CONTENTS

Introduction 7-1
Proposed Development 7-1
Current Transport Policy 7-2
National Planning Policy Framework 7-2
National Planning Practice Guidance 7-3
Hertfordshire Local Transport Plan 7-3
Hertfordshire Minerals Local Plan Review 2002-2016 7-4
Study Area 7-5
Existing Conditions 7-5
Local Highway Network 7-5
Existing Traffic Flows 7-11
Vehicle Speeds 7-17
Accident Records 7-17
Proposed Operation 7-22
Development Trip Generation 7-22
Site Access 7-24
Impact of the Proposals 7-25
Safety and Capacity 7-25
Environmental Impact 7-27
Mitigation 7-33
Residual Impact 7-33
Conclusions 7-34

INTRODUCTION

7.1 This chapter of the ES considers the potential environmental effects related to the movement of vehicles associated with the operation of the proposed quarry at Hatfield Aerodrome.

7.2 Consideration is given to existing and future traffic levels, to the routing of vehicles on the surrounding highway network and to the resultant capacity and environmental impacts of site generated traffic. The chapter concludes with a summary of the assessments undertaken and an overview of the mitigation measures proposed. It should be noted that the effects on air quality associated with vehicle emissions is addressed in Chapter 9 of this volume.

Proposed Development

Current Site Usages and Recent Use History

7.3 The application site has been described in Chapter 2 above. It covers an area of around 87.1ha and comprises the southern part of the former Hatfield Aerodrome. Drawing HQ 2/2 (Chapter 2) shows the extent of the application site along with the extent of the extraction area. It comprises an area of open unoccupied land that is partly used as public open space and grazing.

7.4 A concrete roadway extends west into the centre of the application site from Albatross Way to the east; a number of other tracks also cross the application site.

Proposed Development

7.5 The proposals, which have been described in Chapter 3 above, would involve the winning and working, together with processing for sale, of some 8Mt of sand and gravel over a period of around 30 years (based on an annual output of around 250,000tpa). The proposed development would also consist of processing facilities and a concrete batching. These would be located in the northern part of the application site.

7.6 Processed aggregates and concrete (together with the import of cement and inert fill materials) would be exported via a new access constructed onto the A1057 on the southern side of the quarry.

7.7 An internal road would connect a new site access from the A1057 to the processing facilities at the north of the Site. This would run along the western boundary of the site.

7.8 Processed aggregate would be exported from the site via HGVs of an appropriate size and nature, and said HGVs would be weighed on both ingress and egress of the site.

7.9 The quarry would be worked on a phased basis to allow for progressive restoration. As such, in addition to the export of aggregate/concrete restoration materials would also be imported to the application site.

Hours of Operation

7.10 The quarry would operate to the following hours:

- 0700 hours to 1800 hours Monday to Friday;
- 0700 hours to 1300 hours Saturdays; and
- No operations on Sundays or bank holidays save for emergency repairs.

Staff

7.11 The quarry would have a core staff of 6 employees. This would comprise a manager, a foreman, 2 loading shovel operatives, 1 dozer operative, 1 concrete batcher and 1 weighbridge operative.

7.12 The number of staff would increase to 10 during earthmoving works which will be undertaken on a campaign basis. This would be over a temporary period.

7.13 For the purposes of any impact assessment a workforce of 10 has been assumed.

CURRENT TRANSPORT POLICY

7.14 The type and location of this development requires the Transport Assessment to give full regard to the current planning policy framework. This chapter considers the following national and local planning policy guidance in the context of the aspects of highways and transport pertinent to the proposed development:

- National Planning Policy Framework (NPPF);
- National Planning Practice Guidance;
- Hertfordshire Local Transport Plan;
- Hertfordshire Minerals Local Plan Review.

7.15 It should be noted that planning policies relevant to the EIA are also set out in Chapter 4 above

National Planning Policy Framework

7.16 The NPPF was published on 27th March 2012 as part of the Government's reforms to make the planning system less complex and more accessible, with its primary intent to be one of encouraging sustainable patterns of growth.

