# Extensions to Areas Approved for Sand & Gravel and Clay Extraction and Non Hazardous Landfill, Retention of MRF, Secondary Aggregate Recycling and Continued Clay Extraction at Variance to Conditions

## Finmere Quarry, Banbury Road, Finmere

Environmental Statement – Non-Technical Summary (Volume 1)

AT Contracting & Plant Hire Limited

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# 1. Introduction

This Non-Technical Summary (NTS) accompanies six applications for planning permission which have has been submitted to Oxfordshire County Council (OCC) by AT Contracting & Plant Hire Limited ('ATC&PH'). ATC&PH is the owner and operator of Finmere Quarry.

Briefly, the applications seek permission to:

- extend the area approved for sand & gravel extraction to include land between the existing non-hazardous waste landfill and the A421 (Banbury Road) and to retain the processing and concrete batching plants and compound for a further temporary period;
- extend the area to be restored following landfilling with non-hazardous waste to include land between Finmere Plantation and the area safeguarded for the development of $HS_2$;
- enable the approved sand and gravel mineral processing plant to also be used for the recycling of secondary aggregate from incoming inert waste materials;
- extend the area approved for the extraction of clay for use in on-site landfill engineering to include the land to the south of Foxley Fields Farm;
- continue the operation of the approved material recovery facility (MRF) until non-hazardous waste landfilling is completed; and
- enable the current clay extraction area to be worked in accordance with an alternative scheme and for this part of the site to be restored to broadleaved woodland, nature conservation and a pond - instead of to agriculture.

In accordance with the pre-application discussions held with OCC, this Environmental Statement (ES) has been prepared as a single document in which the potential environmental effects of the developments proposed in each application is assessed as one overall scheme. The ES summarises the findings from the Environmental Impact Assessment (EIA) of the proposed development.

The ES includes detailed assessments of potential effects in terms of:

- Transport
- Air Quality
- Ecology
- Hydrogeology
- Hydrology
- Heritage
- Landscape and Visual
- Noise
- Soils
- Socio Economics
- Other Potential Effects (Cumulative, Community and Social and Human Health).

The purpose of this NTS is to summarise the findings of the ES in non-technical language in accordance with Regulation 18(e) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017.

The objective of the EIA process is to anticipate the changes (or 'impacts') that may occur to the environment as a result of the proposed development, such as changes to air quality or noise. The changes are compared to the environmental conditions that would have occurred without the Proposed Development (defined as 'the baseline'). The EIA process identifies potentially sensitive 'receptors' that may be affected by these changes (e.g. people living near the development, local flora and fauna, etc.) and defines the extent to which these receptors may be affected by the predicted changes (i.e. whether or not the receptors are likely to experience a 'significant effect').

Where possible, the EIA uses best practice defined methodologies, based on legislation, definitive standards and accepted industry criteria.

As the design of the proposed development has evolved changes have been made to avoid or reduce environmental effects on receptors where possible. The likely environmental effects of the proposed development have been considered by reference to baseline conditions at the time of preparing the ES, the mitigation measures already included within the design known as embedded mitigation and any further mitigation proposed.

Account has also been taken of i) whether likely potential effects are considered to be positive or negative, permanent or temporary, ii) whether the likely potential effect is direct or indirect, iii) the duration and frequency of the effect and iv) whether or not any secondary effects are likely.

## 1.1 Figures

The following Figures are appended to this NTS:

FQ/ES/Location – Finmere Quarry Complex Location Plan

FQ/ES/001 – EIA Scheme Boundary

FQ/NTS/001 – NTS Context Plan

FQ/Masterplan – Overall Final Restoration Masterplan.

## 1.2 Documents for Purchase and Inspection

Paper copies of the planning applications and the accompanying ES and NTS are available to purchase from AECOM (Royal Court, Basil Close, Chesterfield S41 7SL) at a cost of £25.00 (per application), £100.00 (ES) and (NTS) £10 respectively.

Copies of the planning applications and the accompanying ES and NTS are available on CD (in Adobe Acrobat format) from the same address at a cost of £40.00 each.

The application and ES documents are also available for inspection:

- at the offices of Oxfordshire County Council (Speedwell House, Speedwell Street, Oxford OX1 1NE); and
- on the County Council's website.

# 2. Site and Surroundings

## 2.1 Site

The Finmere Quarry complex is located approximately 450 metres to the south west of Finmere village, to the north west of Newton Purcell and approximately 12km north east of Bicester in the north east of Oxfordshire (see Figure FQ/ES/001). Access is gained direct from Banbury Road (A421). The current complex mainly comprises:

- an area at the northern end of the existing quarry (and to the east of the disused railway line) approved for the landfilling of non-hazardous wastes until January 2028 under planning permission number 17/01189/CM (MW.0004/17);
- a further area to the west and south of Finmere Plantation (and to the east of the disused railway line) approved under planning permission number 17/01189/CM (MW.0004/17) - but with restoration to a waterbody, grass / heathland and agricultural use without landfill;
- an area mainly to the west of the disused railway line and east of Widmore Farm previously approved for sand and gravel extraction and landfilling with inert wastes under planning permission number 10/01516/CM (MW.0142/10) and now subject of application number 16/02524/CM (MW.0142/16) for permission to continue that development subject to a revised end date; and
- an area to the south of Finmere Plantation approved for use as a MRF until December 2021 under planning permission number 15/02059/OCC; and
- an area to the south east of Finmere Plantation for the excavation of sand and gravel and clay for use in on-site landfill engineering currently approved under planning permission number 17/02083/CM (MW.0083/17).

Access from one part of the quarry to another is gained via internal haul roads and does not necessitate traffic along the local highway or public rights of way network.

The area of the Finmere Quarry Complex that is the subject of the EIA and this ES is shown on Figure FQ/ES/001 – attached to this NTS.

## 2.2 Surroundings

The surrounding area is predominantly agricultural land with scattered farmsteads and woodland / plantations.

The nearest residential properties are at (see Figure FQ/NTS/001):

- Boundary Farm to the east;
- Barley Fields to the south east;
- the bungalow at Foxley Fields Farm adjacent to the eastern site boundary; and
- Widmore farmstead adjacent to the western quarry boundary.

## 2.3 Public Rights of Way

There are a number of public rights of ways within Finmere Quarry and in the adjoining area; these are shown on Figure FQ/NTS/001.

## 2.4 Designations

There are no major environmental designations either within or in the vicinity of Finmere Quarry i.e. AONB, Special Areas of Conservation or Sites of Special Scientific Interest. The quarry also falls well outside the Oxford Green Belt.

The woodland at Finmere and Grassy Plantations are included on the Priority Habitat Inventory.

Widmore Farmhouse to the west of Finmere Quarry is a Grade II Listed Building.

The main designation affecting parts of the quarry is the area safeguarded for the development of $HS_2$.

