TARMAC
A CRH COMPANY

Stanninghall Quarry,

Horstead, Norfolk

Stanninghall Quarry Northern Extension and Consolidation Application

PLANNING APPLICATION STATEMENT

October 2020

PLANNING APPLICATION STATEMENT

STANNINGHALL QUARRY

Horstead, Norfolk

Client: Tarmac
Job no. 407.05731.00052
Document title: Planning Application Statement
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APPENDICES

1.0 INTRODUCTION

This Statement has been prepared in support of a planning application, submitted by Tarmac Trading Limited to Norfolk County Council (NCC), which seeks planning permission for a northern extension to Stanninghall Quarry, and the integration of the existing quarry permitted area at Stanninghall Quarry with the northern extension area as an overall consolidation scheme.

The Planning Application Statement (PAS) is accompanied by a comprehensive submission which comprises:

- Environmental Statement (ES) (Volume 1);
- Technical Appendices to the Environmental Statement (Volume 2); and
- Non-Technical Summary of the ES (Volume 4);

The Planning Application Statement (PAS) formalises the planning application and includes the application forms, a description of the development which constitutes the formal planning application; and the application plans which illustrate the details of the proposed development.

The PAS is therefore distinct from the ES which considers the environmental effects of the development. Those environmental effects are comprehensively addressed in the ES (Volume 1) and are therefore not repeated in this PAS. However, the PAS draws upon the mitigation measures which are recommended in the ES to minimise the environmental effects of the proposed development, with the measures included for ease of reference in a 'schedule of mitigation measures and environmental commitments' (ref PAS Chapter 8.0).

The PAS also reviews the planning policies against which the application will be judged, notably those contained within the National Planning Policy Framework (NPPF) and the emerging NCC Minerals and Waste Local Plan (MWLP): Preferred Options (July 2019) which confirms a requirement for the release of additional reserves of some 20.3m tonnes of sand and gravel over the plan period to 2036. It is proposed to meet this requirement by the release of reserves at 19 defined 'specific site allocations' for future extraction. The identified sites include the Stanninghall northern extension as Specific Site Policy MIN65. The allocation is the largest of the site allocations (assumed 4.5m tonnes), where the reserve represents over 22% of the overall supply requirement for Norfolk. The Stanninghall northern extension is thus a key component of the emerging mineral supply strategy for the county.

The existing Stanninghall Quarry contains remaining reserves of some 1.22 million (m) tonnes as at 1st January 2020. However, some 450,000 tonnes of the permitted reserve lies beneath the processing plant site area and will not be available until the processing plant and related infrastructure is removed. It would therefore be logical to exploit reserves present in land to the north of the existing quarry using the infrastructure at the existing plant site before the plant is removed.

A planning application is thus being submitted at this stage (autumn 2020) with an overall phased development scghme which would provide for a smooth transition into the northern extension area as part of a revised overall working and restoration scheme. The scheme thus deals comprehensively with the future development and restoration of the overall quarry area, but also in the context of the limited available reserve at the existing quarry.

INTRODUCTION 1

The planning application is supported by an updated phased quarry development and restoration scheme for Stanninghall Quarry which reflects the enlarged surface area associated with the northern extension. The scheme integrates the proposed extension area into the remaining areas of the existing quarry which either remain to be worked or which will be required for operational purposes.

Subject to the spatial extent of these developments, there would be no material changes to the established operation at the quarry in terms of general working practices, hours of working, noise limits, dust controls, and ground and surface water controls.

The scheme, which is discussed in detail in Section 6.0 of this PAS, has been designed as a 5-phase operation, which includes a 'Phase 4B' within the currently permitted Stanninghall Quarry area, with then phases 5 – 8 to be worked in a clockwise direction within the proposed northern extension area. A final phase 9 would comprise the extraction of sand and gravel within the current plant site area as part of the final works within that area.

The overall site contains reserves of some 5.053 million(m) tonnes, comprising some 770,000 tonnes with the Phase 4B area, some 3.83m tonnes within the northern extension area, and some 450,000 tonnes within the plant site area (figures rounded). It has been assumed that the site would be worked at an output of some 300,000 per annum, which would give a working life for the development of just under 17 years.

The phasing arrangement has been designed to facilitate the progressive restoration of the site by using soils and overburden to profile and restore preceding phases as a rolling programme of soil stripping, placement in the preceding phase and progressive sand and gravel extraction by phase.

The phases within the proposed northern extension area would not provide equal volumes of sand and gravel, but rather, they have been designed partly to reflect the existing field pattern, but also importantly, the logistics of the soil stripping and handling to achieve an efficient programme of progressive restoration as part of the overall materials balance.

The site would be progressively restored to an agricultural landscape with a hedgerow field pattern, with a substantial area of native woodland and woodland glades together with areas of species rich grassland around the perimeter.

A programme of community engagement has been undertaken in advance of the submission of the application. This is discussed in Section 10.0 below, with a response to the key issues raised by members of the public at a 'virtual' public exhibition of draft proposals published on-line in September 2020.

The formal planning application forms are produced within Section 2.0 of this statement. The planning application plans are listed in Section 4.0 of this PAS, with a summary of the key features illustrated on the plans. The plans are produced at the rear of the document.

2.0 APPLICATION FORMS

APPLICATION FORMS 2

Minerals or Waste Planning Application

For office use only:
C.C. Ref
D.C. Ref
Fee Paid
Date Validated
Expiry of Statutory Period

Part A. To be Completed by all Applicants

Please read accompanying notes before completing this form. Four completed copies of this form and plans must be submitted to Norfolk County Council. Further copies may be requested for consultation purposes.

1a Name and Address of applicant

Tarmac Trading Ltd
Regional Office, Bellhouse Quarry
Warren Lane, Stanway
Colchester, Essex CO3 0NN

Tel.No. 01206 332208
Fax No.
E-mail alan.everard@tarmac.co.uk

1b Name and Address of agent

Graham Jenkins
SLR Consulting Ltd
Fulmar House, Beignon Close
Ocean Way
Cardiff CF24 5PB

Tel. No.
Fax No.
E-mail

2 Full address of application site and outline in red on submitted plan.

Stanninghall Quarry,
Norwich Road
Horstead
Norwich
Norfolk
NR12 7LX

Site area = 106.8 Hectares

3 State whether applicant owns or controls any adjoining land, and if so, give its location, and outline in blue on submitted plan.

No

4 Give a brief description of the proposed development

Proposed northern extension of Stanninghall Quarry, and consolidation working and restoration scheme incorporating existing quarry

5 State the present use of land and/or buildings or, if vacant, the last previous use.

Northern extension area - agricultural land.

6 Type of application **Please tick a, b, c, or d**

A Full permission	✓				
B Outline permission		If yes are any of the following reserved for the subsequent approval of the Local Planning Authority?			
External appearance		Design		Access	
Siting		Landscaping			
C Approval of matters reserved in an earlier outline permission		If yes give Permission Ref No.			
D Change or removal of a condition		If Yes give Permission Ref No			
		And Condition No.			

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7 State whether the proposal involves the construction of, or alteration to, an access to a highway.
If yes please show details on submitted plans.

No

I/We hereby make application for permission to carry out the development described in this application and attach the following:

1	Plans (Quote reference numbers below)	Tick Box	✓		
	Please refer to supporting statement				
2	Supporting Statement	Tick Box	✓		
3	Land Ownership Certificate	Tick Box	✓		
4	Environmental Statement	Tick Box	✓		
5	Copies of any existing relevant Section 106 or 278 Agreements	Tick Box			
6	Fee (cheques payable to Norfolk County Council) [BACS payment]	Tick Box	✓	Amount	£ 78,000

Signed  G Jenkins

Dated 29th October 2020

On behalf of (insert applicant's name if signed by an agent).

Tarmac Trading Ltd

Minerals

Part B

Complete only if application relates to extraction processing and/or treatment of minerals. You may need to provide further information on a separate sheet or on plans.

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1 Buildings and fixed plant

A	Purpose of proposed building/plant	Use of existing washing and screening plant
B	If the proposal relates to an existing operation please explain relationship.	Northern extension to existing Stanninghall Quarry
C	Type and design (dimensions and location to be shown on drawings).	N/A
D	Type and colour of materials to be used.	N/A
E	External lighting system.	N/A
F	Measures for suppressing noise, dust and fumes including position of ventilation and fume outlets	N/A
G	Provision for parking and loading of vehicles (show also in plan form).	N/A

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2 Geology

A	Type of mineral to be extracted.	Sand and gravel
B	Particulars of testing carried out on the deposit.	Borehole and trial pit investigation
C	Estimated reserve.	3.8m tonnes in northern extension area (tonnes)

3 Production

A Estimated average annual output. 300,000 (tonnes)

B Expected commencement date of operations: Continuation of existing operation

C Expected duration of operations: Approximately 17 (years)

D Approximate extent of the market served: General Norwich market area

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4 Highways

A Estimated number of lorries leaving the site daily and their payload.: Average 67 loads, comprising 54 loads of aggregate (20 tonnes) and 13 loads of ready mixed concrete (5.5m³)

B The route(s) they will normally follow: 90% to and from the south
10% to and from the north

C Measures to be taken to prevent mud being carried onto the public highway.: As existing via surfaced quarry access road and use of wheel wash

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5 Water

A Is working to take place below the water table?

If so are the workings to be pumped? No

B Arrangements to be made for the disposal of any excess water.: As existing - infiltration to ground

C Arrangements to be made for the disposal of processing waste.: Via Silt lagoons

D Arrangements for control and containment of oil spillage: Existing fuel handling arrangements

6 Environmental Protection

A Detailed proposals for screening including management of any banks and planting (show also in plan form).	Please refer to Planning Application Statement, and ES Chapter 6.0
B The proposed days and hours of working.	As existing, Mon - Fri 0700 - 18.00 Saturdays 07.00 - 13.00
C Details of arrangements to minimise nuisance from noise.	Please refer to ES Chapter 10.0
D Details of arrangements to minimise nuisance from dust and fumes. .	Please refer to ES Chapter 11.0
E Details of any public footpaths or services affected eg. drainage, electricity, gas etc.	N/A

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7 Extraction

A The depth of excavations.	(i) maximum (metres) (ii) average (metres)
B The general method of working including direction and duration of phases (show also in plan form).	Please refer to Phasing plan Ref KD.SH.D.0008
C The routes and methods of transporting mineral from quarry face to plant (show also in plan form).	Please refer to Phasing plan Ref KD.SH.D.009 to 014
D Details of stockpiling, storage and silt pond areas (show also in plan form).	As shown on above mentioned plans
E Details of all mobile plant.	As existing - mobile excavator and dump truck

Restoration

A Details of soils and overburden.

(i) Depth of topsoil, subsoil and overburden

(ii) Method of stripping

(iii) Location and maximum height of soil and overburden mounds

(iv) Duration of storage and management details

Please refer to accompanying Planning Application Statement Section 6.0

B The proposed after-use
eg. amenity, agriculture, forestry

Agriculture, species rich grassland and woodland

C Details of restoration including (where applicable).

(i) Use of quarry waste, including volumes

(ii) Grading final levels and contours of the restored area (show also in plan form and sections)

(iii) Drainage of the restored area

(iv) Landscaping and planting

(v) Phasing and timing of restoration

Please refer to accompanying Planning Application Statement Section 7.0

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8 Aftercare

A Subsequent aftercare of restoration including details of who is to carry out this programme.

As above - details set out in Section 7.0 of Application Statement.

3.0 PLANNING CONTEXT

3.1 The Development Plan

The adopted development plan relating to mineral extraction on Norfolk comprises:

- The NCC Core Strategy and Minerals and Waste Development Management Policies Development Plan Document (DPD), 2010 – 2026, hereafter referred to as the Minerals Core Strategy', adopted September 2011; and

- The NCC Minerals Site Specific Allocations Development Plan Document hereafter referred to as the 'Site Allocations Plan', adopted October 2013, which also covers the period to 2026.

These documents set out the mineral planning strategy for the county in terms of the calculation of aggregate requirements and policies and proposals to meet these requirements over the Plan period via the allocation of 26 sites for future sand and gravel extraction.

NCC produce annual monitoring reports setting out the position regarding mineral planning decisions and delivery of planning policies as Annual Monitoring Reports geared towards assessing circumstances against policy in the development plan. In parallel, Local Aggregates Assessment (LAA) Reports are published annually setting out aggregate sales, reserves and the landbank of permitted reserves at the end of the respective year of the LAA reports.

These reports chart the progress in terms of the delivery of the site allocations in terms of planning permissions, but also highlight the eroding supply of allocated sites to meet future aggregate needs beyond the Plan period of the currently adopted Plans. As a result, the adopted development plan is currently the subject of a review via the Norfolk Minerals and Waste Local Plan (NMWLP) which will 'roll forward' the provision in the adopted mineral development plan from a revised base date of 2018 to a new end date of 2036 as an 18 year supply. It is also intended that the NMWLP will be one single document relating to mineral and waste which will replace the 3 x current development plan documents (the two referred to above plus the Norfolk Waste Site Specific Allocations DPD).

3.2 The emerging Development Plan

The NMWLP has reached a relatively advaced stage in its production, having progressed through a 'call for sites' (July 2017); an assessment of prposed sites; initial consulation (July / August 2018); a Sustainability Appraisal and Strategic Environmental Assessment; and a Habitats Regulations Assessment. The results have been set out in a 'Preferred Options' document published in July 2019.

The Preferred Options document confirtrms that since the adoption of the Minerals Site Allocations Plan, eleven of the 26 allocated sites for sand and gravel extraction have received planning permission. Of the remainder, five are no longer proposed to be developed for mineral extraction, with the rest reassessed for their continued suitability for future sand and gravel as part of this NMWLP together with a further 25 sites which were proposed in response to a 'call for mineral extraction sites'.

PLANNING CONTEXT 3

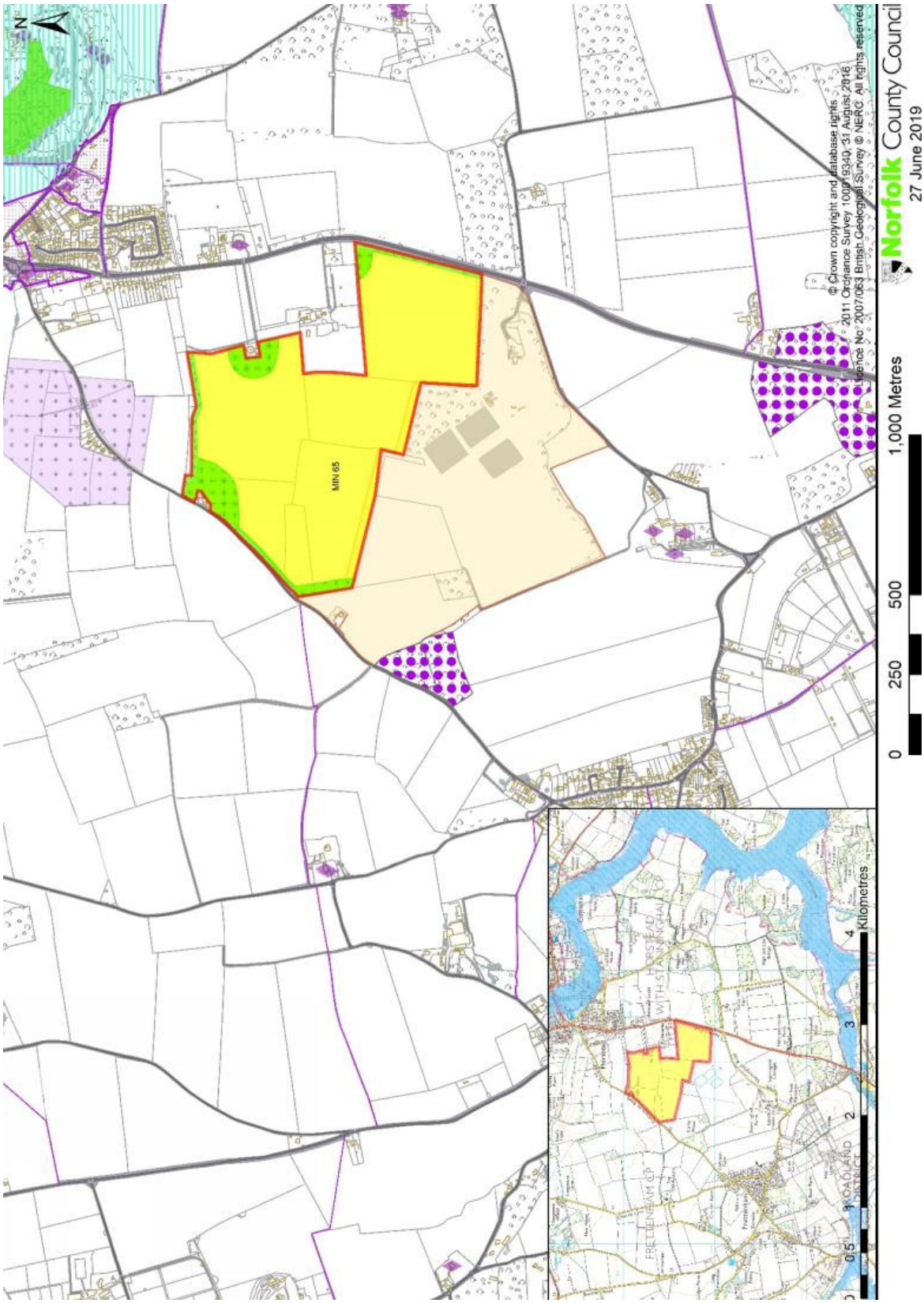
The intended provision to be made in the NMWLP plan period is based upon permitted reserves as at 31st December 2018 (13.3m tonnes) and a calculation of future requirements based upon the average production of sand and gravel in Norfolk over a 20 year period to 2018 (1.868m tonnes per annum). This gives a requirement for 33.6m tonnes, and with current permitted reserves of13.3m tonnes, a need to allocate additional sites sufficient to provide 20.3m tonnes of sand and gravel. Over the Plan period to 2036.

Following a detauiled assessment of the 'candidate sites, it is proposed to meet this requirement by the release of reserves at 19 defined 'specific site allocations' for future extraction. The identified sites include the Stanninghall northern extension as Specific Site Policy MIN65, as illustarted in Figure 3.1 below. The allocation is the largest of the site allocations (assumed 4.5m tonnes), where the reserve represents over 22% of the overall supply requirement for Norfolk.

The NMWLP contains a site description and appraisal of planning issues for each of the proposed allocated sites. With respect to Stanninghall, the appraisal provides advice on the need for assessments of the effects of the development in terms of noise, dust, archaeology and the historic environment, landscape and visual amenity ecology, flood risk, hydrogeology, and bird strike hazard. This advice has been drawn upon in undertaking the EIA as discussed further in the ES Volume 1, but each of the issues referred to in the Stanninghall site appraisal are discussed further in Section 7.0 below.

However, by way of introducion, the proposed development is considered to be fully consistent with the emerging mineral supply strategy for the county in terms of both meeting the issues identified under the 'planning appriasal' topics set out in the Preferred Options document, and the reserve availability at the site which represents a key component of the future sand and gravel supply stratgy for the county. Moveover, with the timescale for the development of circa 17 years from 2020, the development is aligned with the timescale of the emerging NMWLP to 2036, with the reserves capable of being fully or very substantially utilised within the timescale of the Plan.

Figure 3-1 NMWLP Preferred Options. Policy MIN65 Land North of Stanninghall Quarry: Site Plan



3.3 Planning Application: Description of Development

The description of the development for the Stanninghall Quarry northern extension and consolidation scheme which comprises the planning application is:

> ***"The phased extraction of some 5.05m tonnes of sand and gravel comprising some 1.22m tonnes remaining in the existing permitted Stanninghall Quarry, and some 3.83m tonnes in the northern extension area as an extension and consolidation scheme; the retention and use of the existing Stanninghall Quarry processing plant and related infrastructure for the duration of the extension and consolidation development; the retention and use of the existing Stanninghall access to the B1150 for the duration of the extension and consolidation development; the construction of temporary soil screen mounds within the development area; and the phased restoration of the extraction area to create a land use mixture of arable agriculture, species rich grassland, and woodland.***

These elements of the development are described in Chapters 6.0 and 7.0 below.

4.0 PLANNING APPLICATION PLANS

The following plans are submitted with and form part of the application:

1. **Site Location Plan ref KD.SH.001**

   Plan showing the location of the site in relation to surrounding features and settlements.

2. **Application Site Plan ref KD.SH.D.017**

   The plan shows the boundaries of the application site edged red and the permitted Stanninghall Quarry area shaded in red.

3. **Current situation ref KD.SH.D.006**

   The plan shows the current circumstances at the application site in terms of the agricultural field pattern within the northern extension area; the remaining extraction area within the existing quarry; the location of the processing plant and related lagoons and infrastructure; the existing perimeter bunds; and the site access to the B1150.

4. **Block Phasing ref KD.SH.D.0008**

   The plan confirms the proposed limits of extraction and the proposal to develop the site in 6 phases, with a final phase representing works within the current processing plant site. The operation would commence within the current permitted area as 'Phase 4B' and then continue in a clockwise direction as phases 5 and 6 within the western area of the northern extension area, and then as Phases 7 and 8 within the eastern area, with Phase 9 representing the final works within the processing plant site.

5. **Phase 4B Working and Restoration ref KD.SH.D.0009**

   The plan shows operations progressing westwards into Phase 4B, with a temporary soil screen bund to the east of the property at The Hollies. The overburden and soils from phase 4B would be used to restore phase 3 in the south western area of the existing quarry, and the southern area of Phase 4B.

6. **Phase 5 Working and Restoration ref KD.SH.D.010**

   The plan shows the development of the quarry into phase 5, with soil and overburden from phase 5 used for progressive restoration within Phase 4B and the western area of Phase 5.

