

A12 Chelmsford to A120 widening scheme TR010060

6.3 ENVIRONMENTAL STATEMENT APPENDIX 11.2 MINERAL INFRASTRUCTURE ASSESSMENT

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**ENVIRONMENTAL STATEMENT APPENDIX 11.2 MINERAL
INFRASTRUCTURE ASSESSMENT**

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JACOBS UK LIMITED

A12 CHELMSFORD TO A120 WIDENING SCHEME

MINERAL INFRASTRUCTURE ASSESSMENT

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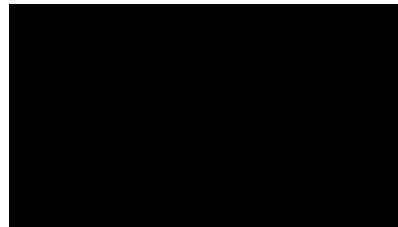
MINERALS INFRASTRUCTURE ASSESSMENT

MAY 2022

PREPARED AND APPROVED BY:

NEIL HUGHES Technical Director,

Chartered Mineral Surveyor
and Registered Valuer



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EXECUTIVE SUMMARY

The proposed scheme between junctions 19 (Boreham interchange) and 25 (Marks Tey interchange) is proposed to improve safety, solve strategic traffic problems arising from inadequate and varying route standards, and reduce congestion and delay, which will collectively increase resilience along this key part of the strategic road network (SRN).

The Applicant is seeking powers to widen the existing A12 to three lanes (where it is not already three lanes) between junction 19 and junction 25. The proposed works extend for a total of 15 miles (24km).

The proposed scheme also includes safety-related improvements, including closing off existing private and local direct accesses onto the main carriageway, and alterations and improvements to existing non-vehicular routes along the A12 for walkers, cyclists and horse riders (WCH).

Major connecting roads include the A130, which joins the A12 at junction 19, and the A120, which joins the A12 at junction 25. The B1137 links Boreham to junction 19 and Hatfield Peverel, and the B1018 and the B1019 link Maldon to Witham and Hatfield Peverel respectively. The B1023 (Inworth Road) links Kelvedon to Tiptree, and Braxted Park Road connects Tiptree to Rivenhall End. These are the main local roads that connect directly to the A12 and therefore will be subject to some associated development to integrate the proposed scheme with the local traffic network.

The proposed scheme will also require the diversion and alteration of utilities, including apparatus for electricity, communications, water and gas. One of the high-pressure gas main diversions has the potential to be a Nationally Strategic Infrastructure Project (NSIP) in its own right under section 20 of the Planning Act 2008.

Policy S2 (Strategic priorities for minerals development) of the Essex Minerals Local Plan 2014 (MLP) requires safeguarding mineral resources of national and local importance, mineral transshipment sites, Strategic Aggregate Recycling facilities and coated roadstone plants, so that non-minerals development does not sterilise or compromise mineral resources and mineral supply facilities.

Policy S8 (Safeguarding mineral resources and mineral reserves) of the MLP requires that a non-mineral proposal located within a Mineral Consultation Area (MCA) must be supported by a Mineral Infrastructure Assessment (MIA) to ensure that existing and allocated mineral sites and infrastructure are protected from inappropriate neighbouring developments that may prejudice their continuing efficient operation. Policy S8 of the MLP defines MCAs as

extending up to 250m from the boundary of a minerals infrastructure site or allocation for the same.

The Order Limits of the proposed scheme passes through a number of MCA for existing and allocated mineral sites and infrastructure, namely Bulls Lodge Quarry, Colemans Farm Quarry, Marks Tey Brick Clay Quarry, Marks Tey rail sidings.

Consequently, the requirements of Policy S8 are triggered and so a MIA is required as part of the DCO application to assess and reduce any adverse impact of the safeguarded minerals and infrastructure sites arising from the proposed scheme.

