Nottinghamshire Minerals Local Plan

Transport Evidence Base Stage 1: Site Sifting

FINAL

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1. Introduction

1.1 Overview

1.1.1 AECOM has been commissioned by Nottinghamshire County Council (NCC) to examine the proposed locations for minerals extraction within its administrative area.

1.1.2 As part of the development of the Nottinghamshire Minerals Local Plan, a call for potential sites has resulted in the submission of 23 sites (plus three potential extensions of these sites) by operators. The first step in deciding which of these potential minerals sites will be included in the Local Plan is therefore to consider the impact of developing these sites against a variety of criteria.

1.1.3 The purpose of this report is to examine the potential sites against *transport-related* criteria. As such, this document would also need to be read alongside other (non-transport) evidence when judging the full range of issues posed by any future minerals development within the NCC county boundary.

1.2 Submitted Sites

1.2.1 Table 1.1 shows the locations of the sites submitted to NCC as part of the initial call for sites.

Table 1.1: Submitted Minerals Sites

Sand and Gravel	Operator	Extension / New	Location
Shelford	Brett Aggregates	New	Nottingham
Mill Hill near Barton in Fabis	London Rock	New	Nottingham
Barton in Fabis (west)	Cemex	New	Nottingham
Cromwell North	Cemex	New	Newark
*Cromwell Triangle**	*Cemex*	*New*	*Newark*
*Carlton River Meadows**	*Cemex*	*New*	*Newark*
East Leake	Cemex	Extension	Nottingham
Redhill	No operator	New	Nottingham
Great North Road north	Tarmac	New	Newark
*Great North Road south***	*Tarmac*	*New*	*Newark*
Botany Bay	Tarmac	New	Idle Valley
Langford south & west	Tarmac	Extension	Newark
Langford north	Tarmac	Extension	Newark
Besthorpe east	Tarmac	Extension	Newark
Burridge Farm	Tarmac	New	Newark
Bawtry Road	Owner operator	Extension	Idle Valley
Barnby Moor	Hanson	New	Idle Valley
Barnby Moor	Rotherham Sand and Gravel	New	Idle Valley
Coddington	Hanson	New	Newark
Scrooby, Thompson Land	Rotherham Sand and Gravel	New	Idle Valley
Scrooby North	Rotherham Sand and Gravel	New	Idle Valley

Sherwood Sandstone	**Operator**	**Extension / New**	**Location**
Scrooby Top north	Rotherham Sand and Gravel	Extension	Idle Valley
Bestwood II east	Tarmac	Extension	Nr Ravenshead
Bestwood II north	Tarmac	Extension	Nr Ravenshead
Clay	**Operator**	**Extension / New**	**Location**
Woodborough Lane	Ibstock	Extension/New	Dorket Head
Gypsum	**Operator**	**Extension / New**	**Location**
Bantycock	British Gypsum	Extension	Newark
* Both Cromwell Triangle and Carlton River Meadows are proposed extensions of Cromwell North. ** - Great North Road South is an extension to Great North Road North.			

1.3 Report Structure

1.3.1 The methodology for this report is provided in Section 2. This report then considers all sites put forward by operators for inclusion in the Local Plan (Section 3) and potential for cumulative effects (Section 4). An overall ranking of site has been produced within this Stage 1 report (Section 5).

1.3.2 It is intended that a Stage 2 report would follow once the 'preferred' sites have been identified by NCC, following its consideration of all the issues posed by the longlist of potential sites.

2. Methodology

2.1 Overview

2.1.1 The purpose of this section is to identify the methodology through which the submitted sites will be assessed. It examines the national planning policy context within which the Nottinghamshire Minerals Plan is being developed, and the available guidance documents that can be used to set the assessment criteria.

2.2 National Planning Policy Framework (NPPF)

2.2.1 The NPPF sets out the Government's planning policies for England and provides a framework to develop localised planning strategies. The document identifies three key components which the planning system has to balance:

- an economic role – contributing to building a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure;
- a social role – supporting strong, vibrant and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being; and
- an environmental role – contributing 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.

2.2.2 With regard to transport, the document focuses on, and emphasises, the promotion of sustainable transport. NPPF states that plans and decisions should take account of whether:

- the opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;
- safe and suitable access to the site can be achieved for all people; and
- improvements can be undertaken within the transport network that cost effectively limit the impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

2.2.3 NPPF also notes that plans should protect and exploit opportunities for the use of sustainable transport modes for the movement of goods or people. Therefore, developments should be located and designed where practical to:

- accommodate the efficient delivery of goods and supplies;
- give priority to pedestrian and cycle movements, and have access to high quality public transport facilities.

2.2.4 Specifically in terms of minerals, the NPPF states that:

"Minerals are essential to support sustainable economic growth and our quality of life. It is therefore important that there is a sufficient supply of material to provide the infrastructure, buildings, energy and goods that the country needs. However, since minerals are a finite natural resource, and can only be worked where they are found, it is important to make best use of them to secure their long-term conservation".

2.2.5 And that, Local Authorities should:

"Safeguard existing, planned and potential rail heads, rail links to quarries, wharfage and associated storage, handling and processing facilities for the bulk transport by rail, sea or inland waterways of minerals, including recycled, secondary and marine-dredged materials;"

2.3 Guidance Documents

2.3.1 There is no national guidance available on the specific transport assessment issues relating to minerals sites. Planning applications supporting minerals proposals, however, will often include a Transport Assessment (TA) as part of the submission package.

2.3.2 The Department for Transport (DfT) issued guidance on how TA documents should be prepared in the form of the *Guidance on Transport Assessment* (GTA, DfT 2007)[1]. Furthermore, advice on the design of suitable access to / from developments of varying types are provided in the Manual for Streets, the 6Cs Design Guide (which is a local highway authority design guide approved by Nottinghamshire County Council) and the Design Manual for Roads and Bridges (DMRB).

2.3.3 It is important to note, however, that the GTA focuses on matters of access to (general) development by sustainable modes (e.g. walking and cycling routes to housing estates, employment areas etc.) and the measurement of highway capacity. These issues are of lesser importance to minerals sites since quarries are normally located well outside urban centres where opportunities for sustainable movement are not well developed, operational life can be relatively short, and total Heavy Goods Vehicle (HGV) numbers small (when compared with hourly movements generated by other development types[2]). As such, the key issues raised during public consultation mainly focus on those described in the Institute for Environmental Assessment (IEA) Guidelines for the Environmental Assessment of Road Traffic (GEART). Although somewhat dated (it was prepared in 1993), this document can be used to judge, in broad terms, the environmental impact of the development in terms of its traffic impact and has been referred to in many recent planning inquiries.

2.3.4 The purpose of the *Guidelines for the Environmental Assessment of Road Traffic* (GEART) is to provide the basis for a systematic, consistent and comprehensive coverage for the appraisal of traffic impacts for a variety of development projects. In terms of general environmental assessment, the guidelines were superseded by the *Guidelines for Environmental Impact Assessment* (GEIA) but they still provide a useful methodology for assessment because the focus is on assessment thresholds relating to traffic impact and not on assessment methodologies for specific types of environmental assessment.

2.3.5 The impacts considered by GEART include; noise, vibration, visual effects, severance, driver delay, pedestrian delay, pedestrian amenity, fear and intimidation, accidents and safety, hazardous loads, air pollution, dust and dirt, ecological effects, and impact on heritage and conservation areas.

2.3.6 GEART states that highway links (i.e. roads) should be separately assessed when:

Rule 1: Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%)

Rule 2: Include any other specifically sensitive areas where traffic flows have increased by 10% of more.

[1] The GTA has been withdrawn by the Government, though still forms the de facto standard used by local authorities when determining the methodology to be applied within a Transport Assessment
[2] The GTA gives a threshold of an increase of 30 two-way trips in any single hour as a starting point for assessing impact on highway capacity.

2.3.7 The GEART Guidelines go on to state that:

"At a basic level, it should therefore be assumed that projected changes in traffic of less than 10% create no discernible environmental impact," and that;

"Previous research has identified that the most discernible environmental impacts of traffic are noise, severance, pedestrian delay and intimidation," and that;

"Other environmental impacts, (e.g. pollution, ecology, etc.) are less sensitive to traffic flow changes, and it is recommended that, as a starting point, a 30% change in traffic flow represents a reasonable threshold for including a highway link within the assessment".

2.3.8 Pedestrian intimidation is believed to result from a combination of factors which can include: pavement width, proximity to traffic, volume of traffic, number of HGV, type of HGV load (i.e. hazardous) and overall traffic speeds. A threshold has been suggested where speeds over 20mph can result in an 'extreme' rating for fear and intimidation.

2.4 Assessment Criteria

2.4.1 Each of the sites considered in this report would have their own characteristics; however, to draw comparisons between them, five key transport assessment criteria of possible concern have been identified:

- Type of site (i.e. whether the site an extension to an existing site, or would be a new site);
- Access (i.e. whether the site has an existing access, and to what extent this complies with modern highway standards);
- Export Mode (i.e. if there is potential to export by rail or canal / river, which are generally taken to be more sustainable than export by HGV in terms of the carbon emissions associated with transport, and would result in less impacts on society);
- Export Route (i.e. the proximity of the site to the strategic road network, and the quality of any connecting routes to / from the strategic network); and
- Sensitive Receptors (i.e. the presence of any development alongside routes connecting to the strategic highway network, which may be sensitive to the introduction of HGV traffic).

2.4.2 Additionally the duration of site operation has been considered. This criterion is documented separately because the duration of site operations does not act as an impact; rather it acts to magnify the other areas of concern. For example, a site which is otherwise in a good location will not necessarily produce negative impacts for being a long term operation. Conversely a site in a poor location will already score poorly and this would be magnified if the site was a long term operation, or somewhat mitigated if it was of a very short duration.

2.4.3 Employee movements to / from the sites have not been specifically assessed within this report. This is because the key issues relating to minerals sites are normally HGV movements. Also, the operating hours of minerals sites normally mean that staff trips occur outside of network peak hours. Where sites are noted to be extension of existing sites, employee movements are not anticipated to change.

2.4.4 Notwithstanding the above, at the Planning Application stage, a detailed assessment would be required in the form of a formal TA. As a result of the detailed assessment there may be a requirement for a certain level of highway mitigation, the impacts of possible mitigation is not included within the assessment criteria. Strategies such as wheel washing and sheeting of HGV are similarly not included.

2.4.5 The objective of the highway Network Management Plan (HNMP) is to deliver optimum transportation services for highway users in Nottinghamshire. In keeping with the HNMP, all new site accesses should be subject to a 3-stage Road Safety Audit by NCC.

2.5 Road Safety

2.5.1 In addition to the above, a review has been conducted of the road safety record surrounding each site. The GTA states that a TA or TS should "*establish the current personal injury accident records for the most recent three-year period or five years if this is considered to be more appropriate*."

2.5.2 Road collision statistics (STATS19 data) have therefore been obtained for the latest 5 years of collision data for the proposed sites.

2.5.3 The data obtained relates to those collisions that resulted in a personal injury and which were reported to the police. This data (known as STATS19 statistics) is generally recognised to be the most complete record of road collisions occurring on the local highway network. For the avoidance of doubt, and as is normal practice, they do not include statistics from collisions resulting in "damage-only" to vehicles, or which were not reported to the police.

2.5.4 Each collision resulting in a personal injury is classed as either 'Slight', 'Serious' or 'Fatal' by the police depending on the most serious injury resulting from the collision (i.e. a collision resulting in two 'Slight' injuries and one 'Serious' injury would be classified as a 'Serious' collision). Definitions given in *Road Accidents Great Britain* (published by the DfT) are as follows:

- Slight: An injury of a minor character such as a sprain (including neck whiplash injury), bruise or cut which are not judged to be severe, or slight shock requiring roadside attention. This definition includes injuries not requiring medical treatment.
- Serious: An injury for which a person is detained in hospital as an "in-patient", or any of the following injuries whether or not they are detained in hospital: fractures, concussion, internal injuries, crushings, burns (excluding friction burns), severe cuts, severe general shock requiring medical treatment and injuries causing death 30 or more days after the accident. An injured casualty is recorded as seriously or slightly injured by the police on the basis of information available within a short time of the accident. This generally will not reflect the results of a medical examination, but may be influenced according to whether the casualty is hospitalised or not. Hospitalisation procedures will vary regionally.
- Fatal: Human casualties who sustained injuries which caused death less than 30 days (before 1954, about two months) after the accident. Confirmed suicides are excluded.

2.5.5 Where specific issues have been identified, these have been considered in more detail within the relevant section.

2.6 Highways England

2.6.1 It is noted that several sites are located adjacent to roads managed by Highways England (rather than Nottinghamshire County Council). These sites will also need the approval of Highways England separate to this report.

3. Site Descriptions

3.1 Overview

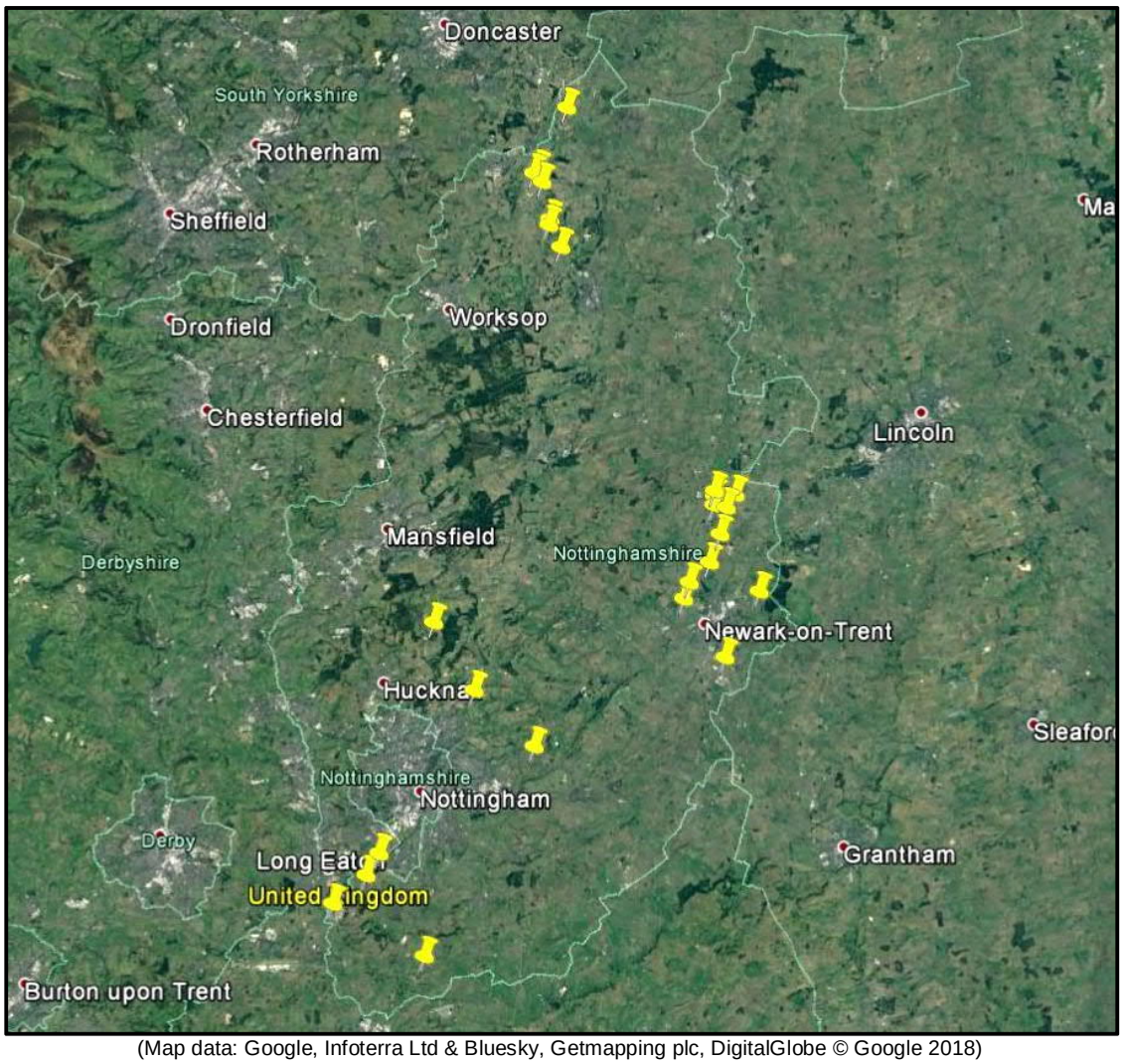
3.1.1 The purpose of this section is to identify the locations of each of the submitted sites, and then to consider each site in turn and to provide comments with regards to each of the transport criteria identified in Section 2.

3.1.2 It is important to note at the outset that the sites presented in this section are not in any order of preference. Information has been obtained from the submissions sent by each operator to the Minerals Plan call for sites, and supplemented with site observations from AECOM site visits.

3.2 Site Locations

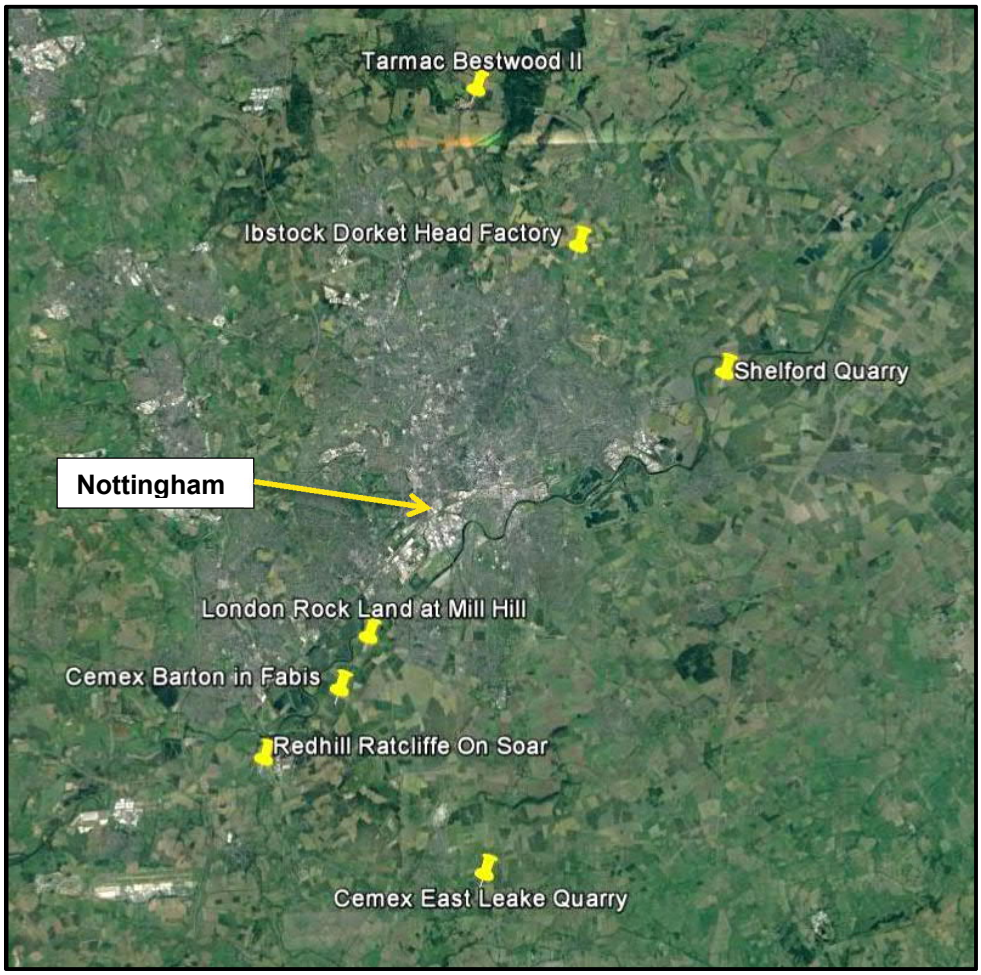
3.2.1 Figure 3.1 shows the location of all the sites submitted for consideration. As can be seen from this figure, there are distinct areas of concentration of proposed minerals working, and Figures 3.2 – 3.4 show more detailed area overviews for the different clusters of sites; being Nottingham, Newark and the Idle Valley.

Figure 3.1: Minerals Sites within Nottinghamshire



(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

Figure 3.2: Nottingham Area Overview Map

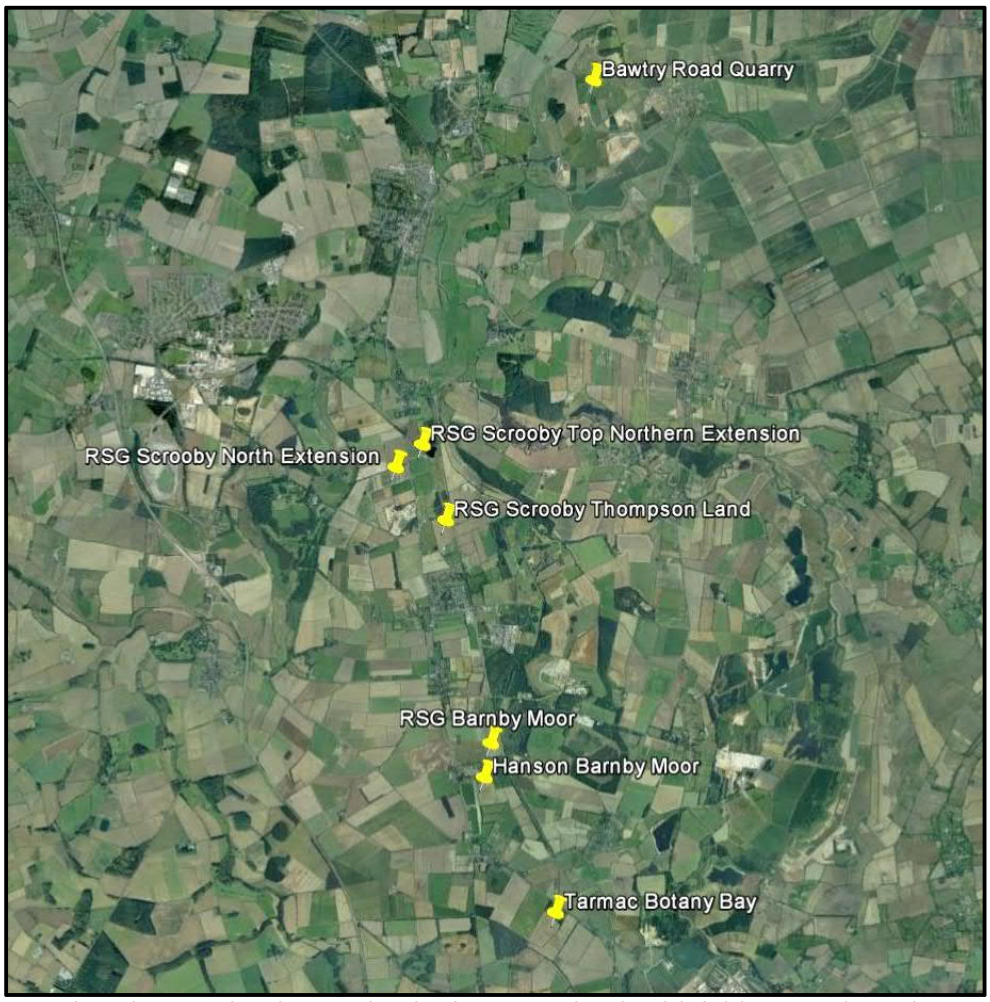


(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

Figure 3.3: Newark Area Overview Map

(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

Figure 3.4: Idle Valley Area Overview map



(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

3.3 Shelford (Brett Aggregates)

3.3.1 **HGV Exports:** This site would be for sand and gravel. The site contains 6.5m tonnes of gravel which would be worked at a rate of 500,000 tonnes per annum. This equates to a life of 13-14 years (including site set-up). Of the export, 180,000 tonnes per annum will be exported by barge along the river Trent to Colwick Wharf for use in the manufacture of concrete and the remaining 320,000 tonnes will be exported by road from a processing plant located alongside the A6097.

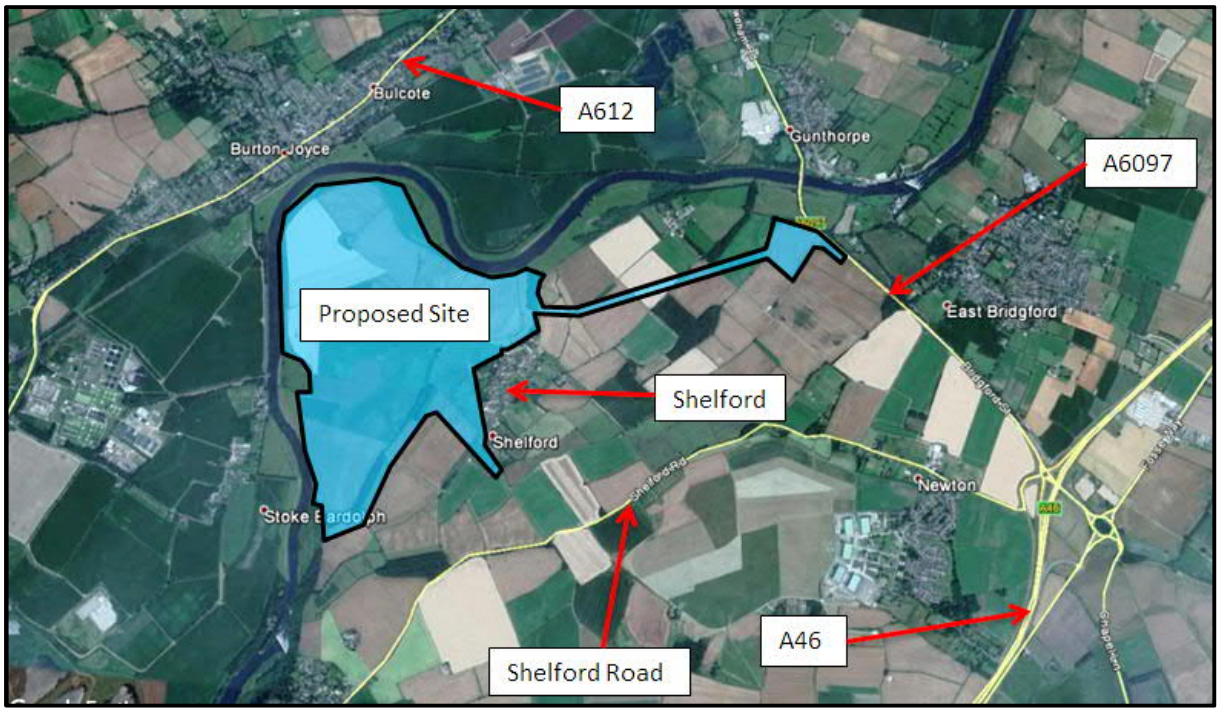
3.3.2 An export rate of 320,000 tonnes per year would equate to 58 HGV arrivals and 58 HGV departures per average day (assuming a 275 day working year[3] and 20T average HGV load[4]).

3.3.3 For added robustness however, the worst case scenario has been considered; an export rate of 500,000 tonnes per year would equate to 91 HGV arrivals and 91 HGV departures per average day (assuming a 275 day working year and 20T average HGV load).

3.3.4 **Site Location and Access:** Figure 3.5 shows the site location. A new access would be required onto the A6097, which is governed by a 40mph speed limit and enforced by average speed cameras. Given the horizontal curvature of the road, placement of an access would require careful design to ensure appropriate visibility splays could be achieved.

3.3.5 It is assumed most HGV traffic would leave the site by turning right and routeing south easterly along the A6097 towards the A46, a distance of under 2km. Inbound traffic would turn left at the site access. This route would not lead to any HGVs routeing past any sensitive receptors, and could be governed by a routeing agreement.