7. **Phase 6 Working and Restoration ref KD.SH.D.011**

   The plan shows the progression of the development into Phase 6, with a temporary soil screen bund established to the east of the property at Hill Farm, and along the northern boundary of the site. Soils and overburden from phase 6 would be used to progress restoration in Phase 5 and along the western side of Phase 6. The temporary

soil bund to the east of The Hollies would be removed, with the material used to assist restoration within Phase 5.

8. Phase 7 Working and Restoration ref KD.SH.D.012

The plan shows the progression of the development within Phase 7, working from north to south. The temporary soil screen bund to the east of Hill Farm would be removed with the material used to progress restoration in Phase 6 together with soils and overburden stripped from Phase 7.

9. Phase 8 Working and Restoration ref KD.SH.D.013

This phase shows the final extraction phase in the south eastern area of the northern extension area, with soils and overburden used to restore phase 7, and the northern area of Phase 8, with temporary stockpiling of soils to the north east of Phase 8.

10. Phase 9 ref KD.SH.D.014

This phase confirms the final restoration works within the plant site area, with the extraction of remaining reserves beneath the plant site, the decommissioning and removal of the plant, and the use of the soil resources in stockpiles around the plant site to complete the restoration works.

11. Current Location of Restoration Materials ref KD.SH.D.007

This plan, to be read in conjunction with the Phase 9 plan, provides further details of the volumes of top soil, sub soil and overburden present in the existing bunds around the plant site area, and which will be used for restoration of Phase 9.

12. Concept Restoration Scheme ref KD.SH.D.015

This plan shows the concept restoration scheme for the overall site area with the land uses to be established; the profiles and gradients of the restored areas; the agricultural land to be re-established in the northern and eastern area, with the hedgerow field pattern; the species rich grassland areas; and the native woodland planting focused in the central / south western area, and along the restored slopes along the northern and eastern margins of the site.

13. Advance hedgerow Planting ref KD.SH.D.025

This plan shows proposed additional tree and shrub planting in the northern area of the site, which it is intended to implement in the 2021 / 2022 winter planting season. The plan also shows the context of the planting with the proposed temporary soil screen bunds on the inner sides of the planting which would be in place during phases 6 and 7.

14. Technical Sections ref KD.SH.D.016

Cross sections A-A – D-D showing existing and proposed final landforms.

15. Geological Borehole Plan ref T57/000

The plan shows the locations and results of the borehole investigation within the existing quarry and proposed northern extension area and the cross-section lines.

16. Geological Cross Sections A - D ref T57/014

The plan shows the –diagrammatic cross sections based upon the results of the borehole investigation.

17. Geological Cross Sections E - G ref T57/015

As above

18. Geological Cross Sections H - J ref T57/16

As above

APPLICATION PLANS 4

5.0 GEOLOGY AND MINERAL RESERVE ASSESSMENT

5.1 Introduction

This chapter consists of a summary of the geological setting of the site and the results of stages of site investigation and assessment which has confirmed the nature of the sand and gravel, overburden and underlying bedrock.

Further details of the hydrogeology are provided within Chapter 9.0 of the ES (Volume 1), with this chapter focusing on the details of the exploitable sand and gravel reserve.

5.2 Regional Geology

The current quarry and proposed northern extension area is underlain by Pleistocene glacio-fluvial sands and gravels belonging to the Corton Sands and the Pebble Beds sequences. The Norwich Brickearth is occasionally found as a thin, clayey interbed between the main geological units. The base of deposit is marked by the gently undulating, clayey, weathered surface of the Upper Chalk.

5.3 Site Investigations

A total of 94 flight auger mineral evaluation boreholes have been drilled across the site between March 2000 and June 2001 to determine the detailed geology and the nature, quality and quantity of economic mineral. A borehole location plan, together with a series of cross-sections are included as part of the sequence of application plans, as listed in Section 4.0 above.

These investigations were undertaken to inform planning applications for extraction at the site submitted in 2002 and 2003, but the data remains relevant for the current application.

5.4 The Sand and Gravel Deposit

The Corton Sands and Pebble Beds together comprise an average of 5.7 m thickness of mineral, lying beneath an average of 1.7 m of topsoil and other overburdens. The Northern Brickearth is present as an interburden locally within the north of the application area to a maximum thickness of 2.0m, but is typically absent.

The Corton Sand averages 31/65/4(%) of gravel/sand/silt. The Pebble Beds average 39/57/4(%) of gravel/sand/silt.

The Corton Sand is typically pale yellow or orange-brown, slightly silty, and fine to fine/medium grained. The Pebble Beds sand is generally dark brown, slightly silty, and fine/medium to medium grained.

The gravel fraction of both units is predominantly sub-angular and sub-- rounded flints and quartzites, predominantly 20-10mm with 7-8% oversize (>40mm) and almost exclusively minus 40 mm, although occasional cobbles up to 250 mm have been recorded during exploration.

GEOLOGY 5

The Corton Sands and Pebble Beds underwent extensive grading analysis as part of the original study, which has been reviewed and updated to revised European specifications and confirms that the sands comply with BS EN 12620 for a 0/2 and 0/4 (MP) grade concrete sand. Other specialist products, such as asphalt and mortar sand may also be produced following suitable processing. This analysis has been borne out by the products available at the existing quarry following processing, and the supply of sand and gravel to the on-site ready mix concrete batching plant.

The gravels are strong and durable and comply with BS EN 12620 for coarse aggregate for use in concrete and also for other uses such as drainage media, again as evident from experience at the existing quarry.

No water strikes were recorded from mineral evaluation boreholes and as borne out by experience of extraction at the existing quarry, the mineral will be worked dry. This issue is considered further in the hydrogeological impact assessment set out in Chapter 9.0 of the ES (Volume 1).

Detailed computer modelling has established a remaining workable reserve of 5.053m tonnes (as at January 2020), of which some 770,000 tonnes lies with the Phase 4B area of the existing permitted quarry, some 3.83m tonnes lies within the northern extension area, and some 450,000 tonnes lies within the plant site area, which will be extracted following the removal of the plant as a final phase of the operation.

The extraction of this reserve will require the removal, handling, and restoration re-use of 210,000m^3 of Top Soil; 185,000m^3 of Upper Sub Soil; 481,000m^3 of Lower Sub Soil / Overburden; and 217,000m^3 of Overburden (ref Table 7.3 in Chapter 7.0 below).

6.0 THE PROPOSED DEVELOPMENT

6.1 The Application Site

The application site is described in Chapter 2.0 of the ES, and in more detail as part of baseline studies reported in the technical assessment chapters of the ES. The detailed information is thus not repeated in this PAS.

However, the planning application site boundary has been drawn to encompass the boundary of the proposed Stanninghall northern extension 'allocated site' in the emerging NMWLP, together with the boundary of the existing Stanninghall Quarry. This provides an overall site boundary consistent with the consolidation nature of the proposed working and restoration scheme.

The application site is some 106.8 hectares in extent, of which the existing permitted quarry area is 53.6 ha, and the extension area 53.2 ha.

The existing quarry is comprised of the current operational working and progressive restoration areas, land awaiting extraction in the western area, a processing plant site (also including a ready mixed concrete batching plant), a series of lagoons used as part of the sand and gravel washing process, and perimeter screen bunds which contain soils stored for use in final restoration works.

The northern extension area comprises 5 large fields and one smaller filed in agricultural use, sub-divided by hedgerows of varying quality. The land has gently undulating topography, where the northern section of the extension area falls gently in a westerly direction from a high point of 23m AOD just north of the of the Water Tower to circa 17mAOD along the western boundary. In the south eastern area of the extension area the land rises gently from circa 10m AOD just south of the property at Beverley, to circa 18m AOD just north of the north eastern boundary of the existing quarry.

The site is located in a general rural setting with no public rights of way (PROW) or public vehicle access routes running through the site.

6.2 Design Objectives

The scheme has been designed to reflect seven key design principles, namely:

(i) To reflect the boundary of the proposed 'site specific allocation' set out in the 'Preferred Options' for the Norfolk Minerals and Waste Local Plan (NMWLP), July 2019;

(ii) To continue the phased working and restoration principles in place at the existing Stanninghall Quarry site across the overall site area including the northern extension area;

(iii) To design a phased extraction scheme which minimises the extent of the operational area at any one time, with land in advance of the working area

temporarily continuing in agricultural use, and land behind the working area being progressively restored to the defined after uses;

(iv) To retain the processing plant in its current central location, where the plant, stockpiles and related operations are well screened from external vantage points;

(v) To retain the existing access onto the B1150 Norwich Road;

(vi) To sustainably use the on-site soil resources to restore the site to a predominantly agricultural landscape; and

(vii) To design a sustainable long-term restoration scheme which reflects the local landscape character, with new habitat creation.

6.3 Quarry Development Scheme

6.3.1 General Principles

The scheme has been designed as a 6-phase operation, as illustrated on the 'block phasing plan' ref KD.SH.D.008. This includes a 'Phase 4B' within the currently permitted Stanninghall Quarry area, with then phases 5 – 8 to be worked in a clockwise direction within the proposed northern extension area. A final Phase 9 would comprise the extraction of sand and gravel within the current plant site area as part of the final works within that area.

The overall site contains reserves of some 5.053m tonnes, comprising some 770,000 tonnes with the Phase 4 area, some 3.83m tonnes within the northern extension area, and some 450,000 tonnes within the plant site area (figures rounded). It has been assumed that the site would be worked at an output of some 300,000 per annum, which would give a working life for the development of just under 17 years

The phasing arrangement has been designed to facilitate the progressive restoration of the site by using soils and overburden to profile and restore preceding phases as a rolling programme of soil stripping, placement in the preceding phase and progressive sand and gravel extraction by phase. The scheme has been designed based upon a detailed materials balance by phase, which is described below and in more detail in section 7.2.2 of the Restoration Chapter below.

The initial phase 4A lies within the existing Stanninghall Quarry, where progressive soil stripping would provide for restoration of the now worked out phase 3 area in the south western area of the site, together with progressive restoration within the phase 4B area behind the advancing working face

The phases within the proposed northern extension area would not provide equal volumes of sand and gravel, but rather, they have been designed partly to reflect the existing field pattern, but also importantly, the logistics of the soil stripping and handling to achieve an efficient programme of progressive restoration as part of the overall materials balance.

The limits of extraction defined on the block phasing plan (ref KD.SH.D.008) have been defined to reflect:

(i) Standoff margins of some 75m to the residential properties at The Hollies and Hill Farm along the western edge of the site, with temporary soil stockpiles to be accommodated in the standoff zone to provide temporary screening;

(ii) A standoff margin of 40m to the Water Tower situated beyond the north eastern boundary of the northern extension area (Phase 7);

(iii) A substantial standoff margin to the residential property at Beverly to the north east of Phase 8 (circa 230m) which reflects to absence of mineral in the land to the north east of phase 8, but also the need accommodate temporary soil stockpiles; and

(iv) Standoff margins to ensure the protection of the perimeter vegetation and the continued screening value which it provides, including a standoff margin to the ancient woodland block at Clamp Wood, to the west of Phase 4B.

Mineral would be hauled from the extraction phase to the existing processing plant by dump truck as a continuation of operations within the existing quarry. The proposed phased extraction and restoration scheme is described below which includes details of the volumes of top soil, sub soil, and overburden to be used for restoration by phase.

6.3.2 Phase 4B

The remaining permitted extraction area within the existing Stanninghall Quarry lies to the north west of the processing plant site and has been defined as a new Phase 4B.

During this phase, restoration works would be completed within the previous south west phase 3 area using sub soils currently stored west of 'lagoon 3' and stripped from the phase 4 area (36,000m^3 in total), together with top soil currently stored in the north western area of phase 3 and top soils stripped from phase 4B (18,000m^3 in total).

Other soils released from the initial Phase 4B strip would be placed in temporary storage – 12,000m^3 of top soil to Bund 12 and 16,700m^3 of sub soil to Bund 5, together with the transfer of remining sub soil west of 'Lagoon 2' to the sub soil Bund 5.

Extraction would then progress in phase 4B, working generally from east to west, with the resulting void regraded and profiled in to establish restoration levels in readiness to receive restoration soils. The remaining in situ soils from Phase 4B would then be progressively stripped and directly placed onto the restoration formation levels for progressive restoration behind the advancing working area. This restoration would comprise tree and shrub planting on the slope to be created along the western side of the restored Phases 3 and embracing the existing woodland block west of Phase 4B, with the remaining restored area in the southern part of Phase 4B to be sown and brought back to an agricultural land use.

Some 7,400m^3 of top soil would be used to create the temporary screen bund / soil storage bund to the east of The Hollies (Bund 13).

During the Phase 4B works, four new water management lagoons would be established within the plant site area.

Phase 4B would yield a reserve of some 770,000 saleable tonnes of sand and gravel, which at an assumed output of 300,000tpa would give a life of some 2.6 years.

6.3.3 Phase 5

Phase 5 would be stripped of soil in sub phases, with top soil from an initial strip (15,200m3) used for direct placement to complete the restoration of Phase 4B, together with some 15,200m3 of upper sub soil and 27,900m3 of lower sub soil / overburden from the initial Phase 5 soil strip.

Sand and gravel extraction would then progress within the initial soil strip area, with the mineral transferred to the plant site by dump truck.

Restoration formation levels would be progressively established within the central and western area of the Phase 5 void, in readiness for receiving overburden / lower sub soil, upper sub soil and top soil from the remainder of the Phase 5 area to be stripped. This operation would utilise some 17,800m^3 of top soil, some 17,800m^3 of upper sub soil, and some 32,600m^3 of lower sub soil / overburden.

Additional top soil would be temporarily stored within Bund 14 in the south eastern area of Phase 5 (5,500m^3).

Following the completion of extraction in Phase 5, and the restoration of the central and western area of Phase 5, the temporary soil screen bund / storage bund east of The Hollies would be removed and the top soil transferred to Bund 14.

Phase 5 would yield a reserve of some 1.18m saleable tonnes of sand and gravel, which at an assumed output of 300,000 tpa would give a life of some 3.7 years.

6.3.4 Phase 6

Phase 6 would similarly be stripped of soil in sub phases, with top soil from an initial strip (13,000m^3) used for direct placement to complete the restoration of Phase 5, together with some 13,000m^3 of upper sub soil and some 23,800m^3 of lower sub soil / overburden from the initial Phase 6 soil strip.

Some 16,200m^3 of top soil would be used to create a temporary screen bund / soil storage Bund 15 to the east of the Hill Farm on the outer eastern side of an existing hedgerow to the east of the Farm, and along the northern boundary of the site.

Sand and gravel extraction would then progress within the initial soil strip area, with the mineral transferred to the plant site by dump truck along a temporary haul road corridor through the centre of Phases 5 and 6.

Restoration formation levels would be progressively established within the western and south eastern area of the Phase 6 void, in readiness for receiving overburden / lower sub soil, upper

sub soil and top soil from the remainder of the Phase 6 area to be stripped. This operation would utilise some 14,500m^3 of top soil (2,800 from phase 6 and some 11,700m3 from the western area of Bund 15), together with some 14,500m^3 of upper sub soil, and some 26,700m^3 of lower sub soil / overburden.

Phase 6 would yield a reserve of some 680,000 saleable tonnes of sand and gravel, which at an assumed output of 300,000tpa would give a life of some 2.3 years.

6.3.5 Phase 7

The same working principles would be adopted for Phase 7, with top soil from an initial strip (10,900m3) used for direct placement to complete the restoration of Phase 6, together with some 10,900m3 of upper sub soil and some 21,800m3 of lower sub soil / overburden from the initial Phase 7 soil strip.

Following completion of restoration in the northern area of Phase 6, the temporary screen bund / soil Bund 15 east of Hill Farm would be removed and placed within temporary soil Bund 16 along the northern side of the future Phase 8.

Sand and gravel extraction in Phase 7 would progress within the initial soil strip area, with the mineral transferred to the plant site by dump truck along the temporary haul road corridor through the centre of Phases 5 and 6.

Restoration formation levels would be progressively established within the northern area of the Phase 7 void, in readiness for receiving overburden / lower sub soil, upper sub soil and top soil from the remainder of the Phase 7 area to be stripped. This operation would utilise some 25,400m3 of top soil, some 25,400m3 of upper sub soil, and some 51,800m3 of lower sub soil / overburden. In addition, some 78,500m3 of lower sub soil / overburden stripped from the southern area of Phase 7 would be used to create restoration batter slopes / formation levels along the eastern side of Phase 7 in readiness for tree shrub planting on the northern and north eastern slopes of Phases 6 and 7.

Phase 7 would yield a reserve of some 980,000 saleable tonnes of sand and gravel, which at an assumed output of 300,000tpa would give a life of some 3.3 years.

6.3.6 Phase 8

Operations in Phase 8 would commence with the creation of a new access track linking Phase 8 to the plant site via the southern section of the track which provided access to phases 5 – 7.

Top soil from an initial strip in the northern area of Phase 8 (10,800m3) would be used for direct placement to complete the restoration of Phase 7, together with some 10,800m3 of upper sub soil and some 21,600m3 of lower sub soil / overburden from the initial Phase 8 soil strip. Soils would also be used to restore the previous internal access track through phases 5 and 6 (2,700m3 of top soil; 2,700m3 of upper sub soil; and 5,400m3 of lower sub soil / overburden).

Sand and gravel extraction in Phase 8 would progress within the initial northern soil strip area, with the mineral transferred to the plant site by dump truck along the newly created access road to the plant site.

Restoration formation levels would be progressively established within the northern area of the Phase 8 void, in readiness for receiving overburden / lower sub soil, upper sub soil and top soil from the remainder of the Phase 8 area to be stripped. This operation would utilise some 9,000m3 of top soil, some 9,000m3 of upper sub soil, and some 18,000m3 of lower sub soil / overburden.

In addition, some 17,700m3 of top soil would be placed in Bund 17 in the north eastern area of Phase 8; some 13,800m3 of upper sub soil to Bund 18; and some 18,200m3 to Bund 19.

Phase 8 would yield a reserve of some 1.04m saleable tonnes of sand and gravel, which at an assumed output of 300,000tpa would give a life of some 3.5 years.

6.3.7 Final Works: Phase 9

The position at the end of Phase 8 is illustrated on plan ref KD.SH.D.014.

The final works would involve the extraction of the remaining reserves of sand and gravel situated beneath the plant site area requiring the decommissioning and removal of the plant and either processing the remaining sand and gravel using a mobile plant, or marketing the material ‘as raised. On cessation of mineral extraction and processing, all quarry plant, offices and associated infrastructure would be removed from the site.

The silt lagoons would be allowed to dry out and the fresh water lagoon would be drained.

The silt lagoons from the dried out lagoons would be used partly to create restoration formation levels within the residual area to be restored, and partly with the lagoons to be restored in situ via capping and profiling. When ground conditions permit, all remaining land would be re-graded to achieve the final restoration formation levels. This would include regrading previous silt lagoons to create land gradients which tie into adjoining land and which achieve the desired surface water drainage arrangements.

The soils available to complete the final restoration works are illustrated on plan ref KD.SH.D.007. with a total of some 202,00m3 of lower sub soil / overburden; 84,100m3 of upper sub soil; and 102,000m3 of top soil available to complete the restoration of the circa 34ha area with soil profiles of circa 0.3m of top soil; circa 0.25m3 of upper sub soil, and circa 0.3m of lower sub soil / overburden.

The final restoration works associated with sand and gravel extraction would yield a reserve of some 450,000 saleable tonnes of sand and gravel, which at an assumed output of 300,000tpa would give a life of some 1.5 years, although in practical terms this output may not be maintained if the residual sand and gravel is not fully processed. Overall, with the required soil movements to complete the restoration works, the final phase to include restoration is likely to be undertaken over a period of some 3 years.

6.4 Processing Plant

The existing Stanninghall Quarry has an installed modern, low level sand and gravel washing and screening plant within a defined plant site area.

The plant includes a hopper which receives material from dump trucks which are used to transport as dug sand and gravel from the extraction area to the plant site. The material is then fed from the hopper by conveyor to a washer barrel and series of screens which separates the gravel into different sizes and segregates the sand into concreting and building sand products. These are then discharged from the plant by conveyors to stockpiles, which are then collected by loading shovel into road going vehicles or placed into separate product stockpiles within the plant site area.

The plant also provides aggregate raw material to an on-site ready mix concrete batching plant located in the northern area of the plant site.

No changes to the plant site or existing arrangement are proposed in relation to the northern extension development.

6.5 Hours of Operation

The existing hours of working at Stanninghall Quarry are regulated by planning condition 9 of permission ref C/5/2015/5017 and are confined to:

- 07.00 - 18.00 Mondays to Fridays and
- 07.00 - 13.00 on Saturdays

No operations are to be carried out on Public or Bank Holidays or Sundays

No changes are proposed to these established working hours.

6.6 Output and Traffic Movements

Based on the exporting of 300,000 tonnes of aggregate in 20 tonne payloads over 275 working days per annum (50 weeks at 5.5 days per week), an average of 54.5 (say 55) loads / 110 HGV movements per day is established. By way of comparison, outputs of 200,000 tonnes and 400,000 tonnes per annum equate to averages of 36.3 (say 37) loads / 74 HGV movements and 72.7 (say 73) loads / 146 HGV movements per day respectively.

It is understood that working on Saturdays is rare. As a result, the number of working days per annum reduces to 250, which results in a corresponding increase in the average daily traffic flows.

Based on 250 working days, exporting 200,000, 300,000 and 400,000 tonnes per annum would result in an average of 40 loads / 80 HGV movements, 60 loads / 120 HGV movements and 80 loads / 160 HGV movements per day respectively.

When distributed over an 11-hour working day, these flows equate to rounded up averages of 4 loads / 8 HGV movements, 6 loads / 12 HGV movements and 8 loads / 16 movements per hour respectively.

Notwithstanding the foregoing, a proportion of the sand and gravel is diverted to the on-site concrete plant. Concrete production in 2019 was 16,478m^3. In order to produce this concrete, the plant consumed 29,660 tonnes of sand and gravel from Stanninghall Quarry.

