 The comments relating to the factors affecting demand for the minerals equally applies to the availability of inert reclamation materials. This second variable generally reflects the market, so if it is busy, both output and input increase, and vice versa.

4.8.3 The extraction and restoration timescales set out below are based upon the assumption of an annual output of 60,000 tonnes and an input of 15,000m³.

Phases 1 & 2	Years 1 – 5
Phase 3	Years 6 – 7
Phase 4	Years 8 – 10

4.8.4 The progressive restoration has been designed to accommodate the requirement for a corridor for the internal road. Also, the southern part of Phases 3 & 4 are returned to water and grassland, so require considerably less 'reclamation' material. The progressive plan 0812/PO/2 shows the broad areas that will be progressively reclaimed.

4.0 PROPOSED DEVELOPMENT (CONT.)

4.8.5 A further factor is the need to keep the plant and operations area active throughout the period of the development. This means it can only be restored at the end, with any remaining mineral below the floor of the plant area being recovered. All these 'detailed' factors contribute to the timescale which is why there needs to be flexibility when considering the overall timescales.

4.9 Water Management

4.9.1 As explained in Section 3, the deposit is a lens or channel of sand and gravel surrounded by and underlain by boulder clay.

4.9.2 The site investigation indicated that the majority of the gravel penetrated in the trial pits was dry (especially in the west of the area) but in the lower lying land to the south east there was evidence of water at around 2.5 - 3.0 metres below surface (i.e. close to the base of the mineral). Any permanent water table is expected to be linked to the water levels in the River Tiffey which are seen to be noticeably below the existing ground levels.

4.9.3 The majority of the mineral deposit will be excavated dry, with some limited areas excavated from below the water table. Should it become necessary to dewater the excavation, the water will be settled within the excavation/operations area before being discharged into the drain which runs along the west side of Bridge Road (and when working Phase 4 the adjacent drain) both of which feed into the River Tiffey. Dewatering will only be carried out during periods of excavation or infilling, (i.e. to ensure the void is 'dry') and will use an electronically powered pump unit.

4.9.4 Dewatering will only take place following the issue of a discharge consent or permit from the Environment Agency which will specify volumes to be discharged, level of suspended solids, ph level, free from oil pollution, etc. This will ensure there is no risk of pollution to the River Tiffey.

4.9.5 Water management in the plant and operations area will require a number of lagoons to be constructed which will store water that is required for sand and gravel washing. Dirty water from the processing plant will be re-circulated through the lagoons allowing the silt from the sand and gravel to settle out and clean water to be recovered for re-use. The silt will be periodically excavated and transferred by dump truck to the excavation where it will be stored and used in restoration of the site.

4.0 PROPOSED DEVELOPMENT (CONT.)

- 4.9.5 Surface drainage will be maintained on site by collecting and directing all surface water from the plant area into the lagoons. This has the advantage of ensuring that any surface water run-off is retained on site and also efficiently utilises rainwater. Any losses of water due to evaporation or through sand and gravel washing will be topped up with water abstracted from a borehole, the use of which will be subject to the conditions of an abstraction licence issued by the Environment Agency.
- 4.9.6 As set out at paragraph 4.3.6, all fuels and lubricants will be stored in either a proprietary self bunded container in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001 or in a suitably bunded area where the volume is 110% of the capacity of the storage tank. Refuelling of plant and machinery will take place on a specified fully bound surface which will drain to an oil interceptor to reduce the risk of spillage. In the event of any accidental fuel spillage on the site, fuel clean up kits will be immediately used.

5.0 RESTORATION

- 5.1 The landowner recognises that minerals can only be worked where they occur economically and that the use of the land for mineral extraction and restoration is temporary. The land is used and returned on a progressive basis and that the timescales will be around 10 - 12 years. The landowner believes that the restoration of the site will enable an improved soil profile through the use of stone free subsoils and a smoothing out of the gradients. Therefore, the preferred restoration of the landowner is back to agricultural use. However, it is recognised that additional biodiversity can be created by restoring the area adjacent to the River Tiffey to two small ponds and meadow grassland (see plan reference 0812/R/1d).
- 5.2 The section on the working design explains the broad principles of how the soils will be restored. There are three key stages:
- importing suitable inert material that is necessary to build up a reclamation level (this is part of the Reclamation Works)
 - the use of loam and loamy sand as a subsoil to cover the imported material (this is changeover from Reclamation to Restoration)
 - the spreading of the topsoil to complete the restoration (this is the Restoration Works).

5.0 **RESTORATION**

- 5.3 During excavation all quarry waste that is suitable as a subsoil will be temporarily stored separately from the general quarry waste within the operating area. The site investigation showed that 'loam' and 'loamy sand' occur as discrete layers or lenses so selective excavation is straightforward.
- 5.4 Once a sufficient area has been excavated, it will be prepared to receive reclamation material by levelling and shaping. The incoming material will be built up in layers to the profile of the final landform, allowing room for the subsoil and topsoil to be spread.
- 5.5 The subsoil will be handled by a crawler excavator that will first loosen up any compacted material before loading it onto a dumptruck. This will travel over the reclaimed 'infill' surface and tip the load in a small stockpile. The tipped material will be spread to an even thickness using an excavator. If the nature and condition of the subsoil is robust enough, the spreading may be carried out using a low ground pressure dozer. Both these methods will follow the procedure in the Guide to Good Soil Handling published by DEFRA/MAFF.
- 5.6 The same method will be employed for handling, transporting, placing and spreading the topsoil. Of particular importance is to ensure the dump trucks only travel on the infill surface and do not cross any areas where subsoil or topsoil has been re-spread. The topsoil will be spread evenly to a minimum thickness of 300 mm. The alternative of the 'Peninsula' method may be followed where the dumptruck is confined to internal roads made up of at least 600 mm of topsoil. Once the road is no longer required the full thickness of the topsoil is excavated by a crawler excavator and re-spread to the final thickness. The action of excavation and spreading effectively breaks up any compaction as a result of the dumptruck. This is also a method recognised by DEFRA.
- 5.7 The objective is to ensure a loose uncompacted soil profile. Should there be any compaction or accidental crossing of placed material, then these areas will be loosened using a low ground pressure dozer and ripper or excavated and re-spread by a crawler excavator.
- 5.8 Other restoration proposals are for nature conservation and include the retention of 4.1 hectares of meadow grassland along the southern boundary and also new woodland blocks and hedgerow planting around the site. Plan number 812/R/1d shows the restoration scheme proposed.

5.0 RESTORATION (CONT.)

5.9 The scheme also includes the construction of two ponds which will be specifically designed as a habitat for great crested newts. Design detail for the ponds which includes cross sectional drawings, planting scheme and aftercare management has been prepared by SLR Consulting Limited and submitted in support of this application.

5.10 It is envisaged that the areas restored to nature conservation will be subject to a Section 106 agreement.

6.0 AFTERCARE

6.1 The areas restored to agriculture will be subject to an aftercare scheme which will cover the following work:

- a cropping regime will be submitted to the MPA following completion of restoration
- details of soil cultivation will be agreed and implemented to prepare the seed bed
- details of the management of the crop (mainly weed control and application of fertiliser) will be kept as well as the crop yield
- an annual meeting will be held with the MPA at which the above details would be provided, and the future cropping agreed,
- any remedial works (compaction, drainage, etc.) would be agreed and carried out,
- the period is expected to last for 5 years.

6.2 For the area restored to meadow grassland, following the seeding of the area, the main requirement is to ensure the control of weeds. At the annual meeting weed control measures would be agreed and implemented, noting that the use of chemicals may be limited due to the water body.

6.3 Any landscape planting would be appropriately protected against damage by wildlife and again appropriate control of weeds would be agreed and implemented. Any dead or diseased plants would be replaced to maintain an appropriate density of planting.

7.0 ENVIRONMENTAL IMPACTS

7.1 Landscape and Visual Impact

- 7.1.1 Minerals can only be worked where they occur and in designing a working and restoration programme the impacts can be substantially reduced by planting hedgerows and woodland as well as building screening bunds with the soils. Landscape impacts are subjective and in order to ensure the working design at this site will not cause an unacceptable landscape or visual impact, a landscape and visual impact assessment has been prepared by Luke Broom-Lynne and submitted in support of the application.
- 7.1.2 The Landscape and Visual Impact Assessment sets out the landscape setting of the site as well as assessing the visual impacts from the surrounding viewpoints and properties. The report reflects the comments made by the Landscape Officers in response to the original application and addresses areas of concern by planting additional woodland blocks around the site and also the inclusion of oak trees within the native species hedgerow which is proposed to be planted along the northern boundary adjacent to Stanfield Road.
- 7.1.3 In terms of landscape setting the site lies within Natural England's 'South Norfolk and High Suffolk Claylands'. This is a relatively 'broad brush' assessment with the more local character being defined by South Norfolk District Council as 'Wymondham Settled Plateau Farmland'. Again this character assessment covers a large area south of Norwich which is essentially generally flat landform, with large open fields with poor hedgerows and is sparsely wooded.
- 7.1.4 The design of the restored site reflects this character by returning the area to arable fields, i.e. replacing like for like. There is a slight change in the field gradients as the restoration provides an opportunity to 'smooth' out the areas of steeper slopes which will not have an impact on the landscape character. This is confirmed by the landscape report.
- 7.1.5 The restoration design includes two small ponds within small meadows which will be defined by additional woodland block and shrub planting. These smaller scale features are not out of character as they are located adjacent to the narrow valley of the River Tiffey and are designed to enhance the ecology of the locality.

7.0 ENVIRONMENTAL IMPACTS (CONT.)

7.1.6 The development itself will have a visual impact and the working scheme has been designed to reduce any impacts to acceptable levels. Reference has already been made to the 'open' view across the site from a section of Stanfield Road which is also referred to in the Screening Opinion where it is suggested that wider margins should be left.

7.1.7 In trying to determine what would be a reasonable margin, there are a number of issues that need to be considered namely,

- protection to any adjoining vegetation
- proximity of noise sensitive properties
- stability to adjacent land uses
- visual impacts
- possible unnecessary sterilisation of minerals

7.1.8 Views from Stanfield Road have been assessed as part of the Landscape and Visual Impact Assessment. The proposal is to plant a new hedgerow along the full frontage of the property ownership (the new hedge is shown on plans 0812/CO/1c). This would be two rows wide with the planting details reflecting the local species mix which is broadly hawthorn (55%), blackthorn (25%) with Wych Elm (5%), Field Maple (5%), Elder (5%) and Dog Rose (5%). The hedgerow will also be interspersed with Oak trees with the final details of any planting being agreed with Norfolk County Council as a planning condition.

7.1.9 The hedge would be planted at the commencement (or earlier if seasons allow). It is recognised that it will take some 4 - 5 years to become established. During this timescale the excavation/reclamation operations will be taking place in Phases 1 and 2 (approx. 5 - 6 years for mineral extraction) before workings start in Phase 3. By then the hedgerow will be established and provide a degree of filtering to the bunds which screen the development.

7.1.10 This design, combined with the excavation taking place in the base of the quarry (some 4 metres below ground level) and the existing landform, means that views into these two phases will not be obvious from Stanfield Road.