Figure 3.5: Site Location Plan - Shelford



(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

[3] This is based on a 5.5 day working week, including Saturday mornings.
[4] Note, the largest HGV tends to carry 28T which, if used, would reduce this HGV trip generation for this site. A 20T carriage has been applied to all sites in this section for fairness and consistency.

3.3.6 **Traffic Data:** Table 3.1 includes traffic data for the area around the proposed site, obtained from NCC.

Table 3.1: Traffic Data for Shelford

Site	Roads	AADT 2016	HGV AADF	HGV%
Shelford	A6097	16,650	995	5.98
	A52 (Saxondale Roundabout)	34,100	3,140	9.21
	Shelford Road	2,700	40	1.48
	East Bridgford Road	2,200	35	1.59
	Main Street	1,,800	55	3.06

3.3.7 Assuming the worst case scenario, the increase in HGVs on the A6097 at the point of the site access would therefore be 18.3% and the increase in general traffic would be 1.1%. As such, the thresholds given within GEART would not be triggered.

3.3.8 **Road Safety:** The study area for road safety analysis for this site is shown below in Figure 3.6, with a summary of all collisions given in Table 3.2, which also provides a breakdown of the location of collisions.

Figure 3.6: Road Safety Study Area for Shelford Site

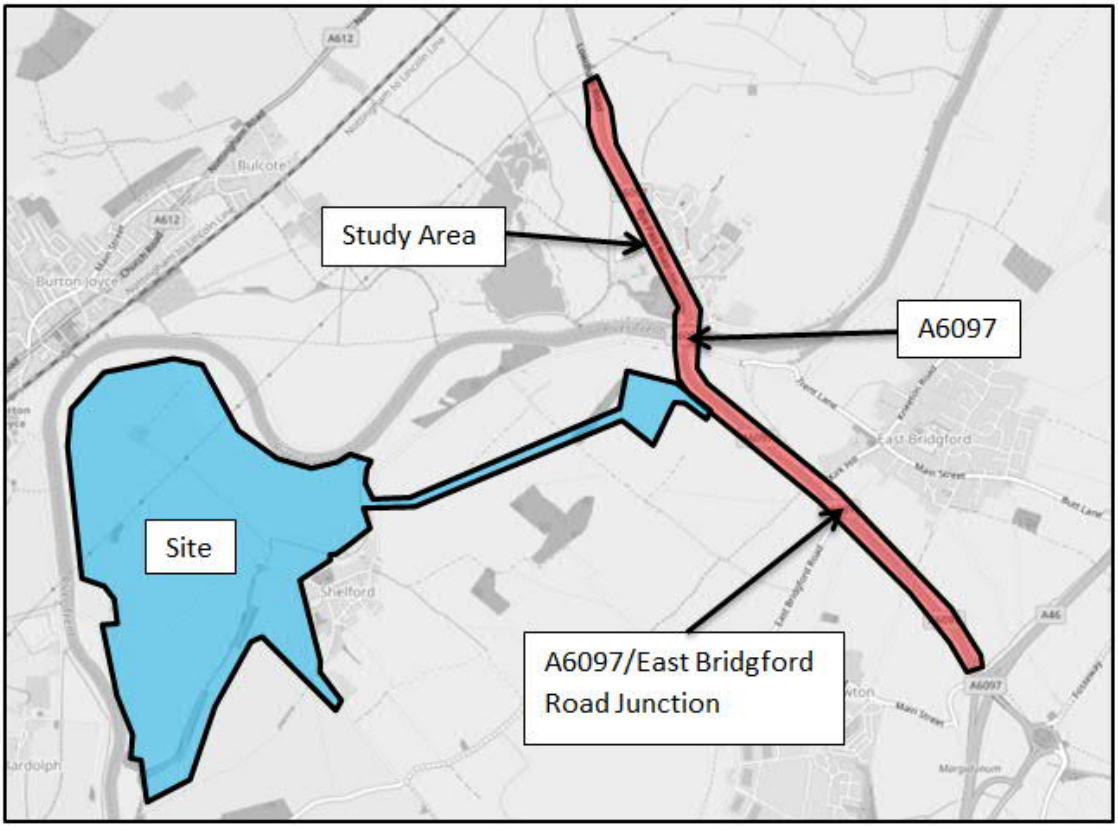


Table 3.2: Road Safety Summary for Shelford Site

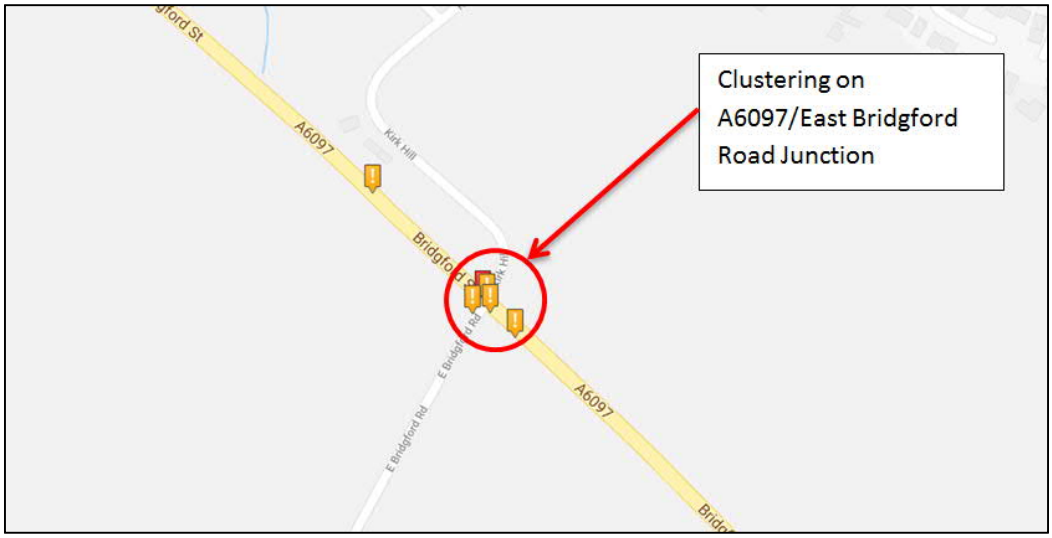
Junction/Link	'Slight'	'Serious'	'Fatal'	Total
A6097	15	5	0	20
A6097/East Bridgford Road Junction	4	1	0	5
Total	**19**	**6**	**0**	**25**

3.3.9 Of these collisions, 1 involved HGVs (>7.5T) and 11 involved pedestrians / pedal cycles.

3.3.10 In terms of collision clusters, 5 collisions have been recorded (4 classified as 'Slight' and one as 'Serious') at the A6097 / East Bridgford Road junction. No fatal collisions have occurred within the study area over the past 5 years of data. There is also a stretch of collisions to the north of the site access (approaching the bridge crossing the River Trent).

3.3.11 Given the number of HGVs proposed, it is unlikely that the route would experience a material change in road safety performance. The collisions at the A6097 / East Bridgford Road junction could likely be addressed via a local road safety scheme) or amendment to traffic signal settings.

Figure 3.7: Collision cluster near Shelford Site (A6097 / East Bridgford Road junction)



3.3.12 **Summary:** The summary for Shelford (Brett Aggregates) is therefore:

- New Site;
- New Access Required (visibility to / from the site access to be proven given geometrical constraints);
- Proposed export by both barge and HGV;
- Site in close proximity to A6097 and A46;
- Main HGV route passes through an existing collision cluster; and
- Few sensitive receptors between site and A46.

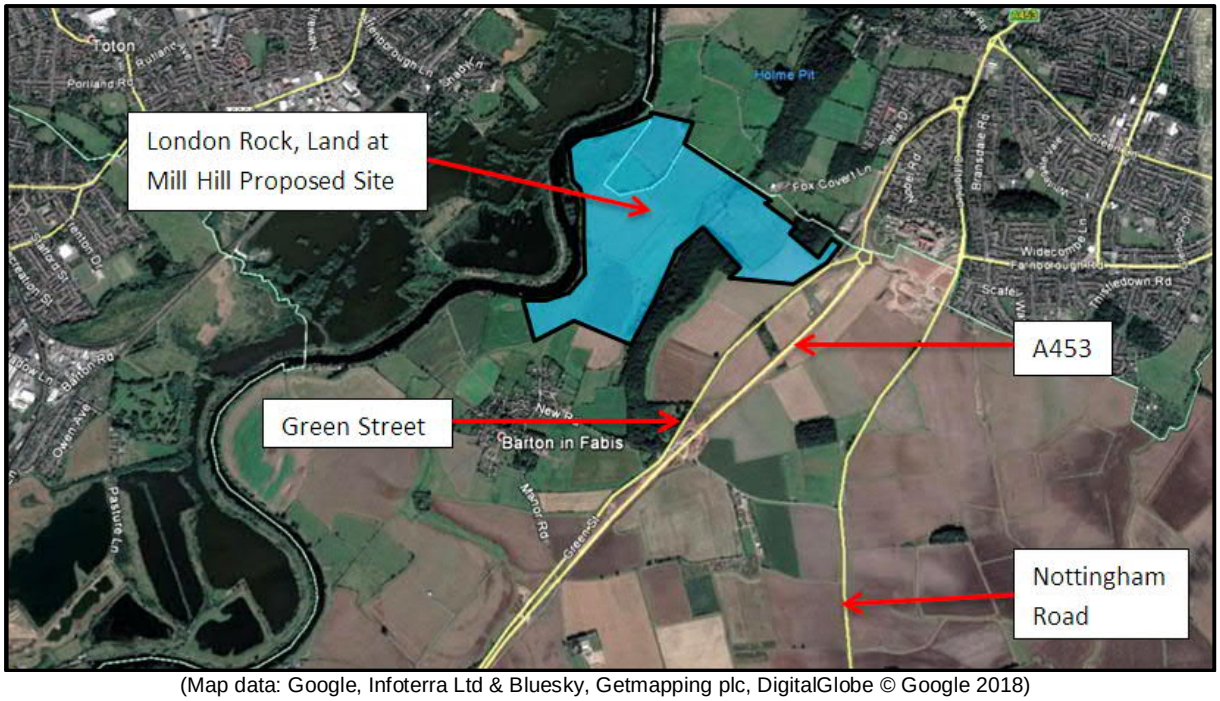
3.4 Mill Hill near Barton in Fabis (London Rock)

3.4.1 **HGV Exports:** This site would be for sand and gravel, which would be worked at a rate of 280,000 tonnes per annum over a period of 12 – 15 years. This would be exported by HGV and equates to 51 HGV arrivals and 51 HGV departures per average working day (assuming a 275 day working year and 20T average HGV load).

3.4.2 **Site Location and Access**: Figure 3.8 shows the site location. A new access would be required onto Green Street which is proposed at the location of an existing farm track. The road has recently been upgraded in this area, and an access drawing would need to be provided to demonstrate visibility splays, and their potential interaction with the junction of Fox Covert Lane. However, once onto Green Street the route to the A453 is short and could be governed by a routeing agreement.

3.4.3 All proposed site HGV traffic would leave the site by turning left onto Green Street, and then join the main strategic highway network at Mill Hill Roundabout, 180 metres north of the site. Traffic would filter onto the A453 and could then route northbound towards Nottingham or southbound towards the M1. Traffic entering the site would enter from Mill Hill Roundabout and turn right into the site. There is no proposed HGV traffic using Green Street, south of the site access towards Barton in Fabis, and therefore will not pass any sensitive receptors.

Figure 3.7: Site Location Plan – Mill Hill near Barton in Fabis



(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

3.4.4 **Traffic Data:** Table 3.3 includes traffic data for the area around the proposed site, obtained from NCC.

Table 3.3: Traffic Data for Mill Hill Site

Site	Roads	AADT 2016	HGV AADF	HGV%
Mill Hill	A453	32,250	2810	8.71
	Green Street	700	30	4.29

3.4.5 Percentage changes in traffic on Green Street would be high, but this is mainly a result of this route being bypassed by the A453 leaving only low residual traffic flows. The increase in HGV's along the A453 would be 3.63% and the increase in general traffic would be 0.32%. As such, the thresholds given in GEART would not be triggered. Given the lack of sensitive receptors, there is unlikely to be any environmental impacts of the proposed traffic generation.

3.4.6 **Road Safety:** Given the recent changes to the highway network no analysis of road safety data has been conducted, as historic collision patterns will not be representative of current / future conditions.

3.4.7 **Summary:** The summary for Mill Hill near Barton in Fabis (London Rock) is therefore:

- New Site;
- New Access Required (visibility to / from the site access to be proven given geometrical constraints);
- Proposed export by HGV only;
- Site in close proximity to A453;
- No road safety issues identified; and
- HGV route avoids Green Street, south of the site access and villages of Barton in Fabis and Thrumpton.

3.5 Barton in Fabis (Cemex)

3.5.1 **HGV Exports:** This site would be for sand and gravel, which would be worked at a rate of 250,000 tonnes per annum over a period of 8 years (assuming 2 million tonnes total). This would be exported by HGV and equates to 45 HGV arrivals and 45 HGV departures per average working day (assuming a 275 day working year and 20T average HGV load). The proposal includes the possibility for inert materials to be brought on to the site for the restoration, this could potentially increase the number of traffic movements; however no detailed information regarding this has been outlined yet.

3.5.2 **Site Location and Access:** Figure 3.8 shows the site location. A new access would be required onto Barton Lane / Green Street. The road has recently been upgraded in this area, and an access drawing would need to be provided to demonstrate visibility splays, and their potential interaction with existing junctions. However, once onto Green Street the route to the A453 is short. The site is in close proximity to the proposed London Rock site at Mill Hill.

Figure 3.8: Site Location Plan – Barton in Fabis (Cemex)

(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

3.5.3 All proposed site HGV traffic would leave the site by turning left onto Green Street, and then join the main strategic highway network at Mill Hill Roundabout. Traffic would filter onto the A453 and could then route northbound towards Nottingham or southbound towards the M1. Traffic entering the site would enter from Mill Hill Roundabout and turn right into the site. There is no proposed HGV traffic using Green Street, south of the site access. HGV routing would need to be agreed such that HGV's are directed not to pass through Thrumpton village.

3.5.4 **Traffic Data:** Table 3.4 includes traffic data for the area around the proposed site, obtained from NCC.

Table 3.4: Traffic Data for Barton in Fabis Site

Site	Roads	AADT 2016	HGV AADF	HGV%
Barton in Fabis	A453	32,250	2,810	8.71
	Green Street	700	30	4.29
	Barton Lane / Green Street	550	15	2.73

3.5.5 Percentage changes in traffic on Green Street would be high, but this is mainly a result of this route being bypassed by the A453 leaving only low residual traffic flows. The increase in HGV's along the A453 would be 3.20% and the increase in general traffic would be 0.28%. Given the lack of sensitive receptors, there is unlikely to be any environmental impacts of the proposed traffic generation.

3.5.6 **Road Safety:** Given the recent changes to the highway network no analysis of road safety data has been conducted, as historic collision patterns will not be representative of current / future conditions.

3.5.7 **Summary:** The summary for Barton in Fabis (Cemex) is therefore:

- New Site;
- New Access Required (visibility to / from the site access to be proven given geometrical constraints);
- Proposed export by HGV only;
- Possibility for inert materials brought on site, potentially increasing HGV movements;
- Site in close proximity to A453;
- No road safety issues identified; and
- No sensitive receptors between site and A453.

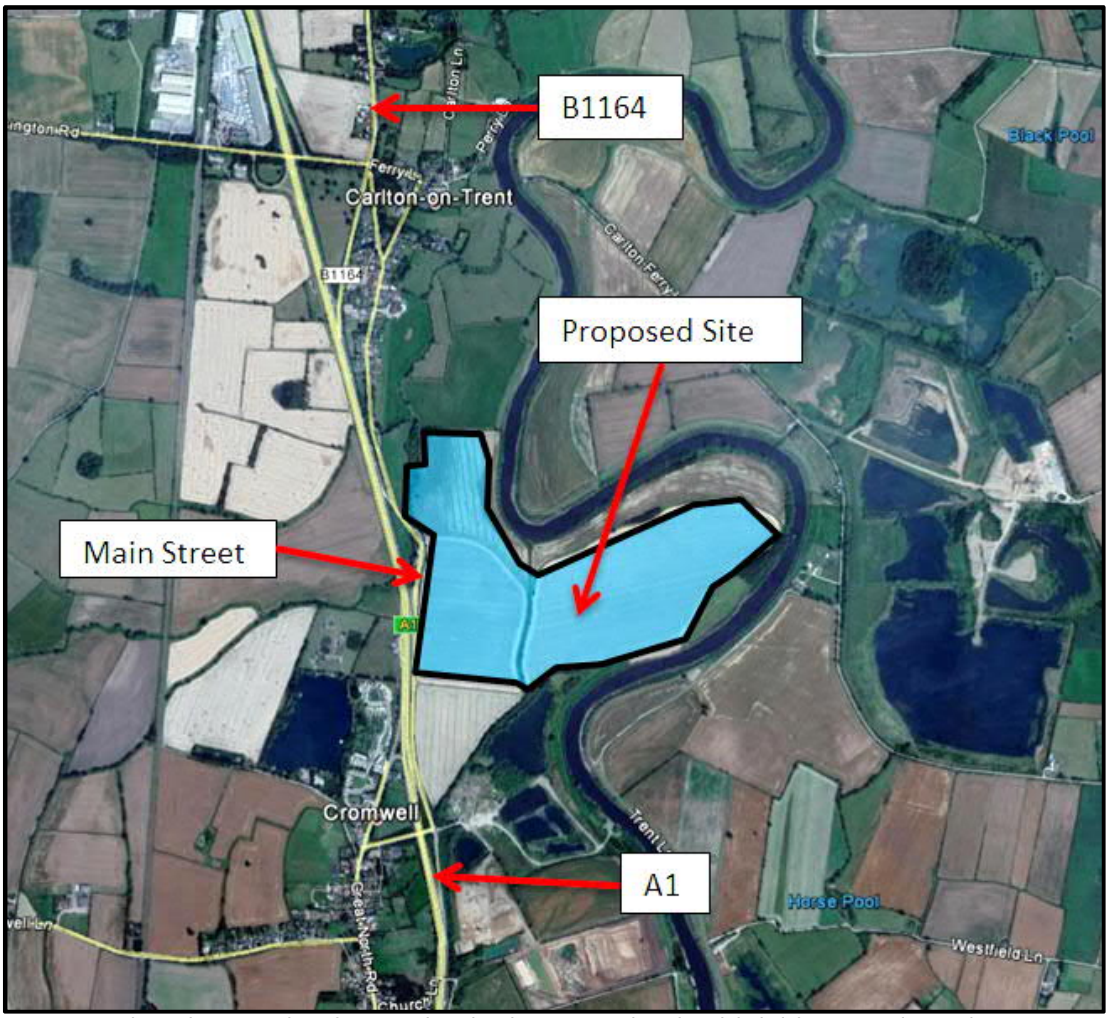
3.6 Cromwell North (Cemex)

3.6.1 **HGV Exports:** This site would be for sand and gravel. The site contains 1.7m tonnes which the operator notes would be worked over 5-6 years (i.e. 309,000 tonnes per year). This would be exported by HGV and equates to 56 HGV arrivals and 56 HGV departures per average working day (assuming a 275 day working year and 20T average HGV load).

3.6.2 **Site Location and Access:** Figure 3.9 shows the site location. A new access would be required onto Main Street which appears achievable (although a formal drawing would be required).

3.6.3 Inbound trips from the north would route either direct from the A1 onto Main Street or through Carlton on Trent via the B1164, joining the A1 and exiting at the next slip road onto Main Street. Inbound trips from south would route through Cromwell. Outbound traffic routeing southbound along the A1 would exit at the slip road from Main Street. Traffic routeing northbound along the A1 would have to first route southbound along Main Street to the existing Cromwell Quarry and cross the A1 via a bridge to then access the slip road routeing northbound, this route would pass some sensitive receptors in Cromwell.

Figure 3.9: Site Location Plan – Cromwell North Quarry



(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

3.6.4 **Traffic Data:** Table 3.5 includes traffic data for the area around the proposed site, obtained from NCC.

Table 3.5: Traffic Data for Cromwell North Site

Site	Roads	AADT 2016	HGV AADF	HGV%
Cromwell North	A1	47,900	8,145	17.00
	Main Street	350	28	7.86
	Bridge over A1	800	35	4.38

3.6.5 Percentage changes in traffic on Main Street would be high, but this is mainly a result of this route being bypassed by the A1 leaving only low residual traffic flows. The increase in HGV's along the A1 would therefore be 1.38% with increases in general traffic of 0.23%.

3.6.6 **Road Safety:** The study area for road safety analysis for this site is shown below in Figure 3.10, with a summary of all collisions given in Table 3.6, which also provides a breakdown of the location of collisions.

Figure 3.10: Road Safety Study Area for Cromwell North Site

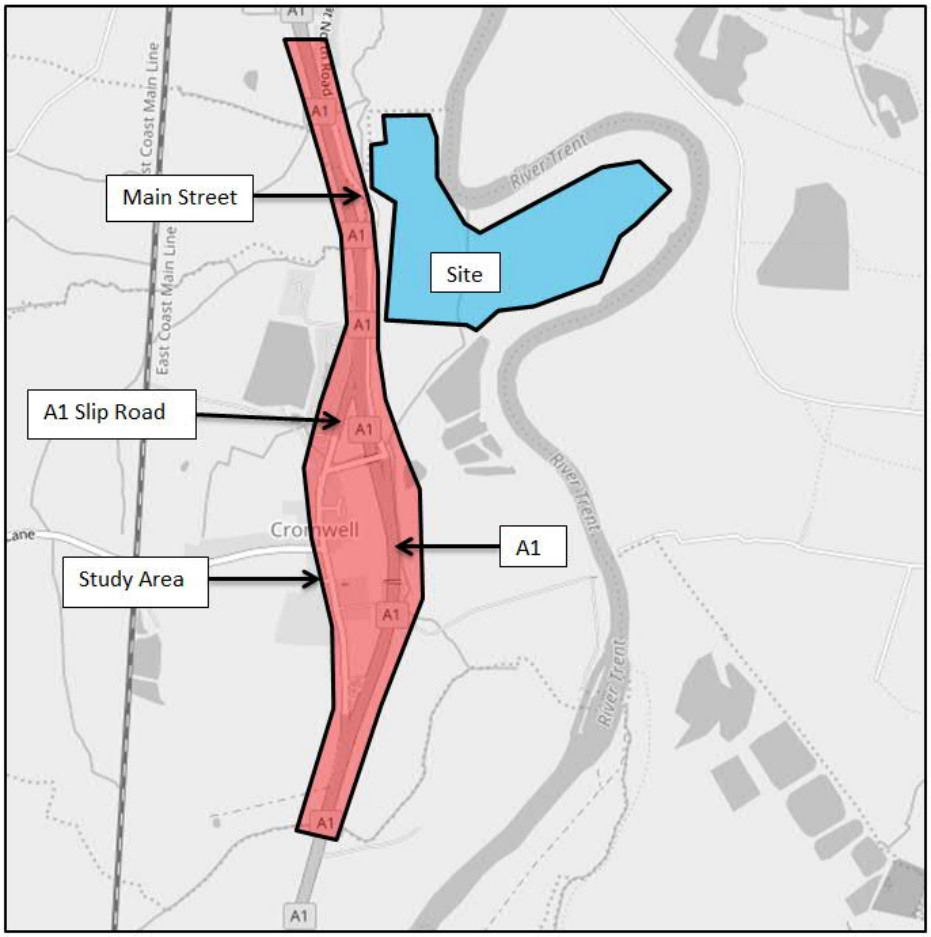


Table 3.6: Road Safety Summary for Cromwell North Site

Junction/Link	'Slight'	'Serious'	'Fatal'	Total
A1	8	3	0	11
Main Street	0	0	0	0
A1 Slip Road	1	0	0	1
Total	**9**	**3**	**0**	**12**

3.6.7 Of these collisions, one involved an HGV (>7.5T) and none involved pedestrians / pedal cycles. (Note: the data provided by NCC does not include the A1 or its slip roads).

3.6.8 No collision clusters were identified within the study area. No fatal collisions have occurred within the study area over the past 5 years of data.

3.6.9 **Summary:** The summary for Cromwell North (Cemex) is therefore:

- New Site;
- New Access Required (visibility to / from the site access appears achievable, subject to submission of a drawing);
- Proposed export by HGV only;
- Site in close proximity to A1;
- No road safety issues identified; and
- Likely northbound HGV route passes near sensitive receptors through Cromwell.

3.7 Cromwell Triangle (Cemex)

3.7.1 **HGV Exports:** This site would be for sand and gravel. The site contains 210,000 tonnes; this would be exported by HGV. As the site is proposed as a possible future extension to the Cromwell North site, little information is available with regards to annual output or trip generation.

3.7.2 **Site Location and Access:** Figure 3.11 shows the site location. The site is being promoted as a possible future extension to the Cromwell North site if implemented, in which case the access for the Cromwell North site would be used by this extension. Routeing would be the same as for Cromwell North.

Figure 3.11: Site Location Plan – Cromwell Triangle

(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

3.7.3 **Summary:** The summary for Cromwell Triangle is therefore:

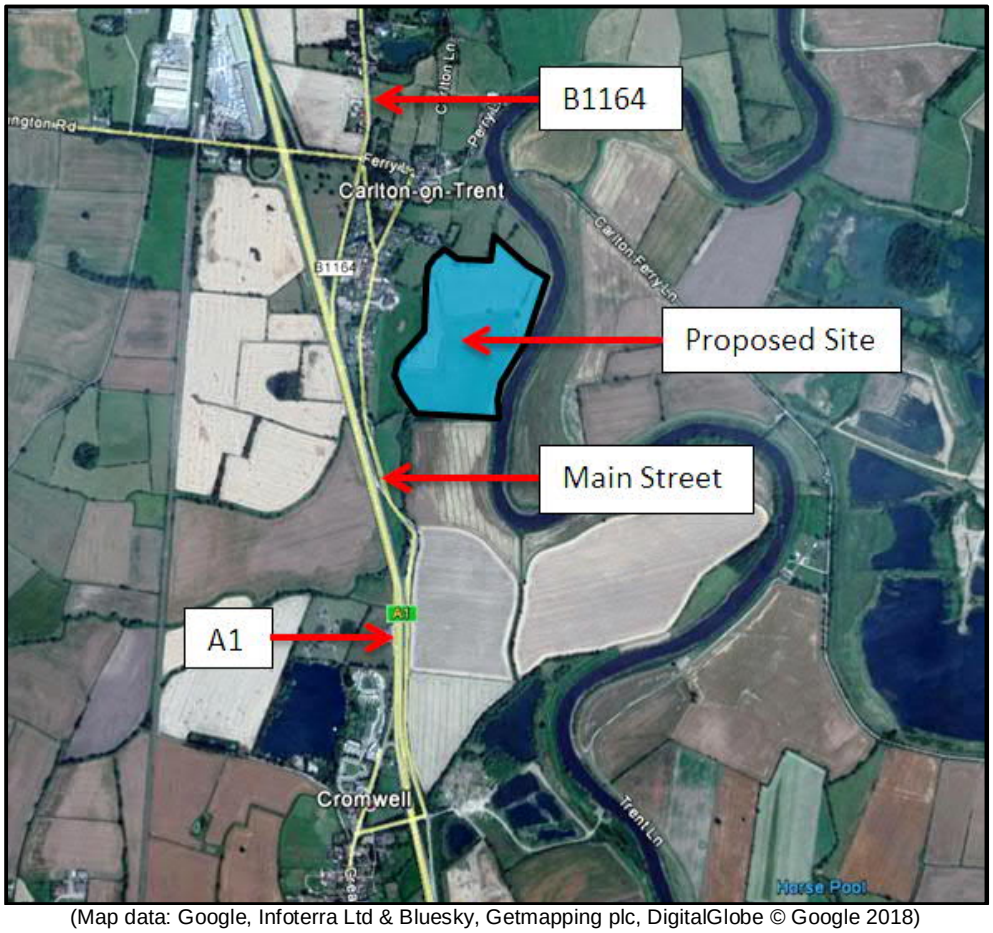
- Potential Extension to Cromwell North

3.8 Carlton River Meadows

3.8.1 **HGV Exports:** This site would be for sand and gravel. The site contains 500,000 tonnes; this would be exported by HGV. As the site is proposed as a possible future extension to the Cromwell North site, little information is available with regards to annual output or trip generation.