In addition to sand and gravel, there were 9 loads of binder, 56 loads of Ground Granulated Blast-furnace Slag (BBGS) and 103 loads of cement imported to the site.

In terms of exported concrete, the average load volume is 5.5m^3, which resulted in 3045 loads per annum.

When adding all of the loads associated with the concrete plant, which also predominantly operates 5 days per week (Monday to Friday), with Saturday working being rare, an average of 12.9 (say 13) loads / 26 HGV movements per day is established.

It is anticipated that concrete production is likely to remain at around this level for the foreseeable future.

Based on the proposed average production of 300,000 tonnes per annum, of which 29,660 tonnes is diverted to the concrete plant, the remaining 270,340 tonnes of sand and gravel would attract an average of 54 loads / 108 HGV movements per day, assuming the distribution remains predominantly over a 5 day week (Monday to Friday). Adding the 13 loads / 26 HGV movements associated with the concrete production, results in an overall total of 67 loads / 134 HGV movements per average day, and 6 loads / 12 HGV movements per hour.

In terms of the distribution of traffic travelling to / from Stanninghall Quarry, it is understood that approximately 10% of production travels to / from the north via Horstead, whilst the remaining 90% travels to /from the south via Crostwick / Spixworth, with the majority of traffic travelling via the A1270 Broadland Northway (also referred to elsewhere in the ES and PAS as the Norwich Northern Distributor Road).

6.7 Water Management

The existing and proposed quarrying operations involve extraction of sand and gravel from above the watertable.

In common with the existing operations, there is no requirement for dewatering or sub-watertable working at the extension site. The full depth of mineral reserve (sand and gravel) is above the watertable.

The free-draining nature of the sand and gravel allows works to proceed without the need for active surface water management.

The lagoon system is, and will continue to be, utilised as the source of water for the mineral washing and grading process for the duration of the proposed development.

This is a re-circulatory system, comprising 3 polythene-lined lagoons. Silt laden waters produced by the mineral washing process are and will continue to be decanted to the active silt lagoon, from where the circuit recommences. Following settlement of suspended solids within the silt lagoons, waters are and will continue to be decanted to the clean water lagoon.

Silt Lagoon L1 is at full capacity in terms of silt deposition. Lagoon L3 is currently being used for silt settlement; and Lagoon L2 for clean water. With Lagoon L1 reaching full capacity, the area immediately to the north of L1 (and to the west of Lagoon L3) has been set aside for 4 x replacement lagoons.

The Abstraction Licence AN/034/0009/014 allows for the topping up of the lagoons, as and when required. The permitted rate of abstraction is up to a maximum of 864 m^3/day (limited to 60,000 m^3/annum for topping up lagoons). Current experience on site demonstrates that the lagoons have only been topped up on two occasions since 2011.

There is no discharge requirement at the application site.

6.8 Environmental Site Management

All Tarmac sites operate under a robust Environmental Management System (EMS) that meets the requirements of ISO 14001: 2015 and ISO 50001 Energy Management Standard (EnMS) Operational sites, and the wider Tarmac EMS is subject to independent third party assessment and certification by the British Standards Institution (BSI).

Day to day operations at Stanninghall Quarry are managed using the Tarmac EMS and are subject to regular inspection and audit, both internal and external. The EMS through the development of a site specific Environmental Management Plan supports the site team in identifying and controlling environmental impacts, managing legal compliance and obligations (permits, consents etc), ensuring training and competence of site personnel, inspection, testing and monitoring and emergency arrangements on site.

The system is also used to deliver company commitments set out in the Tarmac Environmental Policy Statement, a copy of which is produced as **Appendix 1** to this Statement.

PROPOSED DEVELOPMENT 6

7.0 RESTORATION SCHEME

7.1 Introduction

This chapter describes the overall strategy for both the restoration of landform and subsequent land uses for the site. The strategy has been produced by a combination of Tarmac's estates, geological and restoration team along with the landscape architectural, ecologist and planning consultant input in consultation with the landowners 'Trafford Estates'.

The collaborative approach has helped to ensure that the proposals for the establishment and aftercare of the restored site are both achievable and in accordance with the longer-term land management requirements of the landowner. The planting details also draw upon recommendations made in the ecology chapter 7.0 of the ES with regard to species which offer the potential for biodiversity enhancements.

The progressive and final Concept Restoration proposals have been informed by the physical nature of the land and mineral within the site boundary.

The aim of the strategy is to ensure agricultural reinstatement and productivity of land to Best and Most Versatile Land capability, whilst creating and diversifying sustainable habitat or the promotion of biodiversity.

In addition to the principal restoration land use of agricultural land, the strategy seeks to also establish and manage the following key habitat types within the restored agricultural landscape:

- Native Woodland
- Native Species Hedgerow Planting
- Species Rich Grassland

The proposed landform and land use restoration proposals are illustrated on Drawing No KD.SH.D.015 Concept Restoration. This restoration scheme reflects and incorporates the original permitted restoration scheme for the southern part of the site as illustrated on the currently approved restoration concept plan ref T57.52.

The Restoration Proposals for the site have been developed upon an understanding of four key aspects:

A. The sites physical features, most notably:

- General land levels will be lowered through the extraction of mineral. There are no proposals to import any inert fill material for landform restoration.
- The nature of the mineral deposit of sand and gravel allows for the integration of base of extraction levels with varying landform gradients to integrate the restored quarry land with in-situ undisturbed ground.

- Areas of mineral extraction will not come into contact with ground water. The temporary water management lagoons utilised for quarry operations are to be removed from site.

- The chemical make-up of the on-site soils is of a neutral pH.

- The quarry is located within the Broadland Landscape Character Assessment under 'Wooded Estatelands'. This is an area of numerous copses, woodlands and small plantations associated with 'estates', punctuating a landscape of underlying, predominantly arable farmland. The area in which the site is wholly situated in is E2 – Marsham and Hainsford Wooded Estates – comprised of gently rising slopes that extend from the Bure Valley to the belt of woodland in the west.

B. Local planning policies and designations, including:

- Consideration of the identified Landscape Character Area within which the site is located and its interconnection with adjoining landscape areas.

- Consideration of the Habitat, Species and Biodiversity Action Plan for Norfolk. To create appropriate habitats and attract and maintain key species in the county.

C. The landforms and management capability / objects, notably:

- Tarmac are the operators of the existing Stanninghall Quarry and the proposed extension. Tarmac have a vast amount of successful experience of working and restoring quarries of this size and nature. Tarmac also have in-house and consultant support in respect of the Aftercare and Maintenance of land to a variety of agricultural production and wildlife habitat enhancement sites.

- Trafford Estates who own the land have confirmed their commitment to manage the retained site for agricultural and wildlife benefits.

D. Length of time associated with quarrying operations and management

- Tarmac will be working the site for a period of ~17 years, together with a further 5 year aftercare period on final restoration land. This time aspect is key in allowing the company to plan and implement proposals and maintain and develop relationships with neighbours and local community.

The progressive restoration proposals have also taken on board the 'opportunities' for National Level -NCA – The Broads Character area SE03: "*to maintain a sustainable and productive agricultural landscape while expanding and connecting semi-natural habitats to benefit biodiversity*". This would be achieved through the concentration of higher quality soils in areas for agricultural productivity whilst developing approximately one third of the restored site for both landscape character enhancement and new wildlife habitat creation. The habitat would principally comprise native woodland with a diverse range of shrub and tree species of ~24.6 Ha, along with species rich grassland and meadow of ~12.3Ha. Landscape structure will also be reinstated along with new habitats via the establishment of ~1,462 linear m's of hedgerows and hedgerow trees.

The restoration proposals also address 'Landscape Guidance' specifically to area E2 of the Local level Broadlands DC– Landscape Character Assessment SPD including the conservation and strengthening of landscape structure around the promotion of significant site internal woodland structure and the creation of woodland and hedgerow corridors. The development has also considered and is assessed to maintain the setting of both historic assets and the landscape setting of local villages. This would be achieved through both re-establishing original landscape structure planting and the use of temporary screen bunding at appropriate and integrating levels which will be seeded planted and maintained to mitigate potential adverse changes in setting.

Norfolk's Core Strategy and Minerals and Waste Development Management Policies Development Plan Document 2010-2026 has a safeguarding aerodromes Policy DM7. The application site is located within the 13km radius of Norwich airport meaning it must abide by the policy. The development design must display appropriate mitigation measures in order to not increase the risk of bird strikes and general population of birds in the area. If seen to be necessary, a Bird Hazard Management Plan may need to be implemented. In response, it should be noted that the restored landscape does not include any water bodies which may accommodate or promote flocking birds. Significant new woodland blocks are also proposed which will also locations for predatory birds to discourage settlement of flocking birds within restored fields. In these circumstances a specific Bird Hazard Management Plan is not deemed to be necessary.

Based upon the above context and principles, the restoration strategy proposes to introduce a mix of restoration land uses, as set out in Table 7.1 below.

Details for the proposed established and management of the above landuse are described in the subsequent sections.

Table 7-1 Landuse Restoration Proposals and Areas

Potential Landuse	Areas Ha / linear metres
Native Woodland Planting	24.5 Ha
Agricultural Land	69.8 Ha
Species Rich Grassland	11.9 Ha
Native Hedgerow Planting	1,462 linear m's
TOTAL	**106.2Ha**

7.2 Restoration Materials Audit

The restoration of landform and associated topographical levels is to be achieved utilising only on-site "in Situ" soils and overburden material and quarry processing waste (dried silt). There is no proposal for the importation of materials to restore the site.

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7.2.1 Stockpiled Soil Resources

The southern part of the site occupies land which forms the current Stanninghall Quarry. In general accordance with the permitted planting scheme, soils and overburden have been placed into temporary bunds to be used within progressive restoration. Drawing Nº KD.SH.D.007 provides information on the location and volumes of this restoration material, as detailed in Table 7.2 below.

Table 7-2 Current Temporary Store of Restoration Material

Existing Bunds	Topsoil Store (m^3)	Subsoil Store (m^3)	Lower Subsoil / Overburden Store (m^3)
Bund 1	45,700		
Bund 2	7,300		
Bund 3	3,000		
Bund 4	500		
	Subtotal – 56,500		
Bund 5		12,000	
Bund 6		15,500	
Bund 7/8		22,000	
Bund 9		22,000	
		Subtotal – 71,600	
Bund 10			45,700
Bund 11			139,000
			Subtotal – 184,700

A summary of the current overall in-situ soil and overburden material which will require stripping to release mineral is provided below, with proposed block phasing and a material summary illustrated on Drawing Nº KD.SH.D.008.

Please note, all figures are estimates based upon soil surveys and available borehole information and geological survey / investigation results.

7.2.2 Future Soil Stripping and Restoration Material

A detailed soils resources and agricultural survey was carried out by Reading Agricultural Consultants. The topsoil within the site is predominantly sandy loam with a small area of loamy sand to the north-east with an average thickness of 350-425mm. Upper subsoils are predominantly sandy loam of variable thickness, averaging 300mm. Lower subsoils are variable, having textures from sand to clay of 300 to 555mm thickness.

Table 7.3 below illustrates the quantity of subsoil and overburden to be stripped along with processing waste generated which combined with existing stored materials listed within Table 7.2 provide the overall restoration material.

Table 7-3 Soils and Overburden / Waste Material to be utilised for restoration from currently un-stripped land

Stanninghall Quarry	Topsoil (m^3)	Subsoil (m^3)	Lower Subsoil / Overburden (m^3)	Quarry Waste (m^3)	
Phase 4B	45,500	32,100	126,600	31,500	
Phase 5	38,500	33,000	60,500	46,100	
Phase 6	32,100	27,500	50,500	27,800	
Phase 7	42,400	36,300	151,200	40,400	
Phase 8	40,200	34,500	63,200	42,400	
Plant Site	12,000	12,000	29,200	29,500	
Totals	**210,700**	**175,400**	**481,200**	**217,700**	**1,085,000**

*All figures are estimates based upon trial pit and borehole information and subsequent geological models, together with Reading Agricultural Consultants on-site soil survey

The proposals for soil stripping, movement, temporary storage and /or direct placement is illustrated on each of the individual Phased Working and Restoration Plans Drg No's KD.SH.D.009 to KD.SH.D.014. It should be noted that the scheme has been designed to ensure that there is a maximum opportunity to minimise the area of land required for quarry operations through the direct placement of stripped soils and overburden for restoration purposes. This is achievable through the combination of a significant area of land within the south western area of the site now being extracted of mineral and which is currently being regraded to achieve restoration formation levels. This is a sufficiently large enough area to directly place approximately half of the soils and overburden to be stripped from the southern area of Phase 4B to expose mineral.

RESTORATION SCHEME 7

Given the relatively large area of the proposed extension phases this progressive stripping and direct placement of soils and overburden can continue through the scheme into Phase 8. This minimises the potential requirement to store large volumes of soils and overburden in temporary bunds. There is still a requirement to place soils into temporary soil storage bunds as part of this process as illustrated on the phasing plans. If there should be an unexpected requirement to temporarily store soils this will to take place at the base of the extracted void with topsoils at no higher than 3m, subsoil and overburden no higher than 5m.

The only other requirements to temporary place soils in store would be the creation of temporary screening bunds. Three are proposed, Bund 13 (Topsoil 3m in height 7,400m^3) within Phase 4B to screen residents of The Hollies; Bund 15 (Topsoil 3m in height 16,200m^3) within Phases 6/7 to screen residents of Hill Farm and a secondary screen to the northern boundary of the site; and Bund 16 (Topsoil 3m in height 10,300m^3) within Phase 7 to be placed adjacent to the northern boundary of Phase 8 / southern boundary of farmland adjoining residential receptor at Beverley. All bunds would be grass seeded and maintained. The topsoils temporarily held in these screening bunds will be utilised to restore adjacent land once mineral extraction has been completed.

The sequence of soil movements would be as follows:

Phase 4B

Phase 4B on-going stripped Topsoils would be placed to create temporary soil screening Bund 13 -7,400m^3. Progressive stripping would take place with both the direct placement of materials to restore the south western area of the site together with the storage of Topsoils within Bund 12 and Subsoils within Bund 5. ~78,000m^3. Overburden would be directly placed to help establish the new water management lagoons and surrounding final restoration formation levels.

Phase 5

Phase 5 soils and overburden would be progressively stripped to release mineral from Phase 5. Of the 38,500m^3 of Topsoil stripped, 15,200m^3 is to be directly placed to restore land previously extracted within Phase 4B, and 17,800m^3 to be subsequently stripped and placed to restore progressively extracted land within Phase 5. 5,500m^3 of topsoil is to be temporarily stored into Bund 14.

Of the 33,000m^3 of Upper Subsoil, 15,200m^3 is to be directly placed to restore land progressively extracted within Phase 4B, and 17,800m^3 (~5.93 Ha) to be subsequently stripped and placed to restore progressively extracted land within Phase 5.

Of the 60,500m^{3}of Lower Subsoil / Overburden ~27,900m^3 is to be directly placed to restore land previously extracted within Phase 4B, and 32,600m^3 is to be subsequently stripped and placed to restore progressively extracted land with Phase 5. Post mineral extraction within Phase 5, topsoils held within Bund 13 (7,400m^3) are to be removed and placed within Bund 14.

Phase 6

Phase 6 soils and overburden are to be progressively stripped to release mineral from Phase 6. Of the 32,000m³ Topsoil stripped, ~13,000m³ (~4.32 Ha) is to be directly placed to restore previously extracted land within Phase 5, with 16,200m³ of topsoil to be temporarily placed within Bund 15 of which 4,600m³ of topsoil is to be temporarily placed within Bund 15 east of Hill Farm. The remaining 2,800m³ is to be subsequently stripped and placed to progressively restore extracted land within Phase 6 along with topsoil from Bund 15 during Phase 7.

Of the 27,500m³ Upper Subsoil stripped, 13,000m³ (~4.32 Ha) is to be directly placed to restore previously extracted land within Phase 5, and 14,500m³ (~4.83 Ha) is to be subsequently stripped and placed to progressively restore extracted land within Phase 6.

Regrading of land within this phase / Phase 5 restoration area will take place to achieve final restoration formation levels.

Of the 50,500m³ Lower Subsoil / Overburden ~23,800m³ is to be directly placed to restore previously extracted land within Phase 5, and 26,700m³ to be subsequently stripped and placed to restore progressively extracted land within Phase 6.

Phase 7

Phase 7 soils and overburden are to be progressively stripped to release mineral. Of the 42,400m³ of Topsoil, ~10,900m³ (3.65 Ha) is to be directly placed to restore previously extracted land within Phase 6, and 25,400m³ is to be subsequently stripped and placed to progressively restore extracted land within Phase 7. 6,100m³ is to be placed within Bund 16 along with 4,200m³ removed from Bund 15.

Of the 36,300m³ of Upper Subsoil, ~10,900m³ is to be directly placed to restore previously extracted land within Phase 6, and 25,400m³ (~8.47 Ha) is to be subsequently stripped and placed to restore previously extracted land within Phase 7.

Of the 151,100m³ of Lower Subsoil / Overburden, 21,800m³ is to be directly placed to restore previously extracted land within Phase 6, and 51,800m³ is to be directly placed to restore progressively extracted land within Phase 7. 78,500m³ is to be utilising to help create restoration batter slopes / formation levels along the eastern boundary of this phase. Regrading of land within this phase / phase 6 restoration area will take place to achieve final restoration formation levels.

Phase 8

Within Phase 8 a section of site internal access track is to be created, linking Phase 8 to the plant site with other sections of track to access Phase 5, 6 and 7 restored. Soils and overburden is to be progressively stripped to release mineral from Phase 8. Of the ~40,200m³ of Topsoil, ~10,800m³ ~3.63 Ha) is to be directly placed to restore previously extracted land within Phase 7, and 9,000m³ (~3 Ha) is to be subsequently stripped and placed to restore progressively extracted land within Phase 8. A further 2,700m³ is to be placed to restore previous site internal access tracks with the remaining ~17,700m³ being placed into temporary store, within Bund 17.

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Of the 36,300m³ of Upper Subsoil, ~10,800m³ is to be directly placed to restore previously extracted land within Phase 7, and 9,000m³ (~3.0 Ha) is to be subsequently stripped and placed to restore subsequently extracted land within Phase 8, along with a 2,700m³ to restore previous site internal access tracks. The remaining stripped Upper Subsoil to be stored in Bund 18 (13,800m³).

Of the 63,200m³ of Lower Subsoil / Overburden, 21,600m³ is to be directly placed to restore previously extracted land within Phase 7, and 18,000m³ is to be directly placed to restore subsequently extracted land within Phase 8, along with 5,400m³ to restore previous site internal access tracks. The remaining stripped Lower Subsoil / Overburden would be stored in Bund 19 (18,200m³). Regrading of land within this phase / phase 7 restoration area will take place to achieve final restoration formation levels.

Phase 9

For Phase 9, upon the cessation of mineral processing, all quarry fixed plant and mobile plant machinery and equipment is to be decommissioned and removed from site. The remaining areas of disturbed ground will then be fully restored. This will involve regrading to achieve restoration formation levels onto which soil profiles will be placed to achieve final landform and topographical levels. Tree, shrub, species rich grassland / meadow and agricultural land will then be planted and seeded. The remaining soils and overburden by the end of Phase 8 required to achieve the final restoration scheme are as follows:

Table 7-4 Phase 9 Restoration Material

Topsoil (m³)	Upper Subsoil (m³)	Lower Subsoil / OB (m³)
Bund 1 – 45,700	Bund 5 – 32,700	Bund 10 – 45,700
Bund 3 – 3000	Bund 6 – 15,500	Bund 11 – 13,900
Bund 4 – 500	Bund 9 – 22,100	Bund 19 – 18,200
Bund 12 – 12,000	Bund 18 – 13,800	
Bund 14 – 12,900		
Bund 16 – 10,300		
Bund 17 – 17,700		
Total = 102,100m³	**Total = 84,100 m³**	**Total = 202,900 m³**

It is confirmed that at this stage there are sufficient soils and overburden to restore the site.

7.3 Soil Handling

7.3.1 Soil Stripping Movement, Storage and or Placement for Restoration

Soil resources can be damaged by being stripped or moved when wet. Consequently, stripping should only take place in the drier parts of the year and avoided during or just after heavy rainfall. Soils should be stripped using the excavator and dumper method as described by Sheet 1 in the MAFF Good Practice Guide for Handling Soils.

Where soils are to be placed in temporary storage, the resources should be stripped to and stored separately in low bunds (no more than 3 m high for topsoil). Topsoil should be stripped from areas designated for storing subsoil. The bunds should be constructed either by excavator or bulldozer (Sheets 2 and 14 in the MAFF Good Practice Guide) avoiding over-compaction. They should be sown with grass to help maintain biological activity and prevent water erosion if in situ for greater than six months.

The soils should be removed from storage and replaced by excavator during the summer using the loose-tipping technique (Sheet 4 in MAFF Good Practice Guide), which avoids traffic on the restored surfaces and reduces the risk of compaction damage. Compacted subsoils should be ripped using a tine prior to topsoil emplacement. A low ground pressure bulldozer will be used to shape the surface of the store to a convex shape to shed surface water and lightly consolidate the soil to protect against soil erosion.

All restored land to be established and managed to develop the land uses illustrated on the Concept Restoration Drawing Nº KD.SH.D.015, and described in section 7.4 below.

7.3.2 Handling conditions

Soil handling should cease during rain, sleet or snow. Where rainfall occurs during operations, the disturbed soil profile being worked on should be removed to base level before stopping works. The following criteria should be applied:

- In light drizzle soil handling may continue unless soils become plastic (soil field test applied after 4 hours to verify).
- In light rain soil handling must cease after 30 minutes.
- In heavy rain and intense showers, handling should cease immediately.
- After rain has ceased, soil field tests should be applied to determine when handling may restart.