At Colemans Farm Quarry, the development of the proposed scheme would have a fundamental effect on the operation of the quarry as the proposed scheme has the potential to sterilise some of the consented mineral resources in the northern part of the quarry extraction area which would be contrary to national policy and the policy content of the Essex MLP. The proposed measures for Colemans Farm Quarry, i.e. the submission of three planning applications for the re-phasing of the mineral extraction operations (prior extraction) and restoration of the land along the alignment of the proposed scheme, if approved, will avoid the sterilisation of mineral reserves and reduce the operational and financial impact on the operation to an acceptable level. However, this will only be achieved if the removal of the minerals and restoration of the areas within the Order Limits can be achieved without delaying the proposed scheme, otherwise the minerals would have to remain in-situ.

At Bulls Lodge Quarry, one of the haul roads for the proposed scheme temporarily intersects the safeguarded site access for the operational mineral site and coated stone plant. Whilst these sites are likely to encounter some disruption to the access/egress during the construction phase of works associated with junction 19 (Boreham Interchange), traffic management plans would be prepared to keep disruption to a minimum.

Apart from Colemans Farm Quarry, it is considered unlikely that the proposed scheme would give rise to any impact through loss of capacity or by constraining the operation of the remaining facilities.

1 INTRODUCTION

1.1.1 Wardell Armstrong LLP has been instructed by Jacobs UK Limited to produce a Mineral Infrastructure Assessment Report as part of the DCO application for the proposed A12 Chelmsford to A120 widening scheme road development (the proposed scheme).

2 THE PROPOSED SCHEME

2.1 Proposed scheme overview

2.1.1 The proposed scheme between junctions 19 (Boreham interchange) and 25 (Marks Tey interchange) is proposed to improve safety, solve strategic traffic problems arising from inadequate and varying route standards, and reduce congestion and delay, which will collectively increase resilience along this key part of the SRN.

2.1.2 The Applicant is seeking powers to widen the existing A12 to three lanes (where it is not already three lanes) between junction 19 and junction 25. The proposed works extend for a total of 15 miles (24km).

2.1.3 The proposed scheme also includes safety-related improvements, including closing off existing private and local direct accesses onto the main carriageway, and alterations and improvements to existing non-vehicular routes along the A12 for WCH.

2.1.4 Major connecting roads include the A130, which joins the A12 at junction 19, and the A120, which joins the A12 at junction 25. The B1137 links Boreham to junction 19 and Hatfield Peverel, and the B1018 and the B1019 link Maldon to Witham and Hatfield Peverel respectively. The B1023 (Inworth Road) links Kelvedon to Tiptree, and Braxted Park Road connects Tiptree to Rivenhall End. These are the main local roads that connect directly to the A12 and therefore will be subject to some associated development to integrate the proposed scheme with the local traffic network.

2.1.5 The proposed scheme will also require the diversion and alteration of utilities, including apparatus for electricity, communications, water and gas. One of the high-pressure gas main diversions has the potential to be a NSIP in its own right under section 20 of the Planning Act 2008.

2.1.6 A detailed description of the proposed scheme can be found in Chapter 2: The proposed scheme, of the ES [TR010060/APP/6.1], and the location and extents of the proposed scheme are illustrated on Figure 1.1 of the Environmental Statement [TR010060/APP/6.2].

2.2 Application area in relation to safeguarded sites(s)

- 2.2.1 The geographic extent of the proposed scheme, which is defined by Order Limits, is approximately 863ha, with permanent acquisition of land estimated at approximately 657ha.
- 2.2.2 These figures are consistent with the Order Limits issued for the proposed scheme on 9 January 2022. There has subsequently been a net reduction in the Order Limits.
- 2.2.3 Both the Order Limits and permanent acquisition areas include land that is already within the existing National Highways ownership boundary.

2.3 Construction programme and phasing

- 2.3.1 Construction is currently scheduled to start on site in Q1 2024. The proposed scheme would take approximately four years to construct, with the proposed scheme open to traffic in Q4 2027. Further details on construction programme and phasing are provided in Chapter 2: The proposed scheme, of the Environmental Statement [TR010060/APP/6.1].