7.0 ENVIRONMENTAL IMPACTS (CONT.)

- 7.1.11 In addition to this new hedge is the screening bund around the limits of Phases 1 & 2. The northern bund parallel to Stanfield Road and adjacent to the hedge is designed to have an outer face slope of 1 vertical to 3 horizontal and will be 3.0 metres in height to provide a 'softer' appearance.
- 7.1.12 The approach to 'containing' this initial area means the remainder of the site is not disturbed for the first 5 years. When the development needs to extend eastwards, the northern bund is extended to follow the edge of Phase 3 leaving a wide 'buffer' zone of over 150 metres to Hall Cottage. This is designed to provide suitable mitigation to the properties to the north of the site. This is shown on the illustrative cross-sections ref. 0812/CS/2.
- 7.1.13 Similar comments apply to the development of Phase 4. This area is separated from the main site by Bridge Road, with the internal road using the existing railway bridge. This phase is already well screened by the marginal hedgerows, and again a perimeter soil bund will be built to effectively screen the workings.
- 7.1.16 Overall, the Landscape and Visual Impact Assessment concludes that the impact of the proposed development on the landscape is considered to be nil or negligible and that the proposed scheme of restoration provides for the enhancement of the local landscape character.

7.2 Ecology

- 7.2.1 An ecological survey was carried out in June 2008 to establish the level of interest that may be present in the area. As expected, the arable use of much of the area means that the ecological value is low. Features of interest are the boundary hedgerows which contain a number of mature oaks with potential for bat roosts, as well as the ivy covered section of the old railway bridge. The western field has an area of semi-improved grassland which provides a breeding area for skylarks and a range of insects.
- 7.2.2 The main area of ecological interest locally is associated with the River Tiffey and its adjacent ditches. The meadows adjacent to the river do not form part of the development with the field adjacent to the river specifically being excluded. From an ecological perspective, the restoration design seeks to provide habitat for great crested newt in the form of two ponds, along with an area of meadow grassland and the planting of woodland blocks, hedgerows and shrubs around the site.

7.0 ENVIRONMENTAL IMPACTS (CONT.)

7.2.3 The initial report recommended that further specific surveys are conducted as part of the background data that should be submitted with the application. These surveys have been completed and submitted in support of this application and make the following observations and recommendations:

Water Vole/Otter

No evidence of any water voles was found. An old otter spraint was noted and the report recommends a 10 metre margin to the drain that runs adjacent to Bridge Road.

Reptiles

No reptiles were found and it was concluded that these species are absent.

Bats

The potential roosts in the trees around the site will not be directly affected as no trees are to be felled as part of the proposals. Within the site no bat roosting activity was found associated with the bridge but the structure and the ivy covered brickwork offered potential. Prior to working commencing in Phase 4, when the bridge will be used by the quarry vehicles, a further bat survey will be carried out and suitable mitigation put in place as deemed appropriate. Regarding foraging, this is generally restricted to the hedgerows which have an undisturbed margin as well as a grassed bund, both of which provide mitigation. There will be very little 'quarry' activity at dawn or dusk (as they are outside the working hours) further mitigating/avoiding any impacts. There is no permanent 'flood lighting' proposed.

Other

The reports refer to other protected species (e.g. skylarks and brown hares) and the creation of 'replacement' habitat (grassland/meadow) on completion of the development, which it is envisaged will be subject to a Section 106 agreement, will benefit these species.

Trees

The ecological report recommends an undisturbed margin of 10 metres is maintained to those boundaries where there is mature vegetation which is principally the south western boundary. In addition an arboricultural report has been prepared to establish the appropriate stand offs to the mature trees in the hedgerows and is submitted in support of this application.

7.0 ENVIRONMENTAL IMPACTS (CONT.)

This identified the Root Protection Area for the individual trees and groups of trees. These are shown on plan 0812/CO/1c from which it can be seen that only three trees to the south of Phase 1b have a protection zone in excess of the 10 metres recommended by the ecological report.

Where the workings are adjacent to hedgerows the undisturbed margin will be reduced to 5.0 metres to achieve an appropriate balance between protecting the impact and avoiding unnecessary sterilisation of minerals. These margins are shown on the plans.

- 7.2.4 The restoration scheme proposes to create a nature conservation area which will include an area of meadow grassland along the southern margin adjacent to the valley of the River Tiffey along with the construction of two ponds designed specifically to support great crested newt. The conservation area will be beneficial to other species such as otters, voles, amphibians and reptiles as well as being suitable for skylarks and other ground nesting birds. The new woodland blocks, shrub and hedgerow planting will be of benefit to a range of birds as well as enhancing the landscape character.

7.3 Traffic

- 7.3.1 Mineral extraction is a generator of traffic and in order that the impacts are kept to a minimum a good access to the principal road network is important. As explained earlier, the outcrop of sand and gravel that is suitably placed to supply this sector of the market is very limited with many of the outcrops being poorly located away from suitable roads.
- 7.3.2 The application is very well located to the road network and the majority of the market will be to the west where there is a full junction onto the A11 Wymondham Bypass. Access to the site will be from a new purpose 'T' junction which will be constructed in accordance with the relevant design and safety standards.
- 7.3.3 A Transport Statement has been prepared by Create Consulting Engineers Ltd and has been submitted in support of this application. An analysis of existing traffic movements and that which will be created as a result of the development concludes that the junction design and existing road network are suitable and capable to carry the additional vehicle movements without giving rise to capacity or safety issues.

7.0 ENVIRONMENTAL IMPACTS (CONT.)

7.4 Water

- 7.4.1 The geological setting of the sand and gravel has been referred to earlier as a discrete lens or relic channel of sand and gravel contained by boulder clay to the north, east and south (see Geological plan 0812/G). The site investigation showed that the clay outcrop is further south than shown on the geological map with the sand and gravel running out south of Stanfield Road. In terms of groundwater it is relevant to note that the 'glacial' deposit has been reworked by the River Tiffey and is shown as more recent terrace gravel within the meadows.
- 7.4.2 In terms of groundwater, the porous nature of the exposed sand and gravel means there will be infiltration of surface water (rainfall and dispersed field drainage) resulting in the presence of groundwater within the gravels. The glacial gravel will be in hydraulic continuity with the terrace gravels. This was proved by the site investigation which confirmed groundwater was present in the gravel in the south east of this site.
- 7.4.3 The land slopes in a generally southern/slightly south eastern direction with the surface drainage being towards the River Tiffey. The site is on the lower part of the drainage catchment, being separated from the upper slopes by the Stanfield Road which effectively intercepts the drainage from the north making the site a small sub unit within the catchment. (Note, the sand and gravel runs out before reaching Stanfield Road so the cut off drains are in a clay substrata).
- 7.4.4 It is reasonable to expect the groundwater movement to reflect the surface drainage pattern, i.e. mainly through the gravel in a general south easterly direction. The volume of water entering the gravel will be small due to the cut off effect of Stanfield Road and the limited area of the outcrop. The high permeability of the sand and gravel results in a rapid downward vertical movement, as well as a lateral flow toward the River Tiffey.
- 7.4.5 The result of the geological setting is that the groundwater in the north and west of the site is absent as the base of the mineral is above the level of water in the River Tiffey. The structure of the deposit is that it is aligned towards the south east with the base of the gravel falling in this direction. This structure has influenced the groundwater movement with the site investigation showing the basal 1 - 2 metres of the gravel being saturated in the south east of the area.

7.0 ENVIRONMENTAL IMPACTS (CONT.)

- 7.4.6 The water from the south east part of the site is expected to be hydraulically connected to the surface streams of the River Tiffey and the western drain parallel to Bridge Road.
- 7.4.7 The site investigation showed that the deposit in Phases 1 & 2 and the western part of Phase 3 is dry with the base generally being above the groundwater level. Bearing in mind the possibility of minor variations in the surface of the basal clay, there may be localised areas of deepening where the bottom part of the mineral is saturated. Working of these phases may require very limited dewatering or draining by ditches in the base of the excavation.
- 7.4.8 The investigation showed that in the eastern part of Phase 3 and in Phase 4 the basal part of the mineral deposit was saturated, but the thickness varies from broadly dry in the north of the phases to 2.0 metres approximately of saturated mineral along the southern boundary. In working these phases some limited dewatering will be needed if the full depth of the mineral is to be worked 'dry'.
- 7.4.9 It can be seen from the above that the volumes of groundwater are limited, and in terms of water management for sand and gravel workings that take place in river valleys the volumes will not be significant. The response from the Environment Agency to the Screening Request indicated that if the volumes of water being pumped for dewatering were significant then details of quantities would be expected.
- 7.4.10 This does not apply as dewatering will only take place when needed and then only to recover the basal part of the seam in the southern part of Phases 3 & 4. Experience of the company in similar small Norfolk deposits shows that a 100 mm pump would be more than adequate to manage the water coming into the excavation, and that it would only operate when needed and generally for less than a day.
- 7.4.11 The volume of water entering the working is dependent upon the area of the void, the thickness of saturated mineral and the hydraulic conductivity of the mineral, and based upon experience from other similar mineral sites the void will always be large enough to accommodate rainfall/surface drainage. As the area of working will be variable, it is very difficult to calculate the likely volumes. This is further affected by the rate of restoration that will reclaim the void by infilling with quarry generated material (interburden, overburden etc.) and imported inert material.

7.0 ENVIRONMENTAL IMPACTS (CONT.)

- 7.4.12 When dewatering does take place it is recognised there will be an impact on the surrounding aquifer. This is in the form of 'drawdown', but as the saturated thickness is modest and is generally over 2 metres below existing ground surface there will be little impact on surface vegetation which derive their water from rainfall or the pore water in the upper 0.5 metres of ground.
- 7.4.13 A Hydrological Impact Assessment has been undertaken and submitted in support of this application. The assessment confirmed that dewatering requirements are expected to be minimal, with the potential maximum radius of influence within the saturated sand and gravel superficial deposits being approximately 135m. Given the relatively isolated location of the application site, it is considered very unlikely that there would be any significant impacts on local groundwater or surface water resources within the immediate vicinity of the site. If localised dewatering is required, the pumped water would be settled within the excavation area and/or operations area before ultimately being discharged into the River Tiffey via the drainage network at the application site. Under these conditions there would therefore be no significant net loss of groundwater baseflow to the River Tiffey.
- 7.4.14 Given the topographic and geological site setting, it is considered very likely that the unsaturated condition of the superficial deposits is also present in the immediate vicinity of the application site. Therefore, it is considered very likely that any reduction of groundwater flow across the site, due to restoration of the site by infilling with imported inert materials, will easily be accommodated by slightly increased groundwater flow rates around the margins of the site, without leading to a significant increase in groundwater levels within the adjacent superficial deposits. It is therefore considered that there will be negligible associated impacts on the River Tiffey. The assessment also concluded that effective groundwater recharge to the underlying Chalk aquifer, together with groundwater baseflow to the River Tiffey would not be significantly affected by the proposed restoration of the application site using these inert materials.
- 7.4.15 At stated earlier, the groundwater is considered to be in hydraulic continuity with the surface drainage and is expected to contribute to the base flow of the River Tiffey. Dewatering of the southern part of the deposit could reduce this recharge. This is a common impact associated with dewatering and the accepted method of mitigation is to discharge the water to the potentially affected watercourse upstream of the area being dewatered.