# 3. Proposed Development

## 3.1 Introduction

The areas relevant to the six planning applications are show on Figure FQ/NTS/001.These are numbered as Reference Areas 1-6 on Figure FQ/NTS/001 to correspond to each application below for ease of reference within the NTS.

The applications seek permission to:

- extend the area approved for sand and gravel extraction to include land between the existing non-hazardous waste landfill and the A421 (Banbury Road), retain the previously approved processing plant and compound and erect a concrete batching plant – all for a further temporary period (**Reference Area 1**);
- extend the area to be landfilled with non-hazardous waste to include land between Finmere Plantation and the area safeguarded for the development of $HS_2$. (**Reference Area 2**);
- enable the sand and gravel mineral processing plant to also be used for the recycling of secondary aggregate from incoming inert waste materials (**Reference Area 3**);
- extend the area approved for the extraction of clay for use in on-site landfill engineering (and incidental deposits of sand and gravel for processing and sale to customers) to include the land to the south of Foxley Fields Farm (**Reference Area 4**);
- continue the operation of the approved MRF until landfilling is completed (**Reference Area 5**); and
- enable the current clay extraction area to be used in accordance with an alternative scheme and to be restored to broadleaved woodland, nature conservation and a pond - instead of to agriculture (Reference Area 6)

## 3.2 Method of Working

**Sand and Gravel Extension**

The proposed sand and gravel extension will be prepared and worked on an annual campaign basis over approximately five months in the summer, with a further month for subsequent restoration. The sand and gravel will be worked by stripping and storing the soils in accordance with recognised best practice in a phased programme moving from east to west. Mineral extracted will be transported to the processing plant site in dump trucks along internal site roads.

HGVs transporting outgoing deliveries of processed sand and gravel will be loaded from stockpiles within the plant site and then weighed, checked and documented at the new reception compound adjacent to Finmere Plantation. Regrading of the worked out areas and the spreading of returned soils will be carried out.

Silt arising from the washing of the sand and gravel will be deposited / managed in the silt pond.

**Non-hazardous Waste Landfill Extension**

The proposed non-hazardous waste landfill extension will be prepared by removing unsuitable materials and preparing new landfill cells. This will be done by placing and compacting clay excavated from elsewhere within the quarry site. The new cells will be filled with residual waste arising from the MRF.

Once the maximum levels of waste in the cells have been reached, the cells will be progressively capped, covered with suitable soils or soil making materials sourced offsite and restored to a mix of agricultural land and woodland to the north and species-rich neutral grassland and woodland edge habitat in the south.

A security cabin will be constructed to the south of the existing Bridleway 4 crossing.

**Secondary Aggregate Recycling (Using the existing Processing Plant)**

The operation of the processing plant will continue to take place in accordance with the limitations and controls relating to such matters as dust suppression, noise and lighting as have been approved under the current planning permission. Silt arising from the washing of the recovered secondary aggregates will be deposited / managed in the silt pond which has been provided within Phase 1 of the existing clay extraction area.

All incoming deliveries of Construction, Demolition and Excavation (CDE) waste and secondary aggregates leaving the site will be weighed, checked and documented at the new site office adjacent to Finmere Plantation.

**Clay Extraction Extension**

The proposed clay extension will be prepared and worked on an annual campaign basis over approximately five months in the summer - with a further month for restoration. The clay will be worked by stripping and storing the soils in accordance with recognised best practice. Excavation will be phased moving generally from south to north. Clay will be transported to the landfill areas by trucks along internal site roads.

The void left after clay is removed will be progressively backfilled with overburden drawn from the temporary stockpile in Phase 2 of the current clay extraction area and/or similar materials excavated during the course of works elsewhere within Finmere Quarry

**Retention of MRF**

As part of bringing the MRF back into operation, new processing equipment has been installed to sort and process waste to generate recyclable materials. The MRF will be used only for processing non-hazardous wastes and all processing of waste will be undertaken inside the MRF building. Air from the air management equipment will be directed back into the MRF building and will not be discharged to atmosphere.

Wastes delivered to the MRF will predominantly comprise mixed loads plastic, cardboard, paper, timber, textiles and other composite materials.

**Clay Extraction at Variance to Conditions**

The overburden and other site derived materials currently stockpiled in the southern part of the application area will be progressively removed and used in the restoration of other parts of Finmere Quarry .This material will be transported mainly be via the internal haul road to the south and west of Finmere Plantation (rather the currently approved route to the east of Finmere Plantation).

None of the material transported from the application area will be routed via the public highway (other than at the crossing points over bridleways).

## 3.3 Access

All vehicles accessing the site including those accessing the MRF, the landfill and the processing plant compound will continue to be via the existing entrance from the A421 (Banbury Road).

The surfaced site access road connecting all parts of Finmere Quarry to the A421 (Banbury Road) will be maintained and swept as necessary to prevent the carry-over of mud on to the highway. South of the security cabin the main internal access roads will be maintained and/or surfaced with concrete where this has not already been done.

## 3.4 Duration and Traffic Generation

**Sand and Gravel Extension**

The sand and gravel extraction west of the disused railway line previously approved under planning permission number 10/01516/CM (MW.0142/10) (and now subject of application number 16/02524/CM (MW.0142/16) for permission to continue that development subject to a revised end date) is likely to take up to 5 years to complete and generate an average of 21 HGV movements per working day (where a movement is either an inbound or an outbound leg of a journey) if the $HS_2$ holding objection is removed and OCC grants permission.

The proposed sand and gravel extraction extension meanwhile is likely to continue this level of HGV traffic generation for a period of just over 4.5 years – after the raw materials currently stockpiled in the plant compound have been processed beginning in 2020 and ending in 2024 / 2025 (or for just over 4.5 years following the completion of the sand and gravel extraction proposed in application number MW.0142/16).

**Non-Hazardous Waste landfill Extension**

The proposed extension to the area of non-hazardous waste landfill will be operational largely (but not exclusively) after the current landfill area approved under planning permission number 17/01189/CM (MW.0004/17) has been completed and will be mainly filled with residual wastes arising from processing at the MRF. It will therefore have the effect of extending the duration of landfilling, rather than intensifying it.

The approved landfilling was resumed in November 2017 and has consent to accept waste until 6th January 2028 (excluding the additional period required for the importation of restoration materials). The remaining approved void space (658,400m$^3$ as at 15th January 2017) is expected to be filled with MRF residual wastes at a rate of around 120,000m$^3$ per annum and is therefore likely to be filled well before the approved end date and in around 5.5 years.

At the expected rate of filling, the non-hazardous landfill operation is likely to generate an average of 35.5 HGV movements per working day (where a movement is either an inbound or an outbound leg of a journey).

The proposed extension to the non-hazardous landfill area is likely to continue this level of HGV traffic generation over a further 5.5 years - ending at the beginning of 2028.