No soil handling should take place when there are pools of water on the land surface.

Field tests

Field tests should be applied prior to soil handling to assess the suitability of soil conditions. The tests include visual examinations of the soil and a physical assessment of soil consistency and are applied to representative samples of each soil layer to be handled.

Visual Examination Test:

- If the soil is wet, films of water are visible on the surface of particles or aggregates (e.g. clods or peds) and/or when a clod or ped is squeezed in the hand it readily deforms into a cohesive 'ball' – No Handling should take place when the soil is in this condition.

- If the sample is moist (i.e. there is a slight dampness when squeezed in the hand) but it does not significantly change colour (darken) on further wetting, and clods break up/ crumble readily when squeezed in the hand rather than forming into a ball – Handling OK.

- If the sample is dry, it looks dry and changes (darkens) if water is added, and it is brittle – Handling OK.

Consistency Test:

First Test – attempt to mould soil sample into a ball by hand:

- Impossible because soil is too dry and hard – Handling OK.
- Impossible because the soil is too loose and dry – Handling OK.
- Impossible because the soil is too loose and wet – No Handling.
- Possible – Go to next test.

Second Test – attempt to roll ball into a 3mm diameter thread using the flat of the hand on a plate glass square or the back of a spade:

- Impossible because soil crumbles or collapses – Handling OK.
- Possible – No Handling.

7.4 Restoration Proposals

7.4.1 Native Woodland Planting

Key Principles

Advanced Woodland block planting is to be carried out to the northern and eastern boundaries of the site during the first available planting season. This will be followed by progressive planting of native woodland species during Phase 4B to the final restoration stage as illustrated on Drawing Nº KD.SH.D.009 to 014 to achieve the woodland proposals on the Concept Restoration Drawing Nº KD.SH.D.015.

New native woodland areas will have the following features:

- The species mixes will reflect local national vegetation classification (NVC) communities and soil type(s). Where possible, trees and shrubs of local provenance will be sourced as these are most likely to be suited to the local soils and climate and will offer the maximum benefit for biodiversity (Note – Ash is not to be planted due to current guidelines associated with potential Ash Dieback).

- Planting patterns will reflect the natural variation within semi-natural woodlands. Trees will be planted at varied, irregular spacings to encourage the development of a structurally diverse woodland.

- The woodland will have a graduated edge of scrub species, which will provide links to adjacent retained and new hedgerows.

Planting Details

Detailed species mixes will be included within the habitat creation plan for the woodland areas, but at this stage the following list of species is considered appropriate to the locality and soil types and takes into account the species present in existing woodland areas.

Table 7-5 Proposed Woodland Planting Species Mix

	Canopy /Dominant Species/ Common Name	% Mix	Planting Height cm (Whips)	Bare Root/ Container Grown
1	Quercus robur (Oak)	10	30-45	BR
2	Acer campestre (Field Maple)	10	30-45	BR
3	Carpinus betulus (Hornbeam)	5	30-45	BR
4	Tilia cordata (Small-leaved lie)	5	30-45	BR
5	Fagus sylvatica (Beech)	5	30-45	BR
	Nurse Species			
6	Betula pendula (Birch)	5	30-45	BR
7	Sorbus aurcuparia (Rowan)	5	30-45	BR
	Shrubs			
8	Prunus spinose (Blackthorn)	5	30-45	BR
9	Rosa canina (Dog Rose)	5	2 year	BR
10	Malus sylvestris (Crab Apple)	5	30-45	BR
11	Ilex aquifolium (Holly)	5	30-45	CG
12	Corylus avellana (Hazel)	15	45-60	BR

13	Acer campestre (Field Maple)	5	30-45	BR
14	Prunus avium (Wild Cherry)	5	30-45	BR
15	Crataegus monogyma (Hawthorn)	10	30-45	BR
		100		
	Edge Species			
16	Salix caprea (Goat Willow)	20	30-45	BR
17	Prunus domestica (Wild Plum)	15	30-45	BR
18	Sambucus nigra (Elder)	15	30-45	BR
19	Cytisus scoparius (Broom)	10	30-45	BR
20	Lonicera periclymenum (Honeysuckle)	10	1 litre pot	CG
22	Circaea lutetiana (Enchanter's Nightshade)	10	1 litre pot	CG
22	Ribes nigrum (Black Current)	10	30-45	BR
23	Deschampsia cespitosa (Tufted Hair Grass)	10	1 litre pot	CG
		100		

All stock is to be planted at 2m centres in single species groups of 5-7 plants. Stock is to be supplied between 300 to 600mm in height. Shrub species are to be concentrated to the edges of the planting blocks. All stock is to be planted in 300 x 300 x 300 pits backfilled with 50% original soil and material and 50% non-peat-based tree planting compost incorporated 20 grams of a suitable slow release fertilizer. Stock to be protected by a 600mm tree / shrub shelter secured to 750 x 20mm square softwood stake by 2N^{o} plastic tree ties.

Aftercare Management

The following key management principles would be adopted:

- Trees should be watered during any dry spells in the first growing season;
- Weeding to 1m diameter around the bases of the trees will be required to help combat competing vegetation;
- Tree guards and canes should be inspected to ensure their integrity;
- Once the trees have matured the tree guards must be removed;
- Formative pruning should take place throughout the first 10 years to counter poor structure and development;

- Once established (~10 years) the Hazel should be coppiced. Coppicing should be undertaken in stages with one third of the Hazel coppiced every 5 years;
- Tree thinning (25%) should also be undertaken where necessary;
- Monitoring of the management regime should be undertaken on an annual basis in order to assess the success of the scheme towards achieving the proposals of the restoration strategy and the specific habitat aims and objectives. Based on an assessment of the progress towards these aims, changes to management strategies may be necessary and should be agreed at an annual Aftercare meeting. These will be based on on-site observations and actions agreed with Norfolk Council and Tarmac.

7.4.2 Hedgerows

Key Principles

The proposals will incorporate a total of 1462 linear metres of new hedgerows/ hedgerow lined trees. The majority of hedges would be planted as part of restoration to again comprise a diverse range of native species, typical of the local area. This will help ensure that the landscape character and context of the site integrates into the local area.

Hedgerow Planting Details

The general hedgerow planting mix will comprise the following:

Table 7-6 Hedgerow Planting Species Mix

Hedgerow Species Mix:	Bare Root BR Container Grown CG	Height Cm	%
Crataegus monogyna (Hawthorn)	BR	35-40	25
Corylus avellana (Hazel)	BR	35-40	25
Acer campestre (Field Maple)	BR	35-40	10
Sambucus nigra (Elder)	BR	35-40	10
Prunus spinosa (Blackthorn)	BR	35-40	5
Rosa canina (Dog Rose)	BR	35-40	5
Rosa arvensis (Field Rose)	BR	35-40	5
Malus sylvestris (Crab Apple)	BR	35-40	5

Lonicera periclymenum (Honeysuckle)	CG	1 litre pot	2
Gallium mollugo (Hedge Bedstraw)	CG	1 litre pot	2
Rabelera (Greater Stitchwort)	CG	1 litre pot	2
Stachys sylvatica (Hedge Woundwort)	CG	1 litre pot	2
Glechoma hederacea (Ground Ivy)	CG	1 litre pot	1
Humulus lupulus (Hop)	CG	1 litre pot	1
Hedgerow Trees:			
Quercus robur (Pedunculate Oak)	BR	180-250	
Carpinus betulus (Hornbeam)	BR	180-250	

It is proposed to beat up existing site peripheral hedgerows i.e. underplant and strengthen with same species mix.

Generally, all planting will be undertaken in a double-staggered row (set 0.5m apart) with plants distributed 300mm apart along each row (6 plants per linear metre);

Stock of 30-45cm 1+1 transplants will be used, except for Oak and Hornbeam hedgerow trees, where 180-250cm high stock will be used;

Planting will take place between end October and end March;

All plants will be protected from stock and rabbit grazing, either by individual guards or by protective fencing, depending upon the length and location of the hedge to be protected. All plants will be planted using notch-planting techniques.

On average, hedgerow trees will be planted 1No pro-rata every 10m of hedge, in groups of 1, 3 and 5's.

Aftercare Management

Following the 1st growing season, each winter, a failed 'beating up' inspection will take place to ensure an 85% overall stocking density by years 3, 5 and 10;

This will include replacement of dead / diseased or dying plant stock replacement / straightening of tree guards and stakes, removal of herbaceous vegetation from tree guard as necessary to ensure successful establishment;

To control weeds and allow proper growth and prevent unwanted succession by invasive species, each spring, one application of an approved glyphosate will be applied to margins and / or additional spot spraying of any unwanted vegetation. If necessary and depending on the severity or amount of vegetation, encroaching vegetation will be strimmed or hand weeded (March, May and September);

During years 1 to 3, three maintenance visits will be made per annum (March, May and September);

During years 4 to 5, two maintenance visits will be made per annum (May and September);

During years 5 to 10, one maintenance visit will be made per annum (May);

During May and September visits, any dead, dying or diseased species are to be taken out and removed off site and replaced during the following planting season (December to April) to ensure an 85% overall stock density by years 5 and 10;

In years 5, 7 and 10 (if plants have grown to a suitable level) then the hedgerow will be laid to encourage longevity and maintain density;

All protective tree / shrub guards to be removed during the winter of year 5 unless agreed otherwise;

Existing hedgerows and new hedges are to be cut yearly, establish bulk and shape between beginning September and end February, but preferably in winter after most of the potential berries have gone.

7.4.3 Species Rich Meadow Grassland

Key Principles

Land around the periphery of the site / set between woodland is to be sown with a base seed mix to promote species diversity.

Species Rich Grassland Planting Details

The meadow mixture, which is based upon the Emorsgate EM3 standard mix, adjusted to incorporate a number of supplementary wildflower and grassland species additions, contains a very wide range of species. It may be used to create a very diverse sward where conditions vary across a site. It is also useful in situations where precise soil and site characteristics have not been established before sowing.

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Table 7-7 Species Rich Grassland Mix

(i) Wild Flowers

%	Latin name	Common name
0.3	Achillea millefolium	Yarrow
2	Centaurea nigra	Common Knapweed
1	Centaurea scabiosa	Greater Knapweed
1	Daucus carota	Wild Carrot
0.5	Echium vulgare	Viper's Bugloss
0.5	Filipendula ulmaria	Meadowsweet
0.5	Galium album - (Galium mollugo)	Hedge Bedstraw
2	Galium verum	Lady's Bedstraw
0.8	Knautia arvensis	Field Scabious
0.3	Leontodon hispidus	Rough Hawkbit
0.5	Leucanthemum vulgare	Oxeye Daisy
0.5	Lotus corniculatus	Birdsfoot Trefoil
1.5	Malva moschata	Musk Mallow
0.2	Origanum vulgare	Wild Marjoram
0.5	Plantago media	Hoary Plantain
0.5	Plantago major	Broadleaf Plantain
1	Poterium sanguisorba - (Sanguisorba minor)	Salad Burnet
0.8	Primula veris	Cowslip
1	Prunella vulgaris	Selfheal
1.2	Ranunculus acris	Meadow Buttercup
0.8	Rhinanthus minor	Yellow Rattle
0.2	Rumex acetosa	Common Sorrel
0.8	Silene dioica	Red Campion
0.2	Silene flos-cuculi - (Lychnis flos-cuculi)	Ragged Robin
0.5	Silene latifolia	White Campion

0.2	Trifolium pratense	Red Clover
0.2	Trifolium repens	White Clover
0.5	Vicia sativa ssp. segetalis	Common Vetch
20		

(ii) Grasses

%	Latin name	Common name
8	Agrostis capillaris	Common Bent
35	Cynosurus cristatus	Crested Dogstail
10	Dactylis glomera	Crock's-foot
23	Festuca rubra	Slender-creeping Red-fescue
4	Phleum bertolonii	Smaller Cat's-tail
80		

(iii) Sowing Rates

kg/ha	kg/acre	g/m2
40	16	4

Growing guide

Good preparation is essential to success so aim to control weeds and produce a good quality seed bed before sowing.

To prepare a seed bed first remove weeds using repeated cultivation or a herbicide. Then plough or dig to bury the surface vegetation, harrow or rake to produce a medium tilth, and roll, or tread, to produce a firm surface.

Seed is best sown in the autumn or spring but can be sown at other times of the year if there is sufficient warmth and moisture. The seed must be surface sown and can be applied by machine or broadcast by hand. To get an even distribution and avoid running out divide the seed into two or more parts and sow in overlapping sections. Do not incorporate or cover the seed, but firm in with a roll, or by treading, to give good soil/seed contact.

Aftercare Management

First year management

- Most sown meadow wildflower and grass species are perennial; they will be slow to germinate and grow and will not usually flower in their first growing season. There will

often be a flush of annual weeds from the soil in the first growing season which may grow up and obscure the meadow seedlings beneath. This annual weed growth is easily controlled by topping or mowing.

- Mow newly sown meadows regularly throughout the first year of establishment to a height of 100mm, removing cuttings if dense. This will control annual weeds and help maintain balance between faster growing grasses and slower developing wildflowers.

- Avoid cutting in the spring and early summer if the mixture has been sown with a nurse cover of cornfield annuals, or is autumn sown and contains Yellow Rattle. These sown annuals should be allowed to flower, then in mid-summer cut back and the cut vegetation removed. It is important to cut back cornfield annuals before they die back, set seed or collapse: this cut will reveal the developing meadow mixture and give it the space it needs to develop.

- Carefully dig out or spot treat any residual perennial weeds such as docks.

Management once established

- In the second and subsequent years EM3 sowings can be managed in a number of ways which, in association with soil fertility, will determine the character of the grassland. The best results are usually obtained by traditional meadow management based around a main summer hay cut in combination with leave in grazing.

- Meadow grassland is not cut or grazed from spring through to late July/August to give the sown species an opportunity to flower. After flowering in July or August take a 'hay cut': cut back with a scythe, petrol strimmer or tractor mower to c 150mm. Leave the 'hay' to dry and shed seed for 1-7 days then remove from site.

- Mow or graze the re-growth through to late autumn/winter to c 50mm and again in spring if needed.

- EM3 is a complete mix composed of 20% native wild flowers and 80% slow growing grasses (by weight). The flower and grass components are also available to order separately as EM3F for the flower component and EG1 for the grass component.

7.4.4 Agricultural Land

Key Principles

69.8Ha of agricultural land is to be restored as part of the proposed concept restoration.

When used as arable land, this will be enhanced for wildlife by creating grassed headland margins of at least 6 metres in width. Arable land will be Agricultural Land Classification data (ALC) grade 3a soils or above. This unimproved neutral grassland margin contains “weed” species that provide an abundance of seeds for invertebrate, bird and mammals.

Agricultural Land will form a key part of the restoration of the north / central, eastern and south western areas of the site. The agricultural land will be restored at a full soil profile consisting

of topsoil, upper and lower subsoil and overburden capable of achieving Best and Most Versatile land characteristics.

Agricultural Land Planting Details

A medium term 3-year ley is proposed which is multipurpose with leafy mid-season growth. The mix is to be a combination of hybrid ryegrass and timothy suitable for both cutting and / or grazing. The hybrid grasses maximise yield for conservation; be it silage, haylage or hay, whilst the perennial ryegrass and timothy help fill the base of the sword for more efficient grazing.

Species

- 40% Rusa certified Hybrid Ryegrass (T)
- 30% Pirol certified Hybrid Ryegrass
- 15% Toddington certified later Perennial Ryegrass
- 15% Presto certified Timothy (*Sowing rate 14.00kg/acre*)

The ley grassland mix should be planted in spring or autumn. Soil temp must be a minimum of 5 degrees for grass growth and 8 degrees for legumes such as clover with sufficient moisture.

Preparation / Sowing

A short-term agricultural ley (Wynnstay Short Term Stitching In Mix - Plus Cover or similar) will be created in the first two years after restoration and thereafter the land will either be used as pasture or arable land depending on the landowner / manager's requirements

Land is to be cultivated using discs, power harrow and rolls to create a fine, firm seedbed, following which it will then be seeded and rolled. Any stones lying on the surface, which would not pass through a 100mm wire screen mesh, together with other objects likely to obstruct future cultivation, will be removed from the site.

Given the permeability of the soil profile and in-situ material it is not considered that underdrainage installation will be required. After restoration and monitoring of ground conditions for at least two years as well as consultation with the landowner / manager, if it is considered that under-drainage is required a commitment in principle is given to undertake appropriate land drainage.

If required, drainage will be installed via a conventional trenchless drainage machine placing a perforated corrugated plastic drainpipe at 20m spacing, with a placement depth of at least 80cm.

Following the laying of drains (if required), subsoiling at a shallow depth (~ 35cm) would be carried out to ensure a good connection between the bulk of the upper subsoil and the drains.

Soil sampling and crop monitoring is to take place to ensure soil fertility is satisfactory to achieve and maintain the long-term site restoration after uses. As a result of this, appropriate applications of fertiliser and/or weed control treatment will be implemented, if necessary.

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If necessary, fertiliser and lime shall be applied to the restored land at a rate calculated to achieve the nutrient levels to successfully establish a short-term grass ley or cereal crop.

Initial grass seeding work will take place between April and May or late August to mid-September dependent upon the date when restored land becomes available.

If a cereal crop is selected it will be drilled in either spring or autumn and the type will depend upon the landowners / managers cropping requirements / rotation.

Occasional periodic dressings with farmyard manure and lime, where determined beneficial, will be completed during the aftercare period.

Conservation headlands will be ploughed and sown at the same time as the main field with a conservation field margin seed mix (Wynnstay Field Margin Grass Seed Mix or similar).

Field margins to agricultural land will be lightly grazed or cut once every 3 years (outside the bird nesting season) and kept free of pesticides and fertiliser.

Aftercare Management

Year 1 (short-term grass ley)

- The sward is to be allowed to establish
- Soil samples are to be taken and analysed in March
- Fertiliser / lime (based on soil sample results) - to be applied in April
- If required, re-seeding works are to take place April
- Monitoring of soil drainage will be reported at the first year aftercare meeting.
- All restored land to be treated with an approved chemical herbicide to prevent weed establishment.
- One cut of hay or silage will be taken in early June and a second cut will be taken in July / August if there is sufficient growth.
- In the first year, the aftermath will be topped to 100mm before entering the winter period and any arisings which would smother the grass will be collected and carted off site.

Year 2 (grassland)

- A grass crop for silage / hay is there is sufficient growth.
- Nitrogen fertiliser will be applied for a second grass cut.
- Soil samples are to be taken and analysed in March and based on the results, fertiliser/lime to be applied in April.
- Monitoring of soil drainage will continue.
- All restored land is to be treated with an approved chemical herbicide to prevent weed establishment, if necessary.

- Should it be required, an under-drainage scheme will be designed and submitted to the MPA for approval.

Year 3 (grassland option)

- A grass crop for silage/hay is to be taken if there is sufficient growth.
- Soil samples are to be taken and analysed in March and based on the results, fertiliser/lime is to be applied in April, if necessary.
- Cultivation of topsoil will take place comprising discing and chain harrowing as required. Also upon completion of each stage of the cultivation process, stones that will not pass through a 100mm square wire mesh screen are to be removed.
- Given appropriate ground and nutrient conditions, re-seeding works may take the place of a more permanent grass ley.
- Monitoring of soil drainage and remedial works are to take place if required.
- All restored land is to be treated with an approved chemical herbicide to prevent weed establishment, if necessary.

OR

Year 3 (cereal option)

- Undertake soil analysis for P, K, Mg and pH to assess lime and fertiliser requirements for the chosen winter cereal crop.
- After seedbed preparation, drill cereal, e.g. Winter Barley, at approximately 175kg/ha and roll to get good seed-soil contact.
- Apply seedbed fertiliser and insecticides and herbicides, as required, in a tank mix to minimise the number of passes.
- In the spring apply nitrogen top dressing and herbicides and fungicides as required.
- July/August harvest.
- Glyphosate for stubble hygiene.
- Cereal variety to be agreed at the aftercare meeting.

Year 4 (grassland option)

- A hay/silage crop is to be taken in autumn.
- Soil analysis to take place in March followed by the implementation of fertiliser application and liming in April - dependent upon hay/grazing use.
- All restored land to be treated with an approved chemical herbicide to prevent weed establishment, if necessary.
- Monitoring of soil drainage and remedial works are to take place if required.

OR

Year 4 (cereal option)

- As year 3. Cereal variety to be agreed at the aftercare meeting.

Years 5 (grassland option)

- As year 4.

OR

Years 5 (cereal option)

- As year 3 & 4.

Please note: a detailed crop rotation programme will be produced by the landowner based upon restored soil conditions and food type / land use demand.

8.0 MITIGATION MEASURES

8.1 Introduction

The primary mitigation measures have been incorporated into the design of the development with reference to:

(i) The phased nature of the working and restoration scheme which would ensure that only the minimum required area would form part of the operational area at any one time, with land in advance of the working phase temporarily continuing in agricultural use, and land behind the working phase being progressively restored to its proposed after uses;

(ii) The location of the processing plant in a discrete, well screened location in the southern area of the site;

(iii) The temporary soil screen bunds which are in place around the southern, western and eastern sides of the processing plant site;

(iv) The additional temporary soil screen bunds to be placed between the operational area and the residential properties at The Hollies, Hill Farm and Beverley, which will provide visual screening and assist with noise attenuation when operations are temporarily taking place in closest proximity to residential properties;

(v) The advance landscaping and 'beating up' of the hedgerow along the northern boundary of the site, supplemented by a temporary soil screen bund to be positioned on the inside / quarry side of the northern hedgerow which will assist with screening rom the norther, and mitigating the temporary effect on the setting of a cultural heritage feature (Roman Camp) to the north;

(vi) The separate stripping of the top soil, sub soil and overburden, and the sustainable use of this material for the restoration of the site, based upon a detailed audit of available material;

(vii) The design of a restoration scheme which uses on site indigenous material only to create the proposed landform and land uses, with no reliance upon imported backfill material; and

(viii) The restoration scheme itself, which seeks to deliver a range of restoration land uses, aligned with the requirements of the landowner who wishes to return the majority of the site to productive arable farmland, but which also introduces substantial areas of native woodland and species rich grassland.