3.8.2 **Site Location and Access:** Figure 3.12 shows the site location. The site is being promoted as a possible future extension to the Cromwell North site if implemented, in which case the access for the Cromwell North site would be used by this extension.

Figure 3.12: Site Location Plan – Carlton River Meadows



(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

3.8.3 **Summary:** The summary for Carlton River Meadows is therefore:

- Potential Extension to Cromwell North

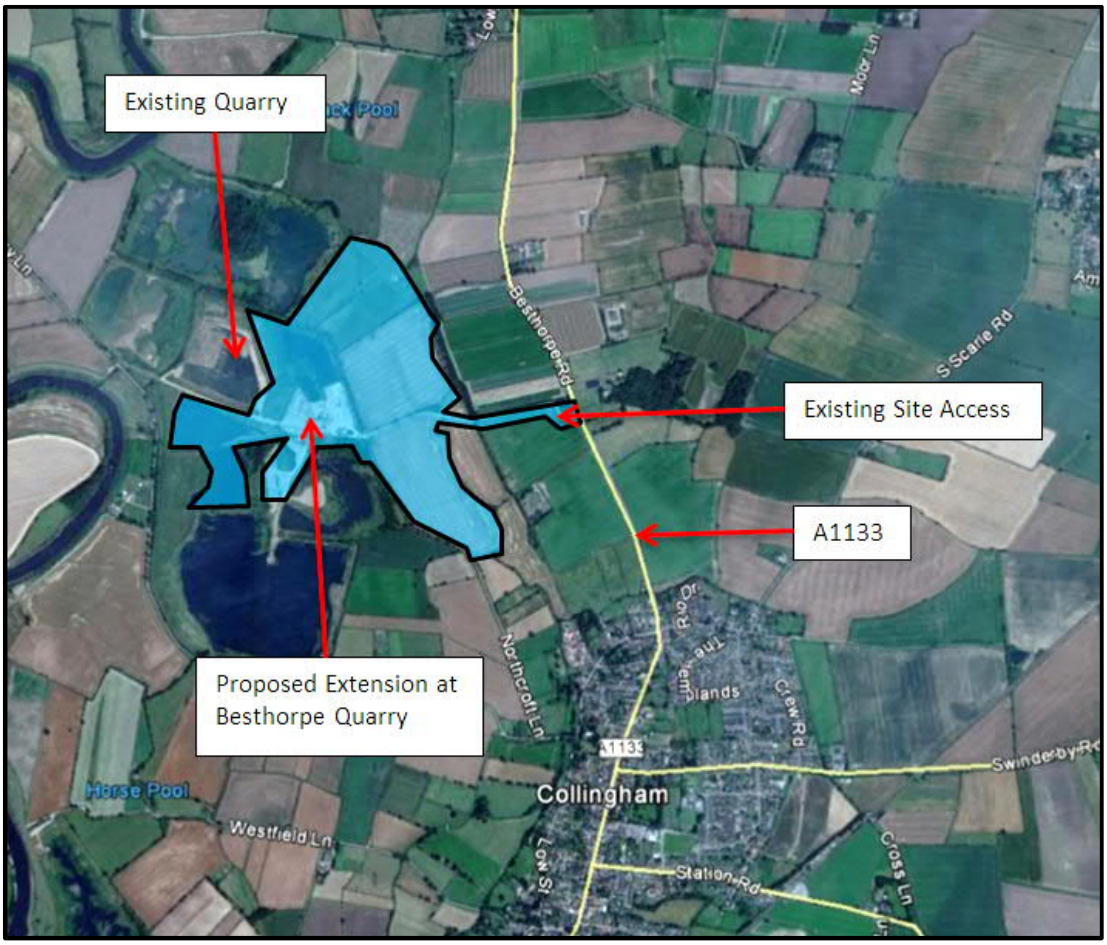
3.9 Besthorpe East (Tarmac)

3.9.1 **HGV Exports**: This site would be for sand and gravel, and is an extension of an existing quarry. The site contains 3.3m tonnes which the operator notes would be worked over 16 years (i.e. 200,000 tonnes per year). This would be exported by HGV and equates to 36 HGV arrivals and 36 HGV departures per average working day (assuming a 275 day working year and 20T average HGV load).

3.9.2 **Site Location and Access:** Figure 3.13 shows the site location. The site benefits from an existing access onto the A1133, and a S106 agreement routes traffic north towards the A57 (to avoid routeing through Collingham).

3.9.3 All inbound HGV traffic will route south along the A1133 and turn right at the access road junction. All outbound HGV traffic will route north along the A1133 and turn left at the access junction. Because of the S106 agreement affecting this development, no HGV traffic will route south of the site access, to avoid travelling through Collingham village.

Figure 3.13: Site Location Plan - Besthorpe East



3.9.4 **Traffic Data:** Table 3.7 includes traffic data for the area around the proposed site, obtained from NCC.

Table 3.7: Traffic Data for Besthorpe East Site

Site	Roads	AADT 2016	HGV AADF	HGV%
Besthorpe East	A1133	5,000	450	9.00

3.9.5 The increase in HGVs on the A1133 at the point of the site access would therefore be 16.0%. Increase in total traffic volumes would be 1.4%. As such, the thresholds given within GEART would not be triggered.

3.9.6 **Road Safety:** The study area for road safety analysis for this site is shown below in Figure 3.14, with a summary of all collisions given in Table 3.8, which also provides a breakdown of the location of collisions.

Figure 3.14: Road Safety Study Area for Besthorpe East Site

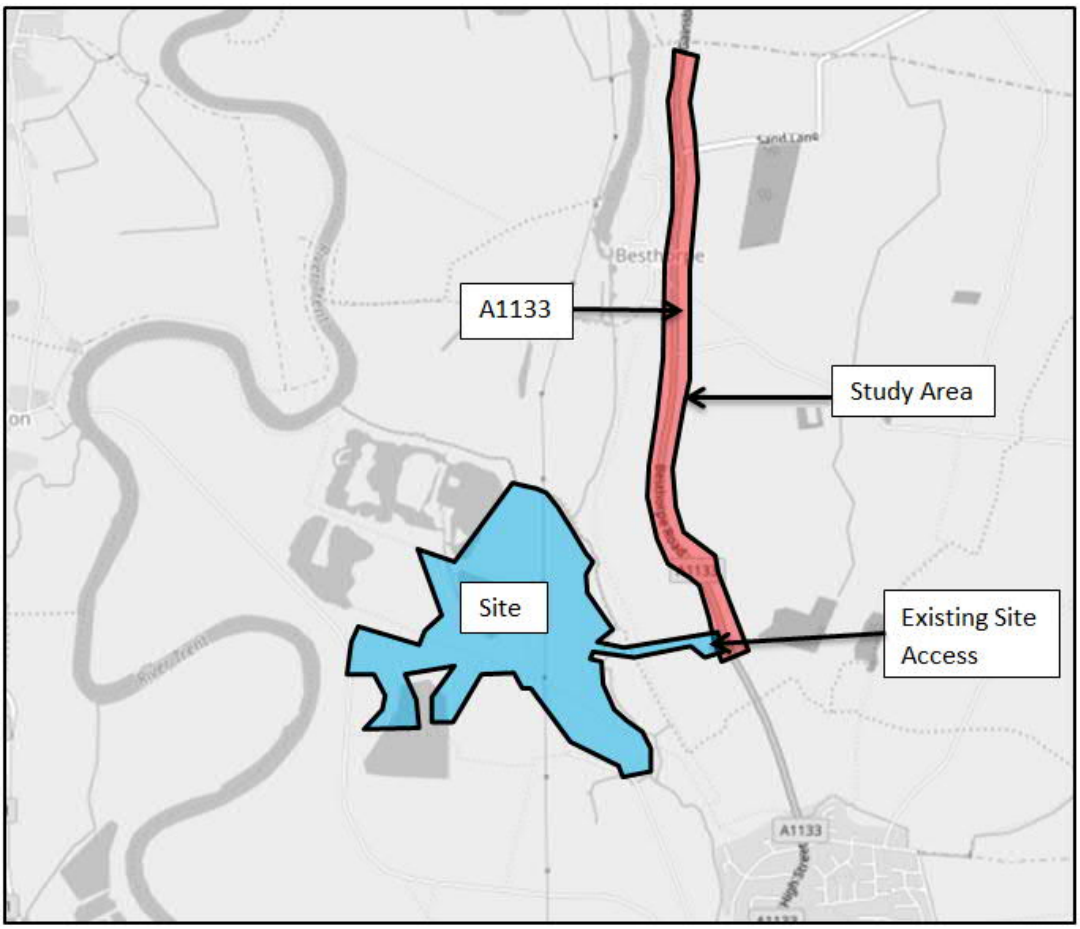


Table 3.8: Road Safety Summary for Besthorpe East Site

Junction/Link	'Slight'	'Serious'	'Fatal'	Total
A1133	3	0	0	3
Site Access Junction	0	0	0	0
Total	**3**	**0**	**0**	**3**

3.9.7 Of the collisions, none involved HGVs (>7.5T) and none involved pedestrians / pedal cycles.

3.9.8 No collision clusters were identified within the study area. No fatal collisions have occurred within the study area over the past 5 years of data.

3.9.9 The summary for Besthorpe East (Tarmac) is therefore:

- Existing Site;
- Benefits from existing access;
- Proposed export by HGV only (although Wharf facility exists, mothballed);
- Site in close proximity to A1133 and A46;
- No road safety issues identified; and
- S106 in place to avoid routeing HGVs through Collingham.

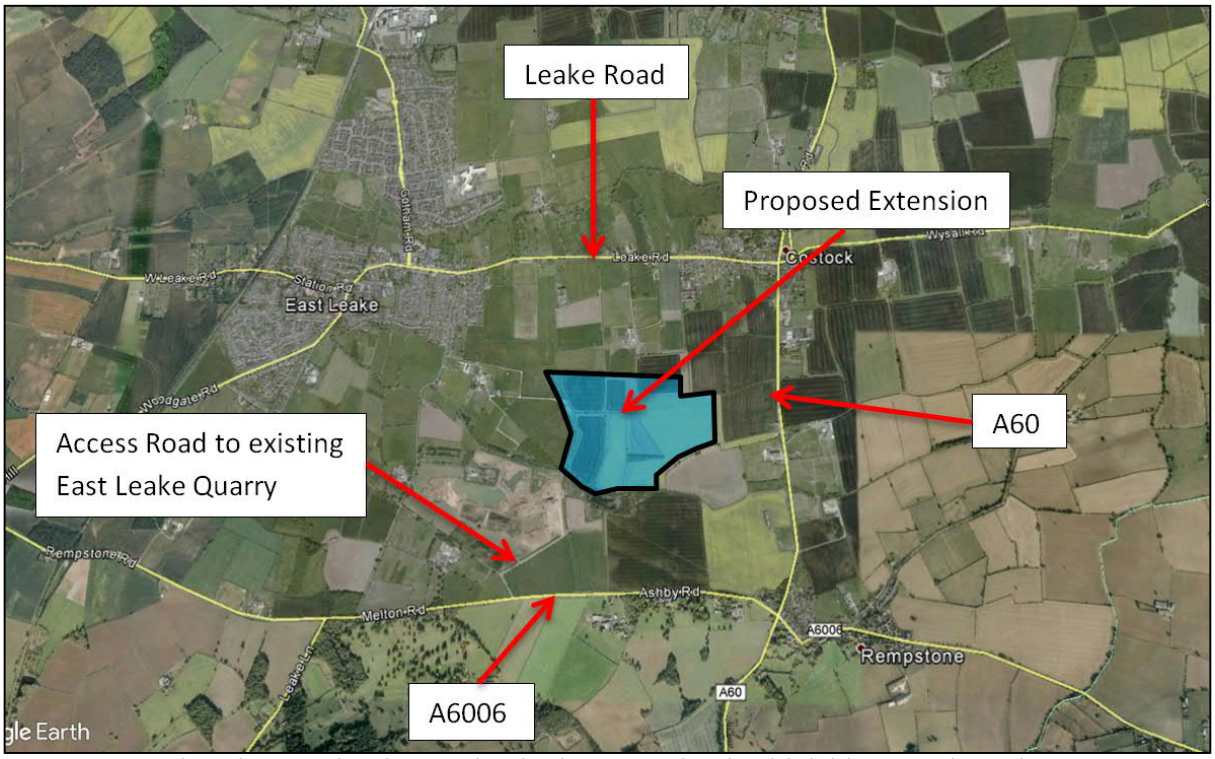
3.10 East Leake (Cemex)

3.10.1 **HGV Exports**: This site would be worked for sand and gravel and is an extension to an existing site. The site contains 750,000 tonnes which the operator notes would be worked over 3-4 years (i.e. 215,000 tonnes per year). This would be exported by HGV and equates to 39 HGV arrivals and 39 HGV departures per average working day (assuming a 275 day working year and 20T average HGV load).

3.10.2 **Site Location and Access:** Figure 3.15 shows the site location, including the existing site access.

3.10.3 It is assumed most inbound HGV traffic would turn right to enter the existing access on Rempstone Road, routeing north from the A6006. Most outbound HGV traffic will likely exit the access turning left onto Rempstone Road and then either turning right onto the A6006 towards the A6 and M1 Junction 24, or left onto the A6006 towards the A60. A 7.5 tonne weight limit applies to HGV's turning right out of the site access junction along Rempstone Road.

Figure 3.15: Site Location Plan – East Leake



(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

3.10.4 **Traffic Data:** Table 3.9 includes traffic data for the area around the proposed site, obtained from NCC. No data was available for Rempstone Road, which the site access joins onto.

Table 3.8: Traffic Data for East Leake Site

Site	Roads	AADT 2016	HGV AADF	HGV%
East Leake	A60	7,725	330	4.27
	A6006	8,650	650	7.51

3.10.5 The increase in HGVs on the A6006, close to the point of the site access, would therefore be 12.0%. The increase in general traffic would be less than 1%. As such, the thresholds given within GEART would not be triggered.

3.10.6 **Road Safety:** The study area for road safety analysis for this site is shown below in Figure 3.16, with a summary of all collisions given in Table 3.9, which also provides a breakdown of the location of collisions.

Figure 3.16: Road Safety Study Area for East Leake Site

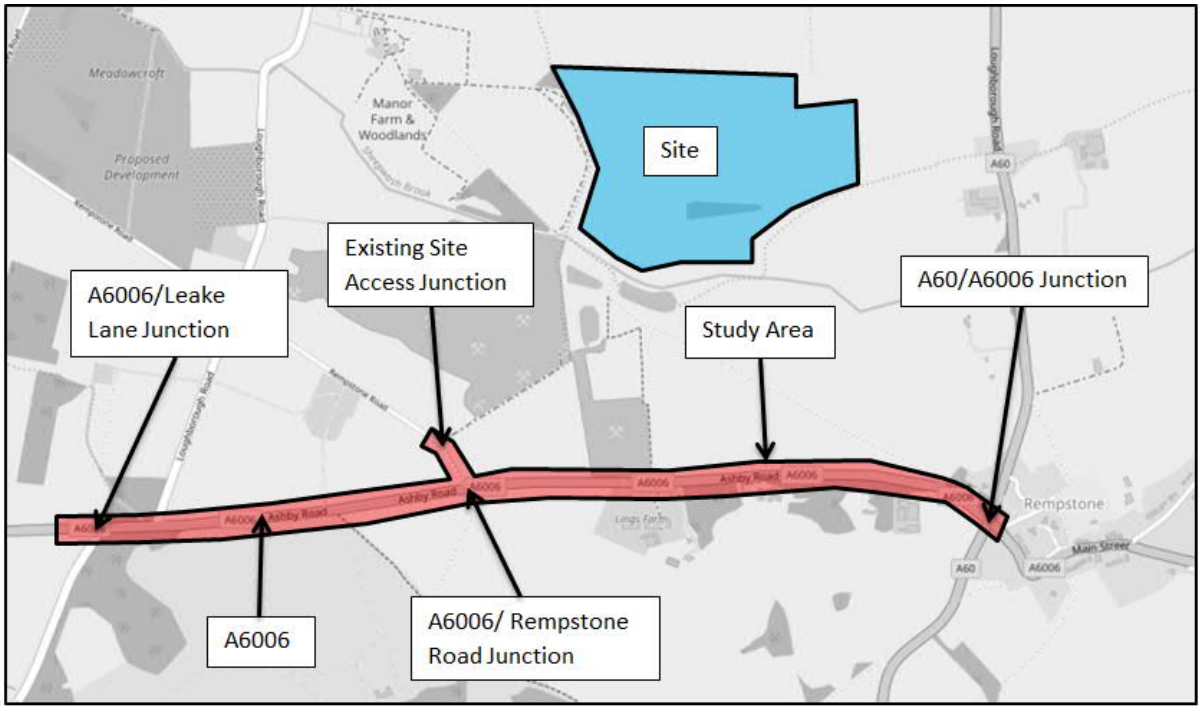


Table 3.9: Road Safety Summary for East Leake Site

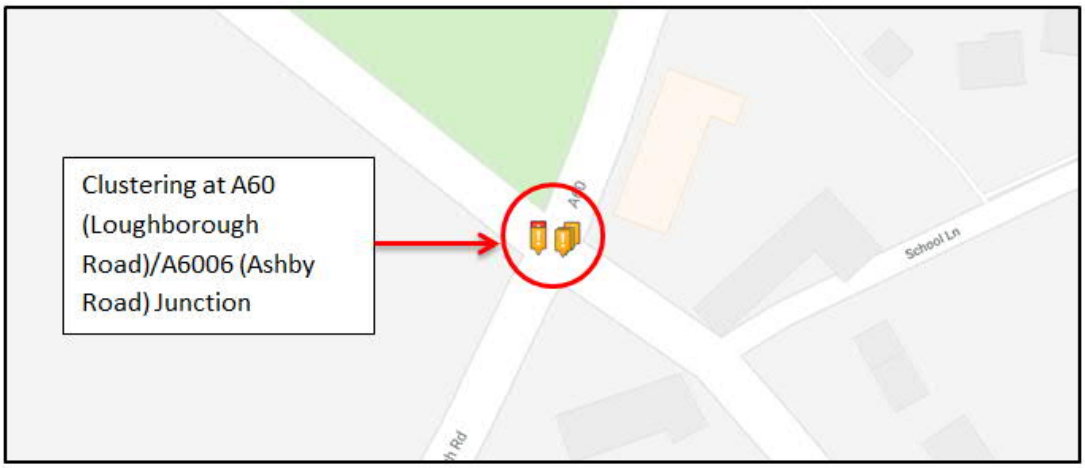
Junction/Link	'Slight'	'Serious'	'Fatal'	Total
A6006	3	1	0	4
Site Access Junction	0	0	0	0
A6006/Rempstone Road Junction	2	1	0	3
A6006/A60 Junction	4	1	0	5
A6006/Leake Lane Junction	1	0	0	1
Total	**10**	**3**	**0**	**13**

3.10.7 Of the collisions, 3 involved HGVs (>7.5T) and none involved pedestrians / pedal cycles.

3.10.8 In terms of collision clusters, 5 collisions have been recorded (4 classified as 'Slight' and one as 'Serious') at the A60 / A6006 junction. No fatal collisions have occurred within the study area over the past 5 years of data.

3.10.9 Given the number of HGVs proposed, it is unlikely that the route would experience a material change in road safety performance. The collisions at the A60 / A6006 junction could likely be addressed via a local road safety scheme) or amendment to traffic signal settings.

Figure 3.17: Collision cluster near East Leake Site



3.10.10 The summary for East Leake (Cemex) is therefore:

- Extension to existing site;
- Benefits from Existing Access
- Proposed export by HGV only;
- Routes to strategic network via local 'A' roads;
- HGV route would likely pass through a collision cluster; and
- Few sensitive receptors near to the site.

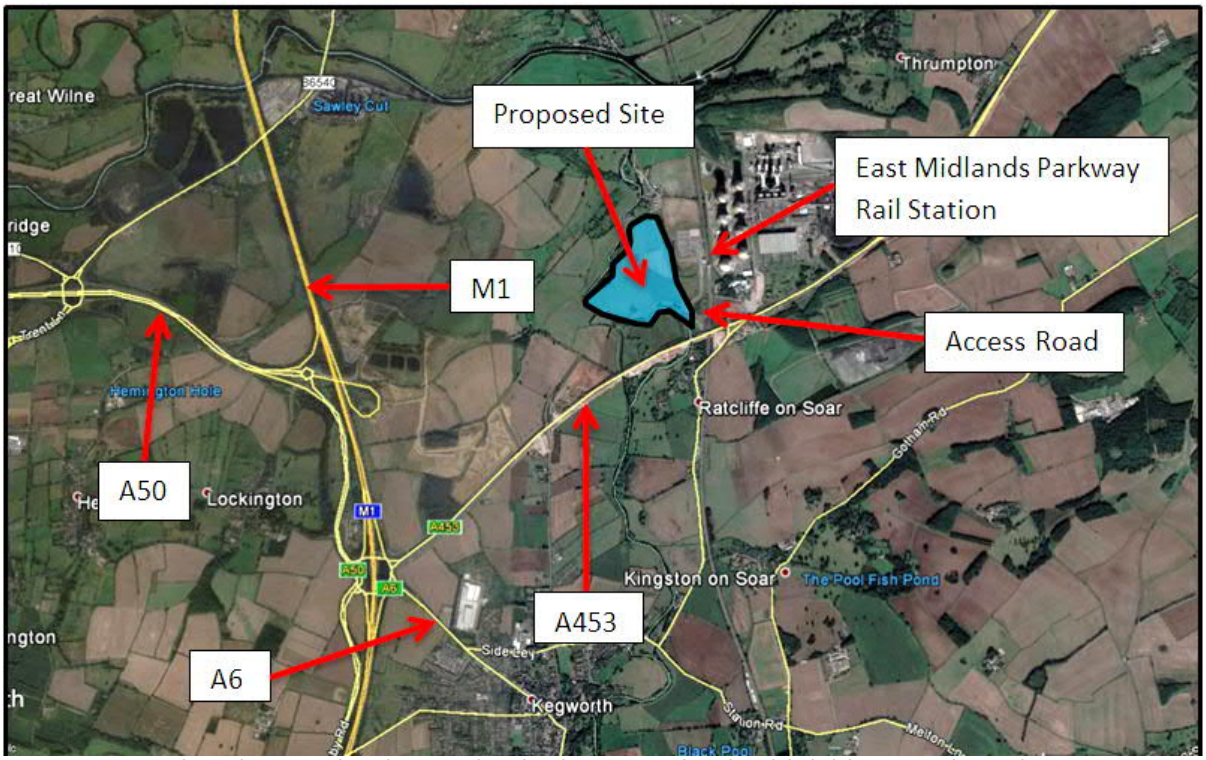
3.11 Redhill (No Operator)

3.11.1 **HGV Exports**: This site would be for sand and gravel. The site contains 700,000 tonnes which the promoter notes would be worked at a rate of 100,000 to 120,000 tonnes a year over 6-7 years. This would be exported by HGV and equates to 22 HGV arrivals and 22 HGV departures per average working day (assuming a 275 day working year and 20T average HGV load).

3.11.2 **Site Location and Access:** Figure 3.18 shows the site location. A new site access would be required, which the promoter states could be directly onto the new road infrastructure serving the Parkway Station. Drawings would be required to prove this to the satisfaction of both the local highway authority and Highways England; however, should an access be achieved then strategic highway links would be excellent.

3.11.3 It is assumed most HGV traffic will enter the site via the roundabout junction serving East Midlands Parkway rail station and would route from the A453. Outbound HGV traffic will use the new road infrastructure serving the station to access the A453 and most traffic would likely route southbound to the M1 J24. Some HGV's may route northbound towards Nottingham. A local lorry routing agreement would be recommended to protect surrounding villages.

Figure 3.18: Site Location Plan – Redhill



(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

3.11.4 **Traffic Data:** Table 3.10 includes traffic data for the area around the proposed site, obtained from NCC. No data was available for the access road that the site would tie into.

Table 3.10: Traffic Data for Redhill Site

Site	Roads	AADT 2016	HGV AADF	HGV%
Redhill	A453	32,900	2,933	8.91
	Kegworth Road	1,950	n/a	n/a

3.11.5 **Road Safety:** The data available for this study does not include the A453 (managed by Highways England). Furthermore, historic collision statistics would not be representative of current / future conditions in this area, given the recent upgrade of highway infrastructure.

3.11.6 **Summary:** The summary for Redhill (No Operator) is therefore:

- New Site;
- New Access Required (subject to submission of a drawing);
- Proposed export by HGV only;
- Routes to strategic network are direct and in close proximity;
- No road safety issues identified; and
- Few sensitive receptors near to the site.

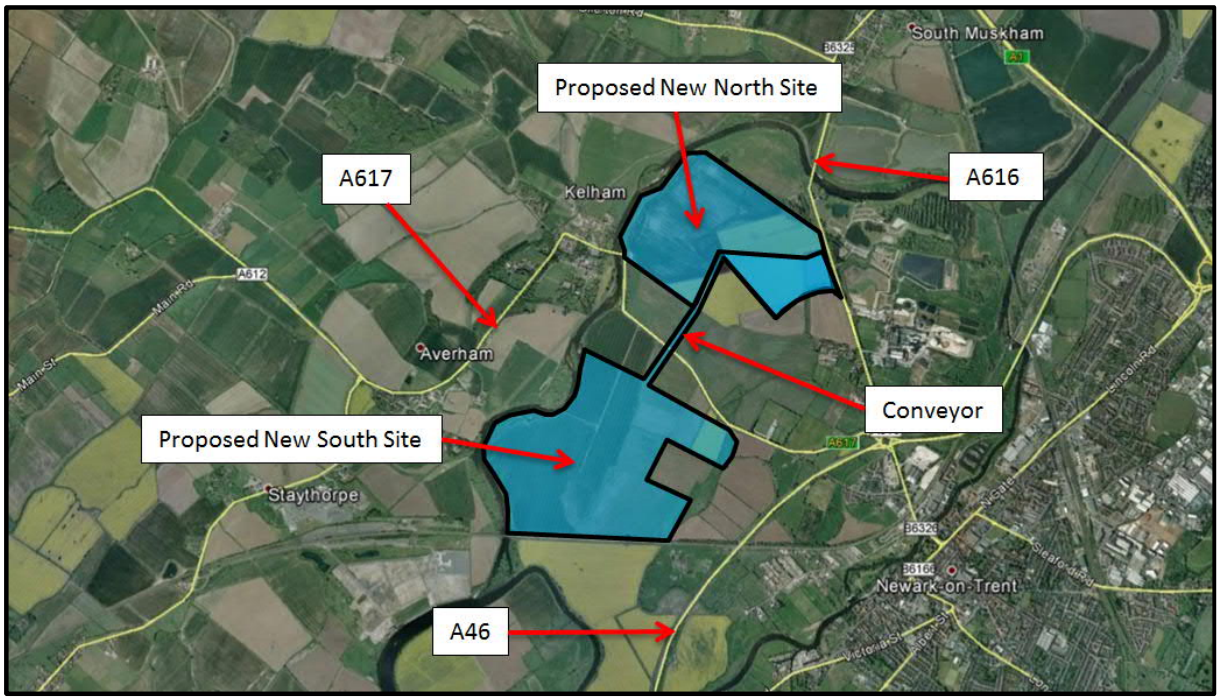
3.12 Great North Road - North (Tarmac)

3.12.1 **HGV Exports**: This site would be for sand and gravel. The site contains 4m tonnes which the operator notes would be worked at a rate of 250,000 tonnes a year over 16 years. This would be exported by HGV and equates to 45 HGV arrivals and 45 HGV departures per average working day (assuming a 275 day working year and 20T average HGV load).