7.17 It is relevant to note that the NPPF objectives of transport policy 'have an important role to play in facilitating sustainable development but also in contributing to wider sustainability and health objectives'.

7.18 The document is a material consideration in planning applications and in the development of Core Strategies. Hence, the policies expressed within the emerging framework are both pertinent and relevant to this appraisal.

7.19 In this context, it is relevant to note that the NPPF objectives of transport policy are to "*facilitate economic growth by taking a positive approach to planning development [by supporting] reductions in greenhouse gas emissions and congestion, and promot[ing] accessibility through planning for the location and mix of development"* (paragraph 84).

National Planning Practice Guidance

7.20 The National Planning Practice Guidance was updated in 2014 and states that there are limitations to minerals as they can only be worked on where they naturally occur. Minerals are in demand but are limited resources and therefore need to be managed. This applies on a national and local level and highlights the importance of combining the two. It suggests that the environmental impacts of mineral extraction need to be considered, including the impact of traffic and the need for the investigation of traffic impacts. It also suggests that the site of extraction should be restored to make it suitable for beneficial after-use.

7.21 It acknowledges the need for extraction of aggregates to meet demand but manage supplies in the chapter 'Planning for Aggregate Minerals'. It highlights the importance of managing markets to meet national and local demands but retaining an understanding of the stocks.

7.22 Demands for aggregates are predicted to rise due to the increase in population expected; the proposed quarry at the site would provide important sand and gravel supplies to the local market within the region as well as some national sales. Supplying the local market would help to reduce the need to transport material from further afield.

Hertfordshire Local Transport Plan

7.23 The Hertfordshire LTP was published in 2011 and sets out Hertfordshire County Council's plan for the transport network over a 20 year period from 2011-2031. The objectives of the plan are to provide the county with a 'reliable and ready usable transport network to benefit local business, encourage further economic growth and allow access for all to everyday facilities' whilst promoting and supporting sustainable travel which will help to reduce car traffic.

7.24 The five goals of the plan support the vision that the transport strategy will:

- support economic development and planned dwelling growth.
- improve transport opportunities for all and achieve behavioural change in mode choice.
  enhance quality of life, health and the natural, built and historic environment for all Hertfordshire residents.
- improve the safety and security of residents and other road users.
- reduce transport's contribution to greenhouse gas emissions and improve its resilience.

7.25 The plan has evolved from the previous version to placing more emphasis on the need to make use of the existing road network and not the building of more roads.

7.26 In the section titled 'Sustainable Distribution and Freight' the plan highlights two challenges that will be addressed:

- keep the county moving; and
- support economic growth.

7.27 It explains that the movement of goods within Hertfordshire is primarily by road and that the Primary Road Network is designed to cater for high flows of HGVs, however, due to the nature of the market and location of final destination for these vehicles this often means HGVs have to use local roads and pass through residential areas which can have major impacts on the environment and congestion.

7.28 Where possible alternative methods of transport should be used, such as rail and water freight. However the council appreciates that this has its limitations and may be unsuitable for new developments due to the lack of infrastructure and capacity problems for passenger services on the rail network. Consequently, the focus of the plan is to concentrate on minimising the impact of road traffic.

7.29 The document states that the council will encourage HGVs to use the Primary Road Network. As the site of the proposed development at Hatfield Aerodrome is adjacent to the A1057 which has a direct connection with the A1, a motorway which runs north to south between Peterborough and London, this suggests the site is located in a suitable location to utilise the existing road network. Furthermore the A1 is recognised as part of the County's Primary Road Network.

7.30 Due to the lack of rail and water infrastructure near to the site and the increasing demand for rail services from local residential areas, such as St. Albans and Hatfield, this means it would be unsuitable and unrealistic for these freight methods to be used for the proposed development as it would require the extensive development of new infrastructure.