These measures have been integrated into the development scheme and can be referred to as 'designed- in' mitigation measures. However, the environmental impact assessments make a number of recommendations for the implementation of more specific and detailed mitigation measures. These measures are set out below, under the sub headings drawn from the Environmental Statement.

8.2 Schedule of Mitigation Measures

8.2.1 Landscape / Visual Mitigation Measures

The following visual measures have been integrated into the proposed development scheme to both mitigate potential adverse effects and enhance the general amenity value of the site.

- The retention of existing soil storage/ screening bunds during the operational period which are positioned around the peripheral boundaries of the fixed plant, processing, stocking and dispatch areas of the development. This is where the fixed structures of the existing development are located and will continue to be located during the extension period. It is also the location where the majority of quarry activity/ movement takes place. The existing seeded and maintained bunds will continue to screen the majority of the plant site activities.

- Advanced native tree and shrub planting and strengthening of existing peripheral hedgerows is to take place during winter 2021/22 to western, northern and eastern boundaries of the site.

- Advanced planting together with existing and progressive restoration planting is to be managed and maintained within a 5-year Aftercare Management Plan and a subsequent longer-term woodland and hedgerow management plan.

- To reduce the potential area of operational/disturbed land the quarry will be subject to progressive restoration. On completion of mineral extraction from the phased extraction area, land will be regraded, and restoration formation levels created utilising on site overburden and quarry dry waste silt onto which a full soil profile will be placed. The soils would be directly placed from soil stripping of the next phase (to expose mineral) supplemented by previously stripped and stored soils when required. All restored land will be planted or seeded in accordance with the Concept Restoration Scheme as illustrated on Drawing No. KD.SH.D.015. All restored land and land uses will be placed under a 5-year Aftercare Management Programme.

- Additional temporary soil screening bunds will be placed in advance of mineral extraction when working in phases 4B and 5 to screen the works from residents of the Hollies, and during phase 6 to screen residents of Hill Farm. These bunds will be 3m in height, grass seeded and maintained. A further 3m high temporary soil screening bund will be placed behind the existing hedgerow/tree planting along the northern boundary. This bund will also be seeded and maintained to help visually contain northern quarrying activities within phases 6 and 7 to potential visual receptors located within the southern areas of Horstead.

- Higher quality soils are to be concentrated to ensure the retention of best and most versatile agricultural land characteristics for agricultural use.

- Significant areas of new habitat is to be created to both integrate into and strengthen local landscape character and also create opportunities to promote long term

sustainable biodiversity. On completion of restoration over one third of the site will be utilised for landscape and wildlife enhancement involving ~24.6 Ha of native species planted woodland, 12.3 Ha of species rich grassland/ meadow habitat and 1,462 linear metres of hedgerow comprise seven woody species and hedgerow trees.

8.2.2 Ecology Mitigation Measures

The primary ecological mitigation measure is the restoration strategy and the proposals to incorporate substantial areas of native woodland, species rich grassland and hedgerows which will have the potential to provide considerable biodiversity enhancements. Other measures have been integrated into the proposed development scheme or would be implemented as additional mitigation measures. These recognise that whilst surveys have been undertaken as part of the EIA, circumstances can change over the duration of the development scheme, and, in certain cases, updated surveys are thus proposed on a phase by phase basis, as discussed below:

- A standoff margin would be applied to operations in the vicinity of the Clamp Wood Ancient Woodland to avoid physical impacts to the root system of trees at the woodland edge.

- The defined 'important' hedges present along the northern and western boundaries of the site would similarly be protected by standoff margins.as a result of the proposed development.

- Prior to any works taking place within areas of amphibian habitat as identified within the ES, an Amphibian Conservation Area will be identified and enhanced for the benefit of common toads. Thereafter, the Conservation Area will be retained and maintained for common toads over the entirety of the duration of the development and restoration aftercare period. Prior to every operation that might destroy or degrade amphibian habitat in areas to be worked, or have the potential to result in mortality or injury to common toads, trapping and translocation to the Conservation area will be performed in line with the strategy described in the ES

- There is a superabundance of habitat in the wider landscape, and no suggestion that the development might impact on any S41 Species of mammals (harvest mice, brown hare and hedgehogs) to such an extent that it might be unable to maintain its populations in the immediate locale. A safeguarding strategy is however proposed to avoid injury and mortality to 'Section 41' protected species by undertaken further pre-development surveys, on a phase by phase basis, to identify any nests, forms, dens and setts which may be present and taking responsible action with temporary standoffs prior to exclusion measures.

- Invertebrate species will be safeguarded by the details of the restoration planting scheme which will ensure that food plants are available for each invertebrate species within the restoration scheme.

- In relation to nesting birds, vegetation will be retained for as long as is reasonably practicable and soil stripping will only occur immediately prior to it being worked. As far

as possible, vegetation clearance will take place outside the nesting season, in the period 1st September through end February. Where it is impractical to perform an operation that will destroy nesting habitat outside the nesting season and works have to take place in the period 1st March through 31st August, a walkover survey will be performed by an Appointed Ornithologist. If no nesting birds are present, works will continue with no further constraint. If nesting birds are encountered, a stand-off of 5 m around the nest will be marked and this area will be retained undisturbed until young have fledged.

- Pre-development surveys, on a phase by phase basis, will be undertaken to identify any badger setts which may be impacted by the development. An appropriate stand-off will then be marked round each sett, and if a mitigation strategy cannot be defined that would safeguard the sett from damage and any badgers therein from disturbance, then a Development Licence may be required from Natural England in order to close the sett and allow works to proceed within the legislation.

- Based upon surveys undertaken as part of the EcIA, there are no trees containing bat roosts which would need to be removed as part of the development scheme. However, in view of the duration of the scheme, and the possibility that bats may utilise other existing trees for roosts, re-surveys will be undertaken on a phase by phase basis to check for the presence of any new bat roosts, and in the event of roots being identified, this would be addressed in the conventional way via the Natural England licencing regime.

8.2.3 Agricultural Land Quality and Soil Resources

The key mitigation measure to address potential impacts on land quality is to ensure the careful handling of soil.

The aim of the restoration is to recreate the same overall area of BMV land as existed prior to the commencement of the initial quarry development (circa 69ha). The soil movement and handling scheme intends to avoid soil compaction and smearing problems by ensuring that soil handling protocols are adhered to at all times.

A suitably trained operator will ascertain when ground and soil conditions are suitable for soil movements drawing upon the protocaols for soil handling set out in the ES. Soil movements for storage or restoration will normally take place as short summer campaigns and will open the area to be worked in the following 12 months, utilising soils to best effect to restore the areas already worked. Operations will be suspended when wet soil conditions predispose to damage, including during significant rainfall.

All soil stripping, handling, storage and placement will be undertaken using excavators and dump trucks in accordance with well-established MAFF Good Practice Guidelines for Handling Soils, namely:

- Sheet 1- Soil stripping with excavators and dump trucks.
- Sheet 2-, Building soil storage mounds with excavators and dump trucks.

- Sheet 3- Excavation of soil storage mounds with excavators and dump trucks.
- Sheet 4- Soil replacement with excavators and dump trucks.

The application includes a detailed soil resource / materials balance audit based upon the soil surveys which have been undertaken with confirmation that sufficient soil resources are present to deliver the restoration land uses which are proposed.

8.2.4 Hydrology and Hydrogeology

In the light of the findings of the Hydrogeological Impact Assessment, the recommended mitigation measures are confined to a continuation of existing on-site procedures for the protection of water quality by minimising the likelihood of spillage or leakage of contaminants in the first instance, and a specification of reactive measures for the management of accidental spillage and / or leakage of fuel, lubricating or hydraulic oils should this occur.

8.2.5 Noise

The primary mitigation measures are associated with the overall design of the phased development scheme, the defined limits of extraction, the retention of the processing plant in its current location, and the phased nature of the extraction and restoration operations.

The study has calculated noise anticipated to arise from operations at the site based upon confirmation of the plant items which would be employed and measurements of sound power levels of the plant.

The study confirms that in the absence of mitigation, the calculated site noise levels comply with the suggested site noise limits at all locations apart from The Hollies and Hill Farm. The required mitigation measures, discussed below, are this confined to these properties.

The calculated site noise levels for temporary operations comply with the PPG site noise limit at all of the receiver locations. The material movement associated with bund formation and removal can take place within the conventional 8 week period in any 12 months for temporary operations in the vicinity of any of the receiver locations, where this represents a n in-built mitigation measure.

The existing site noise limit at The Hollies imposed on the current quarry planning permission is 48 dB LAeq, 1 hour, free field. As is the case with the noise mitigation measures embedded within the current permitted scheme, this noise limit could be adhered to with the temporary creation of a 3m high screen bund between the property and the operational area. .

The proposed ‘Phase 5 extraction” boundary is no closer to The Hollies than remaining permitted mineral extraction within ‘Phase 4B’.

The ‘suggested’ site noise limit at The Hollies, based on 10 dB(A) above background levels is 45 dB LAeq, 1 hour, free field, which could be adhered to with a slightly higher 4m temporary screen bund.

For The Hollies, the calculated site noise level of 45 dB LAeq, 1 hour, free field is achieved at a separation distance of 320 m with no barrier attenuation, so it is appropriate to remove The Hollies bund in Phase 7 as shown on the phasing drawings.

The existing site noise limit at Hill Farm is 48 dB LAeq, 1 hour, free field, which could be adhered to with the temporary creation of a 3m high screen bund between the property and the operational area.

The 'suggested' site noise limit at Hill Farm, based on 10 dB(A) above background levels is 45 dB LAeq, 1 hour, free field, which could be adhered to with a slightly higher 3.5 m bund.

For Hill Farm, the calculated site noise level of 45 dB LAeq, 1 hour, free field is achieved at a separation distance of 280 m with no barrier attenuation, so it is acceptable to remove The Hill Farm bund in Phase 8 as shown on the phasing drawings.

8.2.6 Dust / Air Quality

Specific dust control mitigation measures have been proposed, alongside a series of general good practice with regard to dust control and site management. These comprise environmental design mitigation measures which have been built into the design of the working and restoration scheme, and a series of mitigation measures which apply to day to day operations.

The development would proceed on a phased basis, with progressive restoration to minimise the exposed surface areas that may be subject to erosion and lead to dust generation. This is in line with practises adopted in the current working scheme.

Given the location of receptors in relation to potential dust generating activities a number of specific mitigation measures have been incorporated into the application site layout and design, these measures include:

- processing plant is located within the quarry void in the south-east section of the application site – which is largely surrounded by agricultural land free from sensitive receptors;
- a hard-surfaced haul road exists between the application site entrance off Norwich Road and the plant site;
- mature hedgerows and vegetation on the periphery of the proposed northern extension would be retained to protect sensitive receptors;
- topsoil bunds are incorporated into the application site design to shield sensitive off-site receptors; and
- internal haul roads are positioned within the centre of the application site and therefore positioned away from sensitive receptors.

The dust control measures below are recommended for inclusion during the construction of the soil bunds around the boundaries of the application site; the implementation of such measures would act to significantly reduce the potential for dust generation at the source, including:

- avoid construction of soil bunds within 100m of a receptor when winds are blowing in the direction of the receptor;
- ensure water suppression is used to dampen the material during periods of dry or windy conditions and continued in use until vegetation is well established;

- undertake daily visual monitoring of dust emissions travelling off-site from the area of activity;
- cessation of the activity during prolonged periods of dry / windy conditions whilst continuing to dampen down exposed surfaces; and
- ensure surfaces are vegetated with quick growing plants to minimise the period of exposed surfaces.

Other existing dust control measures at the existing quarry would continue to operate, comprising:

- clear designation of stockpile area to prevent tracking over;
- all storage bunds are to be grass seeded;
- 10mph speed limit enforced on haul routes;
- tractor and bowser available for use in dust suppression;
- progressive phased working scheme reduces the storage and double handling of material; and
- wheel wash adjoins the weighbridge and is used by all HDVs leaving the application site.

8.2.7 Access and Traffic

The traffic study has reviewed the use of the existing site access, the flows on and the capacity of the local road network, and the traffic associated with the existing and proposed development. The study concludes that the proposed development traffic can be safely accommodated and that its quantum falls within the range of normal day to day variations in traffic volume along the relevant routes in the area.

As a result, no further mitigation measures are considered necessary in this case, beyond routine maintenance of the site access and continuing the management protocols adopted by Tarmac, which are periodically reviewed to ensure best practice techniques are adopted to minimise adverse impacts.

8.2.8 Cultural Heritage

Based upon the cultural heritage study undertaken, and knowledge of archaeology within the current extraction area to the south of the proposed northern extension area and the general vicinity, it is likely that archaeological sites will be located within the northern extension area. However, the geophysical survey however located only a handful of archaeological anomalies, and it is also clear that historically the northern extension area has been subjected to ploughing and that any archaeology will have been truncated to some extent.

There is no evidence of any archaeology of national significance that requires preservation in situ.

Given the success of the current strategy within the permitted quarry, it is suggested that a similar Strip Map and Sample approach is followed during soil-stripping which would ensure that all archaeology within the prposed northern extension area is recorded in advance of quarrying.

An archaeological contractor would be appointed to carry out the fieldwork with an experienced and appropriately qualified supervisor in charge of day-to-day site-based work.

Soils would be stripped using a backacting 360° machine equipped with a toothless bucket to a level agreed with the monitoring archaeologist. No tracking or movement of plant may take place on the exposed surface until it has been signed-off by the archaeologist. Machinery may need to be halted or diverted to allow archaeologists safe access to examine the stripped surface.

Details of methodologies will be formalised in a Written Scheme of Investigation, agreed with Norfolk County Council, prior to development commencing.

8.2.9 Mitigation Measures Conclusions

The mitigation measures detailed above have been drawn from recommendations set out in the Environmental Statement. They represent straightforward measures which are conventionally implemented at mineral working sites. Tarmac are accustomed to operating in accordance with such requirements and measures and have established internal management systems to ensure adherence to such good practice measures (ref section 6.8 above).

Each of the requirements are capable of being translated into planning conditions which could be imposed on a planning permission granted for the development, similar in may cases to conditions which are currently imposed on the permission regulating operations at the existing Stanninghall Quarry.

9.0 PLANNING POLICY CONSIDERATIONS

9.1 Introduction

9.1.1 Planning Policy and EIA

When undertaking EIA's and preparing an ES, it is conventional practice to carry out a review of planning policy relevant to the development. This is not an express requirement of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, but it is helpful in allowing the principle of the development and its details to be assessed against a checklist of planning policy objectives and requirements. This in turn assists in identifying and isolating the key environmental issues associated with a particular development, and in arriving at a judgement as to the overall merits of the development balanced against its environmental effects and wider issues of the need for the development. This balance is conventionally undertaken within a PAS, which can appropriately include wider issues influencing the balance, most notably the need for a development.

Planning Applications which are accompanied by an EIA must be considered in the context of 'Regulation 3' of the EIA Regulations which prohibits the grant of planning permission unless an EIA has been carried out in respect of that development. In parallel, planning applications must be determined in accordance with the development plan, unless material considerations indicate otherwise (ref Section 38 (6) of the Planning and Compulsory Purchase Act 2004). In effect, Section 38(6) of the 2004 Act introduces a presumption in favour of granting planning permissions for proposals which are in accordance with policies in the development plan.

In practice, the two requirements are complimentary in that policies in the development plan will conventionally seek to safeguard environmental interests and will generally presume against developments which are likely to give rise to significant adverse environmental and amenity effects.

9.1.2 The Development Plan

The key elements of the adopted development plan for the area comprise:

- The NCC Core Strategy and Minerals and Waste Development Management Policies Development Plan Document 2010 – 2026, hereafter referred to as the Minerals Core Strategy', adopted September 2011; and

- The NCC Minerals Site Specific Allocations Development Plan Document, hereafter referred to as the Site Allocations Plan', adopted October 2013.

The development plan is in the process of being updated and replaced by a Minerals and Waste Local Plan (MWLP) which has reached an advanced stage with the publication of Preferred Options' in --July 2019.

The adopted and emerging -development plan are reviewed below.

9.1.3 National Planning Policy

The National Planning Policy Framework (NPPF) was first published on 27th March 2012 and updated on 24th July 2018 and 19th February 2019.

Planning Practice Guidance (PPG) is an online resource which was launched in March 2014 to accompany the NPPF and which provides more detailed guidance on a range of development topics including minerals.

Again, the key elements of these documents are discussed below.

This chapter of the PAS is structured to firstly give consideration to the need for the development; secondly to review the development in the context of policies for environmental and amenity protection, together with wider strategic planning issues; and thirdly to draw conclusions regarding the overall balance of need against environmental effects.

9.2 The Need for the Development: Sand and Gravel Reserves and Supplies

9.2.1 NPPF

National Minerals Policy is set out in NPPF (February 2019) - paragraphs 203 - 208 which recognises that "*it is essential that there is a sufficient supply of minerals to provide the infrastructure, energy and goods that the country needs*….."(para 203).

It further notes that "when determining planning applications, great weight should be given to the benefits of mineral extraction, including to the economy….." (para 205).

NPPF emphasises the need for Mineral Planning Authorities to plan for a "*steady and adequate supply of aggregates*" by:

a) *preparing an annual Local Aggregate Assessment, either individually or jointly, to forecast future demand, based on a rolling average of 10 years' sales data and other relevant local information, and an assessment of all supply options (including marine dredged, secondary and recycled sources);*
b) *participating in the operation of an Aggregate Working Party and taking the advice of that party into account when preparing their Local Aggregate Assessment;*
c) *making provision for the land-won and other elements of their Local Aggregate Assessment in their mineral plans, taking account of the advice of the Aggregate Working Parties and the National Aggregate Co-ordinating Group as appropriate. Such provision should take the form of specific sites, preferred areas and/or areas of search and locational criteria as appropriate;*
d) *taking account of any published National and Sub National Guidelines on future provision which should be used as a guideline when planning for the future demand for and supply of aggregates;*
e) *using landbanks of aggregate minerals reserves 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 and alternative supplies in mineral plans;

f) *maintaining landbanks of at least 7 years for sand and gravel and at least 10 years for crushed rock, whilst ensuring that the capacity of operations to supply a wide range of materials is not compromised;*
g) *ensuring that large landbanks bound up in very few sites do not stifle competition; and*
h) *calculating and maintaining separate landbanks for any aggregate materials of a specific type or quality which have a distinct and separate market* (ref para 207).

9.2.2 Planning Practice Guidance (PPG)

PPG provides supporting further advice on the 'managed supply system' and 'local aggregates assessments' and the role of aggregate landbanks in ensuring an adequate and steady supplies of aggregates in a particular area.

It confirms that:

"*Aggregate landbanks are an essential component of planning decision-making:*

- *they are the basis on which the level of provision of new areas for aggregate extraction should be calculated when preparing local mineral plans;*
- *they are an important means of assessing when a mineral planning authority should review the current provision of aggregates in its area; and consider whether to conduct a review of allocation of sites in its local minerals plan; and*
- *for decision-making, low landbanks may be an indicator that suitable applications should be permitted as a matter of importance to ensure the steady and adequate supply of aggregates".*

(ref paragraph: 082 Reference ID: 27-082-20140306).

In terms of whether it is justifiable to refuse planning permission for mineral extraction if the landbank is above the minimum level, it emphasises that:

"*There is no maximum landbank level and each application for minerals extraction must be considered on its own merits regardless of the length of the landbank. However, where a landbank is below the minimum level this may be seen as a strong indicator of urgent need…..*

(ref paragraph: 084 Reference ID: 27-084-20140306).

9.2.3 Permitted Reserves in Norfolk

As required by NPPF and PPG, NCC produce NCC produce annual monitoring reports setting out the position regarding mineral planning decisions and delivery of planning policies, as Annual Monitoring Reports geared towards assessing circumstances against policy in the development plan. In parallel, Local Aggregates Assessment (LAA) Reports are published annually (as required by PPG referred to above), setting out aggregate sales, reserves and the landbank of permitted reserves at the end of the respective year of the LAA reports.

The most recent LAA is dated December 2019 and provides data for the 2018 calendar year. This confirms that based upon a 10 year average of sales (1.36 m tonnes) and a permitted

reserve of sand and gravel at 31 December 2018 of 13,310,696 tonnes, this gives a landbank of 9.8 years. It should however be noted that taking a 3- year average sales of 1.58m tonnes would produce a landbank figure of 8.4 years, a 20 year average (which takes into account broader economic cycles) of 1.87m tonnes would produce a landbank of 7.1 years, and using the current sub-regional guidelines apportionment figure of 2.57m tonnes per annum would produce a landbank figure of 5.2 years.

The LAA notes that Policy CS1 of the Core Strategy (discussed below) states that the sand and gravel landbank will be maintained at between 7 and 10 year's supply. An upper limit of 10 years was placed on the landbank in Norfolk to ensure the timely working and restoration of mineral workings. With a landbank at 31/12/2018, based on the 10-year average, at 9.8 years, the LAA indicates that this is within the range for the landbank indicated in Policy CS1, and above the minimum target contained in national policy and guidance.

It also notes that the Minerals Site Specific Allocations DPD (also discussed below) allocated 26 sand and gravel sites for future sand and gravel extraction, of which an estimated 15.97mt has not, at the end of 2018, received permission for extraction, and which, subject to the receipt of planning permission, is available to meet future demand.

9.2.4 Minerals and Waste Local Plan (MWLP): Preferred Options July 2019

The MWLP is intended to replace the current development plan documents as a single minerals and waste development plan, rolled forward to a revised end date of 2036.