3.12.2 **Site Location and Access:** Figure 3.12 shows the site location. A new site access would be required off the A616. A plan showing the required visibility splays would be required; however, given the geometry of the road there is no reason to believe that this couldn't be achieved. The A616 leads directly to the A46.

3.12.3 Outbound HGV traffic would likely route southerly along the A616 towards the A46. However, some traffic may turn left out of the access and route northbound along the A616 / B6325 towards the A1 at the North Muskham interchange and pass some sensitive receptors in South Muskham. Inbound traffic would likely route from the south of the site access on the A616. A local lorry routing agreement would be recommended to protect surrounding villages.

Figure 3.12: Site Location Plan – Great North Road Sites



(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

3.12.4 **Traffic Data:** Table 3.11 includes traffic data for the area around the proposed site, obtained from NCC.

Table 3.11: Traffic Data for Great North Road (North) Site

Site	Roads	AADT 2016	HGV AADF	HGV%
Great North Road (North)	A616	10,800	1080	10.00
	A46	29,800	2883	9.67
	B6325	8,150	540	6.63

3.12.5 The increase in HGVs on the A616, at the point of the site access, would therefore be 8.3%. The total increase in traffic would be less than 1%. As such, the thresholds given within GEART would not be triggered.

3.12.6 **Road Safety:** The study area for road safety analysis for this site is shown below in Figure 3.13 with a summary of all collisions given in Table 3.12, which also provides a breakdown of the location of collisions.

Figure 3.13: Road Safety Study Area for Great North Road (North) Site

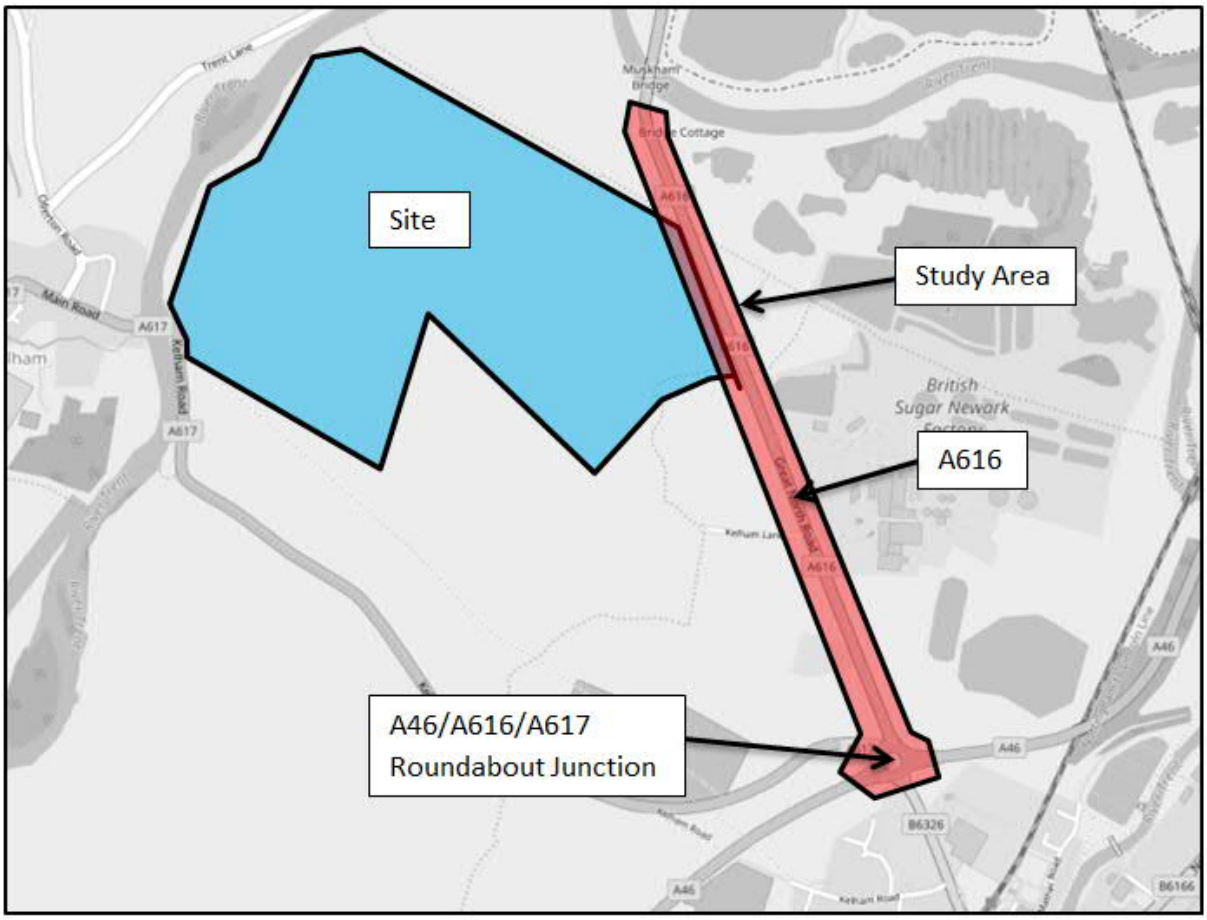


Table 3.12: Road Safety Summary for Great North Road (North) Site

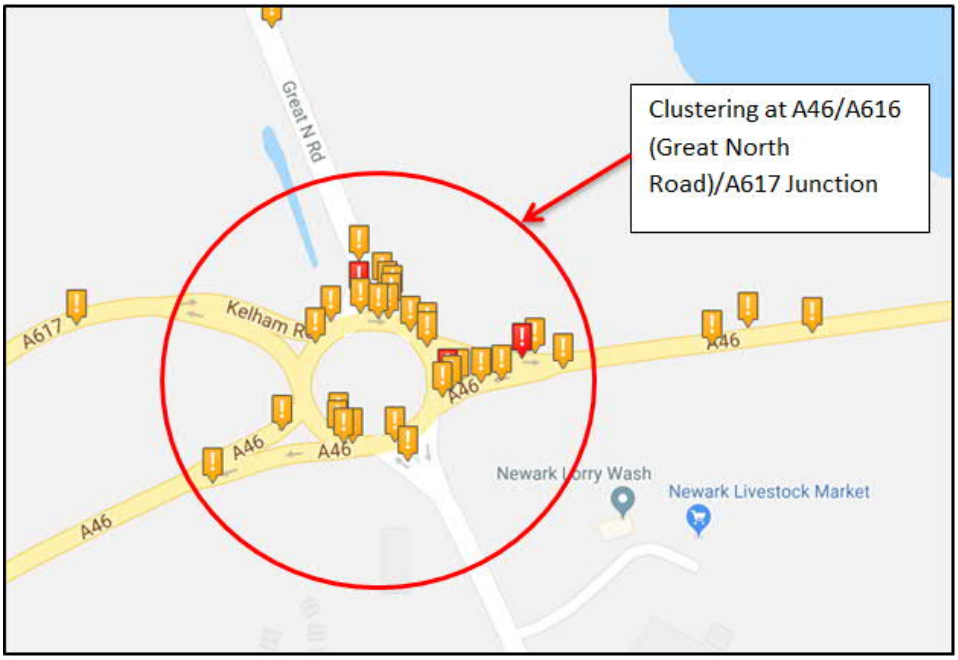
Junction/Link	'Slight'	'Serious'	'Fatal'	Total
A616	10	2	0	12
A46/A616/A617 Roundabout Junction	31	3	0	34
Total	**41**	**5**	**0**	**46**

3.12.7 Of the collisions, 2 involved HGVs (>7.5T) and 5 involved pedestrians / pedal cycles

3.12.8 In terms of collision clusters, 34 collisions have been recorded (31 classified as 'Slight' and 3 as 'Serious') at the A46 / A616 / A617 junction. No fatal collisions have occurred within the study area over the past 5 years of data.

3.12.9 It is understood that Highways England are examining the performance of this roundabout via the Road Investment Strategy (RIS)

Figure 3.13: Collision cluster near Great North Road (North) Site



3.12.10 **Summary:** The summary for the Great North Road - North (Tarmac) is therefore:

- New Site;
- New Access Required (subject to submission of a drawing);
- Proposed export by HGV only;
- Routes to strategic network (A46 and A1) are direct and in close proximity;
- HGVs would likely route through a collision cluster; and
- Few sensitive receptors near to the site.

3.13 Great North Road - South (Tarmac)

3.13.1 **HGV Exports**: This site would be for sand and gravel. The site contains 4m tonnes which the operator notes would be worked at a rate of 250,000 tonnes a year over 16 years. This would be exported by HGV and equates to 45 HGV arrivals and 45 HGV departures per average working day (assuming a 275 day working year[2] and 20T average HGV load[3]).

3.13.2 **Site Location and Access:** Figure 3.12 shows the site location. The site would use as a main access that established for the "Great North Road – North" site, although a secondary access for plant and construction traffic would be required off the A617 (required for the lifetime of the site). A plan showing the required visibility splays would be required; however, given the geometry of the road there is no reason to believe that this couldn't be achieved. As per the northern site, good linkages exist to the A46. The form of the conveyor to connect the site to the north (i.e. across the A617) would need to be agreed and proven to be feasible.

3.13.3 This site would primarily use the same access as the northern site; therefore outbound HGV traffic would likely route southerly along the A616 towards the A46. Some traffic may turn left out of the access however and route northbound along the A616 / B6325 towards the A1 at the North Muskham interchange, however this would pass some sensitive receptors in South Muskham. Inbound traffic would likely route from the south of the site access on the A616. However there will be a secondary access along the A617, in which case most HGV's would turn right out of the access junction and route eastbound towards the A46 and vice versa for inbound traffic. A local lorry routing agreement would be recommended to protect surrounding villages, e.g. South Muskham

3.13.4 **Summary:** The summary for the Great North Road - South (Tarmac) is therefore:

- New Site;
- New Access Required (subject to submission of a drawing for secondary access and reliant on main access for the Northern site);
- Proposed export by HGV only;
- Routes to strategic network (A46 and A1) are direct and in close proximity; and
- Few sensitive receptors near to the site.

Note: It is assumed that this site could not proceed independently of the Great North Road – North (Tarmac) site.

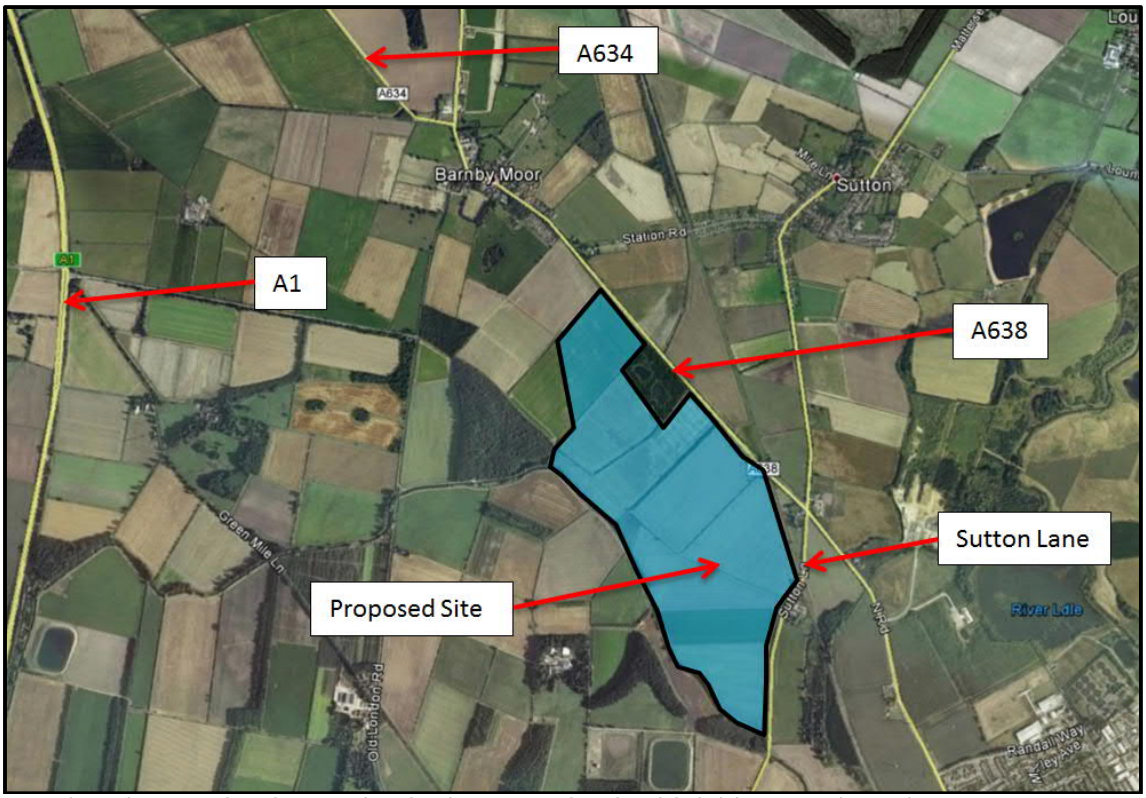
3.14 Botany Bay (Tarmac)

3.14.1 **HGV Exports**: This site would be for sand and gravel. The site contains 2.438m tonnes which the operator notes would be worked at a rate of 200,000 tonnes a year over 12 years. This would be exported by HGV and equates to 36 HGV arrivals and 36 HGV departures per average working day (assuming a 275 day working year and 20T average HGV load).

3.14.2 **Site Location and Access:** Figure 3.14 shows the site location. A new site access would be required off the A638. A plan showing the required visibility splays would be required; however, given the geometry of the road there is no reason to believe that this couldn't be achieved.

3.14.3 Most HGV's will leave the site on route to the A1 via A-roads. Traffic wanting to route northbound would exit the site left out of the access junction and travel northbound along the A638 and A634 and join the A1 (M) at J34, however this would pass through sensitive receptors in Blyth and Barnby Moor. Traffic wanting to route southbound would exit the site to the right of the access junction and route southerly along the A638 / A620 until the junction with the A1. Sutton Lane has a 10T maximum weight limit imposed due to a weak bridge as well as a 4.8 metre (15' 8) height restriction.

Figure 3.12: Site Location Plan – Botany Bay



(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

3.14.4 **Traffic Data:** Table 3.13 includes traffic data for the area around the proposed site, obtained from NCC.

Table 3.13: Traffic Data for Botany Bay Site

Site	Roads	AADT 2016	HGV AADF	HGV%
Botany Bay	A638	9,925	325	3.27
	Sutton Lane (North)	2,800	25	0.89
	Sutton Lane (South)	500	20	4.00

3.14.5 The increase in HGVs on the A638, at the point of the site access, would therefore be 22.1%. The total increase in general traffic would be less than 1%. As such, the thresholds given within GEART would not be triggered.

3.14.6 **Road Safety:** The study area for road safety analysis for this site is shown below in Figure 3.13, with a summary of all collisions given in Table 3.14, which also provides a breakdown of the location of collisions.

Figure 3.13: Road Safety Study Area for Botany Bay Site

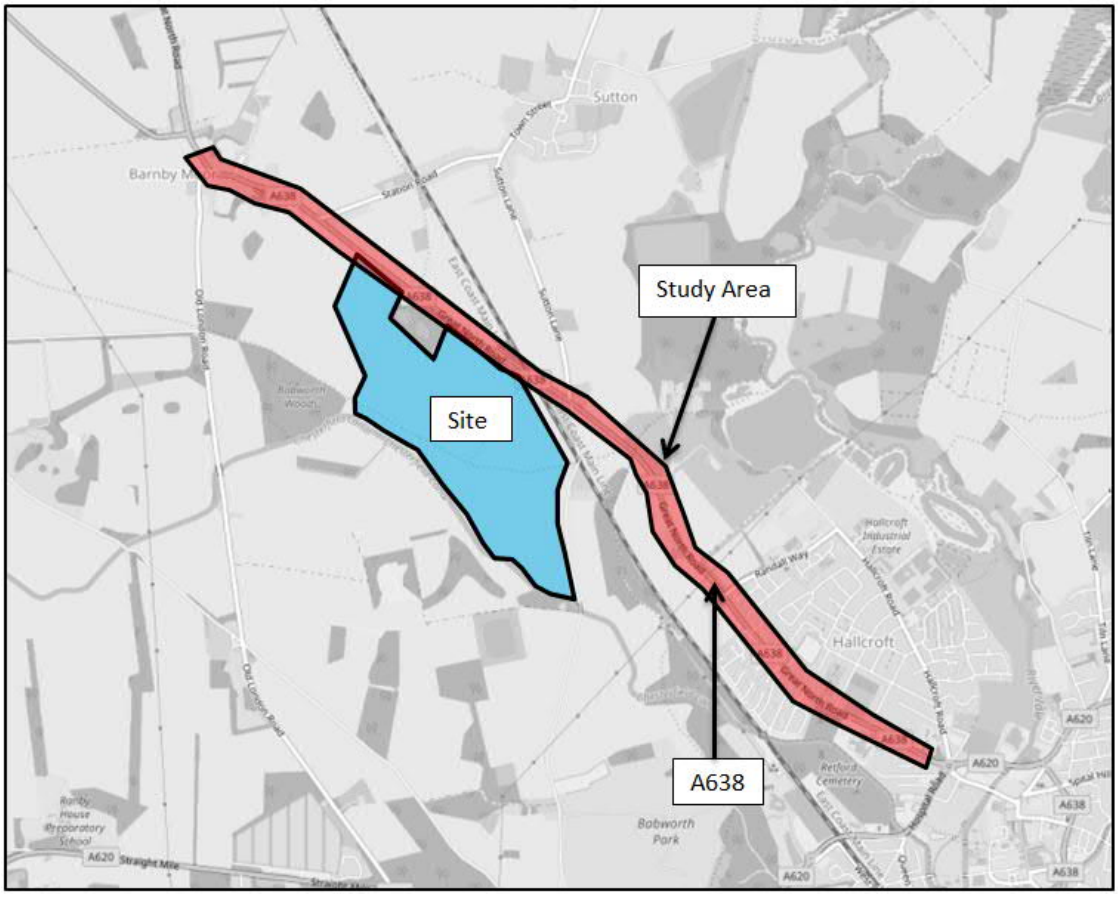


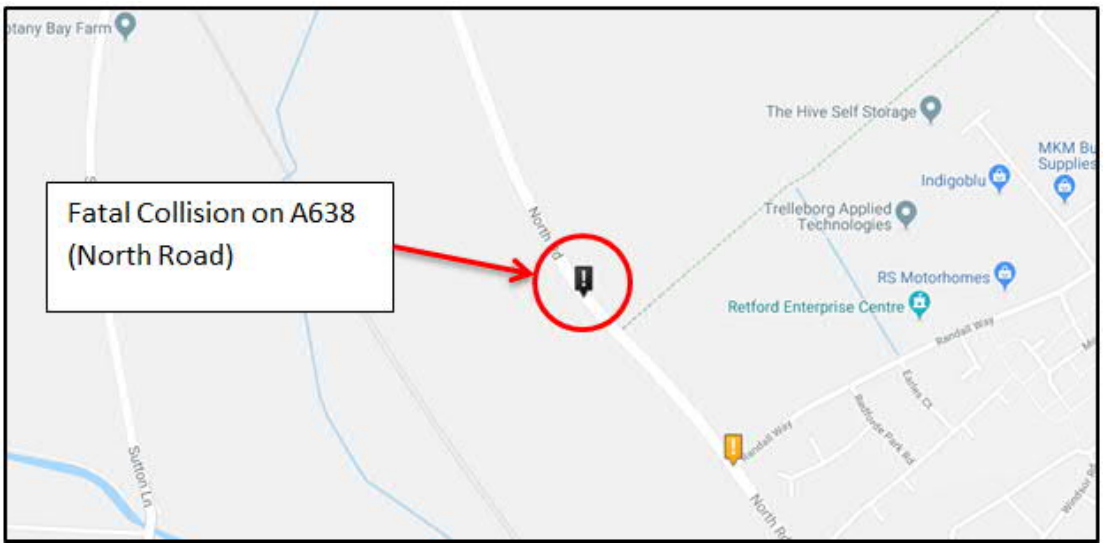
Table 3.14: Road Safety Summary for Botany Bay Site

Junction/Link	'Slight'	'Serious'	'Fatal'	Total
A638	12	3	1	16
Total	**12**	**3**	**1**	**16**

3.14.7 Of the collisions, none involved HGVs (>7.5T) and one involved pedestrians / pedal cycles.

3.14.8 There were no collision clusters identified with the study area. One fatal collision has occurred within the study area over the past 5 years of data; on the A638 (North Road), shown below in Figure 3.14. The incident involved a pedal cycle and van/goods vehicle <3.5T.

Figure 3.14: Fatal Collision near Barton in Fabis Site



3.14.9 **Summary:** The summary for Botany Bay (Tarmac) is therefore:

- New Site;
- New Access Required (subject to submission of a drawing);
- Proposed export by HGV only;
- HGV route would pass sensitive receptors (villages) along the HGV route;
- No pattern of road safety issues identified; and
- Routes to strategic network (A1) are via the A638 / A634 and A638 / A620.

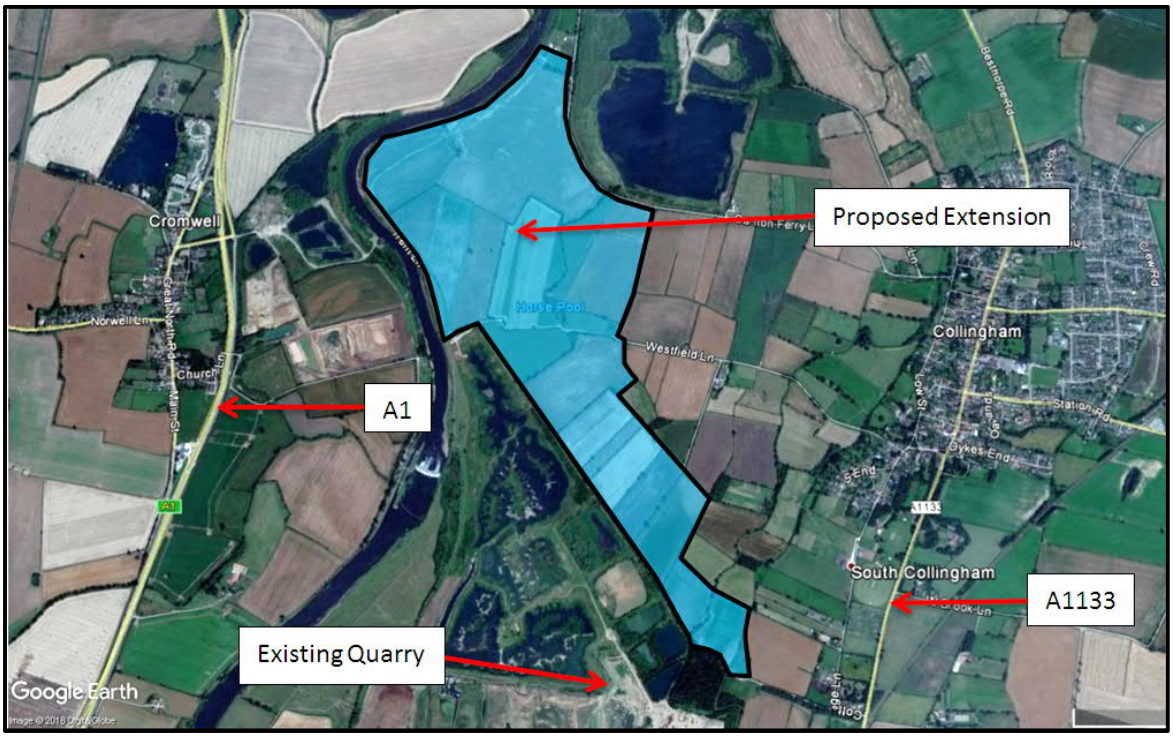
3.15 Langford North (Tarmac)

3.15.1 **HGV Exports**: This site would be for sand and gravel and is an extension to an existing quarry. The site contains 3.6m tonnes which the operator notes would be worked at a rate of 450,000 tonnes a year over 8 years. This would be exported by HGV and equates to 82 HGV arrivals and 82 HGV departures per average working day (assuming a 275 day working year and 20T average HGV load).

3.15.2 **Site Location and Access:** Figure 3.15 shows the site location. The site benefits from an existing access onto the A1133 and road markings require HGVs to turn right from the site towards the A46.

3.15.3 No HGV traffic is permitted to route northwards so as to avoid passing through Collingham. Outbound HGV traffic turns right out of the access junction and routes southbound onto the A1133. It is assumed most HGV's then route onto the A1, A46 or A17. Inbound traffic routes onto the A1133 and turns left into the access junction.

Figure 3.15: Site Location Plan – Langford North



(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

3.15.4 **Traffic Data:** Table 3.15 includes traffic data for the area around the proposed site, obtained from NCC.

Table 3.15: Traffic Data for Langford North Site

Site	Roads	AADT 2016	HGV AADF	HGV%
Langford North	A1133	7,350	480	6.53
	A46	36,650	3498	9.54

3.15.5 The increase in HGVs on the A1133, at the point of the site access, would therefore be 34.2%. The increase in general traffic would be 2.2%. Total increases in HGVs would likely be above the relevant GEART trigger if considered against the baseline data in Table 3.15. However, as this is an extension, the above figures may already include HGVs associated with the site (although it is not known how much volume is currently being produced). As such, further work may be required to determine if this site would generate air quality and traffic noise impacts.

3.15.6 **Road Safety:** The study area for road safety analysis for this site is shown below in Figure 3.16, with a summary of all collisions given in Table 3.16, which also provides a breakdown of the location of collisions.