7.0 ENVIRONMENTAL IMPACTS (CONT.)

- 7.4.16 This mitigation measure is proposed and any dewatering in Phase 3 will be settled before discharge into the ditch adjacent to Bridge Road which feeds the River Tiffey upstream of the excavation. In order to ensure the discharge water is suitably settled, mitigation is twofold. The first is in the base of the excavation where collection ditches are cut into the exposed basal strata to direct the water away from the excavation area to a basal sump. This is the first settlement pond from where the water is pumped to discharge.
- 7.4.17 The second is the construction of small settlement ponds beyond the pump discharge. These are designed to drop the rate of flow to enable further settlement to take place so that by the time the water reaches its discharge point into the River Tiffey any remaining suspended solids will comply with the licence/permit that will control the quality of the discharge. As these ponds are temporary and within the operational area the details will be determined as a day to day operational matter.
- 7.4.18 Reclamation will be achieved by using both quarry derived material and imported inert material. The placed material will have a lower hydraulic conductivity than the existing sand and gravel. The result will be a slight change to the drainage characteristics, with a higher level of field run-off. The restoration design directs this run-off to the perimeter field drains or ditches and also the ponds in the in the south east of the site.
- 7.4.19 The water in the pond will be connected to the groundwater as the southern side will be constructed in the in-situ sand and gravel. The 'porous' bank will act as a soakaway that will enable the pond to feed water to the River Tiffey through the undisturbed gravels underlying the river meadow.
- 7.4.20 The design of the working and restoration of the site incorporates mitigation measures to ensure there will be no unacceptable impacts on the water regime both during operations and at completion.

7.5 Flood Risk

- 7.5.1 The application area is located outside the area that is shown at risk of flooding based upon the flood risk maps available on the Environment Agency's website, and the extent of the flood plain is shown on plan 0812/FP/1a.
- 7.5.2 As set out in the previous section the majority of the excavation takes place above the level of the groundwater so there may only be a need for limited dewatering. Any dewatering required will be via the established drainage ditches which flow into the River Tiffey.

7.0 ENVIRONMENTAL IMPACTS (CONT.)

- 7.5.3 The level of flood risk is proportionate to the quantity of water that needs to be discharged. Anticipated volumes are not significant due to the limited thickness of saturated mineral and the small extraction areas that may require dewatering. Dewatering of mineral workings is relatively common place and all discharges have a potential impact on flood risk.
- 7.5.4 Longwater Gravel will not be permitted to discharge any water from the site without the appropriate discharge consent from the Environment Agency. This will dictate the quality and volumes that are will be permitted to be discharged.
- 7.5.5 As dewatering is only needed occasionally, the stopping of the pumping for a temporary period (even if it is 3/4 weeks long) will not have an adverse impact on the operations which can continue with 'dry' digging. This means there is no requirement to pump when conditions deteriorate.
- 7.5.7 Stanfield Road acts as a surface cut off drain so any surface water draining from the higher ground to the north of the site is effectively collected by the road drains and discharged to groundwater through the underlying mineral deposit.
- 7.5.8 As no development is proposed in the area between the soil screening bund (along the northern boundary) and Stanfield Road, the existing natural drainage of surface water through the porous sand and gravel sub strata into the groundwater will be maintained. This natural drainage will also accommodate any surface water which may be shed by the soil screening bund.
- 7.5.10 It is important to note that the soil screening bunds will be constructed as a result of stripping soils to expose the mineral deposit within the extraction area. As the mineral is porous, it is unlikely that surface water will accumulate on the non-extracted sides of the soil screening bunds as this will continue to percolate either through the undisturbed mineral deposit or drain into the excavated workings.
- 7.5.11 The soil screening bunds will be removed during site restoration with the soils replaced onto the restored surface. Surface water will drain towards the two ponds and also towards the River Tiffey which is located along the southern boundary of the site.

7.0 ENVIRONMENTAL IMPACTS (CONT.)

- 7.5.12 The southern banks of the ponds will be dug into the unworked mineral deposit and will therefore allow the natural soakaway of the water. In practice the ponds will always be charged by the groundwater, with the water level rising to accommodate the surface water which will flow from the surface of the site. The level will gradually drop as the water naturally percolates through the mineral and into the River Tiffey. This is effectively the same drainage mechanism as currently exists with the surface drainage infiltrating into the underlying sand and gravel with the water finding its way to the river valley.
- 7.5.13 The same surface water drainage mechanism applies during the active period of the development as all water entering the excavation will be retained within the void as the surrounding land is higher. Water collecting in the excavation will be managed by a temporary basal drainage system that will direct water to the southern face from where it can soakaway. This ensures that there will be no risk of 'escape' of water from the void which pose a flood risk to neighbouring land or property.
- 7.5.14 A detailed flood risk assessment has been prepared and submitted in support of this application. This concludes that there will be no increase in flood risk as a result of mineral extraction operations or following site restoration.
- 7.5.16 The plant and operations area are located at 42 metres a.o.d., with the drainage being directed south to the silt and water management area which will be slightly lower. Four lagoons will be constructed in the eastern side of the site and will be used to store approximately 3000m³ of water for use by the processing plant. Each lagoon will be sealed with an impermeable liner to prevent the stored water from percolating away and also to prevent the lagoon banks from eroding and collapsing. The lagoons will be interconnected via overflow pipes.
- 7.5.17 All water used by the processing plant will be circulated through the lagoons to allow the settlement of silt from the gravel washing process and enable the recovery of clean water for re-use. Flocculent may be added to the water to assist the settlement process.
- 7.5.18 To prevent overtopping and flooding, an overflow pipe will be installed on the clean water lagoon which will allow any excess water to flow into the excavation void and naturally percolate back into the groundwater.

7.0 ENVIRONMENTAL IMPACTS (CONT.)

7.5.19 The completed restored landform returns the area to broadly similar levels as those currently seen on site. The restored soils will continue to provide some storage capacity which will attenuate the run off rate. Drainage is directed towards the ponds (which provide balancing capacity and allow natural soakaway) and the valley of the River Tiffey. Therefore, at completion there will be no adverse impact on flood risk locally.

7.6 Archaeology

7.6.1 The nature of the development means that any archaeological feature that may be present will be lost as the minerals are extracted. However, the progressive nature of mineral extraction allows sufficient time within the overall timescale of the development for detailed archaeological investigations to take place should there be features on site.

7.6.2 Further, as the restoration is broadly back to existing level, if there is a feature of such significance as to warrant preservation in situ, then the scheme can be readily amended to accommodate this. This flexibility does not apply to most other forms of development which is a very relevant factor when considering the proportionate approach to mineral workings.

7.6.3 An Archaeological Desk Based Assessment has been carried out and a copy is submitted in support of this application. The setting of the site has been assessed against the Norfolk Historic Environment Record, examination of aerial photographs, historical map search and other published data. The assessment showed that the location was typical in terms of the archaeological record with evidence suggesting an agricultural history that is not uncommon to much of the surrounding area.

7.6.4 The Archaeological Desk Based Assessment was followed up by a Geophysical Survey the conclusions of which indicated little in the way of probable archaeology. The only feature that was identified as being worthy of a field evaluation was located in the northern part of Phase 4. A copy of the Geophysical Survey is submitted in support of this application.

7.6.5 Field trenching was carried out to better understand this feature which was found to be the foundations of a windmill. The work was carried out by Archaeological Solutions and a copy of their report is submitted in support of this application.

7.0 ENVIRONMENTAL IMPACTS (CONT.)

7.6.6 In light of the general absence of any evidence that archaeological features are present it is proposed that an archaeological watching brief is agreed and implemented during the site preparation stages of the development. Should any features be found their relative importance will be assessed in association with the County and any appropriate further work will be agreed and implemented. As archaeological features are generally small in size, this additional work can be readily accommodated within the development programme.

7.7 Agriculture

7.7.1 A Soil Classification survey has been carried out and shows that some 64% of the area is of best and most versatile quality. A copy of the Agricultural Land Classification Report is submitted in support of this application.

7.7.2 Where development is to take place that would result in the permanent loss of agricultural land then the sequential approach is to use land of a lower quality in preference to land of higher quality. Unlike most other forms of development minerals can only be worked where they occur, and due to the nature of sand and gravel it is not uncommon that best and most versatile land is worked. Also, there will be no 'permanent' loss.

7.7.3 Government Policy recognises this conflict in MPG7 (now withdrawn and replaced by NPPF) where it is noted that the ability to achieve high standards of reclamation should enable mineral extraction to occur without irreversible loss of land quality. The advice accepts that mineral extraction can take place on best and most versatile land where the restoration and aftercare will be to a high quality such that the long term potential of the land is preserved. This principle is reflected in the NPPF which seeks to achieve high quality restoration and conserving soils.

7.7.4 The development follows this advice by restoring the majority of the site back to agriculture, the balance being to water and ecological benefit. The soil handling will follow the Good Practice Guides provided by DEFRA to ensure the soil resource is fully recovered and reused. In addition, the careful use of less stony material as part of the subsoil is considered to provide an improvement (a factor requested by the land owner who farms the land).

7.0 ENVIRONMENTAL IMPACTS (CONT.)

7.7.5 If minerals are to be provided sustainably to meet the local demand then it is likely that this will involve disturbing best and most versatile land. The development recognises this through the handling, conserving and reuse of the existing soil profile to restore the land back to the same or similar potential. The importation of reclamation material enables the restored slopes to be more even and easier to farm. For example the depression shown as non-agricultural would be reclaimed rather than having to farm around it.

7.7.6 The design of the development recognises the importance of the agricultural resource and restoration will be carried out to a high standard that will be monitored through the aftercare scheme. It is accepted there will be a period of temporary loss but at completion an equivalent area of best and most versatile land will be restored and available for farming.

7.8 Noise

7.8.1 Despite the rural location of the site the background noise readings that have been obtained at the properties around the site show levels in the 40 - 45 dBA LA90. These higher levels are due to principally traffic noise from Stanfield Road and the A11.

7.8.2 The criteria for noise at mineral workings is set out in the Technical Guidance to the NPPF paragraphs 30 & 31 where the limits are 10 dBA above the background noise level subject to a maximum of 55 dB(A) LAeq 1 hour when measured at the property. Despite this, it is encouraged good practice to endeavour to keep noise levels as low as possible. The design of the site has tried to reflect this approach by:

- Ensuring there are environmental bunds around the operational areas. Generally these bunds are 3.0 metres in height as any higher may adversely affect the quality of the stored soils that will be needed for restoration;
- Maintaining an adequate 'buffer' zone between the working and the nearest properties;
- The excavation level for the mineral will be at or close to the base of the deposit (this will be determined by the level of the groundwater in the south east of the site);

7.0 ENVIRONMENTAL IMPACTS (CONT.)

- The relocation of the plant and operations area to the west of the site moves it further away from the closest residential properties.

7.8.3 Experience from other similar workings using the same type of plant and equipment has shown that this design, combined with the open ground distance between the nearest point of the working to the relevant property will keep noise levels below the criteria. Also, this would be the worst case for the relevant property when workings are closest, which only occur for a limited period (3 months approximately) as the rest of the time activities would be further away.

7.8.5 Other measures to minimise noise generate on site will include:

- Modern mobile plant fitted with “white sound” directional reversing alarms which are almost imperceptible at a distance when compared to conventional reversing beepers.
- All stone transfer points, hoppers, chutes, etc. will be rubber lined to insulate the noise generated by stone contact.
- Vibratory screens will be fitted with polyurethane screen mats which are significantly quieter in operation than conventional woven wire screens.
- Operating the quarry plant and equipment below existing ground levels coupled with the perimeter soil storage bunds will serve to attenuate any noise generated on site.