**Secondary Aggregate Recycling**

Incoming inert waste which is deemed to be suitable for processing to recycle secondary aggregates(around 38,000 tonnes per annum) is likely to generate an additional 15 HGV movements per day on average (on the basis that deliveries of secondary aggregate will be backhauled i.e. transported to the customer in the same HGVs used to bring in the inert wastes).

It is proposed that the secondary aggregate recycling operation will continue to operate alongside the landfill and MRF operations i.e. until 2028.

**Clay Extraction Extension**

The proposed clay extraction is for use in on-site landfill engineering and will not therefore generate any HGV movements on the local highway network. The processing and sale of incidental deposits of sand and gravel will not generate a significant amount of HGV traffic.

**Retention of MRF**

The existing MRF approved under planning permission number 15/02059/OCC has permission to operate until 31st December 2020 and is limited to an annual throughput of 150,000 tonnes. The details submitted as part of that application stated that up to 90,000 tonnes of material would be recovered for re-use elsewhere.

The HGV traffic likely to be generated by the export of recovered materials as proposed in planning application number 15/02059/OCC is 42 HGV movements per day on average.

As the recycling of secondary aggregates from incoming inert wastes is now proposed to be carried out using the sand and gravel processing plant, the full capacity of the MRF will be available for the recovery of materials from incoming non-hazardous commercial and industrial (C&I) wastes.

On this basis, it is estimated that 10,000 tonnes of the incoming non-hazardous C&I wastes will be classified as unsuitable for processing at the MRF and will therefore be re-directed to the non-hazardous waste landfill site for disposal. From the remainder, 30,000 tonnes of material will be recovered for export to reprocessors and for re-use elsewhere. The other 110,000 tonnes will comprise the residual materials remaining following processing at the MRF and will be disposed of at the adjacent non-hazardous waste landfill.

The development now proposed includes the deferment of the end date for operations from 31st December 2020 until 6th January 2028 - the same end date as is currently approved for the landfill.

The HGV traffic likely to be generated by the proposed export of recovered materials is 14.5 HGV movements per day on average.

**Clay Extraction at Variance to Conditions**

The proposed continued development of the current clay extraction area at variance to conditions relate to various temporary operational uses and changes to the restoration scheme which will not generate any HGV movements on the local highway network.

**Summary**

The HGV traffic generation arising from the proposed developments is summarised in Table 3.1 below.

**Table 3.1: HGV Traffic Generation**

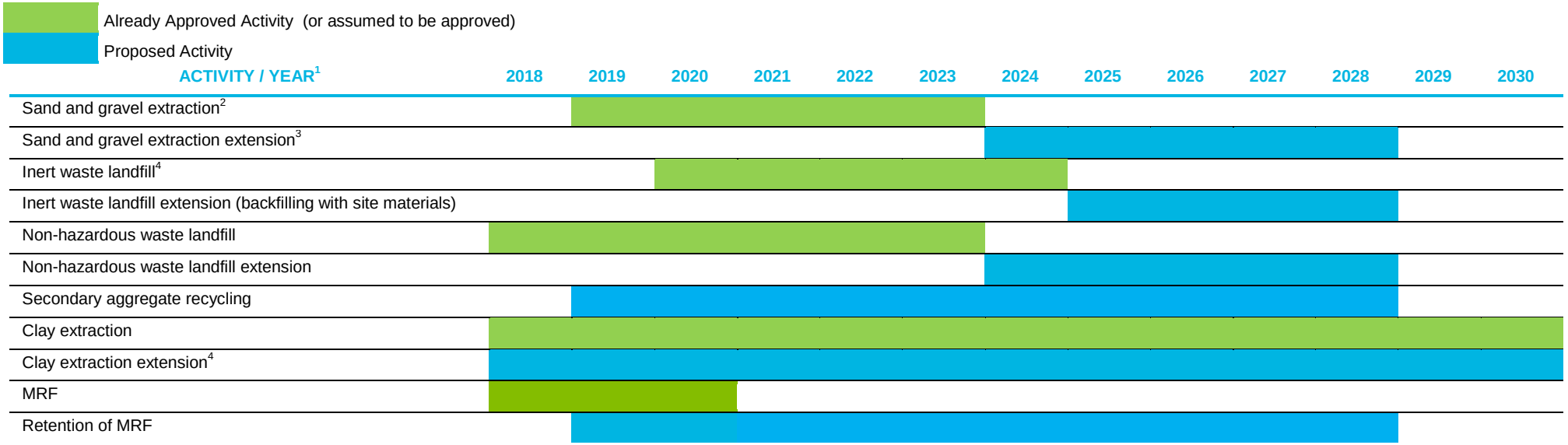
| Activity | Average Daily HGV Movements | |
|---|---|---|
| | As Currently Approved | As Now Proposed |
| Sand and gravel extraction | 21* | 21* |
| Inert waste landfill | 22.5* | N/A |
| Non-hazardous waste landfill / MRF | 35.5 | 35.5 |
| Secondary aggregate recycling | N/A | 15 |
| Clay extraction | 0 | 0 |
| MRF | 42 | 14.5 |

* as proposed in application number MW.0142/16, subject to removal of the current $HS_2$ holding objection and approval by OCC.

## 3.5 Duration

The currently approved and proposed programmes of development are shown indicatively in Table 3.2 below.

## Table 3.2: Durations and Proposed Development Timeline




1. The durations shown do not include restoration timescales - this table shows operational duration only.

2. This activity is as proposed in application number MW.0142/16 (subject to removal of the current $HS_2$ holding objection and approval by OCC). For the purposes of identifying the maximum potential average daily HGV movements it has been assumed that this application will be approved.

3. This assumes that this activity will follow on from the sand and gravel extraction proposed as part of pending application MW.0142/16. If MW.0142/16 is not approved then this activity would commence in 2019 (or once approved – whichever is earlier).

4. It is likely that the proposed clay extraction extension will be progressed once the existing clay extraction area is exhausted however it is not known when this will be therefore these are shown as both taking place in parallel in the above table.

## 3.6 $HS_2$ Safeguarding

The proposed development excludes all land subject of the $HS_2$ Safeguarding Direction dated August 2016.

In addition, drainage ditches will be excavated within the relevant stand-off areas to ensure that surface water run-off from Finmere Quarry is collected and managed within the site and litter screens will be erected along the boundaries of the proposed non-hazardous waste landfill extension area.

These measures will ensure that the construction and operation of $HS_2$ will not be adversely affected by the proposed development.

## 3.7 Hours of Operation

It is proposed that the currently approved hours of operation which generally apply at Finmere Quarry will also apply to the proposed developments i.e.

- 07:00-18:00 hours Mondays to Fridays (excluding Public Holidays); and
- 07:00-13:00 hours Saturdays

In relation to the operation of the MRF (once equipped with the approved acoustic barriers) it is similarly proposed to operate within the currently approved hours of operation i.e.

- 05:00 to 01:00 Mondays to Saturdays.