Figure 3.16: Road Safety Study Area for Langford North Site

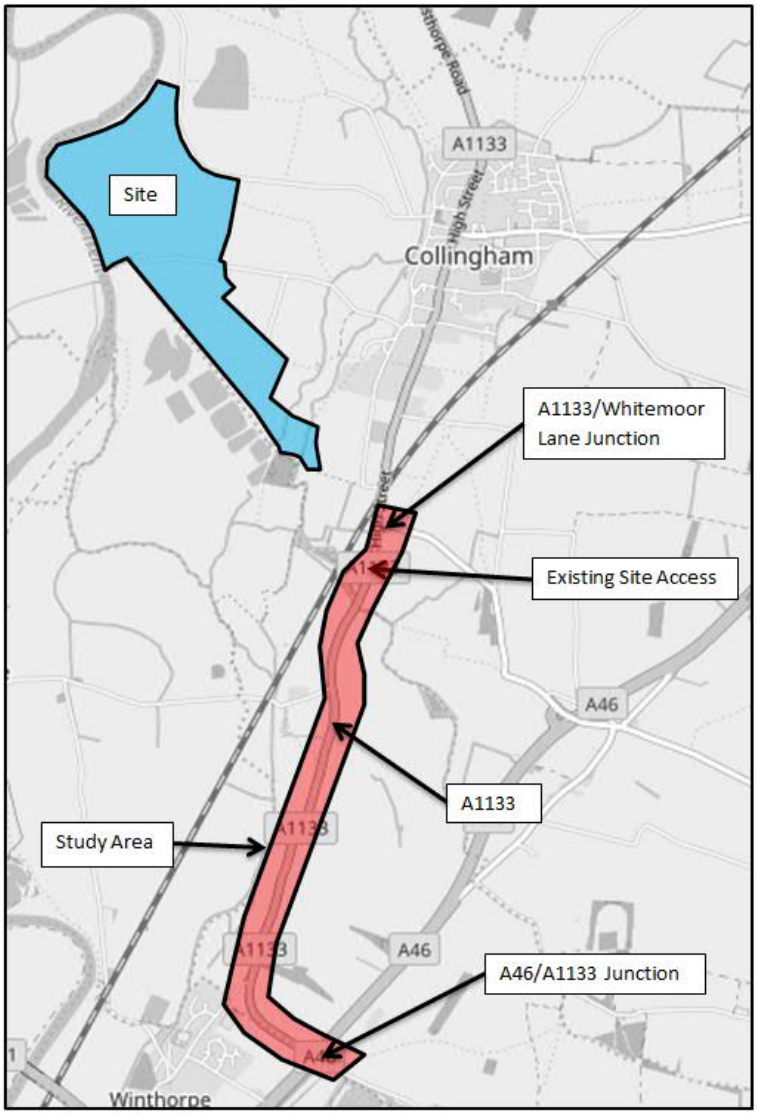


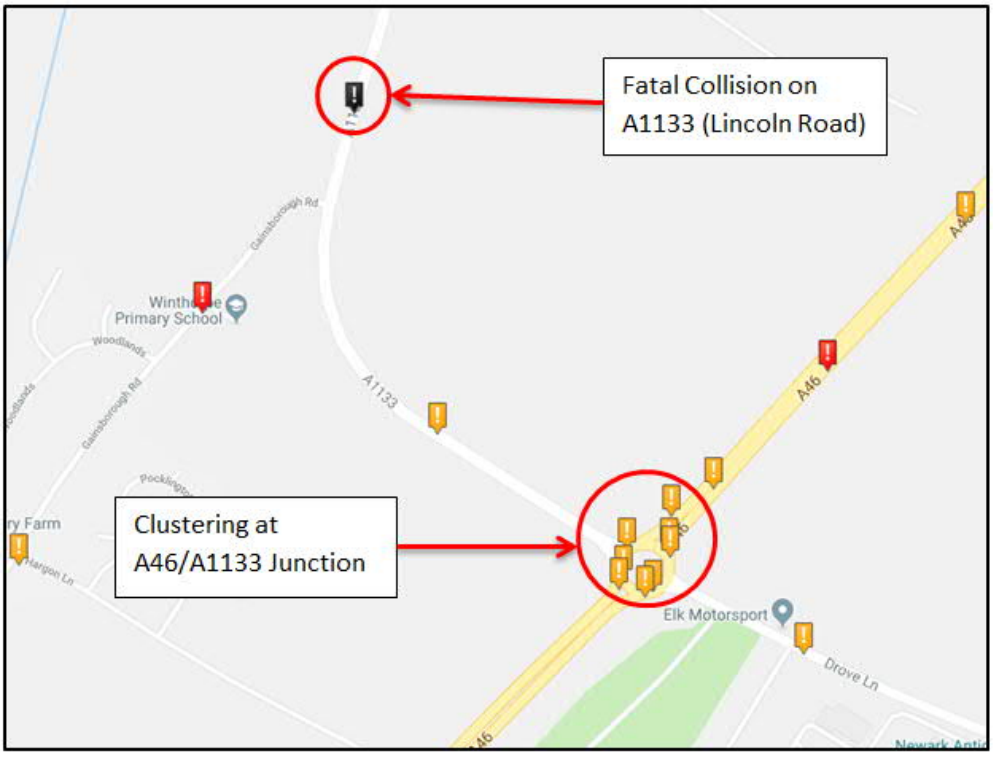
Table 3.16: Road Safety Summary for Langford North Site

Junction/Link	'Slight'	'Serious'	'Fatal'	Total
A1133	2	3	1	6
A1133 / Whitemoor Lane Junction	0	1	0	1
A46/A1133 Junction	8	0	0	8
Site Access Junction	0	0	0	0
Total	**10**	**4**	**1**	**15**

3.15.7 Of the collisions, one involved HGVs (>7.5T) and none involved pedestrians / pedal cycles.

3.15.8 In terms of collision clusters, 8 collisions have been recorded (all classified as 'Slight') at the A46 / A1133 junction. One fatal collision has occurred within the study area over the past 5 years of data; on the A1133 (Lincoln Road), shown below in Figure 3.17. The incident involved a motorcycle and two goods vehicles <3.5T.

Figure 3.17: Collision Cluster and Fatal Collision near Langford North Site



3.15.9 **Summary:** The summary for the Langford North (Tarmac) is therefore:

- Extension to an existing Site;
- Existing Access (with routeing agreed with local highway authority);
- Proposed export by HGV only;
- HGV route passes through a collision cluster;
- HGV route passes few sensitive receptors along the A1133; and
- Routes to strategic road network (A46, A17 and A1) are via the A1133.

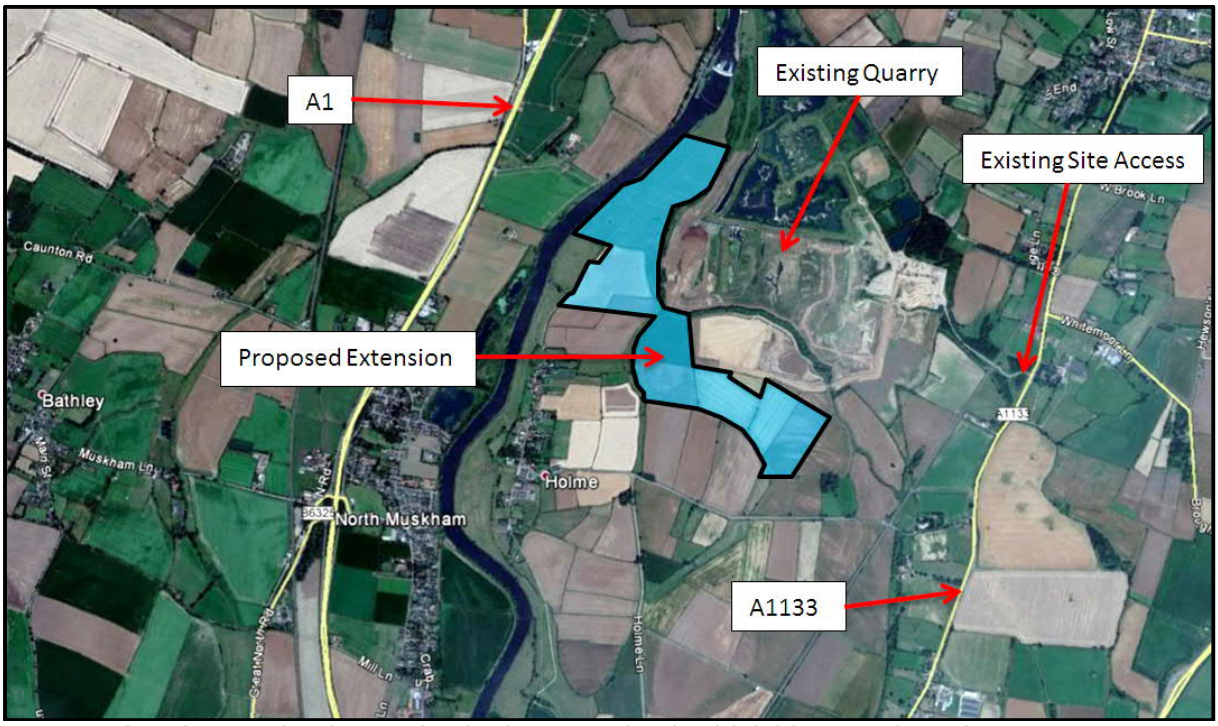
3.16 Langford South & West (Tarmac)

3.16.1 **HGV Exports**: This site would be for sand and gravel and is an extension to an existing quarry. The site contains 8m tonnes which the operator notes would be worked at a rate of 450,000 tonnes a year over 16-18 years. This would be exported by HGV and equates to 82 HGV arrivals and 82 HGV departures per average working day (assuming a 275 day working year[2] and 20T average HGV load[3]).

3.16.2 **Site Location and Access:** Figure 3.18 shows the site location. The site benefits from an existing access onto the A1133 and road markings require HGVs to turn right from the site towards the A46.

3.16.3 No HGV traffic is permitted to route northwards so as to avoid passing through Collingham. Outbound HGV traffic turns right out of the access junction and routes southbound onto the A1133. It is assumed most HGV's then route onto the A1, A46 or A17. Inbound traffic routes onto the A1133 and turns left into the access junction

Figure 3.18: Site Location Plan – Langford South and West



(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

3.16.4 **Traffic Data:** Table 3.17 includes traffic data for the area around the proposed site, obtained from NCC.

Table 3.17: Traffic Data for Langford South / West Site

Site	Roads	AADT 2016	HGV AADF	HGV%
Langford South / West	A1133	7,350	480	6.53
	A46	36,650	3498	9.54

3.16.5 The increase in HGVs on the A1133, at the point of the site access, would therefore be 34.2%. The increase in general traffic would be 2.2%. This increase in HGVs would trigger the GEART threshold. However, as this is an extension, the above figures may already include HGVs associated with the site (although it is not known how much volume is currently being produced). As such, further work may be required to determine if this site would generate air quality and traffic noise impacts.

3.16.6 **Road Safety:** The study area for road safety analysis for this site is shown below in Figure 3.19, with a summary of all collisions given in Table 3.18, which also provides a breakdown of the location of collisions.

Figure 3.19: Road Safety Study Area for Langford South / West Site

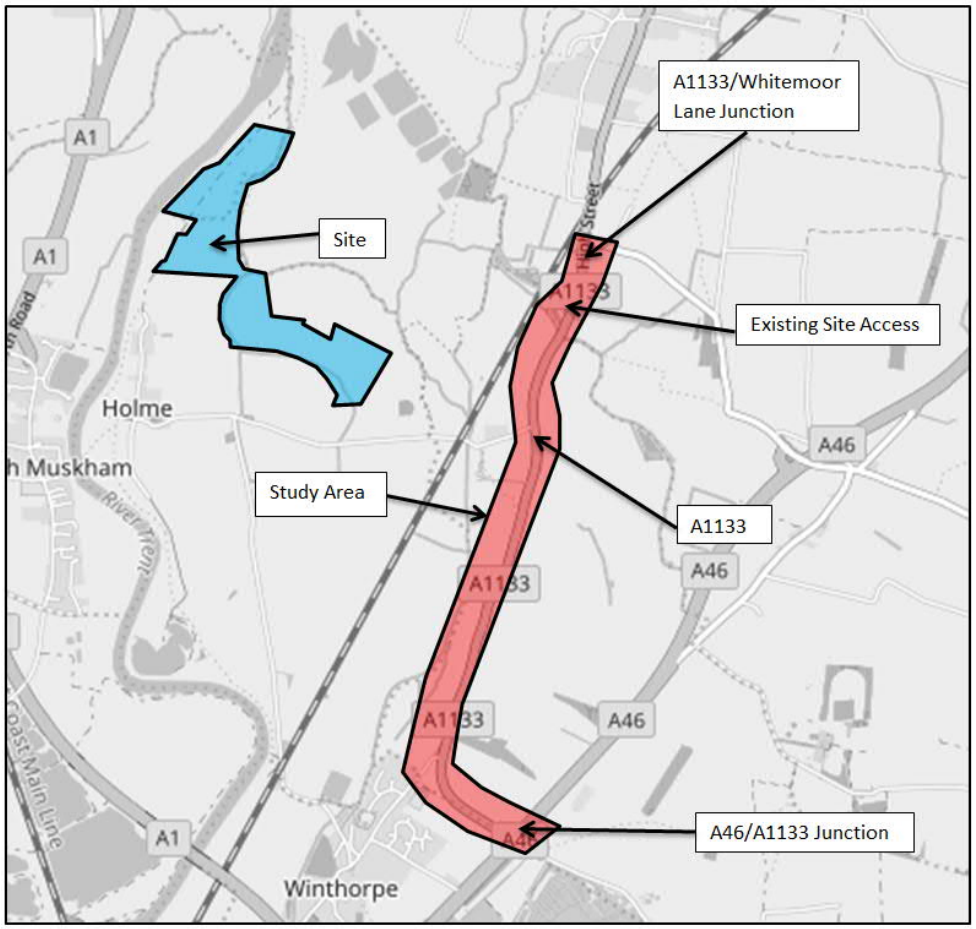


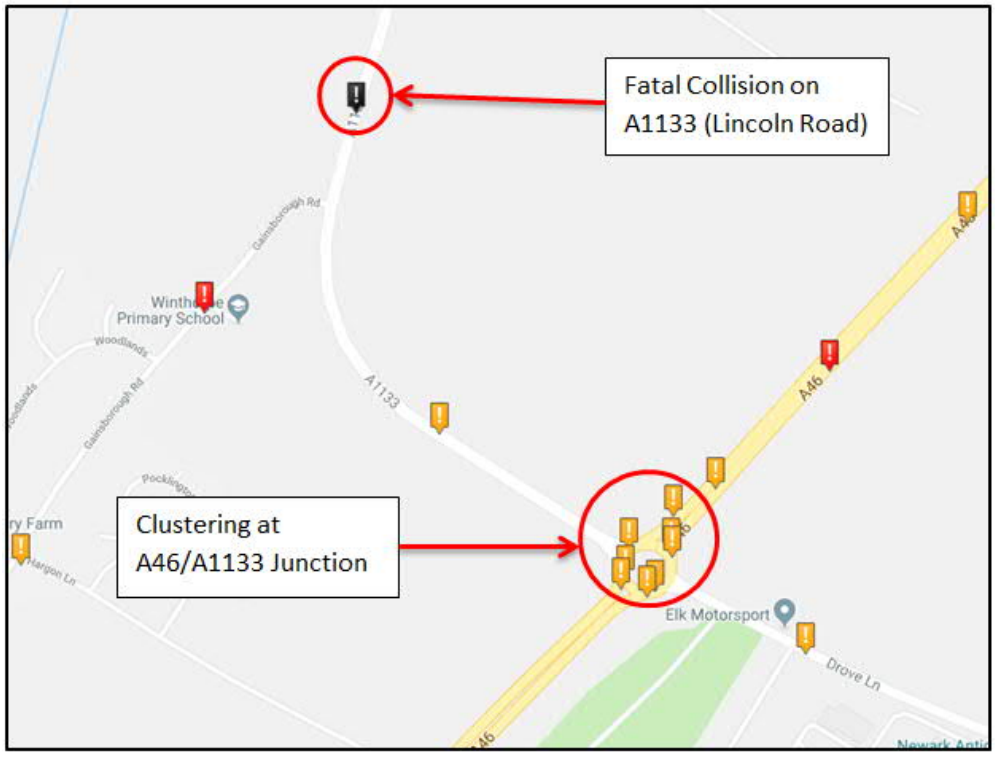
Table 3.18: Road Safety Summary for Langford North Site

Junction/Link	'Slight'	'Serious'	'Fatal'	Total
A1133	2	3	1	6
A1133/Whitemoor Lane Junction	0	1	0	1
A46/A1133 Junction	8	0	0	8
Site Access Junction	0	0	0	0
Total	**10**	**4**	**1**	**15**

3.16.7 Of the collisions, one involved HGVs (>7.5T) and none involved pedestrians / pedal cycles.

3.16.8 In terms of collision clusters, 8 collisions have been recorded (all classified as 'Slight') at the A46 / A1133 junction. One fatal collision has occurred within the study area over the past 5 years of data; on the A1133 (Lincoln Road), shown below in Figure 3.20. The incident involved a motorcycle and two goods vehicles <3.5T.

Figure 3.20: Collision Cluster and Fatal Collision near Langford North Site



3.16.9 **Summary:** The summary for the Langford South and West (Tarmac) is therefore:

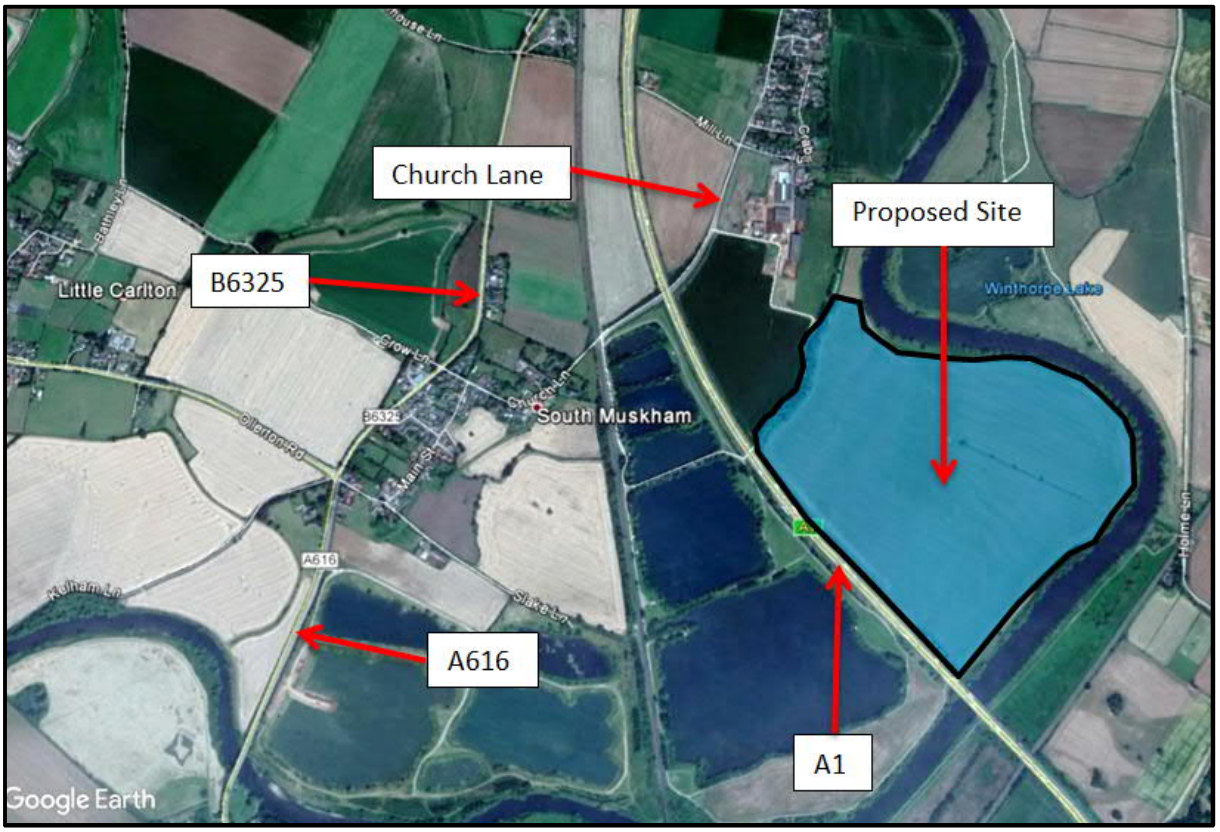
- Extension to an existing Site;
- Existing Access (with routeing agreed with local highway authority);
- Proposed export by HGV only;
- HGV route passes through a collision cluster;
- HGV route passes few sensitive receptors along the A1133; and
- Routes to strategic road network (A46, A17 and A1) are via the A1133.

3.17 Burridge Farm (Tarmac)

3.17.1 **HGV Exports**: This site would be for sand and gravel. The site contains 3.5m tonnes which the operator notes would be worked at a rate of 125,000 to 150,000 tonnes a year over 25 years. This would be exported by HGV and equates to 27 HGV arrivals and 27 HGV departures per average working day (assuming a 275 day working year and 20T average HGV load).

3.17.2 **Site Location and Access:** Figure 3.21 shows the site location. The information from the operator confirms no suitable HGV access direct to the site, and it is proposed to transport material to the company's previously worked quarry at Cromwell by barge. It is then proposed to export the material by HGV along the A1.

Figure 3.21: Site Location Plan – Burridge Farm



(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

3.17.3 **Traffic Data:** Table 3.19 includes traffic data, obtained from NCC, for the area around the existing Cromwell Quarry which material from this site would be transported to by barge for exportation.

Table 3.19: Traffic Data for Burridge Farm (Cromwell Quarry) Site

Site	Roads	AADT 2016	HGV AADF	HGV%
Burridge Farm (Cromwell Quarry)	A1	47,900	8145	17.00
	Bridge over A1	800	35	4.38
	Main Street (A1 Slip Road)	300	35	11.67
	Great North Road	600	20	3.33

3.17.4 Percentage changes in traffic at the site access would be high, but this is mainly a result of this route being bypassed by the A1 leaving only low residual traffic flows. The increase in HGV's along the A1 would therefore be 0.66% with increases in general traffic of 0.11%.

3.17.5 **Road Safety:** The study area for road safety analysis for this site is shown below in Figure 3.22, with a summary of all collisions given in Table 3.20, which also provides a breakdown of the location of collisions.

Figure 3.22: Road Safety Study Area for Burridge Farm (Assuming material exported from Cromwell Quarry)

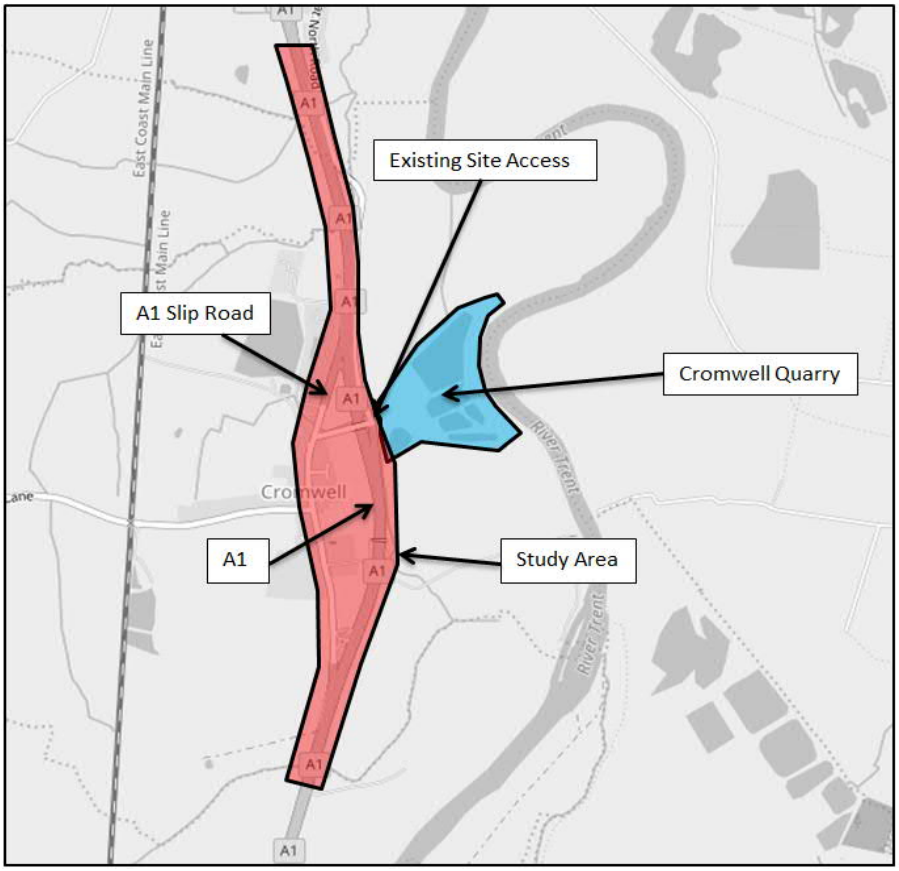


Table 3.20: Road Safety Summary for Burridge Farm (Cromwell Quarry) Site

Junction/Link	'Slight'	'Serious'	'Fatal'	Total
A1	8	3	0	11
Main Street	0	0	0	0
A1 Slip Road	1	0	0	1
Total	**9**	**3**	**0**	**12**

3.17.6 Of the collisions, one involved HGVs (>7.5T) and none involved pedestrians / pedal cycles.

3.17.7 There were no collision clusters identified in the study area. No fatal collisions have occurred within the study area over the past 5 years of data.

3.17.8 **Summary:** The summary for Burridge Farm (Tarmac) is therefore:

- New Site;
- Transport material by barge to Cromwell Quarry (for onward export by HGV);
- Makes use of existing Cromwell Quarry access.
- No road safety issues identified; and
- HGV route passes sensitive receptors in Cromwell.

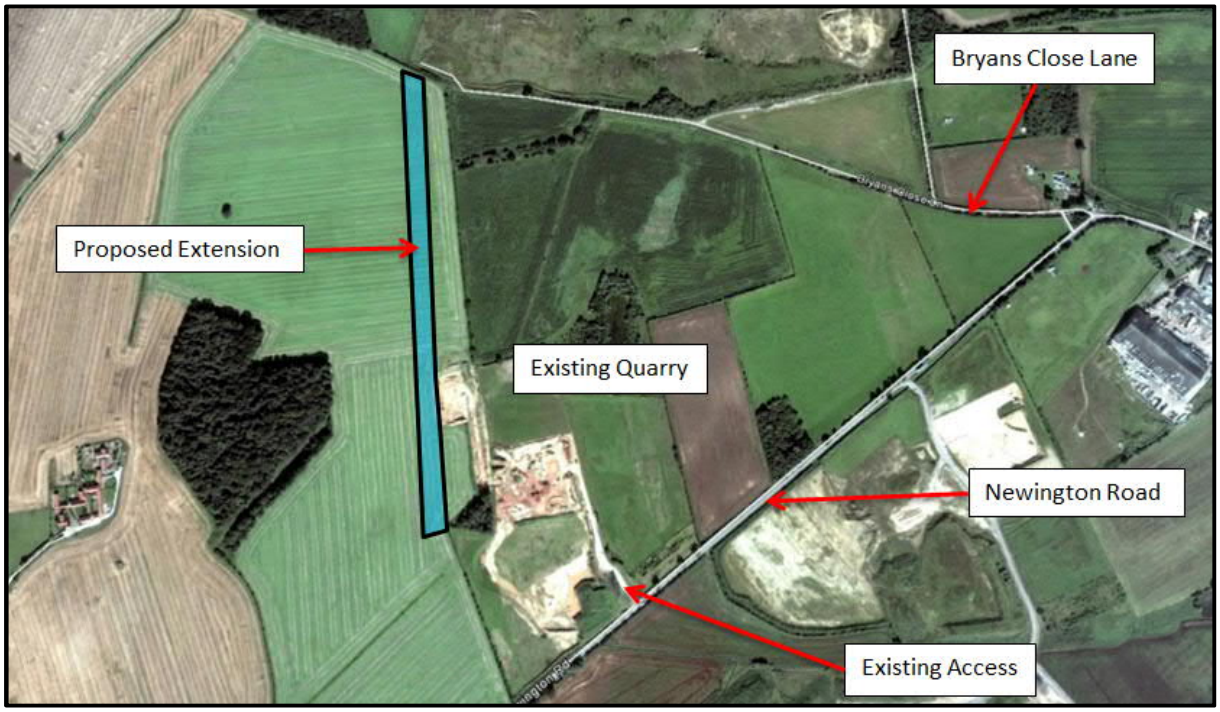
3.18 Bawtry Road (Misson Sand and Gravel Co)

3.18.1 **HGV Exports**: This site would be for sand and gravel and is an extension to an existing quarry. The site contains 180,000 tonnes which the operator notes would be worked over 5 – 7 years at a rate of 30,000 tonnes a year. This would be exported by HGV and equates to 5 HGV arrivals and 5 HGV departures per average working day (assuming a 275 day working year and 20T average HGV load).

3.18.2 **Site Location and Access:** Figure 3.23 shows the site location. It is effectively an extension of the Misson Grey Sand Quarry, and it would use the existing quarry access onto Newington Road. Routeing of vehicles likely take HGVs through the town of Bawtry via Newington Road to the A614.

3.18.3 HGV's exit to the right of the site access and route southerly along Newington Road before joining the A614 and eventually the A1 (M). Some HGV's may route northbound via the A638 whilst passing through Bawtry. Inbound traffic routes through Bawtry via the A614 and accesses the site on Newington Road.

Figure 3.23: Site Location Plan – Bawtry Road (Now Newington Road)



(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

3.18.4 **Traffic Data:** Table 3.21 includes traffic data for the area around the proposed site, obtained from NCC.