7.8.6 The above addresses the noise levels from the normal day-to-day activities. There will be short term periods when the soils are lifted to build the perimeter bunds, and again when they are taken down as part of the restoration work. These short term activities have different criteria to the day-to-day operations as the guidance recognises that in order to construct the acoustic protection there may need to be a period of higher noise levels. The criteria is 70dBA Leq 1 hour for periods of less than 8 weeks. Soil moving is normally completed within 4 - 6 weeks.

7.8.7 In order to ensure that the operations do not give rise to unacceptable levels of noise, a suitable planning condition that sets the maximum permissible noise level at the relevant properties will be enforced. Noise levels will be monitored in accordance with the planning condition and the levels recorded. In the unlikely event of noise levels being found to be in excess of the level stated by the planning condition, then operations will be stopped and the cause of the breach investigated.

7.0 ENVIRONMENTAL IMPACTS (CONT.)

7.8.8 A noise survey has been undertaken by BL Acoustics and is submitted in support of this planning application.

7.9 Dust

7.9.1 There is specific reference to the control of dust at mineral sites in Section 144 of the NPPF, with additional guidance on this policy area provided in Sections 23 to 27 in the Technical Guidance to the NPPF. A dust assessment has been undertaken to determine the impact of the proposed development and is submitted in support of this application.

7.9.2 Two receptors, Hall Farm Cottages and the nearby poultry farm, have been identified as experiencing potential dust impacts in the absence of suitable mitigation being employed. As a result a series of mitigation measures have been proposed to reduce the risk of impact at these receptors to an acceptable level. These include:

- The use of water sprays to dampen down any material being handled when soils are removed and replaced;
- Minimising the drop height from the excavator bucket to the skip of the articulated dumptruck as material is loaded;
- The use of water sprays to dampen down the sand and gravel as it is excavated;
- Limiting the construction of stockpiles and soil storage bunds during dry and windy weather conditions;
- All soil screening bunds to be grassed;
- Tractor and water bowser to be utilised on site to dampen down internal road surfaces during dry weather;
- Dust suppression/encapsulation to be used on screens and crusher where material is processed dry;
- Restricting vehicle speeds through signage & staff discipline;

7.9.3 Any complaints by residents relating to noise or dust will be investigated and action will be taken to prevent a recurrence.

7.0 ENVIRONMENTAL IMPACTS (CONT.)

7.9.4 The dust assessment concludes that the impact of dust from the proposed development would be local (rather than regional or national) and only occur for the duration of operations (i.e. short term).

7.10 Rights of Way

7.10.1 There are no public Rights of Way that cross the site or are affected by the development.

7.10.2 There are two underground pipelines, the routes of which are shown on the plans. Like all underground statutory or private services they are protected by separate legislation which normally allows the landowner to have the pipeline moved if it is affecting the ability to recover minerals, or that it can remain in place subject to agreement and compensation.

7.10.3 The plans show an undisturbed easement to each pipeline and discussion will take place with the pipeline owners/operators to ensure that satisfactory protection measures are implemented.

7.11 Lighting

7.11.1 As the area where lighting will be used at the proposed quarry is completely enclosed by the surrounding land and the soil screening bunds, there is no risk of the lighting being directly observed from any of the surrounding viewpoints.

7.11.2 All luminaires are directed downwards, thus minimising the amount of light pollution. Therefore, the risk of sky glow being observed from surrounding viewpoints is low.

7.11.3 As the lights are controlled by timers and not used during the night, the impact is further reduced to an absolute minimum.

7.11.4 No lighting will be used in the excavation areas except for worklights used on mobile plant such as the crawler excavator, articulated dumptruck and wheeled loaders.

7.11.5 The lighting which is used on site will be switched off between the hours of 5.30pm and 6.30am and also all luminaires will be positioned to direct light downwards, thus avoiding any light spill.

7.0 ENVIRONMENTAL IMPACTS (CONT.)

7.11.6 An assessment of the impact from the use of lighting at the proposed quarry has been carried out and submitted in support of this application. The report concludes that there will be little or no impact from the use of lighting at the quarry.

8.0 POLICY CONTEXT AND ANALYSIS

8.1 National Planning Policy Framework

8.1.1 Planning law requires that applications for planning permission must be determined in accordance with the development plan, unless material considerations indicate otherwise, and the National Planning Policy Framework (NPPF) is now a material consideration in planning decisions.

8.1.2 At the heart of the NPPF is a presumption in favour of sustainable development. For decision taking (i.e. granting planning permission) this means:

- Approving development proposals that accord with the development plan (in this case the Norfolk Minerals and Waste Development Framework Core Strategy and Development Management Policies DPD) without delay; and
- Where the development plan is absent, silent or relevant policies are out-of-date, granting permission unless:
 - Any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the National Planning Policy Framework taken as a whole; or
 - Specific policies in the National Planning Policy Framework indicate that development should be restricted (Section 14).

8.1.3 The NPPF also stipulates that local planning authorities should look for solutions rather than problems, and decision-takers at every level should seek to approve applications for sustainable development where possible (Section 187).

8.1.4 Chapter 1: Building a strong, competitive economy

The Government is committed to securing economic growth in order to create jobs and prosperity, as outlined in Section 18 of the NPPF. It is anticipated that the development proposal at Hall Farm will allow for the creation of a small number of jobs with Longwater Gravel Ltd. Specifically, there will be four employees as well as six contract hauliers that in effect will be indirectly employed.

8.0 POLICY CONTEXT AND ANALYSIS

Furthermore, the development will help to create or maintain secondary jobs in the local building industry in what is South Norfolk's largest housing growth area; Wymondham. The reserve is of a high quality, being 50% sand and 50% gravel. Looking more widely, the Government has recognised that house building will be a key plank of the economic recovery. Sand and gravel supplied by the quarry will support the expected increase in house building over the plan period.

Planning should operate to encourage and not act as an impediment to sustainable growth (NPPF, Section 19). This planning application and supporting information and documents outline in detail how the proposal for sand and gravel extraction, processing and operation is sustainable.

Chapter 2: Ensuring the vitality of town centres (not applicable to minerals development)

Chapter 3: Supporting a prosperous rural economy

Section 28 of the NPPF states that planning policies should support economic growth in rural areas in order to create jobs and prosperity by taking a positive approach to sustainable new development by supporting the sustainable growth and expansion of all types of business and enterprise in rural areas, and promoting the development of land-based rural businesses such as minerals extraction and processing.

As outlined above, it is anticipated that the quarry will allow for a small number of jobs with Longwater Gravel Ltd. Specifically, there will be four employees as well as six contract hauliers that in effect will be indirectly employed. Furthermore, the development will help to create or maintain secondary jobs in the local building industry in what is South Norfolk's largest housing growth area – Wymondham.

Chapter 4: Promoting sustainable transport

The NPPF requires that either a transport statement or transport assessment is provided. This planning application is accompanied by a Transport Statement (Create Consulting Engineers Ltd, May 2013).

8.0 POLICY CONTEXT AND ANALYSIS

The NPPF supports the greater use of sustainable transport. It sets out that the transport statement should show that “the opportunities for sustainable transport modes have been taken up depending on the nature and location of the site” and this is outlined within the accompanying Transport Statement. However, as shown against local Policies CS5 and DM10 in the following sections, there is little prospect for this at the proposal at Hall Farm because of its rural location and its distance from water freight or rail freight opportunities.

However, the Site is within readily achievable cycling distance of Wymondham and travel to/from work by this mode of transport will be raised amongst staff if cycling is considered safe given the routes the employees might need to use. Additionally, staff who could car share with colleagues would be encouraged to do so. Cycling and car sharing posters could be mounted at appropriate locations within the accommodation on site and sustainable travel could be raised as a matter for discussion at staff meetings. Be that as it may, with only four direct employees there is likely to be only eight movements a day, four at the beginning and four at the end, with maybe occasional trips at lunchtime and other times of the day. The Transport Statement assumed a worse-case scenario of 20 on the basis of 5 or 6 employees.

The NPPF also requires that transport statements show how “safe and suitable access to the site can be achieved” and that “improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development.” The Transport Statement accompanying this planning application does this, explaining that access onto the south side of Stanfield Road from the site is via a high-quality, purpose-built T-junction with appropriate and safe levels of visibility ensured.

The NPPF goes on to explain that “development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe”. The accompanying Transport Statement outlines this is not the case with respect to the land at Hall Farm, as there are few (if any) residual impacts, as set out in the analysis against the local policies in the following sections, even with the most arduous traffic ‘loading’ scenario that could be reasonably expected.

Chapter 5: Supporting high quality communications infrastructure (not applicable to minerals development)

Chapter 6: Delivering a wide choice of high quality homes (not applicable to minerals development)

8.0 POLICY CONTEXT AND ANALYSIS

Chapter 7: Requiring good design (not applicable to minerals development)

Chapter 8: Promoting healthy communities (not applicable to minerals development)

Chapter 9: Protecting Green Belt land (not applicable to minerals development)

Chapter 10: Meeting the challenge of climate change, flooding and coastal change

The NPPF requires that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas of highest risk (Section 100). As the application area is entirely located within Flood Zone 1, which represents areas considered to be at low probability of fluvial or tidal flooding, all uses of land are appropriate within this zone, including minerals extraction. The *Flood Risk Assessment* (Longwater Gravel Co. Ltd., June 2013) which accompanies this planning application shows that the proposed development is considered to be appropriate in terms of flood risk.

Chapter 11: Conserving and enhancing the natural environment

Chapter 11 of the NPPF states that the planning system should contribute to and enhance the natural and local environment and these aspects relevant to the minerals development proposal at Harm Farm in Wymondham are outlined below.

Geodiversity (Sections 109 & 117): It is not considered that the proposal will have any adverse impact on the geology or geodiversity, as there are no known geological features or assets of interest within or near to the application area.

Water Resources (Section 109): A *Hydrological Impact Assessment* (SLR, March 2013) was undertaken and confirmed that dewatering requirements are expected to be minimal. Given the relatively isolated location of the application site, it is considered very unlikely that there would be any significant impacts on local groundwater or surface water resources within the immediate vicinity of the site.

Soils (Section 112): The *Agricultural Land Classification* report (Bruce Hill, May 2011) provided in support of this planning application provides an Agricultural Land Classification survey which shows that 64% of the application area fall within Grades 2 and 3a of the best and most versatile agricultural land, with the remaining 36% Grade 3b and non-agricultural land. However, the development proposal includes restoration plans to return 84% (23.3 ha) of the land back to high quality agricultural land, therefore leading to an overall gain in the best and most versatile agricultural land as a direct result of the development proposal.

8.0 POLICY CONTEXT AND ANALYSIS

Landscape (Section 116): The Hall Farm application area is not within, or near to, an Area of Outstanding Natural Beauty or a National Park.

Biodiversity (Section 118): The application area is of sufficient distance (1.8km) from the nearest Site of Special Scientific Interest to ensure that no significant effects on this designated area are likely.

Opportunities have been taken to incorporate biodiversity enhancements into the restoration proposals, through the planting of grassland meadow, two ponds and woodland block and shrub planting. This will provide habitat for skylarks, insects and newts, and will also provide foraging habitat for bats.

The development proposal will not result in the loss or deterioration of any irreplaceable habitats, such as ancient woodland or veteran trees as none are within or near to the application area.