In relation to the hours during which waste and recovered materials may be transported to and from the reception compound and MRF via the access on to the A421, it is proposed that these be amended to:

- 06:00-19:00 hours Mondays to Fridays (excluding Public Holidays); and
- 06:00-13:00 hours on Saturdays.

## 3.8 Restoration and Aftercare

Relative to the currently approved schemes, the restoration scheme now proposed for Finmere Quarry (as a whole) proposes much more extensive areas of new broadleaved woodland and areas designed to enhance nature conservation.

The overall restoration scheme is shown on Figure FQ/Masterplan (appended to this NTS) and includes the retention of existing woodland, hedges and certain water features and introduces positive enhancement through the creation of considerable new areas of wildlife habitat and landscape features, in addition to the restoration of land to agriculture. New permanent ponds will be created as part of the restoration plan and will be planted around the margins with locally-native species to maximise the benefits for a broad range of species.

Two lagoons have been created to the east of Finmere Plantation South. Whilst the primary use of the northern lagoon is to manage surface water and the southern lagoon is for the management of silt generated by the processing plant, these lagoons will be available for use by wildlife for the duration of the scheme. The northern lagoon will be retained, re-profiled and planted up with locally-native species to improve its suitability for wildlife.

The new areas of species-rich grassland and neutral grassland will provide a valuable nectar source for a wide range of invertebrates that in turn will provide increased foraging opportunities for birds and bats. The grassland will also provide increased habitat for important ground-nesting species such as skylark.

A total of 40 bat boxes will be fixed to suitable trees in Finmere Plantation. This will provide additional roosting habitats for local bat populations and enable them to take full advantage of the new habitats as they become established.

Further applications will be made under Sections 257 and 261 of the Town and Country Planning Act 1990 to extend the duration of diversions of BW 4 and 7 and to temporarily divert a section of Bridleway 6. Two new proposed permissive path routes have been included within the restoration design to enhance the existing Public Right of Way network. The public rights of way routes proposed at restoration are shown on Figure FQ/Masterplan attached to this NTS.

After-care of the each part of Finmere Quarry will take place for a period of 5 years following completion of the restoration works in each area.

# 4. Minimising Effects

In addition to the measures referred to above, other mitigation measures will be taken to ensure that:

- relevant wildlife habitats are safeguarded by retaining the adjoining field boundary hedgerows and trees and by replanting any sections which need to be removed for operational reasons as part of the final restoration scheme;
- the surface water and groundwater regimes are not adversely affected;
- noise is minimised to an acceptable degree by i) limiting the hours of operation, ii) ensuring that noise levels do not exceed the limits deemed appropriate by Cherwell District Council's Environmental Health Officer when measured out the nearest houses, iii) ensuring that all site plant is properly maintained and fitted with effective silencers and that site mobile plant is fitted with silent or low-noise impact audible reversing alarms;
- dust and particulate emissions are suitably controlled by the use of a water bowser;
- any archaeological assets are suitably investigated and recorded in accordance with a scheme to be agreed with OCC; and
- visual effects and effects on bridleway users are minimised by i) constructing a suitable screen bund sown with grass alongside the relevant routes, ii) diverting parts of the routes where necessary, iii) by limiting the height of any stockpiles, iv) not installing external lighting unless the details are first approved by OCC and v) ensuring that vehicles only cross at purpose designed crossing points.

# 5. Alternatives

Following a study of alternatives, ATC&PH chose the options which now make up the proposed scheme for a number of reasons, the foremost of which were that they:

- can be achieved within the same timescale as that currently approved for the non-hazardous waste landfill;
- will safeguard the amenity of local residents and known assets e.g. protected species and trees, potential archaeological assets and good quality agricultural land; and
- will result in the creation of an improved final landform and a mix of uses which will be a greater value for nature conservation and public amenity purposes.

# 6. Assessment of Potential Effects

## 6.1 Transport

A transport assessment has been undertaken to assess and mitigate the impact of the traffic generated by the proposed development on the local highway network.

The site is currently accessed via the A421, which routes from its junction with the A43 at the Barleymow roundabout, Oxfordshire, to the junction with the A1 at St Neots in Cambridgeshire. At the point of the site access, the road is a 60mph single carriageway, two way route. About 0.5 miles to the east of the site, the A421 connects with the A4421 at a 4 arm roundabout junction.

The nearest major trunk road to the proposed site is the M40, which is to the south west of the site. The nearby towns of Buckingham, Bicester and Banbury are all easily accessible from the site.

The maximum daily HGVs shown as per the current scenario (current operations) results in a larger number of HGVs in a single year, than the 'now proposed' scenario which creates a larger average number of HGVs but over a longer time frame.

Modelling has concluded that at the site access the junction will operate well within capacity and that there would be very little difference in the performance of the junction with or without the traffic generated by the proposed development.

In conclusion, the proposed development would not lead to material adverse effects in terms of road capacity, safety or environmental effects.

## 6.2 Air Quality

An assessment of the potential for significant effects to occur as a consequence of uncontrolled emissions of coarse dusts and particulate matter (as $PM_{10}$) from the site has been undertaken. Consideration has also been given to the effects associated with road traffic emissions arising from the proposed development.

The resumed operation of the material recovery facility (MRF) and continuation of non-hazardous landfilling within the site means that potentially odorous materials may be accepted into the site for processing and disposal. MRF operations would be carried out within the facility building, and landfilling operations would take place no closer than 350 metres to the nearest properties. Furthermore, there is no recent history of complaints associated with the currently operational site regarding odour.

The overall risk to sensitive receptors from dust soiling is considered to be low. Average background $PM_{10}$ particulate concentrations are less than half of the annual mean air quality objective and this suggests that the background is consistent with that found in rural areas. There is therefore little risk that the contribution of particulates made by the proposed development would lead to an exceedance of the annual average $PM_{10}$ objective.

Taking into account best practice measures that will be implemented on-site during operations, the risk of adverse health effects due to the particulate emissions from proposed operations is low.

No further mitigation is required over and above best practice measures and no further operational monitoring is necessary. The overall effect of the proposed development on local air quality is considered to be not significant.

## 6.3 Ecology

The assessment undertaken demonstrates that the proposed development would be implemented in a manner that complies with relevant legislation and planning policy.

The ecological assessment has considered the impacts of the proposed development on the following in terms of ecological receptors:

- presence of any notable/ important habitats;
- amphibians;
- plant species;

- invasive species;
- invertebrates;
- retiles;
- birds;
- bats;
- badger; and
- other mammals – including hedgehog and Brown Hare.

There will be no significant effects on any statutory or non-statutory sites designated for nature conservation.

As a result of the substantial new tree planting to be undertaken as part of the restoration of the site, the overall impact on woodlands will be positive.

Approximately 100m of species poor hedgerow will be lost but it will eventually be restored with locally-native species and will be more species-rich than it is at present. Together with other species-rich hedgerows to be provided as part of the restoration of the Site, the overall impact on hedgerows will be positive.