3 PLANNING POLICY – MINERALS SAFEGUARDING

3.1 Planning policy context

- 3.1.1 The proposed scheme falls within the administrative boundaries of Braintree District Council, Chelmsford City Council, Colchester Borough Council and Maldon District Council (as the Local Planning Authorities) and Essex County Council (ECC) (as the Minerals and Waste Planning Authority).

3.2 National Planning Policy

- 3.2.1 The National Networks National Policy Statement (NNNPS) sets out the Government's policies to deliver the development of Nationally Significant Infrastructure Projects (NSIP) on the national road and rail networks in England. The Secretary of State uses the NNNPS as the primary basis for making decisions on DCO applications.
- 3.2.2 The key policies from the NNNPS relevant to this scope of work are:
- Paragraph 5.169 states that applicants should safeguard any mineral resources on the proposed site as far as possible.
 - Paragraph 5.182 states that where a proposed development has an impact on a Mineral Safeguarding Area (MSA), the Secretary of State should ensure that the applicant has put forward appropriate mitigation measures to safeguard mineral

resources.

3.3 Local Planning Policy – Minerals Safeguarding Policy

- 3.3.1 Strategic objective (Policy S2- Strategic priorities for minerals development) in the Essex Minerals Local Plan 2014 (MLP) states that the strategic priorities for minerals development will be promoted by: ‘...Safeguarding mineral resources of national and local importance, mineral transshipment sites, Strategic Aggregate Recycling facilities and coated roadstone plants, so that non-minerals development does not sterilise or compromise mineral resources and mineral supply facilities.’
- 3.3.2 Policy S8 (Safeguarding mineral resources and mineral reserves) of the MLP requires that a non-mineral proposal located within a Mineral Consultation Area (MCA) must be supported by a Minerals Infrastructure Assessment (MIA) to ensure that existing and allocated mineral sites and infrastructure are protected from inappropriate neighbouring developments that may prejudice their continuing efficient operation. Policy S8 of the MLP defines MCAs as extending up to 250m from the boundary of a minerals infrastructure site or allocation for the same.
- 3.3.3 The Order Limits area for the proposed scheme passes through a number of MCA, for existing and allocated mineral sites and infrastructure, as shown on Figure 11.1 of the Environmental Statement [TR010060/APP/6.2].
- 3.3.4 A list of relevant mineral designations and specific facilities which would potentially be affected by the proposed scheme are listed in **Table 1** below and described in more detail in Section 4 of this report.

TABLE 1: POTENTIALLY AFFECTED MINERALS SITES AND INFRASTRUCTURE	
Site Type	Site Name
Mineral Local Plan Safeguarded Sites	Bulls Lodge Quarry
	Colemans Farm Quarry
	Marks Tey Brick Clay Quarry
Minerals Infrastructure	Bulls Lodge Quarry Coated Stone Plant
	Colemans Farm Quarry (aggregate bagging plant/ready mixed concrete plant)
	Marks Tey Rail Sidings

**TABLE 1:
POTENTIALLY AFFECTED MINERALS SITES AND INFRASTRUCTURE**

Site Type	Site Name
<p>*The information in this table was provided by Essex County Council in their Scoping Opinion (Planning Inspectorate, 2021) response, and is considered correct as of March 2021. No additional sites or planning applications were identified by Essex County Council in its statutory consultation response in August 2021.</p>	

4 MINERAL INFRASTRUCTURE SITES POTENTIALLY AFFECTED BY PROPOSED SCHEME

4.1 Bulls Lodge Quarry

Location

4.1.1 Bulls Lodge Quarry, operated by Hanson Quarry Products Europe Ltd, is located to the northeast of Chelmsford (Ordnance Survey Grid Reference (OSGR) TL 74250 11466). and is a strategic mineral site in the provision of construction aggregates. The quarry is allocated in the Essex County MLP and safeguarded.

4.1.2 Access/egress for the quarry is via a 1.2km concrete haul road that connects the site to Generals Lane. Junction 19 (Boreham Interchange) is approximately 650 metres to the south along Generals Lane.