The application area is not within or near to any Special Protection Area, Special Area of Conservation or Ramsar site. Habitats Regulations assessments undertaken by Norfolk County Council during the preparation of the Norfolk Minerals Site Specific Allocations DPD have shown that no adverse impacts on these internationally designated sites for nature conservation are likely to arise from minerals development at Hall Farm in Wymondham.

Land Contamination (Sections 120-122): Water management in the plant and operations area will require a number of lagoons to be constructed which will store the water that is required for sand and gravel washing. Dirty water from the processing plant will be re-circulated through the lagoons allowing the silt from the sand and gravel to settle out and clean water to be recovered for re-use. Surface drainage will be maintained on site by collecting and directing all surface water from the plant area into the lagoons. This has the advantage of ensuring that any surface water run-off is retained on site and also efficiently utilises rainwater.

All fuels and lubricants will be stored in either a proprietary self bunded container in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001 or in a suitably bunded area where the volume is 110% of the capacity of the storage tank. Refuelling of plant and machinery will take place on a specified fully bound surface which will drain to an oil interceptor to reduce the risk of spillage. In the event of any accidental fuel spillage on the site, fuel clean up kits will be immediately used.

8.0 POLICY CONTEXT AND ANALYSIS

Given its inert nature the fill material for restoring the landform once extraction is complete will:

- not undergo any significant physical, chemical or biological transformations;
- not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm to human health; and
- the total leachability, pollutant content and the ecotoxicity of its leachate would be insignificant.

The NPPF makes it clear that the issue of quarry slope stability should be addressed; however, the level of detail is dependent on a number of factors including the depth of the working and the length of time slopes are expected to be in place. Overall, the proposal is a comparatively shallow excavation and the Phasing Plans accompanying this planning application show that working and restoration will take place progressively on a phased basis with the result that working slopes are likely to be in place for a short time only.

Noise (Section 123): As required by the Technical Guidance to the NPPF, an assessment of the noise impact has been undertaken, supported by the Noise Assessment (BL Acoustics, May 2011), in support of this planning application. The expected noise levels from excavation and processing operations within the proposed development should be less than 10dB(A) above the measured background noise levels, and also below the highest noise limit of 55dB LAeq,1h. This will be achieved through a number of mitigation measures, such as 3m high bunds, the use of electrically powered dewatering pumps, sinking of the proposed plant site 1-2m below existing ground levels, and locating the plant and operations to the west of the site away from the nearest receptor. Also, the wheeled loaders and dump trucks will use “white noise” reversing alarms. Experience from other similar workings using the same type of plant and equipment has shown that this design, combined with the open ground distance between the nearest point of the working to the relevant property will keep noise levels below the criteria.

The above addresses the noise levels from the normal day-to-day activities. There will be short term periods when the soils are lifted to build the perimeter bunds, and again when they are taken down as part of the restoration work. These short term activities have different criteria to the day-to-day operations as the national guidance recognises that in order to construct the acoustic protection there may need to be a period of higher noise levels.

8.0 POLICY CONTEXT AND ANALYSIS

The criterion is 70dBA Leq 1 hour for periods of less than 8 weeks per year. Provided that all necessary bund construction close to the relevant receptors can be completed within this time period then noise levels should comfortably meet the temporary criterion. The site should be able to operate in accordance with the noise criteria and limits sets within the Technical Guidance to the NPPF.

Air Quality (Section 124): The site does not lie within or near to an existing or potential AQMA.

Light Pollution (Section 125): The planning application is accompanied by a *Lighting Assessment* (Longwater Gravel Co. Ltd., June 2013) which considers the impact from various potential sources of artificial light. Eight potential receptors (viewpoints) were identified, but, as the area where lighting will be used at the proposed quarry is completely enclosed by the soil screening bunds, there is no risk of the lighting being directly observed from any of the surrounding viewpoints.

All luminaires will be directed downwards, thus minimising the amount of light pollution. Therefore, the risk of sky glow being observed from surrounding viewpoints is low. As the lights are controlled by timers and not used during the night, the impact is further reduced to an absolute minimum. To mitigate the impact on bats, no lighting will be used in main extraction areas whilst mineral extraction activities are carried out, except for worklights used on the dumptruck, crawler excavator and wheeled loaders.

Due to the effective screening of the site by the soil screening bunds, the type, number and position of the luminaires and the limited duration of use, the conclusion from this assessment is that there is little or no impact from the use of lighting at the proposed quarry, thus demonstrating that the development conforms to the requirements of the NPPF in this respect.

Chapter 12: Conserving and enhancing the historic environment

NPPF Section 128 requires that the significance of any heritage assets that are likely to be affected by the proposed development is described. The application area does not contain nor is it immediately adjacent to any nationally or locally registered Historic parks or Gardens, registered battlefields, Conservation Areas, or heritage coasts and is therefore unlikely to adversely impact on the historic form, character and/or setting of these locations.

8.0 POLICY CONTEXT AND ANALYSIS

The application area is located approximately 850 metres to the south of the listed Stanfield Hall. The Hall originally had a well-wooded compact and contained parkland, but this has become degraded and neglected, particularly since the construction of the wartime airfield to its east. The building itself has also suffered from incongruous modern extensions and a general lack of maintenance. Analysis of historic maps shows that the application site was never part of the original parkland. The general character of the landscape of the area is undistinguished, the parkland particularly requiring restoration, and the overall restoration proposals will positively enhance the setting of the hall. The heritage effects of the proposed development are thus considered to be negligible.

Additionally, an appropriate desk based archaeological assessment (Archaeological Solutions Ltd., January 2012) was undertaken to determine whether any archaeological features are likely to be found within the application area and therefore could be affected by the development proposal. The assessment showed that the location was very typical in terms of the archaeological record with evidence suggesting an agricultural history. The Desk Based Assessment has been followed up by a Geophysical Survey the conclusions of which indicated little in the way of probable archaeology. The only feature that was identified as being worthy of a field evaluation was located in the northern part of Phase 4. Field trenching was carried out to better understand this feature which was found to be the foundations of a windmill.

In light of the general absence of any evidence that archaeological features are present it is proposed that an archaeological watching brief is agreed and implemented during the site preparation stages of the development. Should any features be found their relative importance will be assessed in association with the County and any appropriate further work will be agreed and implemented. As archaeological features are generally small in size, this additional work can be readily accommodated within the development programme.

As such, in accordance with Sections 132-134 of the NPPF, no substantial harm to or loss of designated heritage assets is predicted.

Chapter 13: Facilitating the sustainable use of minerals

Section 144 of the NPPF requires that Minerals Planning Authorities ensure there are no unacceptable adverse impacts on aviation safety when granting planning permission.

8.0 POLICY CONTEXT AND ANALYSIS

The land at Hall Farm falls outside any relevant aerodrome safeguarded areas and is more than 13km from the centre-point of any aerodromes, according to Norfolk County Council's Proposals Map.

It also requires that the Mineral Planning Authority provide for the maintenance of landbanks of non-energy minerals from outside National Parks, the Broads, Areas of Outstanding Natural Beauty and World Heritage Sites, Scheduled Ancient Monuments and Conservation Areas. The Hall Farm development is outside of all of these designations.

Elsewhere it sets out the need to mitigate adverse impacts on amenity such as noise, dust and on the natural environment. These aspects are covered elsewhere in this planning application, such as earlier with regard to Chapter 11 of the NPPF, and in later sections of this Planning Statement. Additionally, there is specific reference to the control of dust at mineral sites in Section 144 of the NPPF, with additional guidance on this policy area provided in Sections 23 to 27 in the Technical Guidance to the NPPF. This is covered further on in this Planning Statement against, for example, Policy CS14.

NPPF Section 144 also requires restoration and aftercare to be carried out at the earliest opportunity to high environmental standards. This is covered under Policy DM14 further on within this Planning Statement.

Section 145 of the NPPF requires that Minerals Planning Authorities should make "provision for the maintenance of landbanks of at least 7 years for sand and gravel". The NPPF also requires that minerals planning authorities should use the landbank principally as an indicator "of the security of aggregate minerals supply, and to indicate the additional provision that needs to be made for new aggregate extraction".

As the sand and gravel landbank in Norfolk currently holds 5.3 years' worth of permitted reserves (December 2012), permission at Hall Farm will help the County Council move towards meeting national (and local) policy requirements for the maintenance of a 7 year landbank. The annual sand and gravel apportionment for Norfolk is 2.57mt and the development proposal will provide 0.6mt, which constitutes around 0.23 years supply. This will increase the landbank from the current 5.3 years to 5.53 years' supply. Furthermore, as the landbank is below the required 7 years then the County Council will recognise that additional provision needs to be made. This planning application will help by making additional sand and gravel resources available.

8.0 POLICY CONTEXT AND ANALYSIS

8.2 Norfolk Minerals and Waste Development Framework

8.2.1 Core Strategy and Development Management Policies

CS1 – Minerals extraction

The Applicant is already contributing to the sand and gravel supply in Norfolk and is currently working a number of sites. The intention is to continue making a productive and positive contribution to the supply of locally sourced sand and gravel in the county.

The land at Hall Farm has reserves of good quality sand and gravel which will help to meet the demand for this resource in South Norfolk and the Norwich Policy Area during the plan period. A workable deposit of 0.6mt of 50% sand and 50% gravel was encountered through a series of geological tests. The plan is to extract this high quality resource. As the annual sand and gravel apportionment for Norfolk is 2.57mt, this planning application for extraction of 0.6mt of sand and gravel constitutes 0.23 years supply. The site will therefore be especially useful in implementing CS1 by helping to increase the landbank from 5.3 years (as of December 2012) to around 5.53 years, closer to the policy requirement to maintain the landbank at between 7 and 10 years' supply.

The intention is to make a productive and positive contribution to the supply of locally sourced sand and gravel in this part of the county by producing around 60,000 tonnes per annum.

CS2 – General locations for mineral extraction and associated facilities

In accordance with CS2, the land at Hall Farm is close to and well related via appropriate transport infrastructure to the Norwich Policy Area, including the growth area of Wymondham in particular, but also south west Norwich itself and Hethersett (see Policy 10 of the Joint Core Strategy). Policy 1 of the Joint Core Strategy on climate change aims for the development to use locally sourced materials wherever possible. Proximity and access to the main market town of Attleborough is also good.

The development is designed specifically to service the local building and construction market. Longwater Gravel Ltd is a long established Norfolk company whose success is in part based on the reputation it has built up on the service it provides to the local market. The principal markets for sand and gravel and sources of inert material for restoration lie to the west of the site centred on Wymondham and it is anticipated that 80% of the vehicle movements will be to and from the Wymondham area. The south-west fringes of Norwich would also be served.

8.0 POLICY CONTEXT AND ANALYSIS

The benefits of close proximity to Wymondham were highlighted in the site's Sustainability Appraisal.

The site has a frontage of about 470m to the B1135 Stanfield Road and the site access will be from this road. Stanfield Road is a 3B1 HGV access route on the County Council's route hierarchy and connects the A11 trunk road and the B1113, the latter being a level 3A2 main distributor in the County Council's route hierarchy. The site traffic therefore does not use inappropriate roads to access roads higher up the route hierarchy or the trunk road network.

The site is very close, less than 2km, to the A11, the main traffic route in this part of the county. The A11 already carries considerable volumes of long distance and local HGV traffic; in 2010 the AADF for HGVs was 2,491 at the Hethersett bypass. This comprises 6.5% of all traffic.