The sites allocated in the existing Minerals Sites Allocations DPD have been re-assessed for the future suitability for extraction along with other sites which have been promoted by landowners and developers. This process is discussed further in section 9.4.3 below, but in terms of resource provision, the emerging MWLP, via the 'Preferred Options' indicates that over the 18-year plan period to 2036, using the 20-year average of 1.868 million tpa, a total of 33.624 million tonnes of sand and gravel resources would be required. Taking into account the existing permitted reserve of 13.310m tonnes (as at 31/12/2018), the Preferred Options calculates a remaining need to allocated sites with combined reserves of 20.313 million tonnes of sand and gravel.

The Preferred Options seeks to meet this requirement by proposing to identify 19 site specific allocations, with a combined estimated resource of 20.3m tonnes, following an appraisal of 40 sites promoted by landowners and developers. The list of proposed allocations includes the northern extension to Stanninghall Quarry, as the largest of the site allocations, with an assumed reserve of 4.5m tonnes, making up over 20% of the overall proposed allocation.

9.3 General Policy Considerations

9.3.1 National Planning Policy Framework (NPPF) March 2012

NPPF confirms that the purpose of the planning system is to contribute to the achievement of sustainable development, with three overarching objectives (ref paragraph 8), namely:

"a), an economic objective", which notes can help to build a strong responsive and competitive economy by ensuring that sufficient land of the right type is available in the right place and at the right time to support growth……".

The land north of Stanninghall Quarry is "*the right type*" in terms of the quality mineral resource which it contains, and it is in "*the right place*" in the context of the site selection process undertaken by NCC as part of the preparation of the MWLP. It is also in the "*right place*" in the context of being able to maintain local supplies of aggregate to construction projects in the local area in a way which minimises the carbon footprint associated with the delivery of aggregate to construction sites. Further, the development would be at the "right time" in terms of being able to integrate with the extraction of reserves at the existing Stanninghall Quarry as part of a comprehensive working and restoration scheme.

"b), a social objective" including the need to *provide "a sufficient number and range of homes……to meet the needs of present and future generations*":

This will be dependent upon a "*steady and adequate supply*" of aggregate raw materials to the construction industry. The social role also relies upon "*creating a high quality built environment*" which will be assisted by the supply of sand and gravel as a building material; and

"c), an environmental objective" which contributes to "*protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy*".

The relevance of this dimension to the proposed development relates to the enhancement of the biodiversity of the restored site; the protection and enhancement of the built environment via the availability of sand and gravel aggregate; the minimisation of waste from the production process; and the supply of aggregate to local markets which reduces carbon emissions.

It is thus concluded that the scheme represents a sustainable development, which is entitled to the presumption in favour of sustainable development highlighted in paragraph 11 of NPPF, which for decision making means "*approving development proposals that accord with up to date development plans without delay*".

Other elements of NPPF have been referred to in the consideration of need (section 9.2.1 above). However, the more general minerals planning advice set out paragraph 205 of NPPF is also of relevance, notably:

(i) NPPF confirms that when determining planning applications "great weight" should be given to the benefits of mineral extraction, including to the economy;

(ii) There is an implicit acknowledgement that all mineral extraction operations will give rise to some degree of impact, and the requirement is thus to ensure that there is no "unacceptable adverse impact" on the natural and historical environment and human health; In this context the Applicants do not consider the impacts to be "unacceptable";

(iii) Similarly, the requirement is not to eliminate noise, dust and particle emissions, but to ensure that any *"unavoidable noise"* is *"controlled, mitigated or removed at source, and establish appropriate noise limits for extraction in close proximity to noise sensitive properties"; and.*

(iv) The scheme makes provision for "*restoration and aftercare at the earliest opportunity"* which the Applicants are committed to carrying out "*to high environmental standards".*

9.3.2 NPPF Planning Practice Guidance: March 2014

The key issues of minerals guidance set out in Planning Practice Guidance (PPG) relevant to the proposed development at Stanninghall are:

(i) The ability to comply with the noise criteria set out in PPG reference ID: 27-021;

(ii) The ability to adequately control and mitigate dust emissions (ref PPG reference ID: 27- paragraphs 025 – 030);

(iii) The details accompanying the application demonstrate that the restoration scheme is achievable, and that the respective proposed restoration land uses are deliverable (ref ID: 27 – 040);

(iv) A detailed restoration strategy is provided as part of the application (ref PPG reference ID: 27-044); and

(v) The provision of an outline aftercare strategy which can form the basis of a planning condition requiring the submission and implementation of a rolling detailed aftercare management programme paragraphs (ref PPG reference ID 27-paras 44 – 48).

All of these issues have been catered for in the submission.

9.4 The Development Plan

9.4.1 Core Strategy and Minerals and Waste Development Management Policies Development Plan Document 2010-2026: Adopted September 2011

The Minerals Core Strategy, along with the Proposals Map, sets out the spatial vision for future mineral extraction and associated development in Norfolk in the period to 2026. It contains strategic objectives and policies that make clear where, in broad terms, mineral extraction and associated development should be located in Norfolk, and conversely where they should not be located. It also sets out Development Management policies that will be used to ensure that the development of mineral extraction and associated development can happen in a sustainable way at those locations assessed as being appropriate for development (ref para 0.2).

The overall spatial strategy sets out the locational principles in the form of broad areas where mineral extraction and associated development will be preferred. Although minerals can only be extracted where they occur, it confirms that if there is a choice of potential site allocations then Policy CS2 (minerals) gives a locational preference for sites which are close to and /or well-related to the Norwich Policy Area, Great Yarmouth urban area, King's Lynn or Thetford or the main market towns, taking into account any significant environmental constraints near these settlements (ref para 0.7).

The provision to be made for the release of land for sand and gravel extraction is based upon the 'National and Regional Guidelines for Aggregates Provision in England 2005-2020' published by CLG in June 2009. The East of England Regional Aggregates Working Party, of which NCC is a member, apportioned (sub divided) the regional sand and gravel requirement set out in the 'Guidelines' to the constituent Mineral Planning Authorities, giving Norfolk a requirement to make provision for 2.57 m tonnes per annum as its share (apportionment) of regional production (ref para 3.1).

The Minerals Core Strategy rolls forward this apportionment to the end of the plan period (2026) and calculates the minimum total to be allocated in the Site Allocations Plan as 43.69m tonnes. With a deduction of permitted reserves (at 32/12/2009) of 18.02m tonnes, this gave a residual requirement to allocate land for the release of a minimum of 25.67 m tonnes (ref paras 3.2 – 3.3).

The Minerals Core Strategy continues by noting that there is a case for providing some additional flexibility in the allocated landbank, to cover for unexpectedly low quality and/or quantity of aggregate on an allocated site or changing economic and/or business circumstances meaning that some minerals companies may either not wish to take up an option to develop an allocated site, or wish to mothball an existing operation part-way through. An additional year's apportionment (2.57 million tonnes) has therefore been added to the total allocation for sand and gravel (ref para 6.3). However, of importance to the conclusions of this Report is the confirmation that:

> A maximum landbank, of 10 years' supply, is considered necessary to ensure that an excessive reserve of sand and gravel is not permitted for extraction at any one time. This is to provide a satisfactory degree of confidence that there will not be undue delays in the final cessation of extraction and eventual restoration at permitted sites, thereby increasing certainty for local residents (ref para 6.3).

The above context is reflected in Minerals Core Strategy Policy CS1 – 'Minerals extraction' that:

> *The strategy for minerals extraction is to allocate sufficient sites to meet the annual apportionment figures agreed by the East of England Regional Aggregates Working Party, rolled forward to 2026, for both sand & gravel and hard rock (carstone).*
>
> *For sand and gravel, a minimum of 25.67 million tonnes of resources needs to be allocated. However, an additional year's apportionment (2.57 million tonnes, approximately 10 per cent) will also be allocated to introduce a degree of flexibility, so sites and/or Areas of Search delivering a total of approximately 28.24 million tonnes of sand and gravel will be allocated. The sand and gravel landbank will be maintained at between 7 and 10 years' supply (excluding any contribution from borrow pits for major construction projects).*

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In terms of the general locations for mineral extraction and associated facilities, the Core Strategy confirms that the distribution of mineral extraction facilities in Norfolk will be aligned as closely as is practicable with the growth and regeneration areas because there will be an increased need to supply local aggregates for growth-related infrastructure. In that context, it notes that most of the demand for sand and gravel and related products (such as concrete) will be used in the four largest settlements (Norwich, King's Lynn, Thetford and Great Yarmouth) (ref para 6.5).

This is reflected in Minerals Core Strategy Policy CS2 (General locations for mineral extraction and associated facilities) which confirms that:

> *Resource areas for key minerals are shown on the key diagram. Areas of search and/or sites specific allocations will be identified based on these areas.*
>
> *Sand & gravel production: Sand and gravel resources are located widely throughout the county. However, there will be a clear preference for sites which are close and/or particularly well-related via appropriate transport infrastructure, to the Norwich Policy Area, Great Yarmouth urban area, Thetford or King's Lynn or the main market towns (Attleborough, Aylsham, Cromer, Dereham, Diss, Downham Market, Fakenham, Hunstanton, North Walsham, Sheringham, Swaffham and Watton). Extensions to existing sites will be preferred to new sites.*

The explanatory text notes that there is a preference in Policy CS2 for sites which are "*close and/or particularly well-related*" to the main settlements of the county, where for this purpose, the distance meant as "close" is 10 miles or less. However, it confirms that this measure is not intended to be applied rigidly in all circumstances (ref para 6.8).

Policy CS2 continues by noting that notwithstanding the preference for mineral extraction to take place in locations close to or well related to the main settlements, there are significant international ecological and national landscape constraints affecting the four main Norfolk settlements. For the Norwich Policy Area (NPA), this comprises the valley of the River Yare which falls within the 'Broads', which has a status equivalent to that of a National Park. On the eastern edge of the NPA, the river valley is also classed as the Broadland Special Protection Area (SPA) and Broads Special area of Conservation (SAC). The River Wensum is classed as a SAC from (broadly) New Costessey westwards. There is therefore a preference for new minerals sites away from the Wensum and Yare valley areas and the Broads area. Policy CS2 also confirms a preference for extensions to existing sites rather than the development of new sites.

The 'Monitoring and Implementation' chapter 8.0 of the Core Strategy considers the way in which the Minerals Core Strategy policies will be delivered. For Policy CS1 this is confirmed as being via the provision to be made in the Site Allocations Plan and the subsequent adoption of that Plan (ref Table 8).

The key messages to take from the Minerals Core Strategy are:

(i) The primary function is to set the context and requirement for the future provision of sand and gravel to be addressed via the related Site Allocations Plan;

(ii) Having established the resource requirement, the landbank is to be maintained at between a 7 year and 10-year supply, but at a maximum level of 10 years supply;
(iii) A clear preference is for sites to be close to the main urban areas, including Norwich, but outside internationally and nationally designated areas; and
(iv) Extensions to existing sites are preferred to new sites.

These issues are considered further in the conclusions section 9.5 below.

The Core Strategy also includes a series of policies designed to safeguard environmental interest, notably:

- Policy CS14 Environmental Protection, which seeks to protect and enhance the character and quality of the landscape and townscape; biodiversity and species and habitats; heritage and cultural assets and their setting; and residential amenity e.g. noise, vibration, dust, lighting, and visual intrusion. Where any development proposals would potentially have adverse impacts on any of the assets listed above, the adequacy of any proposed mitigation measures will be assessed on a case-by-case basis.

In response, the scheme has sought to enhance the landscape setting of the site and its biodiversity via the restoration strategy, and mitigation measures have been devised to ensure that effects on identified interests can be adequately mitigated.

- Policy CS15 Transport, which confirms that the County Council will consider minerals and waste development proposals to be satisfactory in terms of access where anticipated HGV movements, taking into account any mitigation measures proposed, do not generate: a) unacceptable risks to the safety of road users and pedestrians; b) unacceptable impacts on the capacity and/or efficiency of the highway network (including the trunk road network); c) unacceptable impacts on air quality (particularly in relation to any potential breaches of National Air Quality Objectives and impacts on any Air Quality Management Areas) and residential and rural amenity, including from odour and noise; d) unacceptable impacts on the natural and historic environment; and e) unacceptable physical impacts on the highway network.

These issues have been assessed as part of the Transport study reported in Chapter 12.0 of the ES, which concludes, for the reasons set out, that the traffic generated by the development could continue to be safely accommodated on the local highway network.

- Policy DM 1 Nature Conservation, which confirms that development that would harm locally designated nature conservation and geodiversity sites; and/or habitats, species or features identified in UK and Norfolk biodiversity and geodiversity action plans will only be permitted if it can be demonstrated that sufficient measures to mitigate harm to the site, habitat(s) and/or species can be put in place, preferably in advance of development…….

There would be no affect on locally designated nature conservation sites, and detailed measures have been proposed to ensure that habitats and species are protected during the development and enhanced as part of the restoration strategy.

- Policy DM3 Ground and Surface Water, which confirms that Applicants will need to give due regard to the policies within the Environment Agency's document 'Groundwater Protection: Policy and Practice (GP3)' and demonstrate that proposed

developments would not adversely impact upon groundwater quality or resources and surface water quality or resources. A hydrological/hydrogeological risk assessment must be submitted, where applicable, to demonstrate this to the satisfaction of the County Planning Authority as advised by the Environment Agency.

The Hydrogeological Impact Assessment, reported in chapter 9.0 of the ES confirms that there would be no adverse effect on ground or surface water, subject to a continuation of conventional and established measures of pollution control.

- Policy DM4 Flood Risk, which confirms that a Flood Risk Assessment is required for all development in Flood Zones 2 and 3, and for sites greater than 1 hectare.

A Flood Risk Assessment is included as Appendix 9.2 to the ES which concludes, for the reasons given, that the development would give rise to no adverse flood risk effects.

- Policy DM7 Safeguarding of Aerodromes, which confirms that proposed developments within 13 km of the centre point of safeguarded aerodromes that have the potential to attract birds, due to landscaping or waste management operations, must be subject to a bird hazard assessment. Where significant risk is identified, developers will be expected to modify their proposals to mitigate this risk and as part of the mitigation it may be necessary to produce and implement a Bird Hazard Management Plan acceptable to the aerodrome concerned.

As is the case with the existing quarry, the nature of the quarrying operations, and the land uses to be established as part of the restoration strategy are not such as to give rise to any significant risk of bird strike hazard. As a result, and again, as is the case at the existing quarry, a Bird Hazard Management Plan is not deemed to be necessary.

- Policy DM8 Landscape Character, which confirms that Applicants will be expected to show how their proposals will address impacts on landscape and townscape. This would normally be undertaken through a study and evaluation of local landscape and townscape character and an assessment of how the proposal will impact on it, with reference to any relevant landscape character assessment.

This requirement has been addressed via a detailed Landscape and Visual Imapct Assessment, reported as Chapter 6.0 of the ES.

- Policy DM9 Archaeological Sites, which confirms that Applicants whose proposals could potentially affect heritage assets, or which are in areas with high potential for archaeological interest, will be required to prepare and submit an appropriate desk-based assessment and, where necessary, a field evaluation with their application to the County Council. Development will only be permitted where it would not adversely affect the significance of heritage assets (and their settings) of national and/or regional importance, whether scheduled or not. Where proposals for mineral extraction or waste management facilities would affect Scheduled Monuments and/or other assets of national and/or regional importance (including their settings), there will be a presumption in favour of their preservation in situ. Following the results of a site evaluation, development which would potentially affect other heritage assets (not of national or regional importance) could be acceptable if subject to appropriate mitigation measures – such as physical preservation of the archaeology in situ, or preservation by record (including appropriate publication and archiving).

These requirements have been addressed by the detailed cultural heritage assessment reported as Chapter 13.0 of the ES.

- Policy DM12, Amenity, which confirms that The protection of amenity for people in close proximity to potential minerals extraction and associated developments and waste management facilities will be a key consideration. Where appropriate, buffer zones, advanced planting and/or screening and other mitigation measures, such as restriction on hours of working and dust suppression measures, will be required. Development will be permitted only where it can be demonstrated that the scale, siting and design of a proposal is appropriate and that unacceptable impact to local amenity will not arise from the construction and/or operation of a facility.

These requirements have been addressed as part of the design of the development scheme with in-built mitigation measures in the form of advance landscaping, erection of temporary screen bunds in the vicinity of properties at The Hollies and Hill Farm, and a suite of dust mitigation measures as reported in Chapter 11.0 of the ES.

- Policy DM13 Air Quality, which confirms that Applicants for planning permission will be required to submit information to demonstrate that proposals effectively minimise harmful emissions to air and would not impact negatively on existing Air Quality Management Areas, nor lead to the declaration of a new AQMA. Development will be permitted if adequate measures can be agreed through planning conditions to mitigate potentially harmful air quality impacts to human health. Planning permission will only be granted in areas nearing AQMA threshold limits if an Air Quality Impact Assessment shows that the development in question and its associated activities would not increase air pollution to unacceptable levels, as defined in the National Air Quality Strategy.

Again, this is addressed in the air quality chapter 11.0 of the ES, with conventional (existing) mitigation measures which could be made the subject of a planning condition.

- Policy DM14 Progressive working, restoration and after use, which confirms that proposals for new mineral workings must be accompanied by a scheme for the phased and progressive working and restoration of the site throughout its life. Restoration and after-use of mineral extraction sites and associated development, and temporary waste management facilities, will be determined on a case-by-case basis, prioritising the most appropriate after-use(s) for each site. This will include consideration of restoration to enhance biodiversity, geodiversity and landscape…….

The scheme includes a phased working programme with progressive restoration on a phase by phase basis working towards an overall restoration strategy which it is considered would bring considerable landscape and biodiversity benefits.

- Policy DM 15 Cumulative Impacts, which confirms that where a proposed mineral extraction site, or waste management facility, is considered acceptable (in its own right) but the cumulative impact of a proposal in conjunction with other existing, permitted or allocated minerals extraction sites and/or waste management facilities, in the proximity is considered unacceptable, the proposal may be considered acceptable if phased so that one site follows the completion of the other or it can be demonstrated that the adverse cumulative impacts can be adequately mitigated. Planning applications must therefore be supported by information demonstrating how proposals relate to other development nearby and details of how any cumulative effects are proposed to be mitigated satisfactorily.

Where appropriate, the ES has considered the potential for the development to give rise to cumulative impacts, but for the reasons given, there are considered to be no material cumulative effects in this case.

- Policy DM16 Soils and Agricultural Land, which confirms that where development is proposed on agricultural land, the County Council has a clear preference for locating new mineral extraction and associated activities, and composting facilities, on land of agricultural grades 3b, 4 and 5. Development proposals affecting Grade 1 agricultural land will only be permitted in exceptional circumstances, where it is demonstrated that there are no alternative locations for the development. In addition to the above, when minerals development, particularly extraction, is proposed on agricultural land of grades 1, 2 or 3a it will only be permitted where:

    - Provision is made for high standards of soil management that would enable restoration to a condition at least as good as its previous agricultural quality. To demonstrate this, the County Planning Authority will expect soil and land quality surveys and soil handling and replacement strategies to be submitted (the latter based upon Defra's 'Good Practice Guide for Handling Soils'); or
    - The benefit of restoring the land to another after-use can be shown to outweigh the loss of the agricultural use of the land.

The scheme has been designed to ensure that the restoration strategy makes provision for the return of the same overall surface area of best and best and most versatile land (grades 2 and 3a), albeit with the restored agricultural land placed within a discrete block of land rather than dispersed across the site. Elsewhere, there would be a loss of lower quality grade 3b land where the restoration strategy proposes the creation of species rich grassland and native woodland on the remaining restored area. Overall, in landscape and biodiversity terms, this is considered to offer benefits which outweigh the loss of the original grade 3b agricultural land.

In the context of the above brief assessment, the proposed development is considered to be fully in accordance with the development management policies of the Minerals Core Strategy.

9.4.2 Minerals Site Specific Allocations Development Plan Document: Adopted October 2013

The Site Allocations Plan allocates 26 specific sites for sand and gravel extraction, which are estimated to contain 27,591,000 tonnes of sand and gravel, and which are calculated to enable Norfolk to meet its annual sand and gravel apportionment up to the end of the 2026 Plan period and beyond.

The Site Allocations Plan sets out a description of each of the 26 allocated sites, with issues which should be considered in preparing proposals and planning applications for development at the respective sites.

Policy in the Plan reflects the requirements of paragraph 15 of the (then extant) National Planning Policy Framework (2012) that Local Plans should be based upon and reflect the presumption in favour of sustainable development with clear policies that will guide how the presumption should be applied locally (ref para 4.2).

Policy SD1 of the Site Allocations Plan accordingly confirms the 'Presumption in Favour of Sustainable Development', namely:

> *When considering development proposals, the Council will take a positive approach that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. It will always work proactively with applicants and statutory consultees jointly to find solutions which mean that proposals can be approved wherever possible, and to secure development that improves the economic, social and environmental conditions of the area. Planning applications that accord with the policies in this Local Plan (and, wherever relevant, with policies in neighbourhood plans) will be approved without delay, unless material considerations indicate otherwise. Where that are no policies relevant to the application or relevant policies are out of date at the time of making the decision, then the Council will grant planning permission unless material considerations indicate otherwise - taking into account whether:*
>
> • *Any adverse impacts of granting planning permission would significantly and demonstrably outweigh the benefits, when assessed against the policies in the National Planning Policy Framework as a whole; or*
>
> • *Specific policies in that Framework indicate that development should be restricted.*

Whilst this policy can be regarded as being primarily focused on the positive approach to be taken to the consideration of proposals for extraction at the allocated sites, any applications for sand and gravel extraction at non-allocated sites (including the application for a northern extension to Stanninghall Quarry) need to be considered on their merits against policy in the NPPF and the development plan.