Table 3.21: Traffic Data for Bawtry Road (Now Newington Road) Site

Site	Roads	AADT 2016	HGV AADF	HGV%
Bawtry Road	Bawtry Road	2,400	n/a	n/a
	Springs Road	800	45	5.63

3.18.5 This increase in HGVs would trigger the GEART threshold. However, as this is an extension, the above figures may already include HGVs associated with the site (although it is not known how much volume is currently being produced). As such, further work may be required to determine if this site would generate air quality and traffic noise impacts.

3.18.6 **Road Safety:** The study area for road safety analysis for this site is shown below in Figure 3.24, with a summary of all collisions given in Table 3.22, which also provides a breakdown of the location of collisions.

Figure 3.24: Road Safety Study Area for Bawtry Road Site

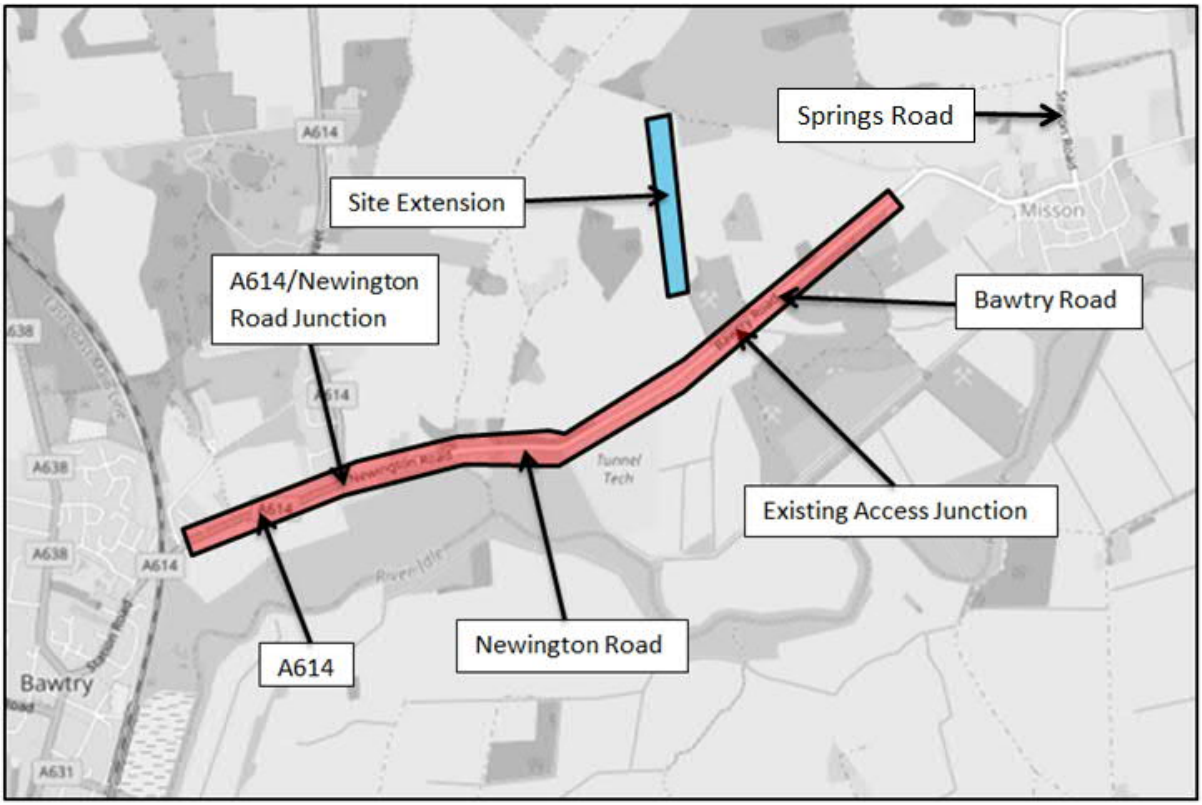


Table 3.22: Road Safety Summary for Bawtry Road Site

Junction/Link	'Slight'	'Serious'	'Fatal'	Total
Bawtry Road	0	0	0	0
Newington Road	1	1	0	2
Site Access Junction	0	0	0	0
A614/Newington Road Junction	1	2	0	3
A614	2	0	0	2
Total	**4**	**3**	**0**	**7**

3.18.7 Of the collisions, none involved HGVs (>7.5T) and none involved pedestrians / pedal cycles.

3.18.8 There were no collision clusters identified in the study area. No fatal collisions have occurred within the study area over the past 5 years of data.

3.18.9 **Summary:** The summary for Bawtry (Misson Sand and Gravel Company) is therefore:

- Existing Site;
- Existing Access;
- Proposed export by HGV only;
- Routes to strategic network via A-roads such as the A614 reached via Newington Road;
- No road safety issues identified; and
- HGVs would route via nearby settlements such as Bawtry.

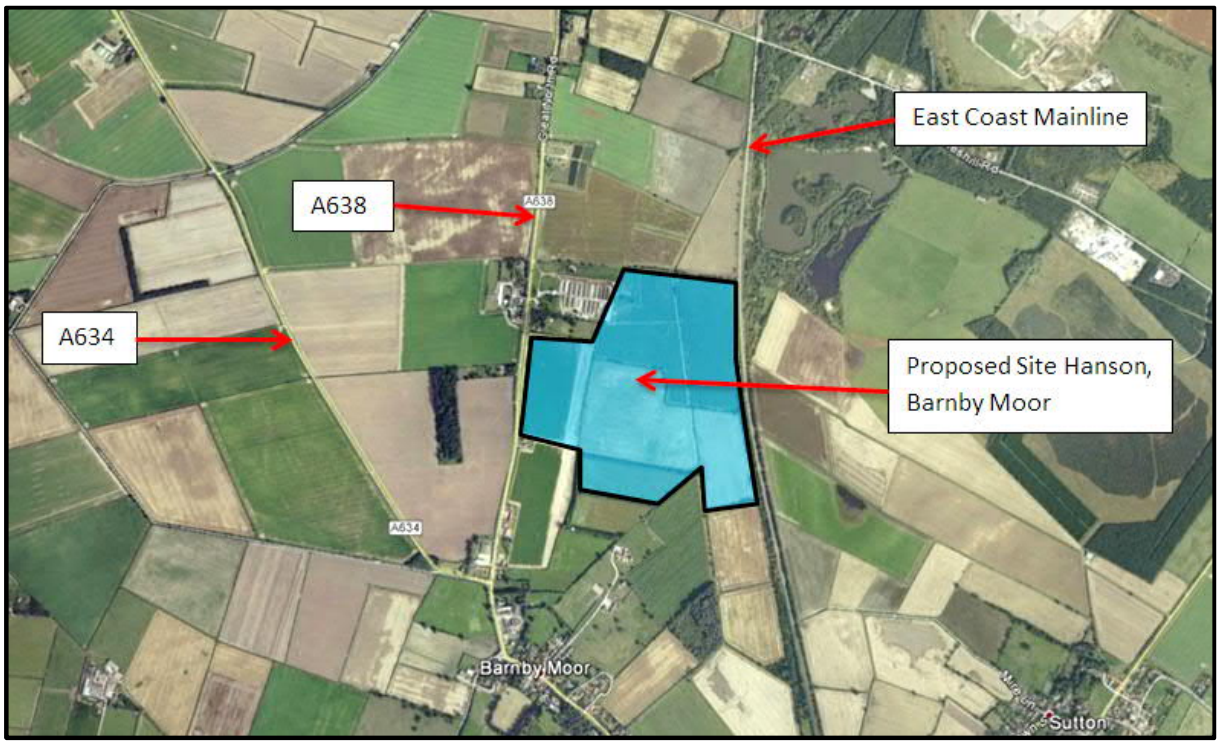
3.19 Barnby Moor (Hanson)

3.19.1 **HGV Exports:** This site would be for sand and gravel. The site contains 900,000 tonnes which the operator notes would be worked over 5 years at a rate of up to 250,000 tonnes a year. This would be exported by HGV and equates to 45 HGV arrivals and 45 HGV departures per average working day (assuming a 275 day working year and 20T average HGV load).

3.19.2 **Site Location and Access:** Figure 3.25 shows the site location. A new access would be required off the A638; however, given the geometry of the road there is no reason to believe that this couldn't be achieved.

3.19.3 Extracted unprocessed mineral would be transported to the company's Aukley plant before being processed and sold into the market.

Figure 3.25: Site Location Plan – Barnby Moor



(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

3.19.4 **Traffic Data:** Table 3.23 includes traffic data for the area around the proposed site, obtained from NCC.

Table 3.23: Traffic Data for Barnby Moor Sites

Site	Roads	AADT 2016	HGV AADF	HGV%
Barnby Moor	A638	5,300	260	4.91
	B6045	2,500	160	6.40
	A634	4,250	145	3.41

3.19.5 The increase in HGVs on the A638, at the point of the site access, would therefore be 34.6%. The total increase in general traffic would be 1.7%. As such, the thresholds given within GEART would be triggered and would require further assessment (in terms of noise and air quality analysis) on nearby sensitive receptors).

3.19.6 **Road Safety:** The study area for road safety analysis for this site is shown below in Figure 3.26, with a summary of all collisions given in Table 3.24, which also provides a breakdown of the location of collisions.

Figure 3.26: Road Safety Study Area for Barnby Moor (Hanson) Site

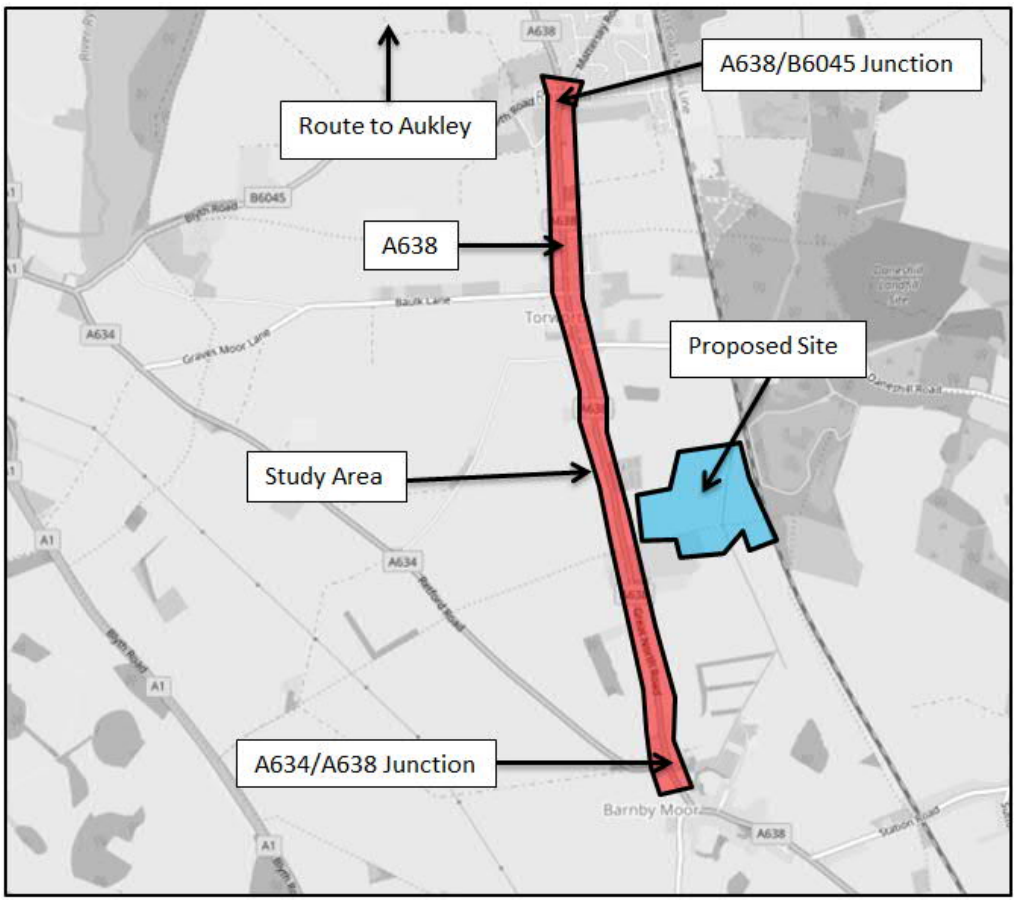


Table 3.24: Road Safety Summary for Barnby Moor (Hanson) Site

Junction/Link	'Slight'	'Serious'	'Fatal'	Total
A638	1	2	0	3
A638 /A634 Junction	1	0	0	1
A634/B6045 Junction	3	0	0	3
Total	**5**	**2**	**0**	**7**

3.19.7 Of the collisions, none involved HGVs (>7.5T) or involved pedestrians / pedal cycles.

3.19.8 There were no collision clusters identified in the study area. No fatal collisions have occurred within the study area over the past 5 years of data.

3.19.9 **Summary:** The summary for Barnby Moor (Hanson) is therefore:

- New Site;
- New Access Required (subject to submission of a drawing);
- Proposed export by HGV only;
- Routes to strategic network via local A-roads until the A1 is reached; and
- HGVs would route via nearby settlements such as Ranskill.

  Note: It is understood that the site would not be brought forward in parallel with Barnby Moor (Rotherham Sand and Gravel).

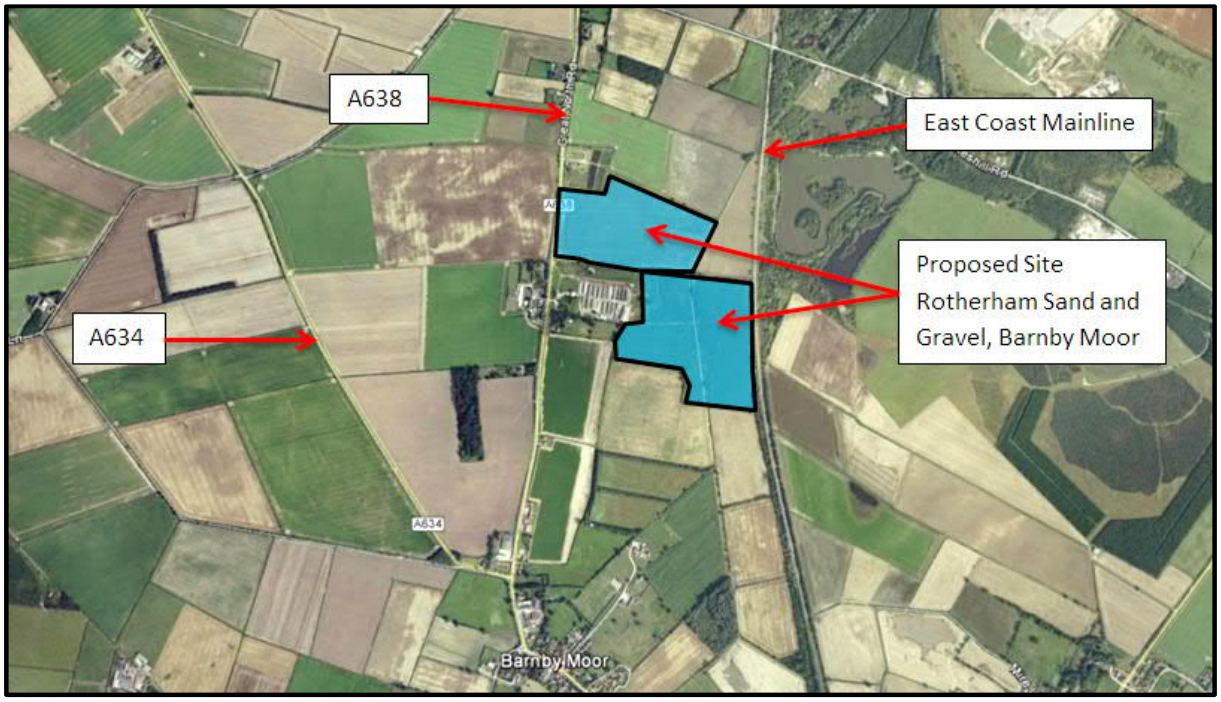
3.20 Barnby Moor (Rotherham Sand and Gravel)

3.20.1 **HGV Exports:** This site would be for sand and gravel. The site contains 1m tonnes which the operator notes would be worked over 25-30 years at a rate of up to 35,000 tonnes a year. This would be exported by HGV and equates to 6 HGV arrivals and 6 HGV departures per average working day (assuming a 275 day working year and 20T average HGV load).

3.20.2 **Site Location and Access:** Figure 3.27 shows the site location. A new access would be required off the A638; however, given the geometry of the road there is no reason to believe that this couldn't be achieved.

3.20.3 Mineral extracted will be transported to RSG's main site at Scrooby Top Quarry before being sold into the wider market. HGV's would turn right out of the site access and route north along the A638 until they reach the Scrooby Top site.

Figure 3.27: Site Location Plan – Barnby Moor



3.20.4 **Traffic Data:** Table 3.25 includes traffic data for the area around the proposed site, obtained from NCC.

Table 3.25: Traffic Data for Barnby Moor Sites

Site	Roads	AADT 2016	HGV AADF	HGV%
Barnby Moor	A638	5,300	260	4.91
	B6045	2,500	160	6.40
	A634	4,250	145	3.41

3.20.5 The increase in HGVs on the A638, at the point of the site access, would therefore be 34.6%. The total increase in general traffic would be 1.7%. As such, the thresholds given within GEART would be triggered and would require further assessment (in terms of noise and air quality analysis) on nearby sensitive receptors).

3.20.6 **Road Safety:** The study area for road safety analysis for this site is shown below in Figure 3.28, with a summary of all collisions given in Table 3.26, which also provides a breakdown of the location of collisions.

Figure 3.28: Road Safety Study Area for Barnby Moor (RS&G) Site

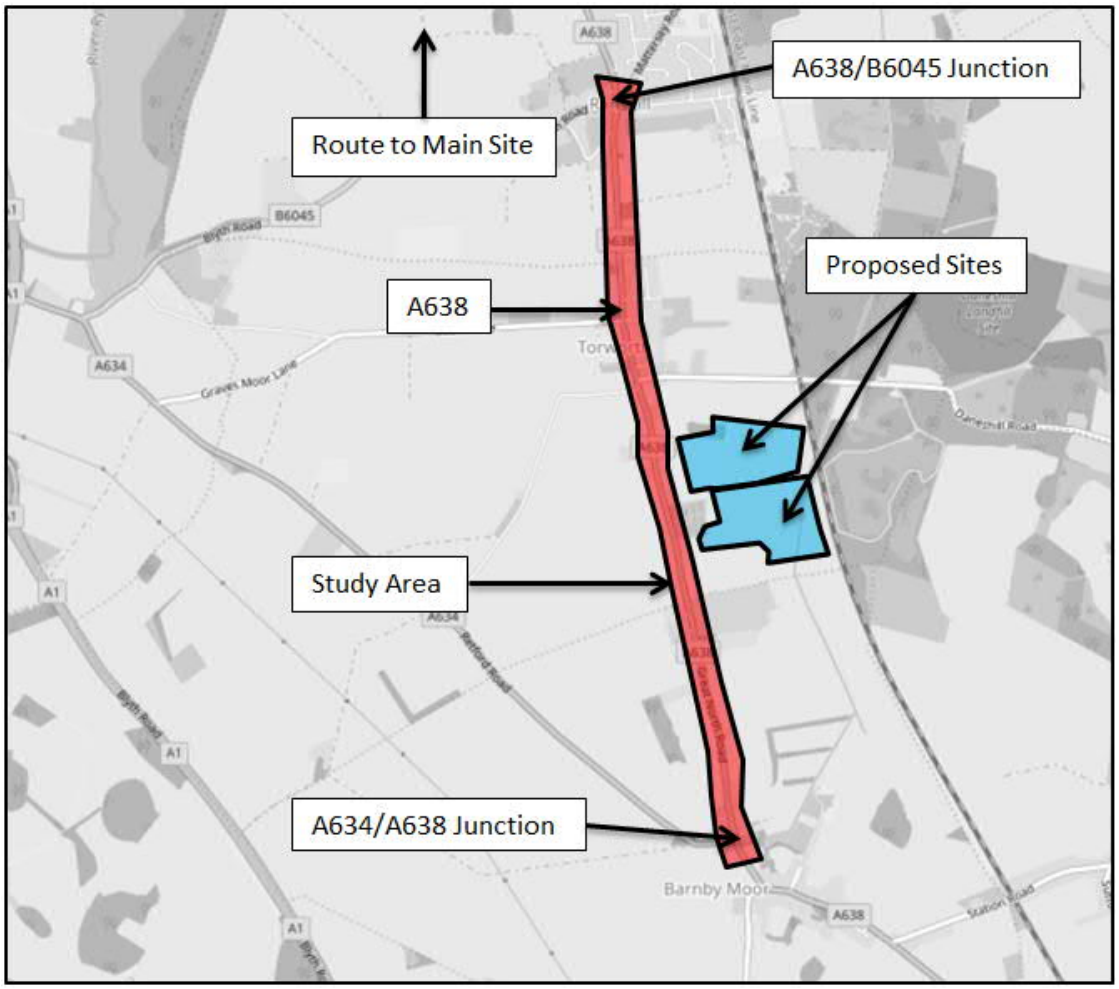


Table 3.26: Road Safety Summary for Barnby Moor (RS&G) Site

Junction/Link	'Slight'	'Serious'	'Fatal'	Total
A638	1	2	0	3
A638 /A634 Junction	1	0	0	1
A634/B6045 Junction	3	0	0	3
Total	**5**	**2**	**0**	**7**

3.20.7 Of the collisions, none involved HGVs (>7.5T) or involved pedestrians / pedal cycles.

3.20.8 There were no collision clusters identified in the study area. No fatal collisions have occurred within the study area over the past 5 years of data.

3.20.9 **Summary:** The summary for Barnby Moor (Rotherham Sand and Gravel) is therefore:

- New Site;
- New Access Required (subject to submission of a drawing);
- Proposed export by HGV only;
- Routes to strategic network via local A-roads until the A1 is reached; and
- HGVs would route via nearby settlements such as Ranskill.

  Note: It is understood that the site would not be brought forward in parallel with Barnby Moor (Hanson).

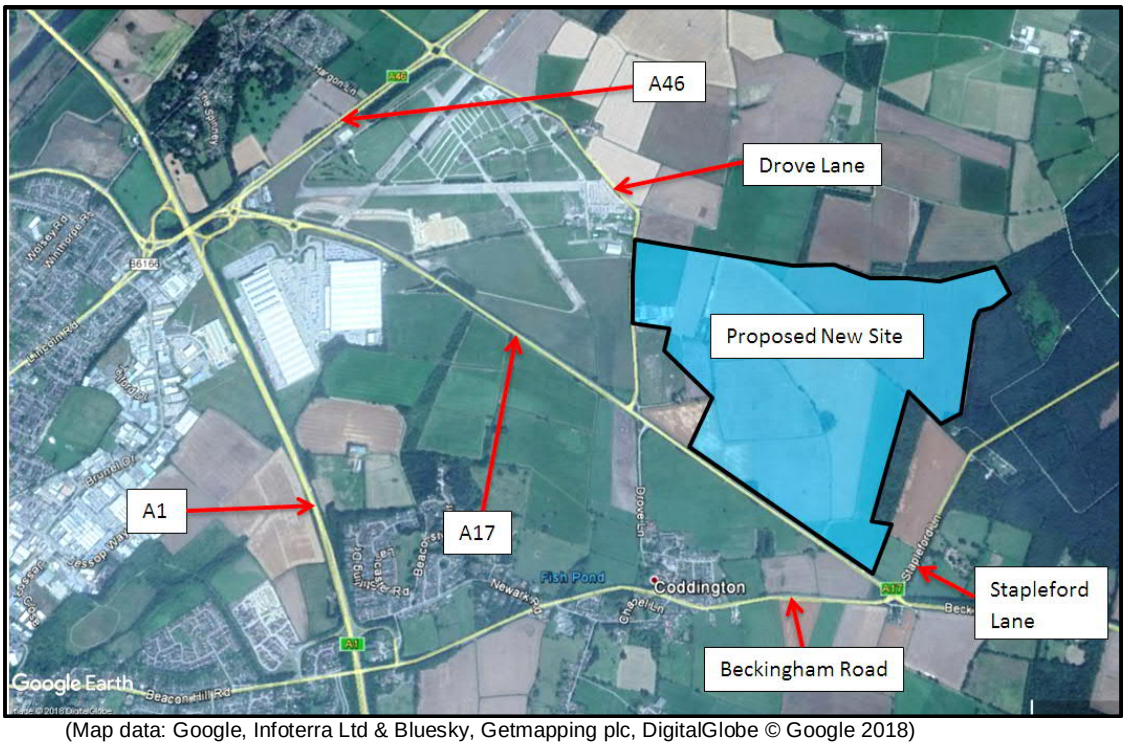
3.21 Coddington (Hanson)

3.21.1 **HGV Exports**: This site would be for sand and gravel. The site contains 9.5m tonnes which the operator notes would be worked over 20 years at a rate of 250,000 to 500,000 tonnes a year. This would be exported by HGV and equates to 91 HGV arrivals and 91 HGV departures per average working day (assuming a 275 day working year and 20T average HGV load).

3.21.2 **Site Location and Access:** Figure 3.29 shows the site location. A new access would likely be required off the A17; however, given the geometry of the road there is no reason to believe that this couldn't be achieved.

3.21.3 Most outbound HGV traffic would likely route right out of the access along the A17 to the A46 / A1.. Inbound traffic would route vice versa and turn into the access on the A17. A lorry routing agreement is recommended to protect Coddington village.

Figure 3.29: Site Location Plan – Coddington



(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

3.21.4 **Traffic Data:** Table 3.27 includes traffic data for the area around the proposed site, obtained from NCC.

Table 3.27: Traffic Data for Coddington Site

Site	Roads	AADT 2016	HGV AADF	HGV%
Coddington	A17	10,125	2,425	23.95
	Drove Lane (North)	2,300	165	7.17
	Drove Lane (South)	3,150	25	0.79
	Beckingham Road	7,125	165	2.32
	A1	45,750	7,415	16.21
	A46	43,725	4,085	9.34

3.21.5 The increase in HGVs on the A17, at the point of the site access, would therefore be 7.5%. The increase in general traffic would be 1.8%. As such, the thresholds given within GEART would not be triggered.

3.21.6 **Road Safety:** The study area for road safety analysis for this site is shown below in Figure 3.30, with a summary of all collisions given in Table 3.27, which also provides a breakdown of the location of collisions.