Nature of safeguarded facility

4.1.3 The quarry is a major supplier of sand and gravel products to the Chelmsford and southeast of England construction market.

4.1.4 The development of the quarry is regulated by two existing planning permissions granted in 1990. Planning consent Ref. CHL/1019/87, known as the Boreham (Proving Ground) permission covers c.245 hectares and is approximately 75% complete.

4.1.5 Permission CHL/1890/87, known as the Park Farm Permission, covers a further 243 ha and is situated closest the proposed scheme. It contains 4.5 million tonnes of sand and gravel, sufficient for approximately six years of production.

Type of material handled/processed/supplied

4.1.6 The quarry is extracting the commercial deposits of the Chelmsford Gravels to produce a range of sand and coarse gravel aggregate products that are used by Hanson directly and sold to a wide range of customers across Essex and neighbouring counties.

Throughput/capacity

- 4.1.7 Output fluctuates in relation to market demand, which is a function of the prosperity of the wider economy, activity in the construction industry, spending on infrastructure projects, pricing etc.
- 4.1.8 Average sales from Bulls Lodge are 750,000 tonnes per annum (tpa). The maximum rate of output of up to 1,000,000 tonnes (approximately) of sand and gravel is considered the highest level of production achievable from the existing plant and working methods.

4.2 Colemans Farm Quarry

Location

- 4.2.1 Operated by Brice Aggregates Limited, the quarry is located at Colemans Farm, Little Braxted Lane, Witham, Essex, CM8 3EX.
- 4.2.2 Colemans Farm Quarry complex covers some 55.3 hectares of agricultural land. The northwestern boundary of the extant complex permission is the A12 dual carriageway, whilst to the east runs Braxted Park Road. To the southwest is Little Braxted Lane and to the southeast lies agricultural land with the River Blackwater just beyond.
- 4.2.3 Site traffic exits onto and north along Little Braxted Lane with vehicles then required to turn left to access the A12 dual carriageway. A secondary heavy goods vehicles (HGV) access for 'local deliveries' provision is available via an eastern site entrance situated off Braxted Lane.

Nature of safeguarded facility

- 4.2.4 Colemans Farm Quarry was granted approval under planning permission Ref. ESS/39/14/BTE, following completion of a Section 106 legal agreement, in June 2016. This permission permits the extraction of some 2.5 million tonnes of sand and gravel over a 17-year extraction period followed by a further year of restoration to agriculture and water based nature conservation habitats in accordance with an approved Development Plan. The mineral was to be worked in a series of 12 phases, with Phase 1 located within the central western half of the site. Subsequent phasing would then progress southwards, working in an anticlockwise direction, with final phasing ending in the northwest corner of the site area just to the south of the existing A12 carriageway.

Type of material handled/processed/supplied

- 4.2.5 The quarry is extracting high quality sand and gravel. Further planning permissions have been granted for additional ancillary infrastructure. In February 2020, permission was granted (Ref. ESS/10/18/BTE/11/1) for the installation of an aggregate bagging plant. In June 2021, planning consent (Ref. ESS/11/20/BTE) was granted for a ready mixed concrete plant with ancillary facilities.

Throughput/capacity

- 4.2.6 Since the implementation of the planning permission in 2017, approximately 550,000 tonnes of sand and gravel have been sold from the quarry.
- 4.2.7 A more recent planning permission (Ref. ESS/40/18/BTE) was granted in June 2019 and allowed an increase in HGV activity from 29 loads per day to 75 loads per day; an increase in the tonnage limit from 150,000tpa to 225,000tpa and to allow importation of other construction materials (either in as raised or processed form) for distribution to the market.
- 4.2.8 The ready mixed concrete plant has a potential throughput of around 20,000-30,000m³ per annum using aggregates processed on site.

4.3 Marks Tey Brick Clay Quarry

Location

- 4.3.1 The brickworks, operated by W H Collier Ltd is located at Church Lane, Marks Tey, Colchester, Essex, CO16 1LN.
- 4.3.2 Planning permission for the extraction of brick clay and its use in the adjacent brickworks was covered under a former Interim Development Order consent (Ref. IDO/COL/1/92A).
- 4.3.3 The IDO consent is subject to Periodic Review under the Environment Act 1995 and in October 2008, Essex County Council granted planning permission (Ref. 26/08/COL) for the continuation of brick clay extraction for use in the adjacent brickworks.