Hertfordshire Minerals Local Plan Review 2002-2016

7.31 A section within the Hertfordshire Minerals Local Plan Review discusses the implication of transport associated with a mineral extraction development. If this is not suitable then the development would be permitted when traffic movements generated from site operations 'would not have an unacceptable impact of highway safety, the effective operation of the road network, residential amenity or the local environment' (p40). It states that proposals which utilise non-road transport will be supported. It highlights that there is a high amount of HGV traffic generated from such sites related to transporting the material from the site to a processing plant and then from the plant to the customer. Where possible this is expected to be reduced as much as possible by means of internal haul routes or preferably conveyor belts. It suggests that transport related to the quarry operations should utilise major roads within the region and avoid local roads and residential areas as much as possible. However it states that this is often limited due to the restriction

that minerals can only be worked where they naturally occur. The route from the proposed development would utilise the A1057 and A1 which are both regarded as suitable for HGV use as they are considered a distributor and primary road of the county, respectively.

7.32 A review of the plan reveals that it is necessary to consider sites suitable for mineral extraction within the County to help meet the growing demands for materials. Within this review the proposal site for the quarry, at Hatfield Aerodrome, is identified as a 'Preferred Area' implying that the site is highly suitable for the proposed development.

STUDY AREA

7.33 Operational HGV traffic associated with the movement of material, either the importation or exportation, would utilise the principal road network, remaining on the 'A' classified roads and motorways where possible.

7.34 The application site is located conveniently within close proximity of the A1(M) at a distance of under 2km, which can be accessed directly via the A1057. The A1(M) then provides links to the wider strategic road network.

7.35 It is noted that there is a route to the A414 which could potentially be used via Station Road and Smallford Lane. However, there is a restriction on vehicles of 7.5t and above which would prevent this route being used.

7.36 There may be the occasional export load which travels to a local site in St. Albans, west out of the site access. However, it is expected that the vast majority would travel towards theA19M) to the east.

7.37 The study area has therefore been determined as the A1057 to the east of the proposed access to the connection with the A1 by means of Comet Way in both a north and south direction.

EXISTING CONDITIONS

7.38 This section of the chapter discusses the current infrastructure around the application site. It includes a description of the existing access of the application site, the local road network and non-vehicular access options.

Local Highway Network

A1057 Hatfield Road

7.39 The A1057 routes along the southern boundary of the application site. It runs in an east to west direction between St. Albans and Hatfield.

7.40 To the west the A1057 links with the A1(M) via Comet Way, approximately 2km east of the application site.

7.41 In the proximity of the application site the A1057 is a single carriageway road classified as a principal rural road by the Department for Transport. The road is subject to 40mph speed limit and is street lit. There is a footway flanking the southern side of the road past the frontage of the application site. A photograph of the A1057 close to the application site is shown at Figure 7-1.

Figure 7-1
A1057 View Westbound

7.42 To the west of the application site is the Notcutts Garden Centre. This is a large garden centre with a wide formal simple priority junction access. Footway on the northern side of the carriageway terminates at this junction. A photograph of the garden centre access is shown at Figure 7-2.

Figure 7-2
Garden Centre Access Junction

7.43 On the opposite side of the carriageway to the garden centre there is a public house/restaurant, petrol filling station and the small residential area of

Smallford. A photograph of the A057 to the west of the garden centre showing the petrol filling station and footways on both sides of the carriageway is shown at Figure 7-3.

Figure 7-3
View West to Petrol Filling Station

7.44 To the west of the application site, approximately 150m west of the garden centre access junction the A1057 forms a roundabout junction with Oaklands Lane and Station Road. The roundabout junction is shown within Figure 7-4.

Figure 7-4
A1057/Oaklands Lane/Station Road Roundabout

7.45 The roundabout has an approximate Inscribed Circle Diameter (ICD) of 28m and is therefore capable of accommodating larger vehicles.

7.46 To the south of the roundabout junction Station Road links with the A414 to the north of Colney Heath. To the north Oaklands Lane loops round to the west and provides an alternative route into St. Albans.