Figure 3.30: Road Safety Study Area for Coddington Site

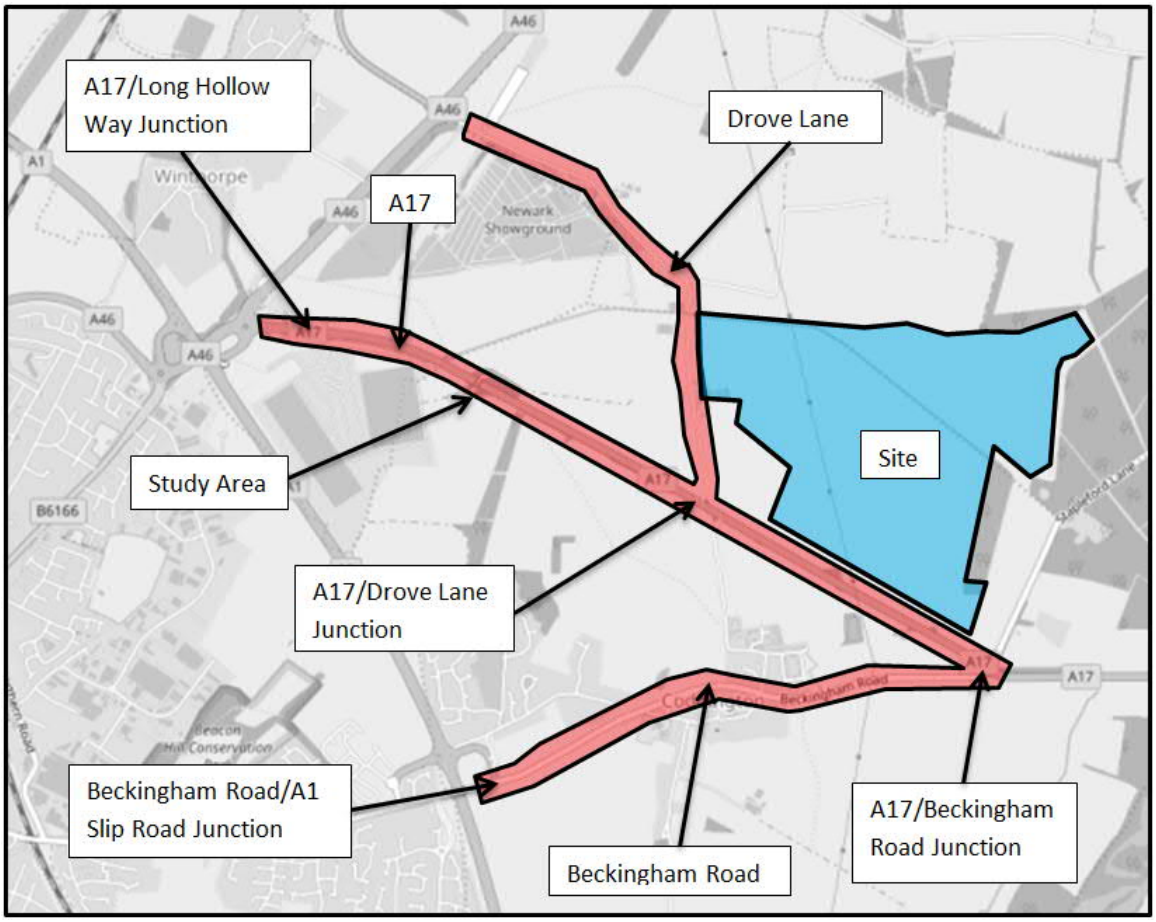


Table 3.27: Road Safety Summary for Coddington Site

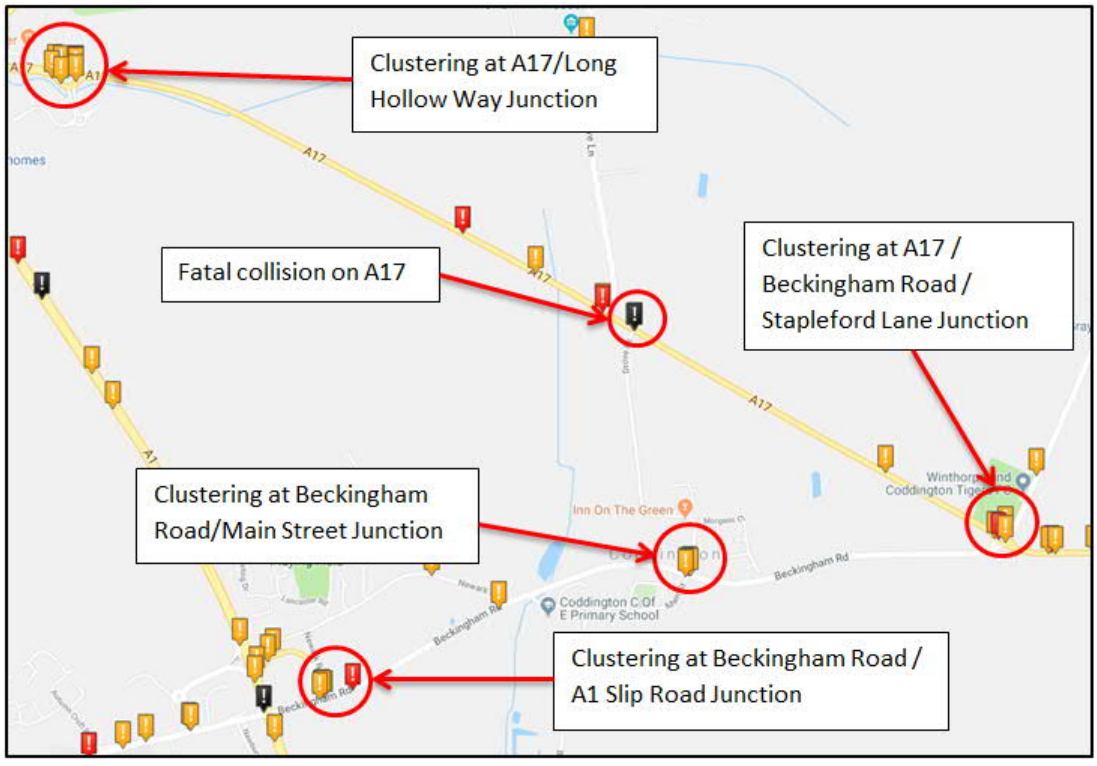
Junction/Link	'Slight'	'Serious'	'Fatal'	Total
A17	3	1	1	5
Beckingham Road	5	2	0	7
Drove Lane	9	0	0	9
A17/Drove Lane Junction	2	1	0	3
A17/Long Hollow Way Junction	8	0	0	8
A17/Beckingham Road Junction	3	1	0	4
Beckingham Road/A1 Slip Road Junction	4	1	0	5
Total	**34**	**6**	**1**	**41**

3.21.7 Of the collisions, 6 involved HGVs (>7.5T) and 3 involved pedestrians / pedal cycles.

3.21.8 In terms of collision clusters, 8 collisions have been recorded (all classified as 'Slight') at the A17 / Long Hollow Way junction. 4 collisions have been recorded (3 as 'Slight' and one as 'Serious') at the A17 / Beckingham Road / Stapleford Lane Junction. 7 collisions (4 classified as 'Slight' and one as 'Serious') have been recorded on Beckingham Road at the junction with Main Street. Finally, 5 collisions have been recorded (4 as 'Slight' and one as 'Serious') at the Beckingham Road / A1 Slip road Junction.

3.21.9 One fatal collision has occurred within the study area over the past 5 years of data; at the A17 / Drove Lane Junction, shown below in Figure 3.31. The incident involved a car and a goods vehicle between 3.5T – 7.5T.

Figure 3.31: Collision Clusters and Fatal Collision (within study area) near Coddington Site



3.21.10 **Summary:** The summary for Coddington (Hanson) is therefore:

- New Site;
- New Access Required (subject to submission of a drawing);
- Proposed export by HGV only;
- Routes to strategic network via local A-roads until the A1 and A46 is reached;
- HGV routes would pass through existing collision clusters; and
- No settlements between the site and the A1 (if routeing northbound). Sensitive receptors if routeing southbound.

3.22 Scrooby (Rotherham Sand and Gravel)

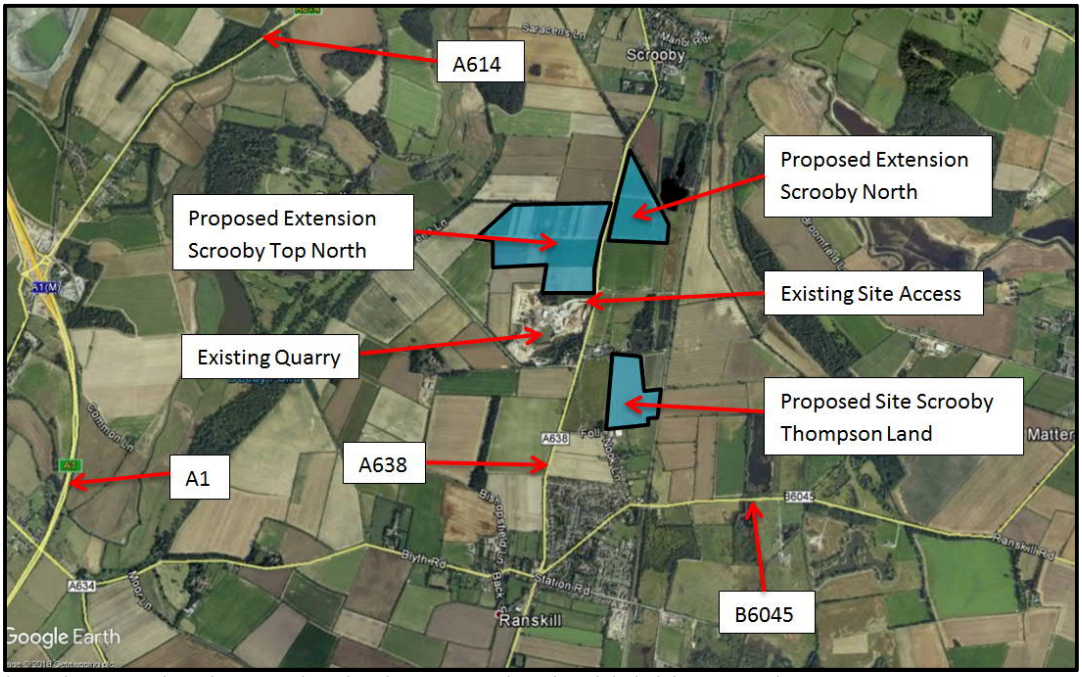
3.22.1 **HGV Exports:** Three sites in close proximity are being promoted by Rotherham Sand and Gravel:

- Scrooby Top North: An extension to the existing Scrooby Top Quarry, releasing 4.831m tonnes of mineral, to be worked at a rate of 120,000 tonnes a year over 40 years. This would be exported by HGV and equates to 22 HGV arrivals and 22 HGV departures per average working day (assuming a 275 day working year and 20T average HGV load).
- Scrooby North: An extension to the Scrooby South Quarry, releasing 620,000 tonnes of material, to be worked at a rate of 15,000 - 30,000 tonnes a year over 20 years. This would be exported by HGV and equates to 5 HGV arrivals and 5 HGV departures per average working day.
- Thompson Land: Effectively, an extension to the Scrooby South Quarry, releasing 400,000 tonnes of material, to be worked at a rate of 50,000 tonnes a year over 8-10 years. This would be exported by HGV and equates to 9 HGV arrivals and 9 HGV departures per average working day.

3.22.2 **Site Location and Access:** Figure 3.32 shows the site locations. Material from the Scrooby Top North site would be exported via the existing Scrooby Top Quarry access. Material from the Scrooby North and Thompson Land would be transported by road from the Scrooby South Quarry access to Scrooby Top Quarry for processing – and then be exported from Scrooby Top Quarry. It is noted that such proposals would increase HGV movements in the immediate vicinity of the site. Drawings would be required for new access points for the Scrooby North and Thompson Land proposals.

3.22.3 Outbound HGV traffic will route towards the A1 (M) J34 by turning right out of the access onto the A638 before joining the B6045 (and subsequently the A634) which provides direct access onto the A1 (M). Inbound HGV traffic would route vice versa and turn left into the site access. This routeing does however pass through sensitive receptors in Ranskill and Blyth. Potentially, some HGV traffic would also route southbound and join the A1 at Ranby, this would pass through more sensitive receptors at Torworth and Barnby Moor.

Figure 3.32: Site Location Plan's – Scrooby



(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018

3.22.4 **Traffic Data:** Table 3.28 includes traffic data for the area around the proposed sites, obtained from NCC.

Table 3.28: Traffic Data for Scrooby Sites

Site	Roads	AADT 2016	HGV AADF	HGV%
Scrooby	A638	4,400	255	5.80
	A614	9,250	740	8.00
	Unnamed Road	850	35	4.12
	B6045	5,650	335	5.93
	A634	7,950	410	5.16

3.22.5 The change in HGVs on the A638 would be 17.3%, and the change in total traffic would be 1%. As such, the GEART thresholds would not be triggered.

3.22.6 **Road Safety:** The study area for road safety analysis for this site is shown below in Figure 3.33, with a summary of all collisions given in Table 3.29, which also provides a breakdown of the location of collisions.

Figure 3.33: Road Safety Study Area for Scrooby Sites

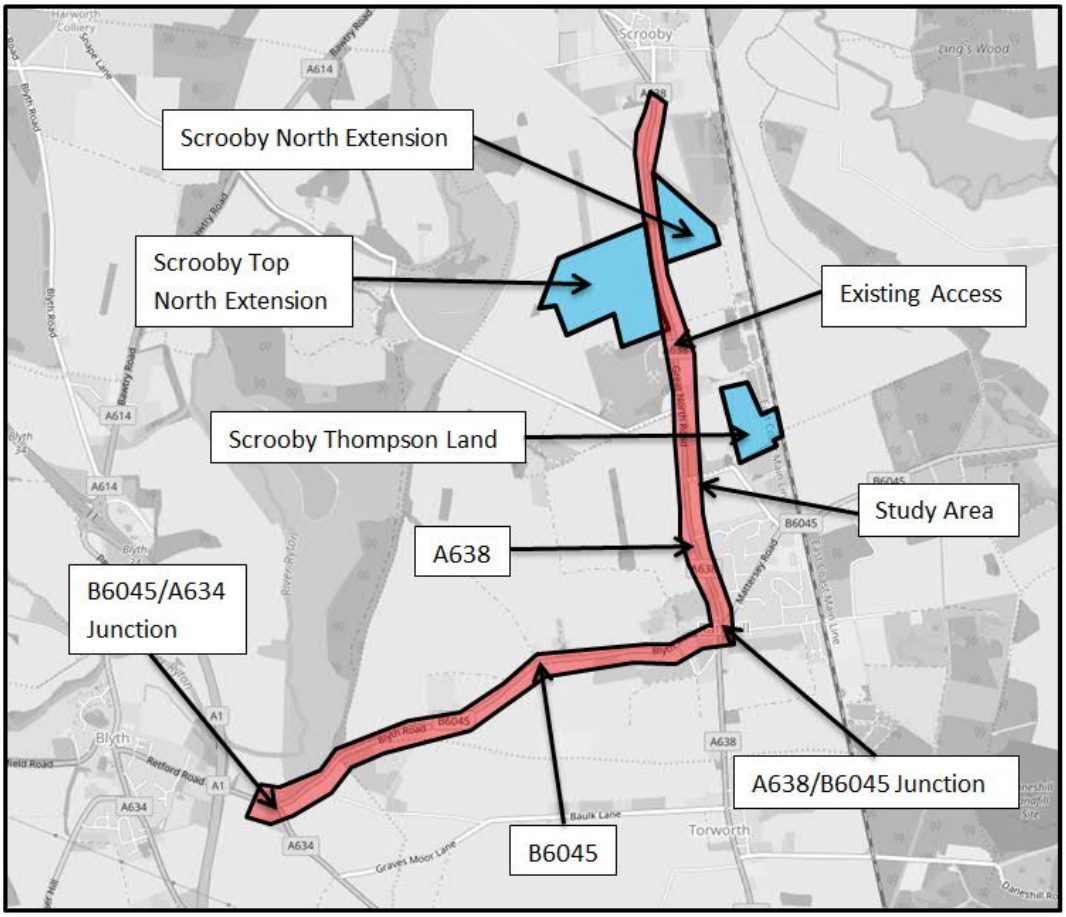


Table 3.29: Road Safety Summary for Scrooby Sites

Junction/Link	'Slight'	'Serious'	'Fatal'	Total
A638	1	4	0	5
Scrooby Top North Existing Access Junction	0	2	0	2
A638/B6045 Junction	2	0	0	2
B6045	3	0	0	3
B6045/A634 Junction	2	0	0	2
Total	**8**	**6**	**0**	**14**

3.22.7 Of the collisions, 3 involved HGVs (>7.5T) and none involved pedestrians / pedal cycles.

3.22.8 No collision clusters were identified within the study area. No fatal collisions have occurred within the study area over the past 5 years of data.

3.22.9 **Summary:** The summary for Scrooby (Rotherham Sand and Gravel) is therefore:

- Extension sites;
- Existing (separate) access points used. Clarification required on access points from Scrooby North and Thompson Land.
- Proposed export by HGV only;
- Routes to strategic network via local A-roads until the A1 is reached;
- No road safety issues have been identified; and
- HGVs likely to route through settlements along A-roads (e.g. Ranskill and Scrooby).

3.23 Bestwood II (Tarmac)

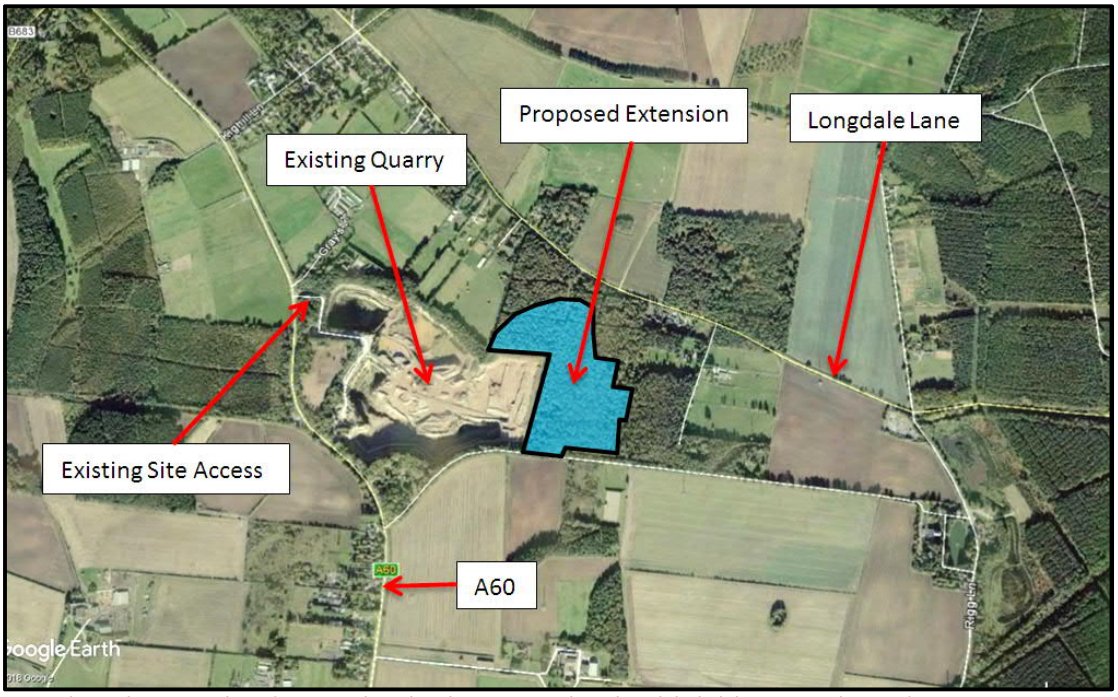
3.23.1 **HGV Exports:** This site would be for Sherwood Sandstone. Two extensions are proposed:

- Northern Extension: Releasing 750,000 tonnes, to be worked at a rate of 140,000 tonnes a year over 6 years. This would be exported by HGV and equates to 25 HGV arrivals and 25 HGV departures per average working day (assuming a 275 day working year and 20T average HGV load).
- Eastern Extension: Releasing 1,440,000 tonnes, to be worked at a rate of 140,000 tonnes a year over 11 years. This would be exported by HGV and equates to 25 HGV arrivals and 25 HGV departures per average working day.

3.23.2 **Site Location and Access:** Figure 3.34 shows the site location. The site benefits from an existing access which would be used by HGVs from the site.

3.23.3 Outbound traffic would route directly from the access onto the A60, routeing either northbound towards Mansfield and Doncaster by turning right out of the site access, or route southbound towards Nottingham or Loughborough by turning left out of the access. Inbound HGV traffic would route vice versa.

Figure 3.34: Site Location Plan – Bestwood II



(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

3.23.4 **Traffic Data:** Table 3.30 includes traffic data for the area around the proposed site, obtained from NCC.

Table 3.30: Traffic Data for Bestwood II Site

Site	Roads	AADT 2016	HGV AADF	HGV%
Bestwood II	A60	15,650	415	2.65
	Kighill Lane	2,400	20	0.83
	Longdale Lane	4,950	70	1.41

3.23.5 The increase in HGVs on the A60, at the point of the site access's, would therefore be 12.0%. The increase in general traffic would be less than 1%. As such, the thresholds given within GEART would not be triggered.

3.23.6 **Road Safety:** The study area for road safety analysis for this site is shown below in Figure 3.35, with a summary of all collisions given in Table 3.31, which also provides a breakdown of the location of collisions.

Figure 3.35: Road Safety Study Area for Bestwood II Site

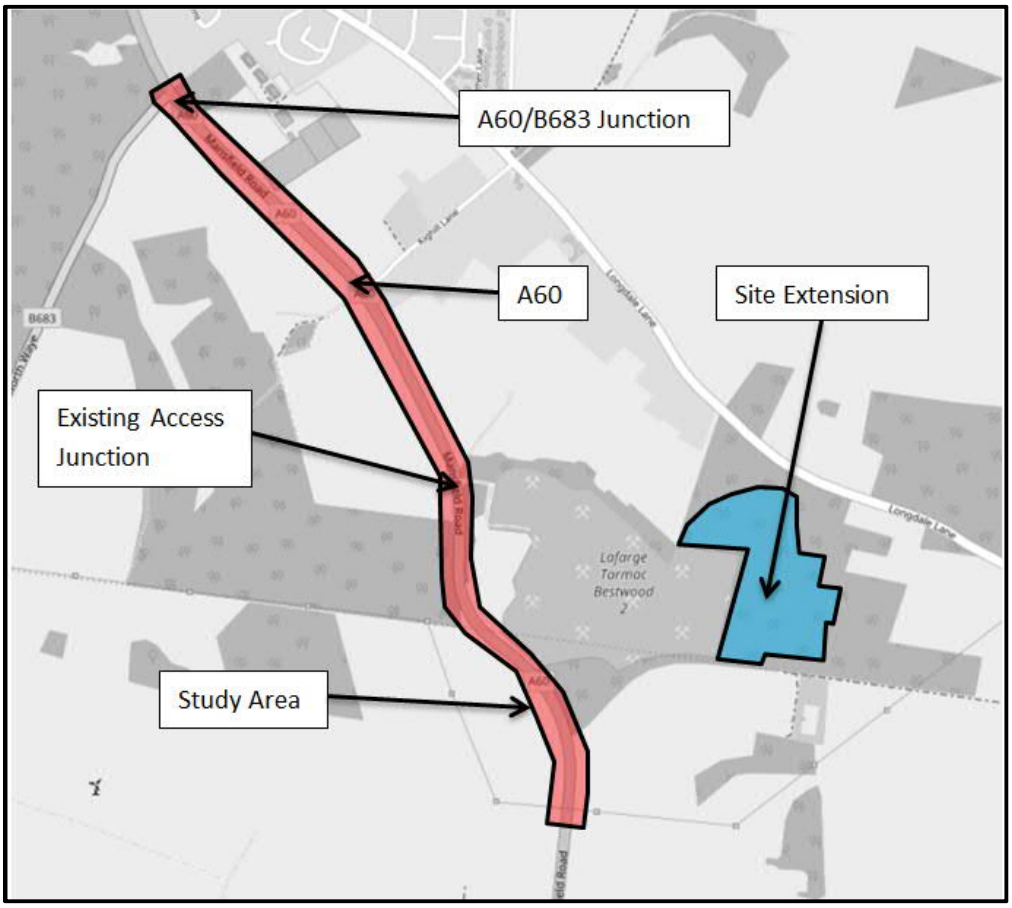


Table 3.31: Road Safety Summary for Bestwood II Site

Junction/Link	'Slight'	'Serious'	'Fatal'	Total
A60	7	5	2	14
Existing Site Access Junction	0	0	0	0
A60/B683 Junction	1	0	0	1
Total	**8**	**5**	**2**	**15**

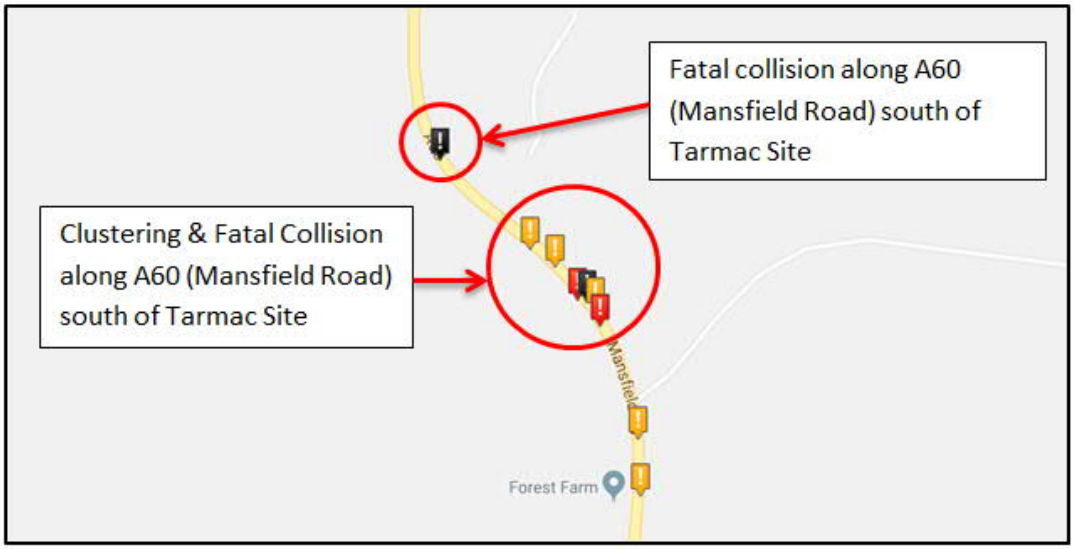
3.23.7 Of the collisions, none involved HGVs (>7.5T) and one involved pedestrians / pedal cycles.

3.23.8 In terms of collision clusters, 6 collisions have been recorded (3 as 'Slight', 2 as 'Serious' and two as 'Fatal') along a bend in the A60, around 500 metres south of the site.

3.23.9 Two fatal collisions have occurred within the study area over the past 5 years of data; one at the aforementioned cluster and the other on another bend, around 250 metres north of this. One involved a car and bus/coach vehicle, the other involved two cars. According to the detailed collision statistics, both involved head-on collisions between vehicles heading in opposite directions.

3.23.10 Given the number of HGVs proposed, it is unlikely that the route would experience a material change in road safety performance; however, this location would likely benefit from a local road safety scheme.

Figure 3.36: Collision Cluster and Fatal Collisions near Bestwood II Site



3.23.11 **Summary:** The summary for Bestwood Extensions (Tarmac) is therefore:

- Extensions to an existing Site;
- Existing Access;
- Proposed export by HGV only;
- Proposed route would pass through an existing collision cluster;
- Some sensitive receptors south of the site and HGVs likely to route through Ravenshead via A60.
- Access is direct onto the A60.