9.4.3 Emerging Minerals and Waste Local Plan (MWLP): Preferred Options July 2019

Strategic Context

The emerging MWLP has reached the stage of 'Preferred Options, following a 'call for sites' in 2017, and the publication of a Consultation Draft Plan in July 2018, which included an appraisal of the merits of promoted sites in terms of a sustainability appraisal, and an assessment in terms of the potential effects of the development against a range of landscape, ecology, highways and historic environment and archaeology criteria.

Based upon the identified requirements for future sand and gravel extraction in the Plan period to 2036 (20.3m tonnes, as discussed in section 9.2.4 above), the Preferred Options identifies 19 site specific allocations which are estimated to contain sufficient reserves to meet the identified requirements. As noted above, the proposed allocations include the northern extension to Stanninghall Quarry as one of the key sites in terms of the reserves available.

The weight to be afforded to the emerging plan

NPPF confirms that Planning Authorities may give weight to relevant policies in emerging plans according to the stage of preparation of the emerging plan (the more advanced its preparation, the greater the weight may be given); the extent to which there are unresolved objections to relevant policies (the less significant the unresolved objections, the greater the weight that may be given); and the degree of consistency of the relevant policies in the

emerging plan to the policies in the NPPF (the closer the policies in the emerging plan to the Framework, the greater the weight that may be given).

In this case it is considered that weight can be afforded to the plan given the relatively advanced stage which has been reached, the absence of any material unresolved objections, and the overall consistency with the context provided by the NPPF.

Policy MIN 65 Land north of Stanninghall Quarry

In identifying sites as proposed site-specific allocations for extraction, the Preferred Options, includes a commentary for each site on the key characteristics of the site, and the issues which need to be considered in preparing development proposals. With respect to proposed allocation MIN 65 'Land north of Stanninghall Quarry' the following issues are identified:

> ***M65.1 Amenity:*** *The nearest residential property is 13m from the site boundary. There are 13 sensitive receptors within 250m of the site boundary and four of these are within 100m of the site boundary. The settlement of Horstead is 239m away. The proposed development scheme would include standoff margins to the three properties located at the perimeter of the site, which would increase the distance of the proposed extraction area from these closest properties. Even without mitigation, adverse dust impacts from sand and gravel sites are uncommon beyond 250m from the nearest dust generating activities. The greatest impacts will be within 100 metres of a source, if uncontrolled. A planning application for mineral extraction at this site would need to include noise and dust assessments and mitigation measures to deal appropriately with any amenity impacts.*

This advice has been duly followed, with noise and dust impact assessments included as chapters 10.0 and 11.0 of the ES, and mitigation measures included to protect the amenities of the identified properties.

> ***M65.2 Highway access:*** *The site would use the existing processing plant and site access. The site access is via Quarry Road onto the B1150 Norwich Road, which is a designated lorry route. The site is not within an AQMA. The site is proposed as an extension to an existing site, however, the extraction rate is proposed to increase to 350,000 tpa which would lead to an increase in the number of HGV movements from the existing 75 per day up to an estimated 122 HGV movements per day. The proposed highway access is considered to be suitable by the Highway Authority.*

These comments are noted, including confirmation of the acceptability of the continued use of the highway access, albeit noting that the scheme is predicated upon an average output of 300,000 tpa, rather than 350,000 as assumed in the text above. It does however follow that an average lower output (300,000 tpa) would be similarly acceptable in highway terms.

> ***M65.3 Historic environment:*** *The historic landscape character of the site is Twentieth Century agriculture with enclosure and agriculture with 18th to 19th century piecemeal enclosure. The site is within a wider historic landscape character of 20th century agriculture with enclosure and boundary loss, agriculture with 18th to 19th century piecemeal enclosure and estate fields. The wider historic landscape character also includes drained enclosed rectilinear grazing marsh (17th to 20th century enclosure), enclosed wetland meadow, informal parkland, and woodland*

(ancient woodland and 18th to 20th century plantation woodland).

The landscape character of the site and surrounding area has been fully assessed as part of the LVIA (ES Chapter 6.0), and the proposed restoration strategy is considered to be reflective of this local landscape character.

> ***M65.4*** *The nearest Listed Building is Grade II Horstead Lodge which is 310m away. There are 50 Listed Buildings within 2km of the site, 24 of these are within Coltishall and Horstead Conservation Area which is 380m from the site. The nearest.Scheduled Monument is the 'Roman camp and settlement site west of Horstead, which is 140m away. There are 2 Scheduled Monuments within 2km of the site. There are no Registered Historic Parks and Gardens within 2km of the site. A planning application for mineral extraction at this site would need to include a Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation measures if required.*

As required, the ES includes a cultural heritage assessment, reported as ES chapter 13.0, which includes mitigation measures designed to safeguard defined heritage assets.

> ***M65.5 Archaeology:*** *There are Historic Environment records of multi-period features in the northern part of the site including a probable WW2 military site possibly a training site, within the site boundary. There is a WW2 Royal Observers Corp post on the site boundary. The site is in a wider landscape with a significant number of finds and features from multiple periods, including Roman features including a camp and probable trackway, and a possible settlement. Therefore, there is the potential that unknown archaeology exists on the site and an assessment of the significance of archaeological remains will be required at the planning application stage, in order to protect and mitigate the impact of mineral extraction in this site. The archaeology assessment may initially be desk-based but may need to be followed up with field surveys and trial-trenching.*

As required, the ES is accompanied by a cultural heritage assessment (ES Chapter 13.0), supported by the results of a geophysical survey of the northern extension area, produced as Appendix 13.2. The assessment includes proposals for additional archaeological investigations which it is intended will be set out in a formal Written Scheme of Investigation to be agreed with NCC.

> ***M65.6 Landscape:*** *The site is not located within the AONB, a Core River Valley or any other designated landscape feature. The site comprises open arable plateau farmland divided by hedgerows with some boundary trees. The site is within the landscape character area described as 'Marsham and Hainford Wooded Estatelands' in the Broadland Landscape Character Assessment. The site lies within a wider area of arable farmland . The land to the south is an operational mineral working. Glimpses of the land can be seen from Frettenham Road to the west through gaps in boundary hedges. Views could also be seen from two properties which lie close to the site perimeter to the west and east respectively. The site is fairly level and it should be possible to design a scheme of working, incorporating screening, which would have an acceptable impact on the wider landscape. The proposal for the site indicates that screening and standoff areas would form part of the working scheme.*

These issues are catered for in the design of the development scheme, which, as indicated, makes provision for screening and stand-off margins to properties in the vicinity of the site.

The LVIA, produced as chapter 6.0 of the ES includes a landscape character assessment and visual assessment which includes reference to the points raised in the text above. t

> ***M65.7*** *There are no Public Rights of Way within the site. There is a PRoW (Frettenham BR4) close to the western site boundary at one point.*

Noted, and a as a result, the development would have no effect on public rights of way. In addition, given the relative absence of public rights of way in the wider locality, the restoration strategy does not include provision for rights of way within the restored site given that they would not connect into a wider rights of way network.

> ***M65.8 Ecology:*** *The site is 1.4km from Crostwick Marsh SSSI, which is part of The Broads SAC, Broadland SPA and Ramsar site. The SSSI citation states that the site forms an excellent example of unimproved valley meadow and supports a series of intergrading plant communities ranging from damp neutral grassland through species-rich fen grassland to tall fen in the valley bottom. A number of uncommon plants are present and there is additional ornithological interest. The proposed extraction site is in a different hydrological catchment to Crostwick Marsh SSSI and therefore would not adversely affect the hydrology of the designated sites. Due to the distance from the proposed extraction site to the SSSI the designated sites would not be affected by dust deposition and the birds on the designated sites would not be disturbed by noise or lighting from mineral extraction operations. Therefore, no adverse effects are expected on the SSSI, SPA, SAC or Ramsar site.*

These comments are noted and are corroborated by the conclusions reached by the ecological and hydrogeological studies undertaken as part of the EIA, and reported as chapters 7.0 and 9.0 of the ES.

> ***M65.9*** *The nearest County Wildlife Site is CWS 1409 'Land adj. All Saint's Church' which is 900m from the site boundary. It is a semi-improved neutral-acidic grassland with a diversity of forb species (herbaceous flowering plants) with a central oak and sycamore woodland. Due to distance, no impacts on County Wildlife Sites are expected.*

Again, noted and corroborated by the conclusions reached by the ecological study.

> ***M65.10*** *The nearest ancient woodland sites are: Clamp Wood, which is an Ancient Semi-Natural Woodland (ASNW) and Plantation on Ancient Woodland Site (PAWS) and is 0.27km from the site, and Stanninghall Wood which is a PAWS and is 0.89km from the site boundary. Due to the distance from the ancient woodland there would be no impacts from dust deposition. The proposed extraction site would be worked dry (above the water table) and therefore the ancient woodland would not be adversely affected.*

Also noted, but with additional protection to be afforded to the ancient woodland by a standoff margin to protect the root systems of trees at the edge of the ancient woodland block.

> ***M65.11 Geodiversity:*** *This site consists of the Britons Lane sand and gravel member, Happisburgh glacigenic formation - sand and gravel, overlying Wroxham Crag formation - sand and gravel on the west of the site, Wroxham Crag Formation at the surface in the east of the site. There is significant potential for vertebrate fossils within the Wroxham Crag. The Britons Lane sands and gravels are known to*

contain priority features such as palaesols and erratics in other locations, and therefore they may occur on this site. Potential impacts to geodiversity would need to be assessed and appropriate mitigation identified as part of any future application. It would be useful to retain some open faces for scientific study during operational stages, and ideally after restoration, and have a 'watching brief' during the extraction phase in case features of potential geodiversity interest are uncovered.

A 'watching brief' to record any features of geodiversity interest could be accommodated if required, subject to health and safety considerations.

M65.12 Flood Risk: *The site is in Flood Zone 1 (lowest risk) for flooding from rivers. The site has a low probability of surface Water flooding, with a few locations of surface water pooling in a 1 in 1000 year rainfall event. Sand and gravel extraction is considered to be a 'water compatible' land use that is suitable in all flood zones. The site is not in an Internal Drainage Board area.*

Noted and corroborated by the Flood Risk Assessment produced as ES Appendix 9.2

M65.13 Hydrogeology: The site is partially located over a Secondary B aquifer and a Secondary A aquifer (superficial deposits) and a principal aquifer (bedrock). The majority of the site is within groundwater Source Protection Zone 3. The most northern part of the site is within groundwater SPZ2. A southern part of the site is not within a groundwater SPZ. A planning application for mineral extraction at this site would need to include a Hydrogeological Risk Assessment to identify any potential impacts to groundwater and appropriate mitigation measures.

The required Hydrogeological Risk (Impact) Assessment is reported as chapter 9.0 of the ES, with no adverse effects identified to the defined source protection zones.

MGS.14 Water Framework Directive: *The site is approximately 700 metres from the River Bure which is the nearest Water Framework Directive waterbody. The groundwater level in this area is several metres below ground level and therefore overland flows are not expected from the site towards the River Bure. The site proposal indicates that the working would not require dewatering, the current permitted site to the south has been worked 'dry'. MIN 65 and the existing adjacent processing plant, which the sand and gravel would be transported to by internal haul route, are both some distance west of the River Bure. Therefore the sand and gravel to be processed would not be transported across this waterbody. Due to the distance of the site from the River Bure, it is not expected that there would be a pathway for silt ingress into this waterbody from any future sand and gravel extraction within site MIN65.*

Noted and corroborated by the results of the Hydrogeological Impact Assessment reported as chapter 9.0 of the ES

MGS.15 Utilities infrastructure: *There are no Anglian Water sewerage assets or water assets within the site. There is no electricity transmission infrastructure with the site. There are electricity distribution lines running approximately north to south through the site. There are no high pressure gas pipelines within the site.*

Noted

MGS.16 Safeguarding aerodromes: *The site is within the zone where Norwich Airport must be consulted on developments with the potential to increase the*

number of birds and the 'bird strike' risk to aircraft. Therefore, a Bird Hazard Assessment would be required at the planning application stage.

As is the case with the existing quarry, the nature of the quarrying operations, and the land uses to be established as part of the restoration strategy are not such as to give rise to any significant risk of bird strike hazard. As a result, and again, as is the case at the existing quarry, a Bird Hazard Assessment is not deemed to be necessary, but this can be established at the application stage following consultation with Norwich Airport.

MGS.17 Restoration: *The site is proposed to be restored to a combination of arable agriculture, grassland and woodland.*

Correct, and reflected in the restoration strategy which forms part of the submission.

MGS.18 Conclusion: *Site MIN 65 is considered suitable to allocate for sand and gravel extraction. Development will be subject to compliance with the relevant Minerals and Waste Local Plan Policies and Specific Site Allocation Policy MIN 65.*

Noted, but in response, the proposed development is considered to be fully in compliance with the adopted minerals development management policies (ref section 9.4.1 above) and with the emerging development management policies included in the MWLP Preferred Options (as discussed below).

These issues are summarised in proposed Policy MIN 65, namely:

Specific Site Allocation Policy MIN 65 (land north of Stanninghall Quarry):

The site is allocated as a specific site for sand and gravel extraction. Development will be subject to compliance with the Minerals and Waste Local Plan policies and all the following requirements:

- *Submission of noise and dust assessments and a programme of mitigation measures to deal appropriately with any amenity impacts;*
- *Submission of a Landscape and Visual Impact Assessment to identify potential impacts and suggest appropriate screening and standoff areas to mitigate any identified impacts to an acceptable level, which will be included in any working scheme;*
- *Submission of a progressive restoration scheme to an arable agriculture afteruse with wide field margins, grassland and woodland to provide landscape and biodiversity gains;*
- *Provision of opportunities during working for any geodiversity assets to studied, and if compatible with the landscape and ecology objectives an open face to be included within any restoration scheme for future scientific study;*
- *Submission of a Hydrogeological Risk Assessment to identify any potential impacts to groundwater and appropriate mitigation measures if required;*
- *Submission of a Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation measures if required;*

An appropriate archaeological assessment must be prepared in consultation with Norfolk County Council; this may initially be desk-based but may need to be followed up with field surveys and trial-trenching. The archaeological assessment will be used by Norfolk County Council/Historic Environment Service to agree appropriate mitigation measures.

As evident from the commentary above, it is considered that all issues highlighted in Policy MIN65 have been fully and satisfactorily addressed, and that the proposed development and supporting submission is thus fully compliant with the requirements of Policy MIN65.

Finally, the Preferred Options includes a series of development management policies which build upon and, where appropriate, update those contained within the currently adopted Core Strategy. The key policies of relevance to the proposed Stanninghall Northern extension are as follows:

Policy MW2: Development Management Criteria

Proposals for minerals development and/or waste management development will be permitted where sufficient information is submitted to demonstrate that the development would not have an unacceptable impact (including cumulative impact in combination with other existing or permitted development) on:

a. Local amenity and health (including noise levels, odour, air quality, dust, litter, light pollution and vibration);

b. The quantity of water for resource purposes within water bodies, and the quality of surface waterbodies and groundwater, with particular regard to preventing the deterioration of their existing status, and their associated ecosystems that may be affected by water quantity and quality;

c. The capacity of existing drainage systems;

d. Flood risk on site or an increase in flood risk elsewhere, as demonstrated by a Flood Risk Assessment (where required by the National Planning Policy Framework) and making an allowance for climate change;

e. The best and most versatile agricultural land;

f. Aircraft safety due to the risk of bird strike and/or building height and position;

g. The safety and capacity of the road and any other transport network;

h. The appearance, quality and character of the landscape, countryside and visual environment and any local features that contribute to its local distinctiveness;

i. Public Open Space, the definitive Public Rights of Way network and outdoor recreation facilities;

j. Land stability;

k. The natural and geological environment (including internationally, nationally or locally designated sites and irreplaceable habitats);

l. The historic environment (as identified through a Heritage and Archaeology Statement), including heritage and archaeological assets and their settings; and

m. The character and quality of the area, in which the development is situated, through poor design.

Where appropriate, enhancement of the environment will be sought, including the enhancement of the Public Rights of Way Network, creation of recreation opportunities, reduction of flood risk elsewhere through betterment, and enhancement of the natural, historic and built environment and surrounding landscapes.

Each of these issues, where relevant, have been addressed in the text above, and the comments are thus not repeated in response to the requirements of Policy MW2.

Policy MW3: Transport

All proposals for minerals development or waste management facilities must assess and consider positively the potential for non-HGV transportation of materials to and from the facilities, principally by rail or water. The County Council will consider minerals and waste development proposals to be satisfactory in terms of access where anticipated HGV movements, taking into account any mitigation measures proposed, do not generate:

a) Unacceptable risks to the safety of road users and pedestrians;

b) Unacceptable impacts on the capacity and/or efficiency of the highway network (including the trunk road network);

c) Unacceptable impacts on air quality (particularly in relation to any potential breaches of National Air Quality Objectives and impacts on any Air Quality Management Areas);

d) Unacceptable physical impacts on the highway network (e.g. road or kerbside damage).

Planning applications for new minerals development or waste management facilities, or proposals that generate an increase in traffic movements or traffic impact, must be accompanied by a Transport Statement or Transport Assessment that demonstrates:

• Suitable highway access and egress in accordance with published highway design guidance;

• A suitable route to the nearest major road (trunk road or principal road or main distributor road), which may need to be incorporated in a formal Routing Agreement;

• Consideration of other road users, including cyclists, horse riders and pedestrians; and

• Appropriate measures to reduce car travel to the site by workers and visitors and encourage walking, cycling and use of public transport.

Again, these issues have been addressed in response to Core Strategy policy CS15, and are thus not repeated here

Policy MW6: Agricultural soils

Where development is proposed on agricultural land, the County Council has a clear preference for locating new mineral extraction and associated activities, and composting facilities, on land of agricultural grades 3b and 4. Development proposals affecting Grade 1 agricultural land will only be permitted in exceptional circumstances, where it is demonstrated that there are no alternative locations for the development. In addition to the above, when minerals development, particularly extraction, is proposed on agricultural land of grades 1, 2 or 3a it will only be permitted where:

• Provision is made for high standards of soil management that would enable restoration to a condition at least as good as its previous agricultural quality. To demonstrate this, soil and land quality surveys, and soil handling and replacement strategies (based upon Defra's 'Good Practice Guide for Handling Soils') must be submitted to the County Planning Authority; or

• The benefit of restoring the land to another after-use can be shown to outweigh the loss of the agricultural use of the land.

As above, these issues have been considered in response to Core Strategy Policy DM16 and are not repeated here.

Policy MP1: Provision for minerals extraction – Strategic Policy

The strategy for minerals extraction is to allocate sufficient sites to meet the forecast need for both sand & gravel and hard rock (carstone). For sand and gravel, specific sites to deliver at least 20,313,300 tonnes of resources will be allocated. The sand and gravel landbank will be maintained at a level of at least 7 years' supply (excluding any contribution from borrow pits for major construction projects). Mineral extraction for sand and gravel outside of allocated sites will be resisted by the Mineral Planning Authority unless the applicant can demonstrate: a) There is an overriding justification and/or overriding benefit for the proposed extraction, and b) The proposal is consistent with all other relevant policies set out in the Development Plan.

The proposed development at Stanninghall Quarry is a key component of the strategic policy and would deliver over 20% of the overall identified sand and gravel requirement for Norfolk during the Plan period to 2036.

Policy MP6: Cumulative impacts and phasing of workings

Where a proposed mineral extraction site is considered acceptable (in its own right) but the cumulative impact of a proposal in conjunction with other existing, permitted or allocated minerals extraction sites in the proximity is considered unacceptable, the proposal may be considered acceptable if:

• phased so that one site follows the completion of the other, or

• the applicant can demonstrate that the adverse cumulative impacts can be adequately mitigated.

Proposals must also comply with the development management criteria in Policy MW2.

As noted above in response to Core Strategy Policy DM15, there are not considered to be any material cumulative impact issues in this case, and no additional specific cumulative impact mitigation measures are deemed to be required.

Policy MP7: Progressive working, restoration and after-use

Proposals for new mineral workings must be accompanied by a scheme for the phased and progressive working and restoration of the site throughout its life to ensure that the worked land is reclaimed at the earliest opportunity. Phased and progressive working and restoration must seek to reduce and mitigate potential impacts, including to amenity, landscape, the natural, built and historic environment, through minimising the area of land occupied at any one time by the mineral working. Applications to vary planning conditions

to amend progressive working and restoration schemes will only be acceptable where exceptional circumstances justify a change from the permitted schemes. Restoration and consequent after-use of mineral extraction sites and associated development will be determined on a case-by-case basis. After-use proposals may include agriculture, forestry, ecology, reservoirs, amenity or flood alleviation. Preference will be given to restoration that:

• enhances Norfolk's biodiversity (focussing on priority habitats and species in Norfolk),

• contributes positively to identified Green Infrastructure corridors and/or ecological networks, and

• creates high-quality, locally distinctive landscapes.

• Reinstates Best and Most Versatile agricultural land, where it occurs.

The restoration proposal must demonstrate that:

• The appropriate restoration and after-use is both feasible and achievable in the proposed time scales.

• Due consideration has been given to opportunities to improve public access, particularly to implement the County Council's Rights of Way Improvement Plan.

• Due consideration has been given to supporting the aims of the Norfolk Green Infrastructure Strategy / Ecological networks.

• Any important geology or geomorphology on the site will be retained in sample exposures for study purposes where practical and safe to do so.

Again, these issues have been commented upon in response to Core Strategy Policy DM 14, but in response to the more comprehensive schedule contained in Policy MP7, the restoration strategy satisfies the 'preferences' which are listed in terms of the biodiversity enhancements which would be delivered; the contribution provided to the ecological network via the links associated with the native woodland planting and hedgerows; the high quality landscape which would be established, in keeping with the character of the wider landscape; and the reinstatement of best and most versatile agricultural land over the same surface area as that which existed prior to the development at Stanninghall Quarry.