7.47 On the opposite side of the road, broadly in line with the centre of the application site's southern boundary, Wilkin's Green Lane, a narrow single width road, joins the A1057 from the south by means of a simple priority junction. This lane provides access to a few residential properties and connects to Ellensbrook Way to the west of Hatfield.

7.48 The A1057 is a relatively straight road. Whilst this provides good forward visibility it can result in higher vehicle speeds. This is also apparent due to the positing of a speed camera on the southern boundary of the application site, near to the Wilkin's Green Lane junction, as shown within Figure 7-5.

Figure 7-5
A1057 Speed Camera

7.49 Approximately 600m east of the Wilkin's Green Lane junction Poplar Avenue meets the A1057 from the south by means of a simple priority junction. Poplar Road provides access to the Bramble Road residential development.

7.50 A further 200m east of the Poplar Avenue junction the A1057 forms a junction with Albatross Way and Ellenbrook Way.

Albatross Way/Ellenbrook Lane Roundabout

7.51 Albatross Way forms the northern arm of the Albatross Way/Ellenbrook Lane roundabout junction with the A1057.

7.52 It provides a route around the western and northern boundary of the University of Hertfordshire campus routeing past the Hertfordshire Sports Village. It also provides a link to the existing access to the application site.

7.53 Ellenbrook Lane, the southern arm of the roundabout junction, provides access to residential development. It links with Wilkins Green Lane and Selwyn Drive which both loop back up with the A1057. A photo of the junction is provided at Figure 7-6.

Figure 7-6
Albatross Way/Elenbrook Way Roundabout

Mosquito Way/Comet Way

7.54 To the east, adjacent with the University of Hertfordshire, the A1057 forms a roundabout junction with Mosquito Way and then Comet Way. Both roundabouts are large signalised junctions with a duelled section providing a link between.

7.55 The Mosquito Way is a three armed junction, with Mosquito Way being the northern arm linking up with Albatross Way on the northern side of the University, continuing northbound towards Hatfield Garden Village.

7.56 The Comet Way junction is a four armed roundabout junction adjacent to the A1(M) and 'The Galleria' shopping centre. Comet Way forms the northern and southern arms of the junction, running parallel to the A1. Approximately 1km south of this roundabout Comet Way provides access both to the northbound and southbound carriageway of the A1 motorway via a signalised grade separated roundabout.

A1(M)

7.57 In this location the A1(M) forms a six lane motorway which runs in a north to south direction. The A1(M) links with the M25 London Orbital approximately 8km to the south, which provides access to the wider strategic road network.

7.58 To the north the A1(M) provides access to Stevenage and Peterborough, continuing northbound with links to the wider network.

Existing Non-Car Accessibility

7.59 Although the main vehicle movement from the application site is anticipated to be HGVs associated with the transporting of material to/from the proposed quarry, access to the site by means of foot, cycle and public transport needs to be considered. These modes may be utilised by staff working on site and the current infrastructure needs to be investigated to determine whether it would provide suitable access to the site.

Pedestrian Access

7.60 A footway runs the entire length of the A1057 providing an option for pedestrians to access the application site on the southern side of the carriageway. This footway runs from the residential areas of Smallford and Hatfield. Within these residential areas a footway is located on both sides of the road. There is also a zebra crossing to the west of the application site within Smallford and crossing facilities at the signalised roundabouts to the east of the site near Hatfield.

7.61 There are also bus stops located along this footpath which could be used when combining sustainable transport options. These are discussed in the 'Public Transport' section below.

7.62 Whilst the site access by its nature would be unsuitable for pedestrian access, a system could be arranged for pedestrians to be given lifts by colleagues from the site access junction to the site facilities.

Cycle Access

7.63 Approximately 50m to the south of the A1057, Route 61 'Alban Way' of the National Cycle Network links St Albans and Hatfield with a traffic free route. Route 61 continues to both Welwyn Garden City and Maidenhead in each direction. As the A1057 is subject to a 40mph speed limit this would also be a suitable route for cyclists to utilise.