Nature of safeguarded facility

- 4.3.4 The quarry is one of only two brick clay operations in the County and has planning permission to extract brick clay up to 21 February 2042. Extraction of brick clay is limited to a depth of 28 metres below original ground.

Type of material handled/processed/supplied

4.3.5 Brick clay is confined to isolated pockets within the County. The material is used in the small-scale manufacture of bricks, roof tiles and clay materials and for specialist uses such as the construction and restoration of buildings and serving markets of a more sub-national and local character.

4.3.6 Paragraph 3.114 of the adopted Essex MLP states that the landbank for brick clay shall be at least 25 years. There are sufficient reserves of mineral at the site to provide the required landbank.

Throughput/capacity

4.3.7 Not known.

4.4 Bulls Lodge Quarry Coated Stone Plant

Location

4.4.1 The coating plant site extends over an area of 1.2 hectares and is located within the southwest corner of Bulls Lodge Quarry (OSGR TL 74610 10758), adjacent to the sand and gravel processing plant and ancillary infrastructure.

Nature of safeguarded facility

4.4.2 The facility is a roadstone coating plant producing a range of asphalt macadam mixes. In January 2004, planning permission was granted (Ref. ESS/01/11/CHL), subject to conditions, for the erection of buildings necessary for the manufacture of coated roadstone products using predominantly sand and gravel extracted from Bulls Lodge Quarry along with some recycled aggregates from the nearby recycling facility. Planning permission expires on 31 December 2030.

Type of material handled/processed/supplied

4.4.3 Planning condition 7 of consent ref (ESS/01/11/CHL/REVISED NOTICE), granted on 30 March 2011, stipulates that not less than 66% of the aggregates supplied to the development per annum shall be from indigenous sources at Bulls Lodge Quarry.

Throughput/capacity

4.4.4 The maximum HGV movements for the life of the permission shall not exceed 60 per hour during daytime hours, i.e. 0730 – 1800. This is the combined total of movements from the coating plant, sand and gravel quarry, concrete batching plant, recycling facility and bagging plant.

4.5 Marks Tey Rail Sidings

Location

4.5.1 The rail sidings, operated by Lafarge Tarmac, are located approximately 550 metres east of Marks Tey Railway Station, site centred on (OSGR) TL 92264 24170) and covers an area of approximately 2.43 hectares.

4.5.2 The site comprises an access road and sidings with an approximately 1.0 hectare storage area for aggregates. Access is via Station Road, which connects to the A120. The site is active and is safeguarded to maintain its use as a facility for mineral transshipment.

Nature of safeguarded facility

4.5.3 The MLP described the site as being used for the loading of sand and aggregates onto railway wagons for transport to London.

Type of material handled/processed/supplied

4.5.4 Sand and gravel extracted from Lafarge Tarmac's Colchester Quarry at Stanway and transported to the sidings site by road and rail.

Throughput/capacity.

4.5.5 Not known.

5 POTENTIAL IMPACT OF SAFEGUARDED MINERAL SITES & INFRASTRUCTURE ON PROPOSED SCHEME

- 5.1.1 The proposed scheme is categorised as a NSIP of strategic importance at a regional and local level.
- 5.1.2 The indirect impacts (or proximal sterilisation) from the operation of the safeguarded mineral and infrastructure sites would more commonly be associated with more sensitive land uses such as residential developments that could limit the operation of such sites.
- 5.1.3 In view of the nature of the proposed scheme, it is not considered to be susceptible to adverse impact from any of the safeguarded mineral infrastructure sites arising through noise, dust emissions, odour, traffic volume, visual impact or lighting impact.