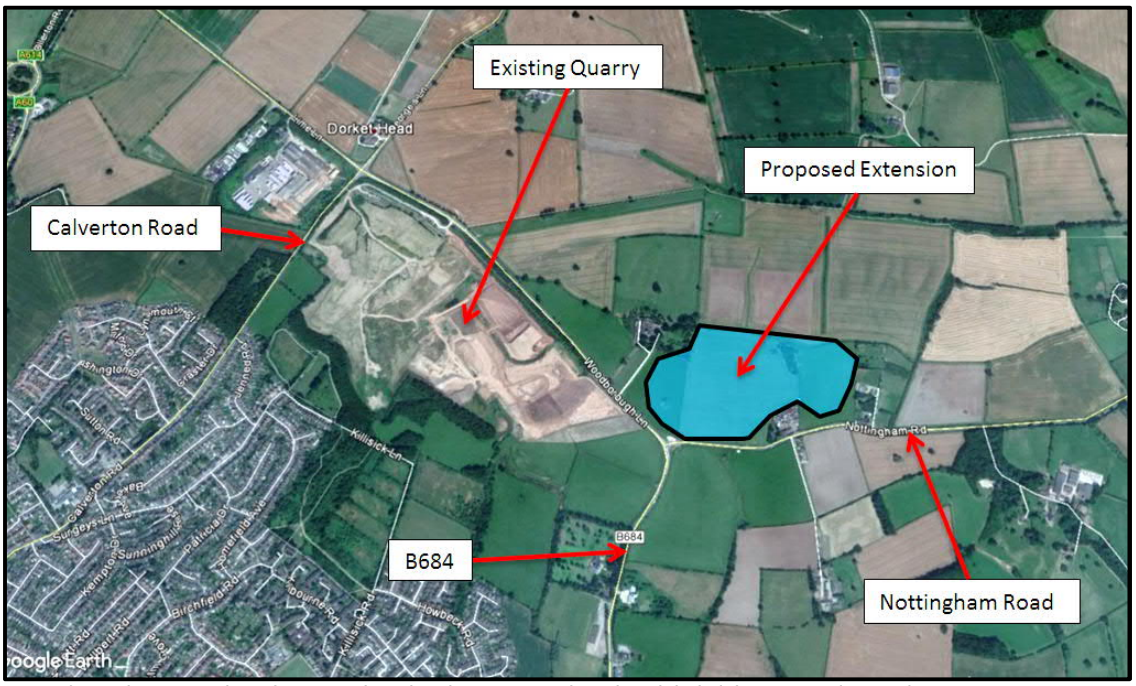
3.24 Woodborough Lane (Ibstock)

3.24.1 **HGV Exports**: This site would be for clay extraction. The site contains 2.7m tonnes which the operator notes would be worked over 20-25 years at a rate of 100,000 tonnes a year. This would be transported directly to the Dorket Head Factory for use in the production of bricks.

3.24.2 **Site Location and Access**: Figure 3.37 shows the site location. Both an access point (for plant and staff) and a crossing of the B684 will be required. Drawings showing the location of the access and crossing point would be required, demonstrating the forward visibility and visibility splays of each, given the horizontal curvature of the road.

3.24.3 HGV's would travel the short distance via the new access to the existing quarry, through the B684.

Figure 3.37: Site Location Plan – Woodborough Lane



(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

3.24.4 **Traffic Data:** Table 3.32 includes traffic data for the area around the proposed site, obtained from NCC.

Table 3.32: Traffic Data for Woodborough Lane Site

Site	Roads	AADT 2016	HGV AADF	HGV%
Woodborough Lane	B684 (Woodborough Lane)	13,067	312	2.39
	Nottingham Road	4,750	n/a	n/a
	Calverton Road	5,450	50	0.92

3.24.5 As the material is to be transported a short distance across the B684 to the existing quarry, there should be no additional increase of HGV's on the B684 (Woodborough Lane).

3.24.6 **Road Safety:** The study area for road safety analysis for this site is shown below in Figure 3.38, with a summary of all collisions given in Table 3.33, which also provides a breakdown of the location of collisions.

Figure 3.38: Road Safety Study Area for Woodborough Lane Site

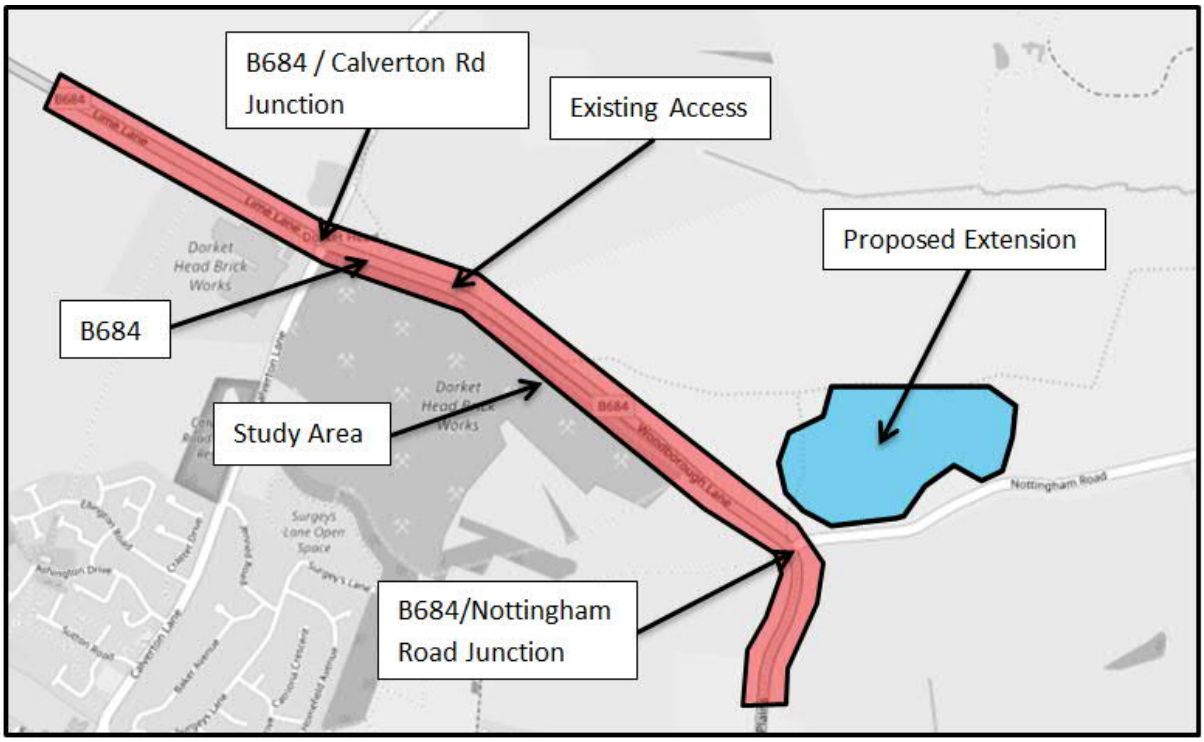


Table 3.33: Road Safety Summary for Woodborough Lane Site

Junction/Link	'Slight'	'Serious'	'Fatal'	Total
B684	3	2	0	5
B684 / Calverton Road Junction	3	0	0	3
Existing Access Junction	0	0	0	0
B684/Nottingham Road Junction	2	0	0	2
Total	**8**	**2**	**0**	**10**

3.24.7 Of the collisions, none involved HGVs (>7.5T) and one involved pedestrians / pedal cycles.

3.24.8 No collision clusters have been identified within the study area. No fatal collisions have occurred within the study area over the past 5 years of data.

3.24.9 **Summary:** The summary for Woodborough Lane (Ibstock) is therefore:

- Existing Site;
- New Access and Crossing Point is Required (subject to submission of a drawing);
- No increase in HGVs;
- Export route passes no sensitive receptors; and
- All material to be used by nearby brick factory.

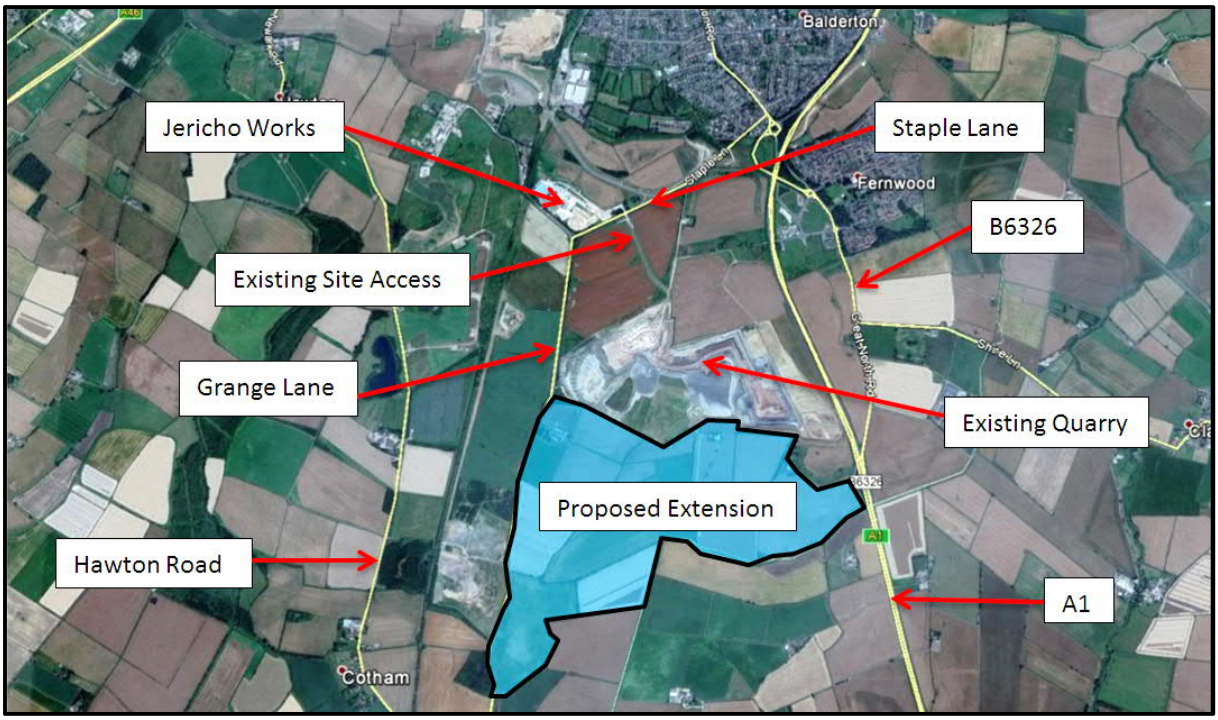
3.25 Bantycock Quarry (British Gypsum)

3.25.1 **HGV Exports:** This site would be for Gypsum extraction. The site contains 7.5m – 8.5m tonnes which the operator notes would be worked over 15-24 years at a rate of 350,000 to 500,000 tonnes a year. This would be exported by HGV and equates to 91 HGV arrivals and 91 HGV departures per average working day (assuming a 275 day working year and 20T average HGV load).

3.25.2 **Site Location and Access**: Figure 3.39 shows the site location. The site benefits from an existing access on Staple Lane, and 25% of material is expected to be used at the adjacent Jericho Works. The remainder would be transported to facilities at East Leake (Nottinghamshire) and Barrow (Leicestershire).

3.25.3 Outbound HGV traffic will turn right out of the access onto Staple Lane before routeing either northbound along the A1 at the roundabout junction with the B6326 or if routeing southbound on the A1 would route along the B6326 and join the A1 close to the eastern boundary of the proposed site, this would however pass sensitive receptors at Fernwood. Inbound HGV traffic would route from the A1 to Staple Lane before turning left into the site access.

Figure 3.39: Site Location Plan – Bantycock Quarry



(Map data: Google, Infoterra Ltd & Bluesky, Getmapping plc, DigitalGlobe © Google 2018)

3.25.4 **Traffic Data:** Table 3.34 includes traffic data for the area around the proposed site, obtained from NCC.

Table 3.34: Traffic Data for Bantycock Site

Site	Roads	AADT 2016	HGV AADF	HGV%
Bantycock Quarry	Staple Lane	1,600	210	13.13
	Grange Lane	1,100	100	9.09
	B6326	11,425	415	3.63
	A1 Slip Road (Northbound)	3,600	235	6.53
	A1	44,825	6645	14.82

3.25.5 Total increases in HGVs would likely be above the relevant GEART trigger if considered against the baseline data in Table 3.34. However, as this is an extension, the above figures may already include HGVs associated with the site (although it is not known how much volume is currently being produced). As such, further work may be required to determine if this site would generate air quality and traffic noise impacts.

3.25.6 **Road Safety:** The study area for road safety analysis for this site is shown below in Figure 3.40, with a summary of all collisions given in Table 3.35, which also provides a breakdown of the location of collisions.

Figure 3.40: Road Safety Study Area for Bantycock Site

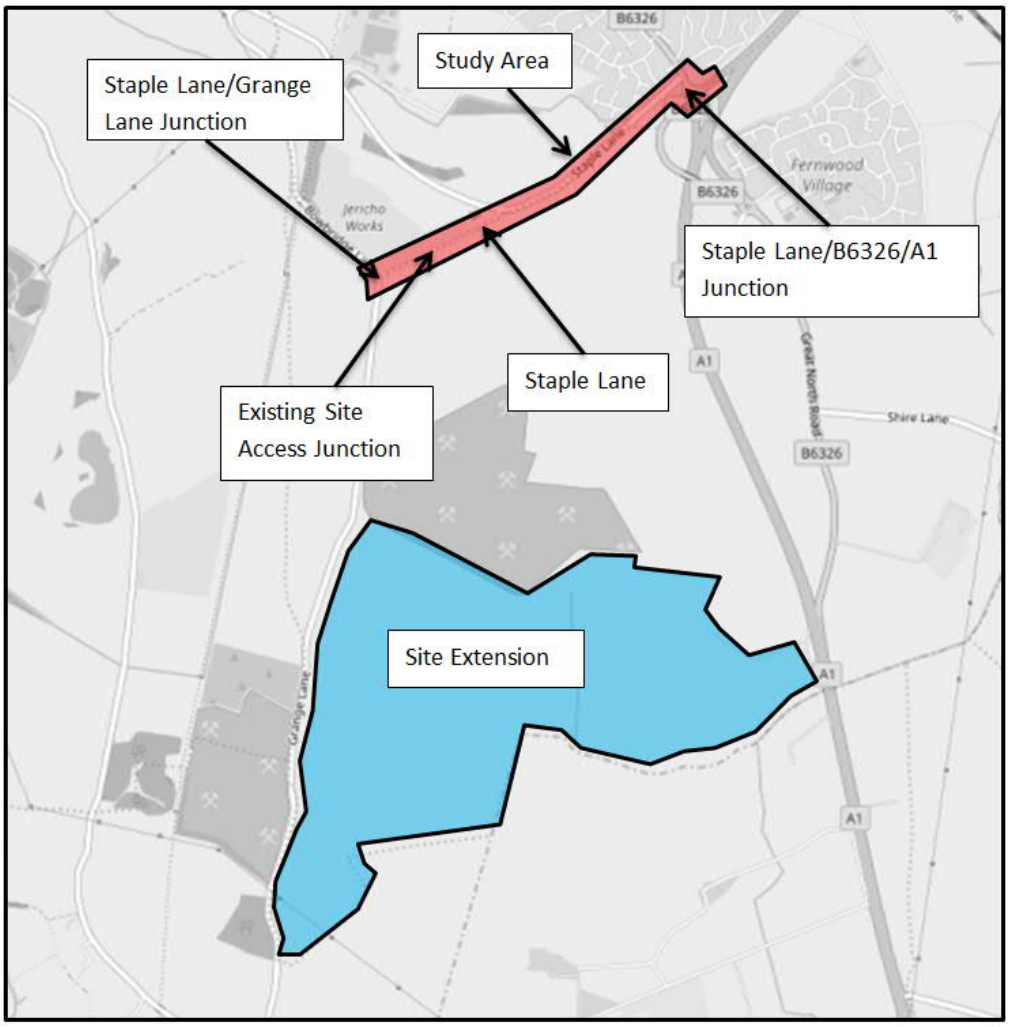


Table 3.35: Road Safety Summary for Bantycock Site

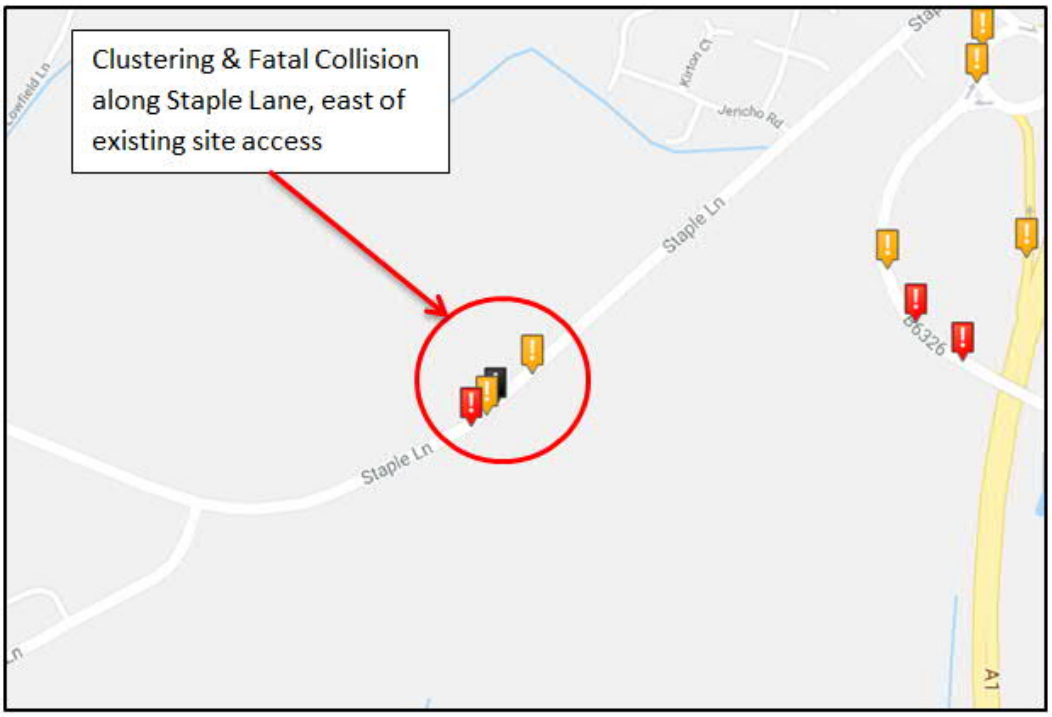
Junction/Link	'Slight'	'Serious'	'Fatal'	Total
Staple Lane	2	2	1	5
Existing Site Access Junction	0	0	0	0
Staple Lane/Grange lane Junction	1	0	0	1
Staple Lane/B6326/A1 Junction	5	2	0	7
Total	**8**	**4**	**1**	**13**

3.25.7 Of the collisions, 2 involved HGVs (>7.5T) and 3 involved pedestrians / pedal cycles.

3.25.8 In terms of collision clusters, 4 collisions have been recorded (2 as 'Slight', one as 'Serious' and one as 'Fatal') along a stretch of Staple Lane, around 650 metres north east of the site access. From the detailed collision records, these would appear to be head-on collisions involving vehicles heading in opposite directions. One fatal collision has occurred within the study area over the past 5 years of data; at the aforementioned cluster on Staple Lane; this involved two cars.

3.25.9 Given the relatively low number of vehicles using this route, a road safety scheme should be considered in this location.

Figure 3.41: Collision Cluster and Fatal Collision near Bantycock Site



3.25.10 **Summary:** The summary for Bantycock Quarry (British Gypsum) is therefore:

- Extension to an existing Site;
- Existing Access arrangements;
- Proposed export by HGV only; and
- Routes to strategic network (A1) via Staple Lane;
- HGV route passes through a collision cluster; and
- HGV route passes a few sensitive receptors in Balderton and Fernwood.

4. Potential for Cumulative Effects

4.1 Overview

4.1.1 The purpose of this section is to identify the possible cumulative effects that the various minerals sites submitted to NCC for consideration may have on the highway network. This is because, as is noted in Section 3, several of the proposed sites are located within close proximity to each other and may therefore amplify each other's impact on the local highway network.

4.1.2 It is important to note, however, that limited information is available at present in terms of the timings of workings. This may mean that sites in close geographical proximity are not worked at the same time, and therefore cumulative impacts are considered negligible at this stage.

4.2 Site Clusters

4.2.1 From the information in Section 3, four main clusters have been identified. These are:

- the vicinity of Cromwell Quarry;
- Barnby Moor;
- Scrooby Sites; and
- Barton in Fabis.

4.2.2 **Cromwell Quarry:** The key issue near Cromwell Quarry is the potential concentration of HGVs on the approach / exit from the A1, including increased HGV volumes on Main Street. The sites of interest include Cromwell North and Burridge Farm.

4.2.3 **Barnby Moor:** It is understood that the proposals at Barnby Moor (being promoted by Hanson and Rotherham Sand and Gravel) would be an 'either / or' and would not both occur. However, Botany Bay is also located directly to the south of Barnby Moor and this may create a cumulative impact depending on which of Hanson / Rotherham Sand and Gravel is progressed.

4.2.4 **Scrooby Sites**: The proposed extensions (Scrooby Top North & Scrooby North) and developments (Scrooby Thompson Land) are all located within close proximity to each other and are located off the A638. The increased HGV volume routeing to / from these sites would therefore use the A638 and route through to Ranskill, and then use the B6045 to the A1. This impact may be mitigated by the timing of developments; however, the use of existing processing facilities may also increase HGV trips in the immediate vicinity of the area as material is transported between sites.

4.2.5 **Barton in Fabis:** Barton in Fabis (Cemex) and Barton in Fabis (London Rock) are both located along the A453 / Green Street.

4.2.6 It is noted that the proposed extensions to Langford and Besthorpe are to the north and south of Collingham. This does not appear to pose any risks of cumulative impact, however, as routeing agreements for both mean that HGVs should not pass through Collingham.

5. Ranking of Sites

5.1 Overview

5.1.1 NCC has requested that an initial ranking of sites be prepared which reflects transport criteria. The purpose of this section is to produce an overall ranking of all the sites listed in Section 3 of this report, based on the key criteria identified in Section 2.

5.2 Ranking Logic

5.2.1 As noted in Section 2.3, highway capacity issues are not common with minerals sites given a combination of their location and the usually low number of HGVs generated in any one hour, particularly peak hours. The *Guidance on Transport Assessment* (DfT, 2007) identified a threshold as when to start considering highway capacity issues, and this is when a site generates 30 or more two-way trips in a single hour. The quarries that produce the highest number of HGVs are Bantycock, Coddington and Shelford; all of which are anticipated to generate 91 HGV arrivals and 91 HGV departures per average day (or fewer, if larger HGVs are used than the 20T capacity assumed in this report). Assuming a 10 hour working day, this is the equivalent of 18 two-way HGV movements per average hour. As such, it is unlikely that any site could be excluded on grounds of highway capacity, particularly if accessed directly from an 'A' class road.

5.2.2 Similarly, road safety risks tend to vary in proportion to overall traffic flow. Collision clusters have been noted in the vicinity of the proposals at Shelford, East Leake, Great North Road, Langford North, Langford South and West, Coddington, Bestwood II and Bantycock. It is unlikely that the number of trips will materially alter road safety risks although contributions to improvements could be secured (via the Transport Assessment process) at the time that individual planning applications are brought forward. The cluster of collisions near Bantycock Quarry does, however, appear to be occurring on a road which is not currently carrying large volumes of traffic.

5.2.3 In terms of environmental impact, the GEART triggers are exceeded (for HGVs only, not general traffic) by Cromwell (plus extensions), Bantycock Quarry, Langford North, Langford South & West, and Barnby Moor. It should be noted, however, that this does not necessarily mean that these sites have an environmental impact; only that they should be considered in further detail by appropriate additional environmental assessment. Changes in total traffic flow are low in all cases, and Bantycock Quarry and the proposals at Langford and Burridge Farm may have existing quarry-related traffic on the highway network since they are extensions and / or make use of existing points of access. Furthermore, it is difficult to be definitive about these aspects until the cumulative impacts are understood (i.e. HGV movements on specific routes may overlap).

5.2.4 Given the above, a ranking logic is provided in Table 5.1, and the initial ranking of sites is provided in Table 5.2. Promotion of existing sites is considered preferential to new sites, given many issues (such as HGV routeing) are already agreed. In addition, it has been assumed that those sites that have good access to the trunk road network (i.e. the category of roads recommended for long distance and freight transport, and which are maintained as such by the Government rather than by local authorities) would be preferred to those with access to locally maintained A-roads or B-roads. It is important to note, however, that the sites are only ranked against the other sites on this list and therefore a site at the bottom of the list does not indicate that such a site is 'unacceptable' – only that others within the specific Nottinghamshire list are more favourable in transport terms.

Table 5.1: Ranking Criteria

Rank Category	Category	Description
1	Few Generated Highway Trips	Developments within this category will not produce any additional HGV trips on the highway network (or very few movements), as they may, for example, use the material worked for use in other areas of the site or at a factory / processing plant that adjoins to the site (and which benefits from separate planning permission).
2	Existing Sites connecting to the Trunk road network	Developments within this category are extensions to existing sites whose access provides direct connection onto Trunk roads (or else connect via a very short connector route) for efficient distribution of mineral to the market and with little impact on sensitive receptors.
3	Existing Sites connecting to Local A Roads	Developments within this category are extensions to existing sites whose access is onto locally important A roads. It is assumed this category of A-road would allow efficient distribution of mineral, but may have larger impacts on communities than connecting to a trunk road.
4	Existing Sites with B & Minor Roads	Developments within this category are extensions to existing sites whose access is onto B or more minor roads.
5a	New sites that use Sustainable Export Modes connecting to A Roads	In accordance with the NPPF, developments within this category contain some element in which the magnitude of impact on the highway network is mitigated. For example, some material may be exported by modes other than road such as by barge or rail. (It is assumed that all other transport matters are acceptable).
5b	New sites that use Sustainable Export Modes connecting to B Roads	As above, but connecting to B roads.
6	New Sites connecting to the Trunk road network	Developments within this category are new sites whose access provides direct connection onto Trunk roads (or else connect via a very short connector route).
7	New Sites connecting to Local A Road	Developments within this category are new sites whose access is onto local A roads.
8	New Sites connecting to B & Minor Roads	Developments within this category are new sites whose access is onto B or more minor roads.

Table 5.2: Site Rankings

Rank Category	Rank Title	Rank	Site (s)
1	Few Generated Highway Trips	1	Woodborough Lane (Ibstock)
2	Existing Sites connecting to the Trunk road network (or via short connector route)	2	Burridge Farm (assuming use of existing Cromwell Quarry access)
3	Existing Sites connecting to Local A Road	3	Bestwood II, Langford South & West, Langford North
		4	Besthorpe East
		5	Scrooby Top North
4	Existing Sites connecting to B & Minor Road	6	Bantycock Quarry (British Gypsum)
		7	Bawtry Road
		8	East Leake
5	New sites that use Sustainable Export Modes	9	Shelford (Brett Aggregates)*
6	New Sites connecting to the Trunk road network (or via short connector route)	10	Redhill
		11	Cromwell North (plus extensions), Barton in Fabis (London Rock),
7	New Sites connecting to Local A Road	12	Coddington, Great North Road north (plus Great North Road south extension), Shelford (Brett Aggregates)*
		13	Botany Bay, Scrooby North, Scrooby Thompson Land
		14	Barnby Moor (Hanson), Barnby Moor (Rotherham Sand & Gravel)
8	New Sites connecting to B & Minor Road	15	Barton in Fabis (Cemex)
* - Shelford is listed twice, to reflect uncertainty as to the quantum of material that could be exported via sustainable transport modes.			

5.2.5 Within Table 5.2, other factors noted in this report have been used to arrange the sites within the overall ranking. These factors are potential for export by sustainable modes (NPPF policy requirement), potential impact on sensitive receptors and road safety risk. For instance:

- within Category 3, the Langford sites are presented higher in the table than Besthorpe East since their route to the major route network is shorter (given the routeing restrictions in place).
- within Category 7, those sites that have few impacts on sensitive receptors are ranked more highly than those that route HGVs via such receptors.

5.2.6 Where there is no significant difference between sites in this initial sift, sites are presented in the same ranking location in alphabetical order.

6. Summary and Way Forward

6.1.1 This report has presented an initial sift of the sites submitted to NCC as part of its 'call for sites' for inclusion in a new Minerals Local Plan. It has considered matters relating to access, routeing and potential cumulative impacts. An overall ranking of sites has been prepared based on transport criteria.

6.1.2 No site has been identified as being unacceptable, albeit that several require demonstration of an appropriate access can be achieved, given both geometrical constraints and recent changes to the highway network.

6.1.3 The next steps would be for:

- NCC to confirm its preferred sites; and
- Consider cumulative effects on the basis of receiving a proposed timeline against which the different sites would be developed.

6.1.4 The above would be presented in a *Stage 2 Transport Assessment* report.

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