7.64 Route 61 meets up with other routes such as Route 6 in St Albans, which runs between Milton Keynes and Luton to the west of the site, and Route 12 to the east of the site, which provides links to Stevenage and St Neots.

7.65 Within the built up area of Hatfield, to the east of the application site the footway or footpath that runs alongside the carriageway provides an off road facility for cyclists to utilise. This would help connect the application site to cycle routes from Hatfield.

Public Transport

7.66 To the west of the site access, within the residential area of Smallford there are bus stop facilities at the Three Horses Public House. In both directions there is a layby for busses to pull into so they do not have to stop on the carriageway and covered bus shelters are provided.

7.67 Table 7-1 below summarises services and the frequency from this stop.

Table 7-1
Bus Service Summary

Service Number	Route	Nearest Stop	Frequency
300/301	Stevenage – St Albans – Hatfield – Hemel Hempstead	Oaklands/Three Horses Public House (200m from site access)	Mondays-Fridays Up to 6 services an hour from 06:15 to 19:58 Saturdays Up to 4 services an hour from 06:19 to 20:00 Sundays Up to 1 service an hour from 09:32 to 23:37
601	Welwyn Garden City – Hatfield – St Albans	Oaklands/Three Horses Public House (200m from site access)	Mondays-Fridays Up to 2 services an hour from 06:28 to 22:58 Saturdays No services Sundays No services

Existing Traffic Flows

7.68 Traffic survey specialists 'Axiom Traffic Limited' were commissioned to undertake an Automatic Traffic Count (ATC) on the A1057 Hatfield Road in order to determine existing traffic conditions.

7.69 The ATC was undertaken by means of pneumatic tubes positioned in the carriageway on the A1057 Hatfield Road, located approximately 75 metres east of the entrance to the garden centre, as shown within Figure 7-7. The pneumatic tubes measure directional traffic flow/vehicle speed and also classify vehicles into various groups.

Figure 7-7
ATC Location on the A1057

7.70 Data was recorded between 25th April 2015 and 1st May 2015 and therefore reflects typical weekday traffic flow conditions on the local highway network (i.e. non-school holiday periods, typical weather conditions etc.). The ATC data 'as received' is attached at Appendix 7/1.

7.71 The data confirms that across the surveyed weekdays, the AM peak occurs between 08:00 – 09:00hrs. The weekday PM peak was observed between 17:00 – 18:00hrs. The data also confirms that the Saturday and Sunday highway network peak periods occur between 12:00 – 13:00hrs, and 14:00-15:00hrs respectively.

7.72 A summary of the average weekday traffic data recorded is provided within Table 7-2.

Table 7-2
Existing Traffic Flows

	Eastbound		Westbound		Two-way	
	Tot	HGV	Tot	HGV	Tot	HGV
Weekday						
AM Peak (08:00-09:00hrs)	479	22	620	33	1,099	55
PM Peak (17:00-18:00hrs)	572	15	693	22	1,266	37
24 Hour (00:00-24:00hrs)	7,150	390	8,269	354	15,420	744
Saturday						
Peak (12:00-13:00hrs)	549	18	725	13	1,274	31
24 Hour (00:00-24:00hrs)	6,979	205	8,058	221	15,037	426
Sunday						
Peak (14:00-15:00hrs)	593	8	593	8	1186	16
24 Hour (00:00-24:00hrs)	5,336	107	6,037	150	11,373	257

7.73 The above summary table shows that the highest 24 hour vehicular traffic flow occurs during weekdays. It also determines that the average weekday PM peak and Saturday afternoon peak are the busiest periods on the A1057 Hatfield Road, with almost 1,300 two-way movements.