6 POTENTIAL IMPACT OF PROPOSED SCHEME ON SAFEGUARDED SITES AND INFRASTRUCTURE

6.1 Introduction

- 6.1.1 The assessment of potential impacts upon any of the safeguarded mineral and mineral infrastructure sites are those arising from the construction and operational phases of the proposed scheme between junction 19 (Boreham Interchange) and junction 25 (Marks Tey interchange) where the sites are situated.

6.2 Distance of the proposed scheme from the safeguarded site

- 6.2.1 The distances between the mineral and mineral infrastructure sites and the proposed scheme Order Limits (at their closest point) are summarised in **Table 2** below.

TABLE 2: DISTANCE OF THE PROPOSED SCHEME FROM THE SAFEGUARDED SITES	
Mineral Operation / Infrastructure Site	Distance to Order Limits
Bulls Lodge Quarry	<ul style="list-style-type: none"> • Immediately adjacent to Park Farm consent boundary
Bulls Lodge Quarry Coated Stone Plant	<ul style="list-style-type: none"> • 406m
Coleman Farm Quarry	<ul style="list-style-type: none"> • Directly traverses across quarry operation
Marks Tey Brick Clay Quarry	<ul style="list-style-type: none"> • 840m (along Church Lane and Coggeshall Road)
Marks Tey Rail Sidings	<ul style="list-style-type: none"> • Immediately adjacent

6.3 Bulls Lodge Quarry

- 6.3.1 Bulls Lodge Quarry is already affected by the proposed Chelmsford North East Bypass (CNEB) which will traverse south to north through the quarry. The CNEB route links with junction 19 (Boreham interchange) via a radial distributor road (part of the Beaulieu Park development)
- 6.3.2 When constructed, the CNEB will cut off the existing access between the quarry workings to the west and the quarry infrastructure east. Design measures include the construction of a bridge to allow plant and machinery to access the quarry workings west of the CNEB from the compound east of the CNEB and a conveyor to transport mineral excavated to the compound.
- 6.3.3 The 250 metre MCA buffer zone drawn around the quarry extends into the proposed scheme Order Limits. However, the Order Limits do not encroach into the boundary of the Park Farm planning consent and so there is no adverse impact on the future working of the mineral reserves by the proposed scheme.
- 6.3.4 The Order limits of the proposed scheme do encroach upon Generals Lane and the quarry access road for a distance of approximately 990 metres between points TL 74691 10272 and TL 73958 09778.
- 6.3.5 The environmental impacts of the proposed scheme on the Bulls Lodge Quarry have not been assessed from a noise, dust, or odour perspective due to the quarry not being considered as a sensitive receptor.

6.4 Bulls Lodge Quarry Coated Stone Plant

- 6.4.1 Any traffic disruption arising from the proposed works between junction 19 (Boreham Interchange) and junction 20a (Hatfield Peverel South Interchange) would be minimised through traffic management plans.

6.5 Colemans Farm Quarry

Potential impact – mineral sterilisation

- 6.5.1 The construction of the proposed scheme would have a fundamental effect on the operation of the quarry as the proposed scheme has the potential to sterilise some of the consented mineral resources in the northern part of the quarry extraction area which would be contrary to national policy and the policy content of the Essex MLP.
- 6.5.2 The proposed scheme would result in the following changes to the operations at the site:

- a) Requirement to establish a new primary access into the quarry from the realigned A12 and/or its attendant connector roads into the site.
- b) Need to relocate the plant site and ancillary facilities currently in operation at the site.
- c) Need to ensure that the current void space under the route of the proposed scheme is restored to enable the realignment and construction of the A12 to proceed in a timely manner.
- d) Requirement to remove any remaining minerals not sterilised by existing development in the proposed route area to ensure that these are not needlessly sterilised. Such an approach is consistent with national and local policy guidance.
- e) Construction of the A12 along the proposed route compromises the approved restoration landform at the existing Colemans Farm Quarry site, and the ability to generate quantities of restoration materials by the practice of over deepening.
- f) The proposed scheme compromises the approved restoration habitat distribution and the ability for the operator to deliver the priority habitat creation targets that the company is subject to under the Development Plan.