The loss of two ponds and the silt lagoon will result in the loss of breeding and foraging habitat for a range of invertebrates, amphibians and common waterbirds however the loss of these features has been successfully mitigated under European Protection Species Licence by the creation of new ponds in an existing receptor site.

At least six new permanent ponds will be created as part of the restoration of the site, together with shallow scrapes, and temporary lagoons. In combination with the proposed restoration and the existing measures in place, the overall impact on waterbodies will be positive.

Appropriate mitigation measures will be adopted onsite to avoid harm of birds e.g. avoiding site clearance work will be carried out during the active breeding season (typically mid-March to late August). Retention of existing habitants (hedgerows) and creation of new habitats (15ha of new broadleaved woodland, together with some 1.3ha of woodland edge scrub comprising locally-native species, at least 14ha of species-rich neutral grassland and some 4.5ha of grassland on the low nutrient soils with scrapes and the creation of six new ponds) will result in an overall positive effect on bird species.

Impacts on bats will be avoided through the implementation of the Tree Protection Plan which will be in effect for the duration for the scheme so any direct impacts on trees that may be used by bats will be avoided. The retention of woodland and hedgerow trees will continue to provide roost opportunities for bats in the medium to long term. The extensive woodland planting under the restoration scheme will provide replacement trees thus providing a succession of roost opportunities for bats in the future. The habitat creation work will result in a significant increase in the populations of invertebrate assemblages using the site, providing much improved foraging opportunities for all species of bats that use the site.

Overall it is considered likely that the proposed scheme will result in a significant positive effect on all the important features identified in the assessment, which is in accordance with national and local nature conservation objectives.

## 6.4 Hydrogeology

The sand and gravel deposit which predominately overlies the White Limestone Formation in the north-western area of Finmere Quarry is designated by the Environment Agency (EA) as a Secondary A Aquifer. The extraction of sand and gravel from the extraction extension area has the potential to impact on groundwater levels. The assessment undertaken concludes that the effect on groundwater will be insignificant because the void created by the sand and gravel extraction will be restored back to original ground level (or similar).

The risk to groundwater quality has been assessed and as only natural materials derived from the quarry will be used to restore the extracted areas, the restoration proposals for the proposed sand and gravel extraction extension pose no risk to the groundwater quality in the sand and gravel aquifer which surrounds the area.

The groundwater management measures in the proposal for the sand and gravel extraction and subsequent restoration with inert materials from the site will have no significant effect on the level and quality of the limestone groundwater which is likely to supply a private groundwater supply at Northwell Farm to the north.

In terms of the proposed clay extraction extension area, it is considered that there is no direct hydraulic connection between the groundwater in the incidental sand and gravel and the watercourses east of the site and hence extraction will have no significant impact on the adjacent surface water system.

The limited nature of dewatering of the sands and gravels and the clay extraction means this will not extend far enough to impact on Tingewick Meadows Site of Special Scientific Interest located approximately 2.5km to the south-east.

The proposed landfill extension area will not have a significant effect on groundwater level and quality in any remaining sand and gravel. The proposed non-hazardous landfill operation has the potential to impact on groundwater levels and quality in the limestone.

Based on the risk assessment undertaken and the mitigation measures proposed, the majority of the potential impacts are classified as being insignificant or of minor significance and on this basis no further mitigation measures are considered necessary.

Should the results of the monitoring indicate that the landfill operations are adversely impacting on the groundwater quality in the limestone aquifer; remedial measures will be developed and agreed with the EA. Monitoring of the groundwater quality in the water pumped from the collection drains in the sands and gravels will also be carried out;

The drilling and monitoring of the additional boreholes will provide information to facilitate an assessment of the impacts of the landfill operations on groundwater quality and to identify the need for any additional mitigation measures to minimise any adverse impacts. Accordingly with the implementation of the additional monitoring and any remedial measures, the significance of the impact on the limestone aquifer will be reduced to minor.

Overall the assessment concludes that the majority of the potential impacts are classified as being insignificant.

In the case of the potential for significant effects from the non-hazardous landfill extension on groundwater level and quality in the limestone aquifer it is considered that following the implementation of a regular monitoring programme (which will identify if there is a need for remedial measures) the significance of any effect on the groundwater level and quality in the limestone aquifer is reduced to minor and not significant.

## 6.5 Hydrology and Flood Risk

The site is located in Flood Zone 1, land considered to have a less than 0.1% (1 in 1000) annual probability of flooding from and/or tidal sources in any given year. The site is therefore considered to be at low risk of flooding from fluvial sources. This risk of flooding from surface water features is considered to be low.

Groundwater may be encountered with sand and gravel extraction. Any influx of groundwater would be managed by establishing a collection/recharge system (or a suitable alternative) therefore pumping of groundwater may be required to manage short-term, localised requirements;

In the long terms (post-restoration), drainage from the site will drain at a green field rate, to a small lake within the quarry void and surrounding restored landscaped areas.

In addition no off-site impacts are predicted as a result of the proposed development in relation to flood risk.

Any risk of blockage of the surface water drainage system or exceedance of the system's design capacity. Will be managed through regular maintenance and inspection of the drainage system.

The Flood Risk Assessment demonstrates that the proposed development will remain safe during its lifetime and will not increase flood risk elsewhere.

## 6.6 Heritage

There are 12 designated heritage assets, all comprising Grade II listed buildings, within the 1km study area. A total of 21 non-designated assets and 15 previous archaeological investigations (events) are also recorded within the study area. Of these, nine are located within the boundary of Finmere Quarry. These largely relate to Neolithic flint working, and Bronze Age and Iron Age settlement activity recorded in the centre and west of the site, although a 19$^{th}$ century brickyard is also recorded towards the eastern boundary.

The main parts of the proposed development which have the potential to impact on heritage assets are the extensions to the areas approved for sand and gravel extraction and for clay extraction.

The proposed extensions to the sand and gravel and clay extraction areas have the potential to impact upon recorded archaeological remains and both have the potential for additional remains to be located. The recorded remains comprise the likely Bronze Age circular enclosure identified within the proposed sand and gravel extension.

Other parts of the proposed development have the potential to impact on the setting of Widmore Farm – a single built heritage asset, comprising the comprising the grade II listed early 19th century farmhouse. The proposed development will be located some distance to the east of the asset, on the opposing side of the former railway line, which offers screening due to its topography and vegetation. The existing woodland of Grassy Plantation also entirely screens the farmhouse from the proposed development. It is therefore considered the proposed development will only bring about minimal change to the setting of the asset that will have little effect on its significance and does not constitute substantial harm.

Appropriate archaeological investigation will be agreed and undertaken prior to the commencement of groundworks associated in the proposed extraction areas. A geophysical (magnetometer) survey will be carried out in order to identify any further potential archaeological features and subsequent archaeological recording that may include targeted evaluation trenching or an archaeological strip, map and record, as required.