7.74 The average weekday two-way traffic profile is shown in graph form at Figure 7-8.

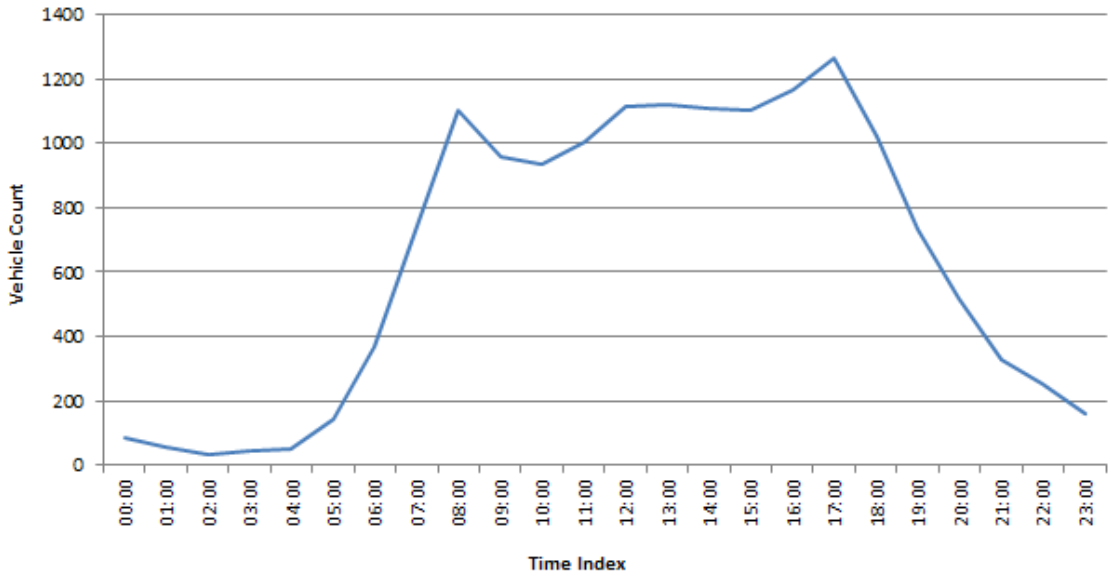

Figure 7-8
Average Weekday Two-way Traffic Profile

7.75 The average weekday traffic profile shows two defined peak periods occurring at 08:00 and 17:00, with a slight inter-peak at 13:00, consistent with standard rush-hour trends. After the 08:00 peak volumes of two-way movements drop by approximately 50 movements until 10:00hrs, and then increase steadily until the evening peak at 17:00hrs. Post 17:00hrs, volumes decline steadily until 02:00hrs.