Policy MP8: Aftercare

Where the proposed restoration following mineral extraction is to an agriculture, forestry, amenity or ecology after-use; or includes a geological exposure, an outline aftercare strategy for at least five years is required prior to the determination of the planning application. The outline strategy should set out the land management proposed to bring the restored land up to the required standard for the proposed after-use. Planning conditions and/or longer-term planning obligations will be used to ensure that a detailed annual management report is provided. The annual management report must include any measures required, following the annual aftercare inspection, to achieve the outline aftercare strategy.

An outline aftercare management strategy for the respective restoration land uses is included within section 7.4 of this PAS, where the details can form the basis for the submission of a more detailed 5 year aftercare management plan to be required by planning condition.

9.5 Planning Policy Conclusions

In terms of Section 38 (6) of the Act and the correct approach of distilling the 'key thrust' of the development plan, the underlying requirement in relation to mineral policy and aggregate provision is to ensure steady and adequate supplies of aggregate in a way which minimises environmental effects. This is an exercise which has been undertaken via the emerging MwLP Preferred Options, which identifies future requirements, and which proposes to allocate sites which are deemed to be capable of being worked with the least environmental and amenity effects. Those proposed allocated sites include the proposed northern extension to Stanninghall Quarry as site MIN65.

This is reflected in emerging policy in the MWLP which:

(i) Commits to ensuring the availability of a landbank of permitted reserves of sand and gravel sufficient for at least 7 years extraction (Policy MP1);

(ii) Allocates Preferred Sites to ensure adequate available reserves throughout the plan period (Policy MP1 and 'Land north of Stanninghall Quarry' Policy MIN65);

(iii) Introduces a firm presumption in favour of granting planning permissions for the release of reserves at the Preferred Sites as opposed to non allocated sites (Policy MP1);

(iv) Identifies 'specific issues' relating to the Preferred Sites which should be addressed in development schemes for the Preferred Sites (REF Policy MIN65 for land north of Stanninghall Quarry'; and

(v) Sets out related development management criteria to regulate environmental and amenity impacts, which follows similar policy in the adopted Minerals Core Strategy.

The landbank of permitted reserves remains close to the minimum level of 7 years depending on the method of calculation (ref section 9.2.3 above), and there is an acknowledge trend of a declining landbank of permitted reserves (ref Local Aggregates Assessments). Additional reserves need to be released to supplement the landbank and maintain a level of "*at least*" 7 years supply.

The northern extension to Stanninghall Quarry is allocated in the emerging MWLP Preferred Options as a site for future extraction and is an essential component of the NCC strategy for future sand and gravel supply.

The site-specific issues have been considered in section 9.4.3 above. All required issues have been fully addressed in the design of the development scheme and in the accompanying EIA / ES. Similarly, the restoration scheme has been designed to deliver the biodiversity and landscape enhancement objectives which have been highlighted.

The scheme is considered to be similarly in accordance with development management policies of the Core Strategy and emerging updated development management policies set out in the MWLP Preferred Options. MLP. There are no other material considerations which militate against the release of the reserves at the Stanninghall Quarry northern extension site.

The Applicants accordingly conclude that the scheme is in accordance with the adopted development plan and the emerging MWLP to which significant weight should be attached. It is therefore entitled to a presumption in favour of planning permission being granted, where this position is further endorsed by policy set out in the NPFF (reference NPPF paragraphs 7, 8 and 11).

10.0 COMMUNITY ENGAGEMENT

10.1 Introduction

The Applicant appointed specialist community engagement company EQ Communications (EQ) to conduct the community consultation and report on feedback. This included pre-application consultation and engagement with local residents, stakeholders and elected representatives over a four-month period, organising a "virtual" public exhibition (necessitated through Covid-19 restrictions on public gatherings) and analysing feedback. The application has considered feedback in finalising the submitted proposal.

The revised NPPF emphasis that "*Early engagement has significant potential to improve the efficiency and effectiveness of the planning application system for all parties. Good quality preapplication discussion enables better coordination between public and private resources and improved outcomes for the community.*" (ref para 39).

It continues by noting that "*Local planning authorities have a key role to play in encouraging other parties to take maximum advantage of the pre-application stage. They cannot require that a developer engages with them before submitting a planning application, but they should encourage take-up of any pre-application services they offer. They should also, where they think this would be beneficial, encourage any applicants who are not already required to do so by law to engage with the local community and, where relevant, with statutory and non-statutory consultees, before submitting their applications.*" (ref para 40).

It further notes that "The more issues that can be resolved at pre-application stage, the greater the benefits […]." (ref para 41).

These themes are already catered for in the NCC "Statement of Community Invovlement" (SCI) adopted in December 2018, which, whilst primarily associated with community involvement in the preparation of the development plan (section 2 of the SCI), also emphasises the importance of community involvement in planning applications, and the role and importance of pre-application community consultation (section 3 of the SCI). The document encourages Applicants to carry out a public involvement programme by a range of measures including public exhibitions and displays, neighbour notification as well as public or one-to-one meetings.

Tarmac has followed this advice as much as is achievable amidst the ongoing restrictions imposed by the UK Government arising from Covid-19 and the constraints this places on organising public events and with respect to ensuring social distancing measures are upheld. Nevertheless, Tarmac has adapted its established practice of undertaking community consultation prior to submitting applications for mineral extraction at its UK sites as a means of both informing the local community of the draft proposals and, where possible, accommodating community feedback into the final submitted proposal.

Tarmac began consulting informally with key stakeholders in June 2020, including meetings with Norfolk County Council, Broadland District Council, Parish Councils and the local MP. As an existing quarry, a Quarry Liaison Group has been operational at Stanninghall from the outset of the quarry development, meeting bi-annually with members of the county, district, and parish councils to discuss issues of local concern as well as share future development

proposals. The formal consultation period ran between September and October, with engagement with key stakeholders and a "virtual" public exhibition of the draft proposals, supported by making hard copies of the exhibition information available locally, as well as publicising the proposals via hard copy flyers and social media.

This chapter of the Planning Application Statement is written to meet the requirements of a Statement of Community Involvement.

10.2 Consultation activities

The consultation phase looked to raise awareness of the Applicant's proposals and provide local residents, stakeholders and elected members with an opportunity to provide feedback.

10.2.1 Key stakeholders

Initial letters were sent on 8th June 2020 to political stakeholders and key stakeholders, introducing the Applicant's scheme and the plans to carry out an environmental impact assessment. On 10th September 2020, a second letter was sent inviting stakeholders to the "virtual" public exhibition. A copy of examples of both letters can be found in **Appendix 2,** with a list of stakeholders.

The letter invited each to an online meeting to present the proposals in advance of promoting the public consultation to the wider community. Meetings were secured with Horstead Parish Council, Frettenham Parish Council, Cllr Fran Whymark, district councillor for Wroxxham ward, Broadland District Council and county councillor for Wroxham electoral division, Norfolk County Council, and Jerome Mayhew, MP for Broadland. A brief summary of each meeting is included in Table 10.1 below.

Table 10-1Summary of issues raised by key stakeholders

Stakeholder	Date of meeting	Comments raised
Cllr Fran Whymark	23 June 2020	• Standoff distance to residential properties North East of the site • Consideration of public access to be incorporated within the restoration proposals
Frettenham Parish Council	23 June 2020	• Question raised on any potential plans to extend southwards following the current application
Jerome Mayhew MP	26 June 2020	• Concerns regarding management of dust, noise, and visual impacts from nearby residential properties • Discussions concerning the potential height of screening bunds to the North East of the site • Suggestion of knocking on doors locally to notify nearby residents

Horstead Parish Council	15 July 2020	• Duration of extraction operations • Rate of extraction and whether there were proposals to increase this • Consideration of impacts from nearby Anglian Water proposals • Ensuring the consultation reached a wide enough audience online

10.2.2 Publicity for local residents and businesses

Letters were hand delivered on 14th September 2019 to 30 home and business addresses closest to the site, introducing the scheme and explaining the forthcoming "virtual" public exhibition. A copy of the letter can be found in **Appendix 3**.

All residents and businesses within the boundary area of the map below were sent invitations to the public exhibition via a flyer circulated on 15th September 2019, also including a feedback form to be returned via a Freepost service upon the launch of the "virtual" public exhibition. The distribution area was identified to include communities and individual properties in the vicinity of the quarry, within a one-mile radius of the centre of the overall proposed development, encompassing the main settlements of Horstead and Fretteham. In total, 713 letters were distributed (Figure 10.1). A copy of the publicity flyer can be found in **Appendix 4**.

In order to ensure that the correct stakeholders were identified, the administrator of the Horstead and Coltishall Community Page on Facebook was asked to advertise the consultation to its 2,000 followers, which was posted mid-way through the consultation period, on 26th September 2020. The Facebook post can be found in **Appendix 5.**

10.2.3 Public exhibition

Owing to the exceptional circumstances arising from Covid-19, it was agreed that a "virtual", online-led public consultation was necessary in order to adhere to Government guidance on public gatherings and social distancing measures.

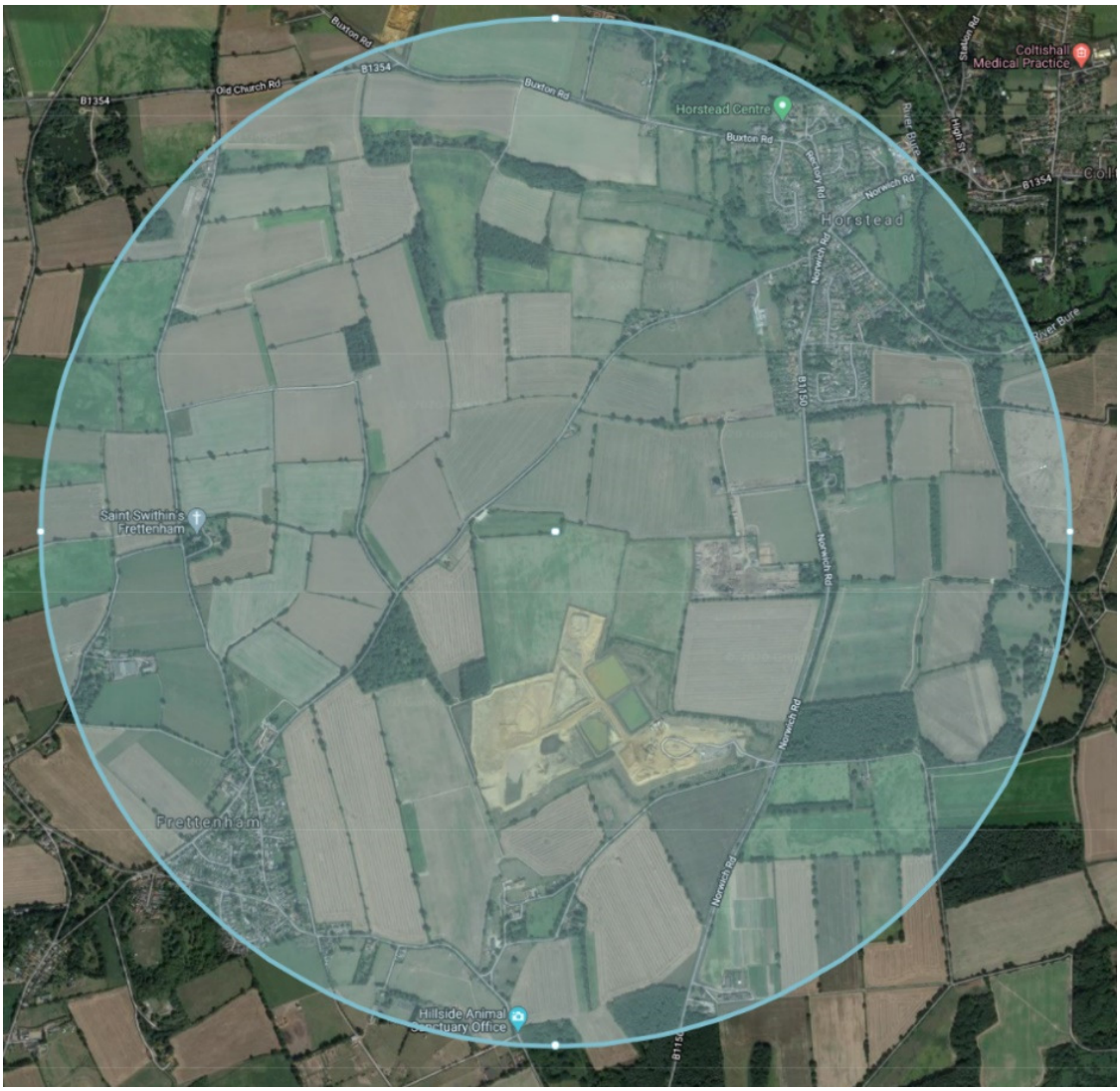
The virtual public exhibition website **http://tarmac-stanninghall.virtualexhibition.info** launched on Monday 24th September 2020, with a consultation period to receive community feedback lasting for two weeks until closing on Sunday 4th October 2020. Two dedicated online question and answer (Q&A) sessions were also arranged on to allow local residents the opportunity to ask questions to the project team after reviewing the available information on the proposals. These were held on 29th September and 30th September 2020, between 6pm and 7pm.

The duration of the consultation period was chosen to meet the following objectives:

- To attract as many visitors as possible;
- To ensure people had time to familiarise themselves with the project, as well as how to navigate the website; and

- To provide sufficient time for the community to review hard copies of information and return feedback via post if they were unable to access a computer or the internet or had a preference to submit feedback in written form.

Figure 10-1 Distribution Area for Virtual Public Exhibition Invitations



In total, 171 people visited the virtual public exhibition website, with 13 completing a feedback form. Three people completed the feedback form online, whilst 10 people completed a feedback form and returned by post. A further one comment was received via email. A copy of the feedback form can be found in **Appendix 6**, with a summary of feedback included in this chapter.

A total of 13 information boards were displayed on the virtual exhibition website detailing the proposals, alongside enlarged maps of the phased extraction proposals.

Hard copies of the exhibition boards, and feedback forms were also left at The Recruiting Sergeant pub and Coltishall Pharmacy to coincide with the launch of the public exhibition information going live and were available upon request. A copy of the exhibition boards can be found in **Appendix 7**.

10.2.4 Feedback methods

A number of formal feedback methods were adopted to enable attendees to register their views. These included:

- Completing the feedback form, either online through the virtual public exhibition website, or via hard copy, returned via our Freepost service;
- Telephoning the dedicated community liaison officer Charlie Gilmartin via 020 8051 8719
- Emailing charlie@eqcommunications.co.uk

Whilst an hour was allocated across two evenings for residents to ask the project team questions in real team, unfortunately no members of the local community registered to take part.

The feedback that was received via feedback forms and email was mixed. Some residents were supportive of the proposed restoration scheme. Concerns were raised however around the extent of traffic on the B1150, the speed of fleet vehicles that use the local road network, and that the restoration scheme under the existing operations had not yet taken place. Feedback also noted that more engagement with the local community would be well-received.

The issues are summarised further below in Table 10.2 together with a short response from the Applicant.

Table 10-2 Virtual Public Exhibition: Key issues

Issue Raised	Key Comments	Response
Access: traffic along the B1150 and wider area	One respondent cited concerns of there already being too much traffic along the B1150, and that any additional lorries would compound any congestion on the local road network	The proposals are not seeking to increase the number of lorries but to maintain current levels but over a longer period of time.
Community engagement	A number of respondents suggested that more open days at the quarry should be arranged, as well as the possibility of engagement with schools either off or on site.	Tarmac welcomes the opportunity to engage with the local community including schools to increase awareness of the quarrying activities taking place at Stanninghall and how we seek to reduce the impacts of the operations so welcome the chance to show case these operations. Tarmac have elsewhere successfully engaged with schools and would be keen to engage with the local schools.
Economic impact	One respondent asked whether any local economic jobs would be created through the extension proposals.	Whilst jobs would not be created, the extension would safeguard the existing jobs at the Quarry.
Noise and dust	General concerns were raised regarding noise and dust and the need to control such emissions	Tarmac take these matters very seriously and operate in strict accordance with the conditions imposed by both the Planning Authority and Environmental Health. Noise monitoring takes place regularly to ensure compliance and dust suppression measures are employed to reduce those impacts. If there are issues, then Tarmac welcomes feedback so that any issues can be addressed as quickly as possible.
Proximity of operations to Horstead	Respondents noted concerns regarding the northern extent of the operations and that current screening proposals and measures to monitor environmental impacts are insufficient. Suggestions were noted to introduce early tree planting when working the extraction phase closest to Horstead.	Tarmac are confident that its proposals to extend the quarry northwards will be well screened by both the natural lay of the land, and the various mitigation measures proposed including screening bunds and hedgerow strengthening which will also assist with screening the operations as they move northwards closer to Horstead.
Restoration land uses	Comments were raised suggesting that south facing slopes should not be extensively planted with trees, as they tend not to survive through a lack of	The comments are noted, and it is recognised that if not considered carefully then such schemes commonly fail.

	moisture, and that any trees planted should be watered regularly. Suggestions of planting flower rich grassland as the best restoration land use were also made.	Tarmac have considerable experience in successful tree planting and management schemes on a number of sites across East Anglia and the wider UK. The aftercare requirements of the Mineral Planning Authority ensures that any tree failures are replaced over a 5 year period and therefore Tarmac will want to ensure that the schemes are well managed to reduce such losses. The development of species rich grassland is noted and the restoration scheme provides for significant areas of such grassland to be developed alongside both woodland and arable farmland.
Restoration implementation	One respondent suggested that more work was required to restore existing areas that had already been worked, and that tree planting for screening should be conducted as soon as any planning consent is obtained, to mitigate any environmental and wildlife impacts.	The quarry is being progressively restored as operations progressed ideally with soils and overburdens being directly placed in their final resting place as we strip areas ahead of mineral extraction. Significant restoration works are currently taking place within the quarry. Proposals to carry out advanced tree planting and/or hedgerow enhancement will be carried out at the earliest opportunity to allow these screens to develop ahead of quarrying operations continuing into the extension areas.
Rights of way	One respondent asked whether there was any potential for public benefit from the landscaped restoration areas, and on whether public footpaths were being considered as part of the restoration scheme.	The land is leased by Tarmac and do not own the land itself. Tarmac will need to consider whether any opportunities can be realised as part of the proposed development.
Speed of vehicle fleet	There were general concerns noted about the speed of lorry drivers upon leaving the site and along the B1150, with one suggestion that lorries needed to adhere to local speed limits.	Tarmac monitors speed and takes any complaints about speeding lorries seriously. Residents are encouraged to note the details of any lorries that do speed, and we can take the appropriate action. These issues are discussed at the Quarry Liaison meeting, but the quarry management encourages anyone to contact the site if they have concerns.

COMMUNITY ENGAGEMENT 10

11.0 SUMMARY AND CONCLUSIONS

This PAS sets out the details of a planning application, submitted by Tarmac Trading Limited to Norfolk County Council (ECC), which seeks planning permission for a northern extension to Stanninghall Quarry, and the integration of the existing quarry permitted area at Stanninghall Quarry with the northern extension area as an overall consolidation scheme.

The application makes provision for:

(i) The phased extraction of some 5.03m tonnes of sand and gravel comprising some comprising some 770,000 tonnes with the Phase 4B area, some 3.83m tonnes within the northern extension area, and some 450,000 tonnes within the plant site area;

(ii) The extraction of sand and gravel at an average rate of some 300,000 tonnes per annum, giving a working life of some 17 years

(iii) The continued use of the existing Stanninghall Quarry processing plant and site access onto the B1150 as part of the extension development;

(iv) The temporary retention of the screen bunds around the processing plant site, pending use of the soil resources in the bunds as part of the final restoration works;

(v) The extraction of sand and gravel in 6 phases, comprising phase 4B within the western area of the existing permitted quarry, phases 5-8 within the northern extension area, and a final phase 9 associated with the extraction of sand and gravel from beneath the plant site area, pending final restoration works within the plant site;

(vi) A phased programme of progressive extraction and ongoing restoration in phases behind the advancing working phase; and

(vii) The progressive implementation of a restoration strategy designed to deliver landscape and biodiversity enhancements, as required by planning policy.

The PAS incorporates the formal planning application forms and introduces the application plans which are produced at the rear of the PAS. It also describes the individual elements of the working and restoration scheme, together with the related engineering and other operations which constitute the planning application development.

The PAS includes an overview of the need to release additional reserves of sand and gravel in the context of national and local planning policy and guidance. It concludes that there is a strong case of need for the development, and that the release of the reserves at the application site would be fully consistent with planning policy objectives relating to maintaining "*steady and adequate supplies*".

The ES (Volume 1) has reached the underlying conclusion that the development could proceed without giving rise to adverse impacts on the comprehensive range of environmental issues which have been assessed. That conclusion is corroborated by the parallel exercise

of reviewing the development against planning policy objectives and requirements for environmental protection. This PAS contends that the development could proceed in accordance with those planning policy requirements, and thus in accordance with the development plan.

In those circumstances the Applicants consider that there should be a firm presumption in favour of planning permission being granted for the proposed development.

APPLICATION PLANS

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APPENDICES

1. Tarmac Environmental Policy Statement
2. Initial Stakeholder advice letter 08/06/20, Stakeholder update letter 10/09/20, and list of stakeholders
3. Letter to closest residents 14/09/20
4. Public exhibition publicity leaflet 15/09/20
5. Facebook post 26/09/20
6. Public Exhibition feedback form
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APPENDICES

Appendix 1 Tarmac Environmental Policy Statement

APPENDICES

Appendix 2 Initial Stakeholder advice letter 08/06/20, Stakeholder update letter 10/09/20, and list of stakeholders

APPENDICES

Appendix 3 Letter to closest residents 14/09/20

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Appendix 4 Public exhibition publicity leaflet 15/09/20

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Appendix 5 Facebook post 26/09/20

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Appendix 6. Public Exhibition feedback form

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Appendix 7. Public Exhibition Boards

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