Access to the growth town of Wymondham can be accessed entirely on Stanfield Road. Access to Norwich is via Stannfield Road and the A11. Access to Attleborough would be via the Stanfield Road, A11 and the B1077 or the Norwich Road, both of which are 3A2 main distributors on the County Council's route hierarchy.

Main market town/ growth area	Distance	Road(s)	Road categories in route hierarchy
Wymondham (Norwich Policy Area)	2 km	C186	3B1 HGV access road
		C186	3B1 HGV access road
		A11	Trunk Road
		B1077	3A2 main distributor
Hethersett (Norwich Policy Area)	6km	C186	3B1 HGV access road
		A11	Trunk Road
		B1172	3A2 main distributor
Norwich (Norwich Policy Area)	15km	C186	3B1 HGV access road
		A11	Trunk Road
		A11	Level 2 Principal Road

8.0 POLICY CONTEXT AND ANALYSIS

It should also be noted that the site also does not fall within any of the broad areas with significant environmental constraints affecting the major settlements identified in CS2.

CS3 – Waste management capacity to be provided (not applicable to minerals development)

CS4 – New waste management capacity to be provided (not applicable to minerals development)

CS5 – General location of waste management facilities (not applicable to minerals development)

CS6 – General waste management considerations (not applicable to minerals development)

CS7 – Recycling, composting, anaerobic digestion and waste transfer stations (not applicable to minerals development)

CS8 – Residual waste treatment facilities (not applicable to minerals development)

CS9 – Inert waste landfill (not applicable to minerals development)

CS10 – Non-hazardous and hazardous waste landfill (not applicable to minerals development)

CS11 – Waste water/sewage infrastructure and treatment facilities (not applicable to minerals development)

CS12 – Whitlingham Waste Water treatment works (not applicable to minerals development)

CS13 – Climate change and renewable energy generation

Opportunities to generate renewable energy on-site have been explored fully by Savills Energy division in May 2012. Savills report considered various types of renewable energy technologies, but concluded that it is not considered practicable to install any of these within the boundaries of the Wymondham quarry, as there are no surplus areas of land to facilitate the installation of any type of renewable technology within the quarry itself.

8.0 POLICY CONTEXT AND ANALYSIS

The perimeter boundaries are either sterilised due to the physical situation of trees and hedgerows which would render any technology ineffective or the land is being used to store soil for bund and screening purposes. Therefore, it is considered that it is not feasible or viable to provide the 10% of energy requirements from renewable energy sources due to the physical limitations and constraints of the site.

The *Flood Risk Assessment* (Longwater Gravel Co. Ltd., June 2013) identified that none of the application area is located on land which is shown to be at risk of flooding, as the site is within Flood Risk Zone 1 – low probability of flooding. It was also noted that Table 2 of the Technical Guidance to the NPPF identifies that sand and gravel workings are “water compatible development” and therefore this type of development is acceptable within any Flood Risk Zone.

CS14 – Environmental protection

Care has been taken in the preparation of this planning application to ensure protection of the County’s natural and built environments whilst minerals operations are taking place and to bring about an enhancement of the natural environment upon restoration.

Provided in support of this planning application are a number of topical technical assessments which give detailed consideration to the impact of the development on natural resources such as water, landscape, biodiversity, and built resources in terms of residential amenity and heritage assets. Each of these resources is considered in turn and, where appropriate, measures are proposed to mitigate any adverse impacts identified.

This planning application and the supporting documents show that the development poses no unacceptable adverse impacts on the environmental topics below and in some cases will lead to long-term improvements.

- **Natural resources, including water, air and soil:** The application area does not lie within or near to an existing or potential Air Quality Management Area.
- A *Hydrological Impact Assessment* (SLR, March 2013) was undertaken and confirmed that dewatering requirements are expected to be minimal. Given the relatively isolated location of the application site, it is considered very unlikely that there would be any significant impacts on local groundwater or surface water resources within the immediate vicinity of the site. It also concluded that there will be negligible associated impacts on the River Tiffey and that effective groundwater recharge to the underlying Chalk aquifer, together with groundwater baseflow to the River Tiffey would not be significantly affected by the proposed restoration of the application site using these inert materials.

8.0 **POLICY CONTEXT AND ANALYSIS**

The *Agricultural Land Classification* report (Bruce Hill, May 2011) provided in support of this planning application provides an Agricultural Land Classification survey which shows that 64% of the application area falls within Grades 2 and 3a of the best and most versatile agricultural land, with the remaining 36% Grade 3b and non-agricultural land. However, the development proposal includes restoration plans to return 84% (23.3 ha) of the land back to high quality agricultural land, therefore leading to an overall gain in the best and most versatile agricultural land as a direct result of the development proposal.

- **The character and quality of the landscape and townscape, including nationally designated landscapes (the Norfolk Coast Area of Outstanding Natural Beauty and the Norfolk and Suffolk Broads):** The application area is not within the Norfolk Coast AONB, nor within the Broads National Park. The site is in a rural area and therefore is unlikely to have any significant effect on townscape character.

Additionally, the *Landscape and Visual Impact Assessment* (Broom-Lynne, June 2013) undertaken in support of this planning application concludes that the landscape impacts of the proposed development are considered to be nil or negligible. Therefore, the proposed development is unlikely to harm the conservation or prevent the enhancement of key characteristics of its surroundings with regards to the character of the landscape.

- **Biodiversity and geodiversity, including nationally and internationally designated sites and species, habitats and sites identified in Biodiversity and Geodiversity Action Plans:** Habitats Regulations assessments undertaken by Norfolk County Council during the preparation of the *Norfolk Minerals Site Specific Allocations DPD* have shown that no adverse impacts on internationally designated sites for nature conservation are likely to result from minerals development at Hall Farm in Wymondham.

The application area is of sufficient distance from any nationally and internationally designated sites (1.8 km from SSSI and 4.8 from SAC) of biodiversity conservation to ensure that no significant effects are likely.

As shown in the *Ecological Survey* (Norfolk Wildlife Trust, March 2012), there may be some adverse impacts on the skylark as a result of the loss of the grassland meadow within the extraction area and the brown hare from the temporary loss of agricultural land.

8.0 POLICY CONTEXT AND ANALYSIS

However, it is proposed to retain a 10m wide buffer area of re-established grassland between the hedgerow perimeters and bunds in order to mitigate against the loss of the skylark breeding habitats. Upon restoration approximately 16% of the site area (4.4 ha) will be returned to native grassland habitat with ponds to support skylark breeding, foraging bats, insects and great crested newts.

The application area does not encompass any features or assets presented within the Geodiversity Action Plan.

- **Heritage assets and their setting, and cultural assets:** The application area does not contain nor is it immediately adjacent to any nationally or locally registered Historic parks or Gardens, registered battlefields, Conservation Areas, or heritage coasts and is therefore unlikely to adversely impact on the historic form, character and/or setting of these locations. The application area is located approximately 850 metres to the south of the listed Stanfield Hall. The Hall originally had a well-wooded compact and contained parkland, but this has become degraded and neglected, particularly since the construction of the wartime airfield to its east. The building itself has also suffered from incongruous modern extensions and a general lack of maintenance. Analysis of historic maps shows that the application site was never part of the original parkland. character of the landscape of the area is undistinguished, the parkland particularly requiring restoration, and the overall restoration proposals will positively enhance the setting of the hall. The heritage effects of the proposed development are thus considered to be negligible.
- **Residential amenity e.g. noise, vibration, dust, lighting, and visual intrusion:** An assessment of the noise impact has been undertaken, supported by the *Noise Assessment* (BL Acoustics, May 2011), in support of this planning application. Noise limit criteria will be achieved through a number of mitigation measures, such as 3m high bunds, the use of electrically powered dewatering pumps, sinking of the proposed plant site 1-2m below existing ground levels, and locating the plant and operations to the west of the site away from the nearest receptor. Also, the wheeled loaders and dump trucks will use “white noise” reversing alarms. The site should be able operate in accordance with the noise criteria and limits sets.
- The potential impact of dust from the development has been assessed through a *Dust Assessment* (SLR, June 2013). On the basis of the risk assessment two receptors (especially Hall cottages) were identified as experiencing potential dust impacts in the absence of suitable mitigation being employed.

8.0 POLICY CONTEXT AND ANALYSIS

As a result, a series of mitigation measures have been proposed to reduce the risk of impact at these receptors to an acceptable level (at Hall cottages) and an insignificant level elsewhere. It is therefore considered unlikely that the development would cause any dust nuisance due to the mitigation strategy.

The *Landscape and Visual Impact Assessment* (Broom-Lynne, June 2013) undertaken in support of this planning application shows that visibility of the proposed development will be variable, being partly screened by local topography and vegetation, with the result that it is likely to be prominent from local viewpoints only, and that the mitigation measures will prove effective. To the north of the site there are few views to it due to the plateau effect on neighbouring fields, and subtle changes in the topography result in the site becoming completely screened from a significant area.

The planning application is accompanied by a *Lighting Assessment* (Longwater Gravel Co. Ltd., June 2013) which considers the impact from various potential sources of artificial light. Due to the effective screening of the site by the soil screening bunds, the type, number and position of the luminaires and the limited duration of use, the conclusion from this assessment is that there is little or no impact from the use of lighting at the proposed quarry.

CS15 – Transport

- **Potential for non-HGV transportation of materials:** There is no potential for non-HGV transportation of aggregate. According to the County Council's Site Specific Sustainability Appraisal, "there are no apparent opportunities for non-road transport of aggregate" (Appendix A – December 2011).
- **Suitable highway access and routing:** It is proposed that the quarry operations will use a new purpose built site access road directly onto Stanfield Road (HGV Access Road). The junction onto the south side of Stanfield Road is set out in the accompanying Transport Statement (Create Consulting Engineers Ltd). This has been the subject of extensive discussions with the Highway Authority, which has agreed in principle with the location and design. Access to the growth town of Wymondham can be accessed entirely by Stanfield Road. Access to Norwich is via Stanfield Road and the A11 trunk road. Access to Attleborough would be via Stanfield Road, A11 and the B1077 or the Norwich Road, both of which are 3A2 main distributors on the County Council's route hierarchy.

8.0 **POLICY CONTEXT AND ANALYSIS**

- **Unacceptable risks to the safety of road users and pedestrians:** Following extensive discussions with the Highway Authority, the location of the access road was moved eastward to overcome the Authority's concerns about safety. The T-junction access design now presented in support of the proposals is fully compliant with DMRB guidance (geometry, appropriate and "safe" levels visibility etc.) and has been subject to a detailed traffic capacity and safety review. The PICADY assessment carried out as part of this report also relates to safety. Queuing on Stanfield Road should not occur in connection with the development proposals and therefore, any risk of rear end shunts must be low. There is nothing in the accident data to suggest that the introduction of the proposed access onto Stanfield Road and associated (comparatively low) level of traffic generation arising from the proposals would compromise highway safety. The internal haul road will be a shingle surface and so unpaved apart from the 25m of road south of the junction with Stanfield Road. By the time vehicles leave the site to turn onto Stanfield Road, there should be no mud carried onto the road as this has shaken off the vehicle's wheels by virtue of the length and design of the access road. Nevertheless, measures to keep the access road and Stanfield Road clear of debris and mud will be implemented.
- **Unacceptable impacts on the capacity and/or efficiency of the highway network:** Access from the site will be directly onto Stanfield Road, a HGV Access Road in the County Council's route hierarchy and therefore considered suitable for HGV traffic. The proposed junction arrangement will aid access and egress and therefore minimise disruption to traffic flows. Queuing on Stanfield Road should not occur in connection with the development proposals. Impacts on capacity and efficiency will be minimal as very few vehicles will enter/ leave the site during the hours of operation.
- **Unacceptable impacts on air quality (particularly in relation to any potential breaches of National Air Quality objectives) and on residential and rural amenity, including from odour and noise:** There should be no significant impacts on air quality given that the County Council's 2011 Sustainability Appraisal stated that "The site does not lie within an AQMA. Given the location of a processing plant onsite, and the short distance to areas of significant growth (a likely destination for much material from the site), air quality impacts are likely to be limited.