## 6.7 Landscape and Visual

No significant residual effects on landscape character are predicted during operation. Equally no significant effects are predicted after restoration.

The restoration proposals includes the retention of existing vegetation, hedgerow boundaries and individual trees within the new excavation areas, alongside proposed restoration elements which would form integral components of the development and mitigates for the loss of any features.

Non-significant effects on landscape character would arise from the change in land use from the existing uses, along with the continuation of baseline existing extraction, landfill, processing and recovery activities.

Any adverse effects would be temporary and largely reversible, varying from short to long term, up to a maximum of around 10 years.

The nature of the landform and the extent of vegetation limit the availability of views of the site from within the wider Study Area.

The proposed development would not entail any significant removal of landscape elements other than grassland and a short section of gappy hedgerow. Changes in visual amenity / views would relate entirely to effects arising from temporary visibility of mineral extraction, landfill, recycling and recovery activities (much of is proposed be within areas of existing activity) and permanent views of restored land. The proposed development, when compared to the (current) situation, constitutes the temporary addition of mineral extraction to parts of the site, the continuation of activities and permanent views of restored land within existing for all areas, within otherwise rural views.

One viewpoint, on Bridleway 4 (VP12) would experience moderate but non-significant adverse effects on visual amenity. From many locations the extent and influence of the proposed activities will not increase relative to the current situation particularly having regard to the progressive restoration which will be continued. Overall, the proposed development would have limited non-significant effects from other viewpoints in the wider landscape.

In conclusion, the proposed development is unlikely to give rise to significant landscape or visual effects or to unacceptable changes in landscape character or visual amenity.

## 6.8 Noise

Baseline noise surveys were undertaken at four locations, considered representative of the residential receptors closest to the planning application boundaries.

Worst case scenario noise levels from combined activities on the site have been calculated at the closest noise sensitive residential receptors. These were then compared with the limits obtained by application of the national

guidance. For all existing residential receptor locations there would be no significant effect as the predicted noise levels do not exceed derived noise limits in any time period.

Predicted night-time noise levels are marginally greater than evening noise levels due to consideration of an HGV movement between 06:00 and 07:00.

With regard to the potential impact upon riders and horses on surrounding rights of way, it is noted that predicted noise levels do not exceed those currently experienced in the area, and remain well below the recommended levels.

No significant effects are predicated from potential noise effects due to the traffic associated with the proposed development.

In summary the predicted noise levels as a result of consented and proposed activities at Finmere Quarry are below the derived limits, and also below existing ambient noise levels, dominated for the most part by sources not associated with operation of the quarry (e.g. road traffic) therefore no significant effects are predicted.

## 6.9 Soils

A soil survey of the proposed sand and gravel and clay extraction extension areas was undertaken in October 2017.

The field survey assessed the agricultural quality (ALC Grade) and found 5 ha of the sand and gravel extraction extension area to be Grade 2 (very good quality agricultural land), a further 4.6 ha Subgrade 3a (good quality agricultural land) and finally 0.94 ha Subgrade 3b (moderate quality agricultural land).

The entire area of the clay extraction area is assessed as (ALC Grade) as Subgrade 3b (moderate quality agricultural land).

The majority of the land within the sand and gravel extraction extension area is classified as best and most versatile land (BMV), whereas the land within the clay extraction extension area is of Subgrade 3b quality and therefore not of BMV quality. The area of BMV to be lost will be replaced by a similar area of land restored with a soil profile of BMV quality. The soil resource would be stripped, stored and re-laid according to best practice and would be used within areas restored to agriculture to re-instate profiles sufficient to achieve BMV quality land. As part of the restoration proposals the sand and gravel extraction e extension area is to be restored to productive agriculture by using the subsoil resources. Therefore all of the restored land within the sand and gravel extraction extension area will be of BMV quality.

The non-BMV quality land within the Clay Extraction Extension Area will be restored to land of a nature conservation value and interest using soils stripped from non-BMV land. As part of the restoration proposals the clay extraction extension area restored to a mix of broadleaved woodland and nature conservation habitats around a pond. The soil profiles within the areas restored to agriculture will have the physical characteristics of best and most versatile land.

All of the soil resources from within the site will be used within the restoration and hence there will be no loss of soil resources from the current proposals. The restored land would be subject to a 5 year aftercare programme to ensure the full rehabilitation of the restored soil profiles.

## 6.10 Arboriculture

A tree survey was undertaken between 16th April 2018 and 18th April 2018 in accordance with the requirements of BS5837:2012 Trees in relation to design, demolition and construction – Recommendations (BS5837).

There were 85 arboricultural features identified during the survey which include 35 groups of trees, 49 individual trees and 1 hedge. The groups are made up of young to mature trees with the majority of them being considered to be in fair to good condition with a small number groups being of poor to fair condition.

The majority of the treestock recorded within the survey was confined to the boundary edges of the land parcels, as former field boundary hedgerows with scattered mature trees.

A number of trees on Site are subject to a Tree Preservation Order. No work or damage should take place to protected trees without the prior consent of the Local Planning Authority (LPA).

Based on the current proposals two individual and one group of moderate quality trees (Category B) and one low quality (Category C) trees are required for removal, to facilitate the proposed works

No additional works to retained trees are likely to be required in relation to the Proposed Development, however some tree works based on the current use of the Site are recommended.

All recommended tree work is made on the basis that this will be carried out in accordance with the principles of BS3998: 2010 Treework – Recommendations and that it will be carried out by suitably qualified contractors. The consent of the LPA will be required for any works to trees which are not specifically required to facilitate the implementation of full planning consent, are dead or dangerous or otherwise qualify as an exception.

No incursions are to be carried out within the RPA of a retained tree.

As the Site is a large mineral / waste management facility the standard default specification for tree protection measures set out in the BS5837 are not deemed feasible. A more practical approach by means of using a visual barrier to create an effective Construction Exclusion Zone in the form of driven timber marker posts (every 10-15m) will be taken. The staff on Site will be briefed on the purpose of these timber posts and the associated constraints; this will be done through a tool box talk and posters to raise awareness about tree protection and appropriate working methodologies to ensure trees are not adversely affected.

The Construction Exclusion Zones identified on the Tree Protection Plan should be fully respected and their location and significance is to be highlighted to all site staff and contractors during the formal site briefing.