6.5.3 The proposed measures for Colemans Farm Quarry, i.e. the submission of three planning applications for the re-phasing of the mineral extraction operations (within Phases 5 - 7) and restoration of the land along the alignment of the proposed scheme, if approved, will avoid the sterilisation of mineral reserves and reduce the operational and financial impact on the operation to an acceptable level.

6.5.4 However, this will only be achieved if the removal of the minerals and restoration of the areas within the Order Limits can be achieved without delaying the proposed scheme, otherwise the minerals would have to remain in-situ.

Potential impact – traffic

6.5.5 Access/egress arrangement via Little Braxted Lane would be maintained for as long as reasonably practicable before switching onto the new proposed arrangement. Quarry traffic would not be diverted back through Little Braxted village. The switch over between existing and proposed arrangement would be communicated to the quarry owners and would take place over a full weekend closure of Little Braxted Lane.

6.6 Marks Tey Brick Clay Quarry

6.6.1 The site is unaffected by the proposed scheme as the Order Limits do not encroach upon the quarry site boundary.

6.7 Marks Tey Rail Sidings

6.7.1 The Order Limits do not encroach into the sidings site and so the proposed scheme does not impact on the infrastructure site.

7 PROPOSED ENVIRONMENTAL MANAGEMENT MEASURES

7.1 General environmental management measures

- 7.1.1 All construction works would be undertaken with appropriate environmental controls in place, in line with an Environmental Management Plan (EMP). This would include the implementation of industry standard practice and measures for environmental impacts arising during construction.
- 7.1.2 A first iteration of the EMP is included with the DCO application [TR010060/APP/6.5] which outlines the essential mitigation developed as part of the Environmental Impact Assessment. A second iteration of the EMP would be developed and implemented by the Principal Contractor prior to the start of construction works, based on the requirements of the first iteration of the EMP.
- 7.1.3 An Outline Construction Traffic Management Plan (CTMP) has been prepared and submitted with the DCO application [TR010060/APP/7.7]. This provides detailed traffic management proposals for each phase of construction work. The Outline CTMP is a live document and will be reviewed and updated during the construction preparation stage and throughout the construction phase and handover period.
- 7.1.4 The following measures to reduce impact from traffic, working methods, noise and vibration, air quality and landscape and visual impacts apply to all the safeguarded mineral infrastructure sites.

7.2 Traffic management

- 7.2.1 Speed restrictions would be in place from when the works commence until completion. Lane closures would be between the hours of 20:00 to 06:00 (traffic count dependant) and full closures from 21:00 to 06:00 (traffic count dependant).
- 7.2.2 Two-lane running would be maintained between the hours of 06:00 to 20:00 to minimise the disruption to traffic flows.
- 7.2.3 All diversion routes for full closures would be pre-signed and advance warning signs would be installed prior to the closure dates.
- 7.2.4 Overnight and weekend closures may be required at tie-in locations to install new road construction arrangements and complete surfacing.

7.3 Working methods during construction

- 7.3.1 The majority of works would be undertaken during normal daytime hours with appropriate traffic management in place. Normal daytime hours are considered to be between 07:30 and 19:00 between Monday and Friday, and 07:30 and 18:00 on Saturday. During the summer months, the working hours would extend to 07:00 to 21:00 to make use of the longer daylight hours.
- 7.3.2 In addition, there would be an hour before or after these times for site set up and close down (this would include activities such as deliveries, movement to place of work, general preparation works, maintenance and safety checking of plant and machinery and site clean-up but would not involve operation of plant or machinery for construction works).
- 7.3.3 Work undertaken outside these hours, as well as on bank holidays, is considered off-peak working. There would be certain instances where evening, night-time or weekend working would be required. (see Chapter 2: The proposed scheme, of the Environmental Statement [TR010060/APP/6.1]).
- 7.3.4 The two main compounds and satellite compounds would be in 24-hour operation at certain stages of the construction programme to facilitate off-peak working.
- 7.3.5 Aggregate processing facilities, which would be included in borrow pit areas and may include crushing, grading and washing of aggregates, would only be operational during normal daytime working hours.
- 7.3.6 Some off-peak working hours may be required for piling. Piling would likely be required for construction of new structures, including bridges, gantries and retaining walls.
- 7.3.7 Traffic diversions, alternative piling methods and offline bridge deck construction are methods that would be employed, where feasible, to reduce the duration of any inconvenience due to overbridge road closures.