8.0 POLICY CONTEXT AND ANALYSIS

Air quality issues related to traffic are exacerbated by congestion. HGV traffic as a result of mineral workings are less concentrated within am/pm peaks in traffic flow, and are therefore less likely to contribute to air quality degradation, than commuter traffic." Most of the lorry movements (around 80% if not more) will be westward towards the A11 and Wymondham and therefore away from the properties towards Bridge Road, such as Hall cottages. Indeed, the 2011 Sustainability Appraisal set out that the "HGV travel route from the quarry to the A11 takes HGVs past very few dwellings, so the amenity impacts would be relatively slight." Site traffic will not use less suitable local roads for site access which might take HGV traffic closer to other residential properties less accustomed to such traffic. In terms of the impact from the junction/ access and the internal haul routes, the *Dust Assessment* (SLR, June 2013) concluded that with mitigation measures, such as restricting lorry speeds and dampening the road during dry conditions, the dust levels will be acceptable.

- **Unacceptable impacts on the natural and historic environment:** All roads used to access the site are part of the County Council's route hierarchy and designated as being suitable for HGV use. Any adverse impacts on the natural environment as a result of additional traffic using these roads will therefore be minimal. The site's location is around 750m distant from Stanfield Hall Moat County Wildlife Site, and this will not be adversely affected by traffic. Similarly, no adverse impacts on heritage assets have been identified as likely to arise from the development proposal.
- **Unacceptable physical impacts on the highway network (e.g. road or kerbside damage):** All of the roads primarily used by the quarry are suitable for HGV use, thereby minimising the risk of physical harm to the highway which could result from using less appropriate roads. Stanfield Road is a HGV Access Road in the County Council's Route Hierarchy. The site access onto Stanfield Road will be via a purpose built site access junction, which is of a high standard and paved for 25m south of the junction.

CS16 – Safeguarding mineral and waste sites and mineral resources (Not applicable as this is a policy for the County Council to apply, rather than for an applicant to substantiate)

CS17 – Use of secondary and recycled aggregates

Waste silt from the extraction process will be used in the restoration of the quarry.

8.0 POLICY CONTEXT AND ANALYSIS

DM1 – Nature conservation

Minerals development on this site is unlikely to significantly harm any locally designated nature conservation and geodiversity sites as there are none within the application area. Although Breakers Yard Meadow County Wildlife Site lies relatively near to the application area, ecological assessments and surveys of the application area have been undertaken and have not identified that any adverse effects on this site is likely to result from the development proposal.

As shown in the *Ecological Survey* (Norfolk Wildlife Trust, March 2012), there may be some adverse impacts on the skylark as a result of the loss of the grassland meadow within the extraction area and the brown hare from the temporary loss of agricultural land. However, it is proposed to retain a 10m wide buffer area of re-established grassland between the hedgerow perimeters and bunds in order to mitigate against the loss of the skylark breeding habitats. Upon restoration approximately 16% of the site area (4.4 ha) will be returned to native grassland habitat with ponds to support skylark breeding, foraging bats, insects and great crested newts.

DM2 – Core river valleys

This application area is not within the Core River Valley.

DM3 – Groundwater and surface water

This site is not within Groundwater Protection Zone 1. A *Hydrological Impact Assessment* (SLR, March 2013) was undertaken and confirmed that dewatering requirements are expected to be minimal, with the potential maximum radius of influence within the saturated sand and gravel superficial deposits approximately 135m. Given the relatively isolated location of the application site, it is considered very unlikely that there would be any significant impacts on local groundwater or surface water resources within the immediate vicinity of the site. If localised dewatering is required, the pumped water would be settled within the excavation area and / or operations area before ultimately being discharged into the River Tiffey via the drainage network at the application site. Under these conditions there would therefore be no significant net loss of groundwater baseflow to the River Tiffey.

Given the topographic and geological site setting, it is considered very likely that the unsaturated condition of the superficial deposits is also present in the immediate vicinity of the application site.

8.0 POLICY CONTEXT AND ANALYSIS

Therefore, it is considered very likely that any reduction of groundwater flow across the site, due to restoration of the site by infilling with imported inert materials, will easily be accommodated by slightly increased groundwater flow rates around the margins of the site, without leading to a significant increase in groundwater levels within the adjacent superficial deposits. It is therefore considered that there will be negligible associated impacts on the River Tiffey. The assessment also concluded that effective groundwater recharge to the underlying Chalk aquifer, together with groundwater baseflow to the River Tiffey would not be significantly affected by the proposed restoration of the application site using these inert materials.

DM4 – Flood risk

The application area is located on land within Flood Risk Zone 1 – low probability of flooding. It should also be noted that Table 2 of Technical Guidance to the NPPF identifies that sand and gravel workings are “water compatible development” and therefore this type of development is acceptable within any Flood Risk Zone.

As the site is over 1 ha, a brief *Flood Risk Assessment* (Longwater Gravel Co. Ltd., June 2013) has been provided in support of the application as required by the Technical Guidance to the NPPF. This assessment of the proposals has been carried out against the requirements of Planning Policy Statement 25 Practice Guide Appendix B: Flood Risk Assessment Checklist, which, although superseded by the NPPF, remains a useful tool for assessing flood risk. The *Flood Risk Assessment* demonstrates that the development will have a negligible effect on flood risk both during the operational stage of the quarry or following restoration.

DM5 – Borrow pits and agricultural or potable water Reservoirs (not applicable to minerals development)

DM6 – Household waste recycling centres (not applicable to minerals development)

DM7 – Safeguarding aerodromes

The land at Hall Farm falls outside any relevant aerodrome safeguarded areas and is more than 13km from the centre-point of any aerodromes, according to Norfolk County Council’s Proposals Map.

DM8 – Design, local landscape and townscape character

The site is in a rural area and therefore is unlikely to have any significant effect on townscape character.

8.0 POLICY CONTEXT AND ANALYSIS

The *Landscape and Visual Impact Assessment* (Broom-Lynne, June 2013) undertaken in support of this planning application concludes that the landscape impacts of the proposed development are considered to be nil or negligible. The visual assessment, combined with the preparation of a draft computer model of the proposals, shows that visibility of the proposed development will be variable, being partly screened by local topography and vegetation, with the result that it is likely to be prominent from local viewpoints only, and that the mitigation measures will prove effective. To the north of the site there are few views to it due to the plateau effect on neighbouring fields, and subtle changes in the topography result in the site becoming completely screened from a significant area. The overall landscape quality of the area ranges from 'ordinary' to good, and the impacts will be short-term, and beneficial in the longer-term.

The application area does not contain nor is it immediately adjacent to any nationally or locally registered Historic parks or Gardens, registered battlefields, Conservation Areas, or heritage coasts and is therefore unlikely to adversely impact on the historic form, character and/or setting of these locations. The application area is located approximately 850 metres to the south of the listed Stanfield Hall. The Hall originally had a well-wooded compact and contained parkland, but this has become degraded and neglected, particularly since the construction of the wartime airfield to its east. The building itself has also suffered from incongruous modern extensions and a general lack of maintenance. Analysis of historic maps shows that the application site was never part of the original parkland. The general character of the landscape of the area is undistinguished, the parkland particularly requiring restoration, and the overall restoration proposals will positively enhance the setting of the hall. The heritage effects of the proposed development are thus considered to be negligible.

Noise and light impacts from the proposed development are covered in more detail under DM14 – Amenity.

In summary, the proposed development is therefore unlikely to harm the conservation or prevent the enhancement of key characteristics of its surrounding with regards to the character of the landscape.

DM9 – Archaeological sites

The Archaeological Assessment (Archaeological Solutions Ltd, January 2012) used a desk-based assessment, followed by geophysical and trench investigations.

8.0 POLICY CONTEXT AND ANALYSIS

As required by the policy, a desk-based assessment was carried out as the development could potentially affect heritage assets below the surface. The assessment showed that the location was very typical in terms of the archaeological record with evidence suggesting an agricultural history that is not uncommon in much of the surrounding area. This suggested nothing of significance or high potential for archaeological interest. Nevertheless a geophysical survey was carried out which revealed some anomalies. As a precautionary measure, trenches were excavated to determine the sub-surface feature, which was found to be the foundations of an old windmill. It is highly unlikely that this would be of regional or national importance. Preservation either in situ or by record can be arranged if required.

Furthermore, the Applicant proposes to undertake a watching brief in advance of extraction, during the soil stripping phases of the proposed development, with any other features of archaeological interest recovered prior to extraction taking place.

DM10 – Transport

- **Suitable highway access and egress in accordance with published highway design guidance:** The Transport Statement (Create Consulting Engineers Ltd, May 2013) accompanying this planning application explains that access onto Stanfield Road from the site will be via a high-quality, DMRB compliant, purpose-built T-junction. Southward, around 25m from the junction the new access road into the Site itself will be constructed to an appropriate specification to enable two-way HGV traffic to/from the Site providing a minimum 5.5m wide carriageway with 2m wide verges.
- A suitable route to the nearest major road (trunk road or principal road or main distributor road): It is proposed that the quarry operations will largely use Stanfield Road (a HGV Access Road) westward from the site to the A11 trunk road only 2km away. It is possible that some quarry traffic will travel eastward on Stanfield Road, to the B1113, the latter being a level 3A2 main distributor in the County Council's route hierarchy. The site traffic therefore does not use inappropriate roads to access roads higher up the route hierarchy or the trunk road network.
- Consideration of other road users, including cyclists, horseriders and pedestrians: See above regarding the purpose built site access junction which has been subject to a detailed safety review. The transport statement provides a comprehensive account demonstrating that the development proposals should be considered acceptable on highway grounds.

8.0 **POLICY CONTEXT AND ANALYSIS**

- The proposed visibility splays on Stanfield Road at the junction with the site access road and the hedge line adjustment required on the north side of Stanfield Road should ensure uninterrupted, continuous intervisibility. Risk will be minimal as very few vehicles enter or leave the site during the hours of operation (see Section 4.3). Measures to keep the access road clear of debris and mud will be implemented. The direct access onto Stanfield Road will mean that less suitable routes in the vicinity will not be used.
- **Measures to reduce car travel to the site by workers and visitors and encourage walking, cycling and use of public transport:** Not unusually for a proposed minerals site, the land at Hall Farm is located comparatively remotely from built up settlements and therefore options for sustainable travel will be limited. On this basis, the Site is not suitable for the implementation of formal Travel Plan measures, an option recognised in the policy. However, the Site is within readily achievable cycling distance of Wymondham and travel to/from work by this mode of transport would be encouraged amongst staff if this mode is considered safe along the potential route. Additionally, staff who could car share with colleagues would be encouraged to do so. Cycling and carsharing posters could be mounted at appropriate locations within the accommodation on site and sustainable travel could be raised as a matter for discussion at staff meetings.