## 6.11 Socio Economics

The proposed development is expected to give rise to the following positive effects in terms of the local economy and employment. It will:

- create up to 47 new jobs – around 50% of whom are likely to live in Oxfordshire;
- generate and maintain jobs in roles such as hauliers, machine operatives, site operatives and office staff;
- generate and maintain jobs at the operations of ATC&P's customers who rely on sand and gravel and other construction materials to be supplied;
- enable the company to continue supporting the local economy by paying salaries of around £1,800,000 per annum and business rates to CDC and OCC of around £200,000 per annum;
- enable the company to continue supporting the local economy by purchasing local goods and services to the value of around £4,800,000 per annum; and
- investing around £1,040,000 in new plant and equipment and site infrastructure and set up works;

To maximise the benefits to the local economy, ATC&PH intends to take the following measures whenever possible and practicable:

- to establish a local supply chain – to ensure that local companies have the opportunity to benefit from the project as suppliers and sub-contractors; and
- to work with local agencies – to ensure that opportunities are made available through established local business networks and recruitment channels.
- In summary the proposed development is assessed as one which is likely to give rise to significant socio-economic benefits.

# 7. Other Potential Effects

## 7.1 Cumulative and Interaction

**Cumulative Effects**

The EIA scoping opinion adopted by OCC on 26th January 2018 by OCC confirmed that the assessment of such potential effects should be scoped as proposed by ATC&PH namely by limiting the assessment to potential combined noise and visual effects arising from the proposed development and the development of HS2.

Assessments of these two potential cumulative effects have been made in the transport and landscape/visual assessment reports and both find that such effects will not be significant.

**Interaction Effects**

Potential interaction effects are those which may arise from various effects likely to be generated by the proposed development in combination.

Interactions between more than one type of effect experienced at a particular receptor could be experienced simultaneously or intermittently. Mitigation of interaction effects is best achieved through management of construction or operation to minimise each potential effect to a level where significant adverse effects will not occur, even if interactions take place.

In this case, as no significant residual effects have been identified within the assessment included within the EIA no significant interaction effects have been identified.

## 7.2 Human Health

Potential effects in relation to matters which could have a bearing on human health have been assessed as part of the other technical assessments undertaken as follows:

- transport section 5 of the ES and Appendix C to the ES;
- air quality section 6 of the ES and Appendix D to the ES;
- hydrogeology section 8 of the ES and Appendix F to the ES;
- hydrology section 9 of the ES and Appendix G to the ES; and
- noise section 12of the ES and Appendix J to the ES.

Each of these assessments find that the proposed development will not give rise to significant adverse effects.

The risk of accidents which could give rise to significant adverse environmental effects is low.

## 7.3 Community and Social

The EIA scoping opinion adopted by OCC on 26th January 2018 confirms that a separate assessment is not necessary (since the relevant potential effects are assessed elsewhere). The proposed scheme design provides details of the public right of way diversions which will be needed.

Applications in respect of temporary diversions will be made to OCC and the information required to be submitted as part of these applications is being discussed with OCC Public Rights of Ways officers.

## 7.4 Statement of Significance

The above assessment of potential cumulative, interaction, human health and community and social effects finds that none are likely to prove to be significant.