8 CONCLUSIONS

- 8.1.1 The Order Limits intersect with the MCA buffer zones defined around the existing mineral sites at Bulls Lodge Quarry, Colemans Farm Quarry, and the minerals infrastructure sites of Bulls Lodge Quarry Coated Stone Plant and Marks Tey Rail Sidings. However, apart from Colemans Farm Quarry, it is considered unlikely that the proposed scheme would give rise to any impact through loss of capacity or by constraining the operation of the remaining facilities.
- 8.1.2 The Order limits and construction of the proposed scheme would temporarily intersect with Bulls Lodge Quarry and Coated Stone Plant and permanently intersect with the actual boundary of the safeguarded Colemans Farm Quarry.
- 8.1.3 The proposed measures for Colemans Farm Quarry, i.e. the submission of three planning applications for the re-phasing of the mineral extraction operations (prior extraction) and restoration of the land along the alignment of the proposed scheme, if approved, would avoid the sterilisation of mineral reserves and reduce the operational and financial impact on the operation to an acceptable level. If the removal of the minerals and restoration of the areas within the Order Limits cannot be achieved without delaying the proposed scheme, the minerals would have to remain in-situ.
- 8.1.4 Bulls Lodge Quarry and Coated Stone Plant are likely to encounter some disruption to the access/egress during the construction phase of works associated with junction 19 (Boreham Interchange). However, traffic management plans would be prepared to keep disruption to a minimum.

STOKE-ON-TRENT

Sir Henry Doulton House
Forge Lane
Etruria
Stoke-on-Trent
ST1 5BD
Tel: +44 (0)1782 276 700

BIRMINGHAM

Two Devon Way
Longbridge Technology Park
Longbridge
Birmingham
B31 2TS
Tel: +44 (0)121 580 0909

BOLTON

41-50 Futura Park
Aspinall Way
Middlebrook
Bolton
BL6 6SU
Tel: +44 (0)1204 227 227

BRISTOL

Desk Lodge
2 Redcliffe Way
Bristol
BS1 6NL

BURY ST EDMUNDS

9 Lamdin Road
Bury St Edmunds
Suffolk
IP32 6NU
Tel: +44 (0)1284 765 210

CARDIFF

Tudor House
16 Cathedral Road
Cardiff
CF11 9LJ
Tel: +44 (0)292 072 9191

CARLISLE

Marconi Road
Burgh Road Industrial Estate
Carlisle
Cumbria
CA2 7NA
Tel: +44 (0)1228 550 575

EDINBURGH

Great Michael House
14 Links Place
Edinburgh
EH6 7EZ
Tel: +44 (0)131 555 3311

GLASGOW

24 St Vincent Place
Glasgow
G1 2EU
Tel: +44 (0)141 428 4499

LEEDS

36 Park Row
Leeds
LS1 5JL
Tel: +44 (0)113 831 5533

LONDON

Third Floor
46 Chancery Lane
London
WC2A 1JE
Tel: +44 (0)207 242 3243

NEWCASTLE UPON TYNE

City Quadrant
11 Waterloo Square
Newcastle upon Tyne
NE1 4DP
Tel: +44 (0)191 232 0943

TRURO

Baldhu House
Wheal Jane Earth Science Park
Baldhu
Truro
TR3 6EH
Tel: +44 (0)187 256 0738

International offices:

ALMATY

29/6 Satpaev Avenue
Hyatt Regency Hotel
Office Tower
Almaty
Kazakhstan
050040
Tel: +7(727) 334 1310

MOSCOW

21/5 Kuznetskiy Most St.
Moscow
Russia
Tel: +7(495) 626 07 67