DM11 – Sustainable construction and operations

It is considered that the proposed development meets those aspects of policy DM11 that are relevant to the working of minerals. No new static buildings or plant are proposed and therefore design standards are not considered relevant to this planning application.

Secondary aggregates produced at the quarry include waste silt and both will be used as restoration materials in the reinstatement of the land to agriculture and native woodland.

Water management in the plant and operations area will require a number of lagoons to be constructed which will store water that is required for sand and gravel washing. Dirty water from the processing plant will be re-circulated through the lagoons allowing the silt from the sand and gravel to settle out and clean water to be recovered for re-use.

8.0 POLICY CONTEXT AND ANALYSIS

Surface drainage will be maintained on site by collecting and directing all surface water from the plant area into the lagoons. This has the advantage of ensuring that any surface water run-off is retained on site and also efficiently utilises rainwater. Any losses of water due to evaporation or through sand and gravel washing will be topped up with water abstracted from a borehole, the use of which will be subject to the conditions of an abstraction licence issued by the Environment Agency.

All fuels and lubricants will be stored in either a proprietary self bunded container in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001 or in a suitably bunded area where the volume is 110% of the capacity of the storage tank. Refuelling of plant and machinery will take place on a specified fully bound surface which will drain to an oil interceptor to reduce the risk of spillage. In the event of any accidental fuel spillage on the site, fuel clean up kits will be immediately used.

The Applicant has an established, documented, implemented and maintained an Environmental Management System (EMS) that accords with the requirements of the Environment Agency Horizontal Guidance Note H6 Environmental Management Systems. The EMS is designed to cover all activities carried out by the Applicant which interact with the environment. A copy of this EMS can be made available upon request, if required.

The type of waste generated by the development will include loam and silt. It is difficult to anticipate how much of the former will be generated, but it is expected that about 40,000 tonnes of silt will be created. Both will be used as restoration materials in the reinstatement of the land to agriculture and grassland. The loam will be stockpiled for use as a subsoil whilst the silt will be recovered periodically from the settlement ponds and used in the restoration of the quarry.

The 'construction phase' at a mineral working is mostly concerned with the erection of plant and machinery in the open air. The only built structures tend to be the portakabins. This almost complete absence of a 'construction phase' in the conventional sense limits any opportunity to minimise the use of raw materials (including hazardous materials) in the construction phase through sustainable design and the use of recycled or reprocessed materials. Equally the lack of static built structures means very little waste is likely to be generated during this phase although in this instance most of the waste that is produced, for example surplus concrete, steel, etc. will be recyclable.

8.0 POLICY CONTEXT AND ANALYSIS

DM12 – Amenity

An assessment of the noise impact has been undertaken, supported by the *Noise Assessment* (BL Acoustics, May 2011), in support of this planning application. To be acceptable, the expected noise levels from excavation and processing operations within the proposed development should be less than 10dB(A) above the measured background noise levels, and below the highest noise limit of 55dB LAeq,1h. This will be achieved through a number of mitigation measures, such as 3m high bunds, the use of electrically powered dewatering pumps, sinking of the proposed plant site 1-2m below existing ground levels, and locating the plant and operations to the west of the site away from the nearest receptor. Also, the wheeled loaders and dump trucks will use “white noise” reversing alarms. Experience from other similar workings using the same type of plant and equipment has shown that this design, combined with the open ground distance between the nearest point of the working to the relevant property will keep noise levels below the criteria.

The above addresses the noise levels from the normal day-to-day activities. There will be short term periods when the soils are lifted to build the perimeter bunds, and again when they are taken down as part of the restoration work. These short term activities have different criteria to the day-to-day operations as the national guidance recognises that in order to construct the acoustic protection there may need to be a period of higher noise levels. The criterion is 70dBA Leq 1 hour for periods of less than 8 weeks per year. Provided that all necessary bund construction close to the relevant receptors can be completed within this time period then noise levels should comfortably meet the temporary criterion. The site should be able to operate in accordance with the noise criteria and limits sets.

The potential impact of dust from the development has been assessed through a *Dust Assessment* (SLR, June 2013). A semi-quantitative assessment of deposited dust was undertaken, taking into account the phased nature of the proposed working scheme. On the basis of the risk assessment two receptors (especially Hall cottages) were identified as experiencing potential dust impacts in the absence of suitable mitigation being employed. As a result, a series of mitigation measures have been proposed to reduce the risk of impact at these receptors to an acceptable level (at Hall cottages) and an insignificant level elsewhere. Key mitigation measures are the use of soil bunds and advanced planting, as well as an effective buffer zone.

8.0 POLICY CONTEXT AND ANALYSIS

Additional mitigation measures include the use of water spraying during dry and windy conditions (on internal haul and access road surfaces, materials to be crushed, and during soil handling etc.), minimising drop heights during soil handling and unloading, seeding the perimeter soil bunds, limiting construction of stockpiles, and limiting vehicle speeds. It is therefore considered unlikely that the development would cause any dust nuisance due to the mitigation strategy.

The planning application is accompanied by a *Lighting Assessment* (Longwater Gravel Co. Ltd., June 2013) which considers the impact from various potential sources of artificial light. Due to the effective screening of the site by the soil screening bunds, the type, number and position of the luminaires and the limited duration of use, the conclusion from this assessment is that there is little or no impact from the use of lighting at the proposed quarry. It is considered that the assessments referred to above all demonstrate that unacceptable impacts to local amenity will not arise from the operation of the facility and that the development proposal thus conforms with Policy DM12.

DM13 – Air quality

The application area does not lie within or near to an existing or potential Air Quality Management Area.

DM14 – Progressive working, restoration and after-use

A detailed Restoration Plan accompanies this planning application. The primary focus in developing the restoration proposals was to return part of the site to high quality agricultural land and providing improved biodiversity habitats on the remainder of the site. To that end, the restoration scheme proposes to restore 23.3 ha of land to agriculture, and 4.4 ha to grassland with ponds to provide improved habitats for skylarks, insects, foraging bats and great crested newts. Preference therefore has been given to some after-uses and restoration that support the enhancement to the Norfolk Ecological Network.

The after-use and restoration proposals therefore demonstrate that:

- The appropriate restoration and after-use is both feasible and achievable in the proposed time scales. The restoration proposal shows that working and restoration will take place progressively on a phased basis. The forecast output of 50,000 to 60,000 tonnes per annum is considered to be a realistic estimate of market demand over the predicted development period with the result that final restoration by 2025 is likely to be achievable;

8.0 **POLICY CONTEXT AND ANALYSIS**

- Opportunities to improve and extend public access and rights of way were not deemed feasible, as there are currently no public rights of way within or adjacent to the site;
- Supporting the aims of the Green Infrastructure Strategy were not deemed relevant to the location of Hall Farm, as it is not thought that the application area is identified as part of the greater Norwich area green infrastructure network; and
- No important geology or geomorphology has been identified on the site and therefore no geological faces are proposed for retention for study purposes.

DM15 – Cumulative impacts

Cumulative impacts assessment provided within the December 2011 *Sustainability Appraisal Report* for the Norfolk Minerals Site Specific Allocations DPD determined that Site MIN 118 (the subject of this planning application) is distant from other existing sites or other sites which are proposed for extraction and therefore no significant cumulative or synergistic effects are expected.

DM16 – Soils

The *Agricultural Land Classification* report (Bruce Hill, May 2011) provided in support of this planning application provides an Agricultural Land Classification survey which shows that 64% of the application area falls within Grades 2 and 3a of the best and most versatile agricultural land, with the remaining 36% Grade 3b and non-agricultural land. However, the development proposal includes restoration plans to return 84% (23.3 ha) of the land back to high quality agricultural land, therefore leading to a likely overall gain in the best and most versatile agricultural land as a direct result of the development proposal.

Where development is to take place that would result in the permanent loss of agricultural land then the sequential approach is to use land of a lower quality in preference to land of higher quality. Unlike most other forms of development minerals can only be worked where they occur, and due to the nature of sand and gravel it is not uncommon that best and most versatile land is worked.

Also, there will be no 'permanent' loss and in this case there is likely to be an overall gain in terms of best and most versatile agricultural land once restoration is complete, as soil handling will follow the Good Practice Guides provided by DEFRA to ensure the soil resource is fully recovered and reused.

8.0 POLICY CONTEXT AND ANALYSIS

In addition, the careful use of less stony material as part of the subsoil is considered to provide an improvement (a factor requested by the land owner who farms the land). The importation of reclamation material enables the restored slopes to be more even and easier to farm. For example the depression shown as non-agricultural would be reclaimed rather than having to farm around it.

8.3 Minerals Site Specific Allocations DPD

8.3.1 The *Norfolk Minerals Site Specific Allocation DPD* (Pre-Submission Publication, February 2012) outlines specific expectations that any planning application covering allocated site MIN 118 (the site allocation covering the Hall Farm application area) would be required to address. The table overleaf outlines these requirements and how they have been addressed within this planning application.

Policy MIN 118 Requirement	Relevant Information
A screening scheme which will include successful mitigation for views from the properties surrounding the site, including long range views, the PROW and surrounding roads.	The development proposal incorporates a screening scheme consisting advanced plating of a mixed hedgerow with tree planting along the boundaries of the development site to ameliorate views from the most significant visual receptors and help restore some of the landscape character to the area. Soil screening bunds, which will surround the site, will be constructed using stripped topsoil to screen the development from nearby properties and viewpoints.
A programme of mitigation measures to deal appropriately with any amenity impacts.	Mitigation measures to reduce dust, noise, and visual impact effects have been integrated into the development proposal.
A scheme of working, and restoration which provides landscape, and biodiversity gains.	A scheme of phased working and restoration has been provided, which outlines landscape and biodiversity enhancement through the restoration of the application area to high quality agricultural land and the provision of a nature conservation area, which will include grassland meadow, two ponds, native woodland blocks and shrub planting and will provide habitat for skylark, bats, insects and great crested newt.
An archaeological evaluation of the site would be required and additional fieldwork may also be needed if features are identified.	A desk based archaeological assessment was undertaken to determine whether any archaeological features are likely to be found within the application area and therefore could be affected by the development proposal. The assessment showed that the location was very typical in terms of the archaeological record with evidence suggesting an agricultural history. The Desk Based Assessment has been followed up by a Geophysical Survey, the conclusions of which indicated little in the way of probable archaeology. The only feature that was identified as being worthy of a field evaluation was located in the northern part of Phase 4. Field trenching was carried out to better understand this feature, which was found to be the foundations of a windmill.
A Hydrological Impact Assessment to identify any potential impacts to groundwater and provide appropriate mitigation for those impacts identified.	A <i>Hydrogeological Impact Assessment</i> has been undertaken and submitted in support of this application. It confirmed that dewatering requirements are expected to be minimal. Given the relatively isolated location of the application site, it is considered very unlikely that there would be any significant impacts on local groundwater or surface water resources within the immediate vicinity of the site.
A survey to identify any protected species and habitats which might be impacted on by the development; and mitigation measures identified which when implemented will address these impacts.	Ecological surveys have been undertaken and have led to a series of recommendations to mitigate any potential effects on protected species and habitats and these have been integrated into the development proposal.