# Figures

FQ/Location – Location Plan

FQ/NTS/001 – NTS Context Plan

FQ/Masterplan – Overall Final Restoration Masterplan

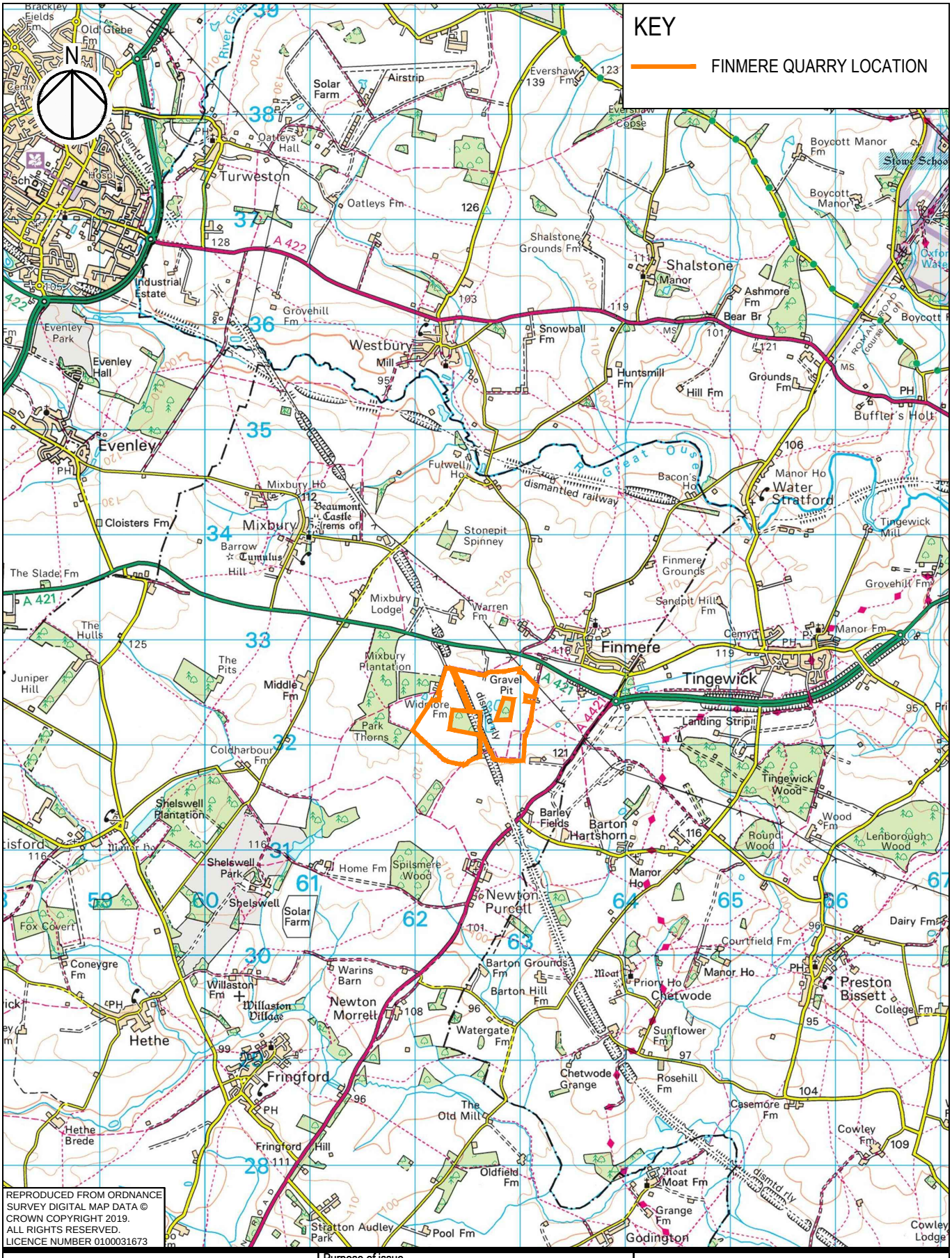



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Figure Title

SITE LOCATION PLAN

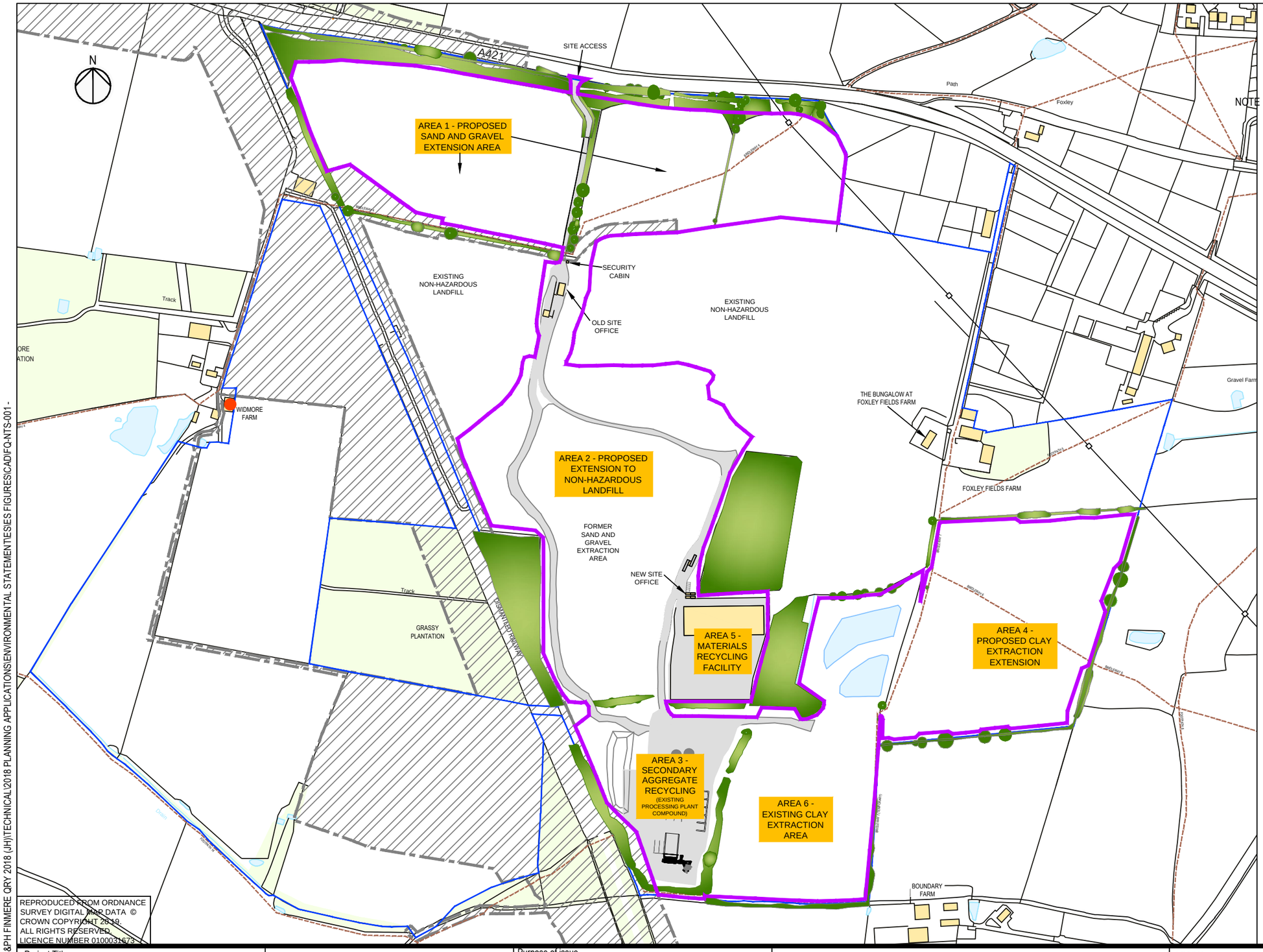
Purpose of issue

| Drawn | Checked | Approved |
|---|---|---|
| AAO | JH | JH |
| Date | Scale @ A4 | Rev |
| 02/19 | 1:50,000 | - |

Figure Number

FQ/LOCATION

AECOM




## KEY

- EIA SCHEME (COMBINED EXTENT OF PLANNING APPLICATION BOUNDARIES)
- FREEHOLD AND LEASEHOLD OWNERSHIPS
- WATER BODY
- LAND SAFEGUARDED FOR HS2
- EXISTING TREE, GROUP OR HEDGE
- PUBLIC RIGHT OF WAY
- LISTED BUILDING

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Project Title: FINMERE QUARRY

Client: ATC & PH

Drawing Title: NTS CONTEXT PLAN

Purpose of issue

| Designed | Drawn | Checked | Approved | Date |
|---|---|---|---|---|
| - | RP | JH | JH | 02/19 |

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| AECOM Internal Project No. 60556545 | Suitability - |
| Scale @ A3 1:5,000 | Zone / Mileage - |

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Drawing Number: FQ/NTS/001

Rev: -

Plot Date : 27 February 2019 18:38:07
File Name : L:\60556545 ATC&PH FINMERE QRY 2018 (JH)\TECHNICAL\2018 PLANNING APPLICATIONS\ENVIRONMENTAL STATEMENT\ES FIGURES\CAD\FQ-NTS-001 -

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING. WHERE APPROPRIATE, TO AN APPROPRIATE METHOD STATEMENT.

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## KEY

- RESTORATION CONTOURS (mAOD)
- EXISTING WOODLAND
- PROPOSED WOODLAND
- PROPOSED WOODLAND EDGE SHRUB MIX
- PROPOSED ISOLATED TREE
- EXISTING TREES
- PROPOSED AGRICULTURAL LAND
- PROPOSED SPECIES-RICH NEUTRAL GRASSLAND
- PROPOSED NUTRIENT POOR SPECIES RICH GRASSLAND WITH SCRAPES
- PROPOSED MARSH / MARSHY GRASSLAND
- EPHEMERAL POOLS
- RETAINED HEDGEROW
- RE-ESTABLISHED HEDGEROW
- PROPOSED SURFACE WATER DRAIN
- EXISTING SURFACE WATER DRAIN
- PROPOSED WATERBODY
- EXISTING WATERBODY
- PUBLIC RIGHT OF WAY
- HS2 POSSIBLE ROUTE VARIATION
- PROPOSED PERMISSIVE PATH

| Revision Details | By / Check | Date | Suffix |
|---|---|---|---|
| - | | | |

Purpose of issue

Client

ATC & PH

Project Title

FINMERE QUARRY
NON-HAZARDOUS WASTE
LANDFILL EXTENSION

Drawing Title

OVERALL FINAL
RESTORATION MASTERPLAN

| Designed | Drawn | Checked | Approved | Date |
|---|---|---|---|---|
| - | AAO | JH | JH | 02/19 |

| AECOM Internal Project No. | Suitability |
|---|---|
| 60556545 | - |
| Scale @ A1 | Zone |
| 1:2,500 | - |

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File Name: FQ-MASTERPLAN

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