7.76 The average weekday two-way HGV traffic profile is shown in graph form at Figure 7-9.

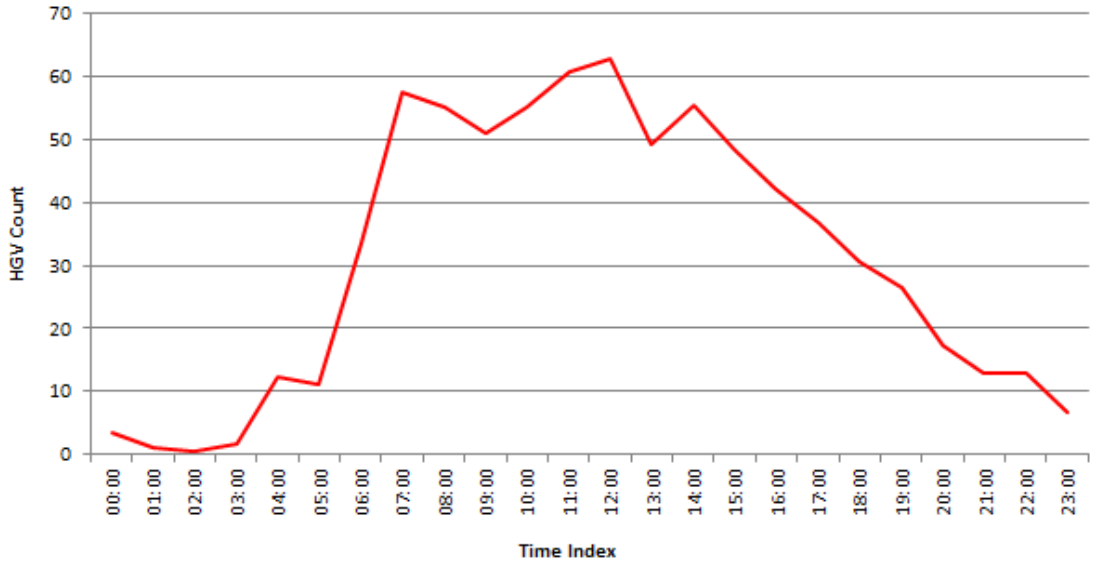

Figure 7-9
Average Weekday Two-way HGV Traffic Profile

7.77 The average weekday HGV profile shows three recognisable peaks at 07:00, 12:00, and 14:00hrs. Between 06:00 – 14:00hrs movements remain fairly constant at approximately 49 or more movements per hour, with the variation range at approximately 13-14 movements per hour. Post 14:00hrs, HGV movements decline at a steady rate until 02:00hrs. On an average weekday, HGV movements account for 4% of movements at peak times, and 5% of total movements in a 24hr period.

7.78 The Saturday traffic profile is shown in graph form at Figure 7-10.

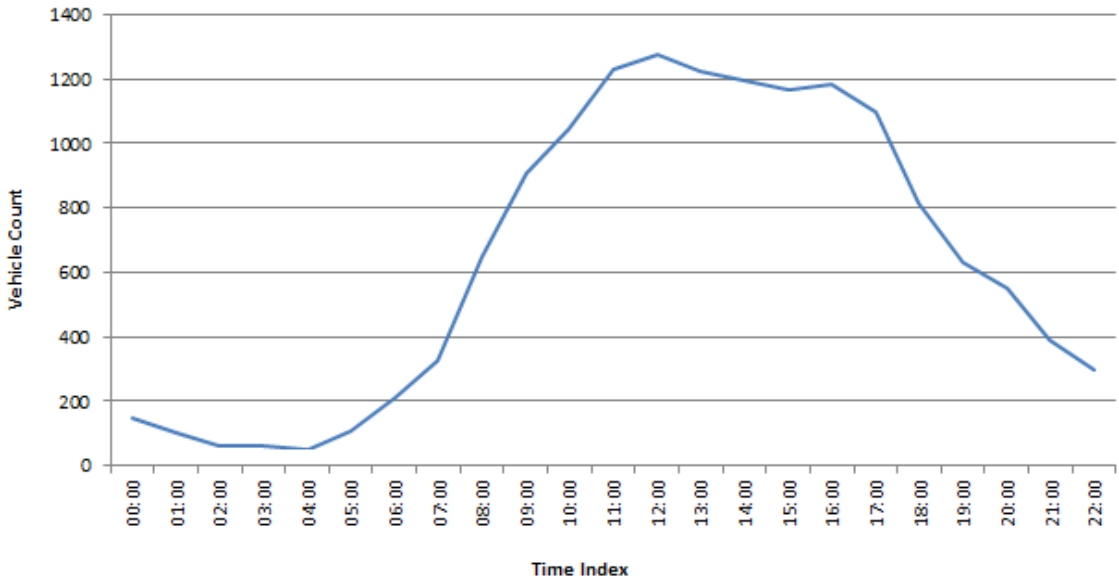

Figure 7-10

Saturday Two-way Traffic Profile

7.79 The Saturday traffic profile shows a gradual increase of traffic throughout the morning resulting in a single peak between 12:00-13:00hrs. Traffic flows then gradually decrease throughout the afternoon and early evening staying between 1,000 and 1,300 movements until 17:30hrs, after which traffic flows decline steadily until 02:00hrs.

7.80 The Saturday two-way HGV traffic profile is shown in graph form at Figure 7-11.

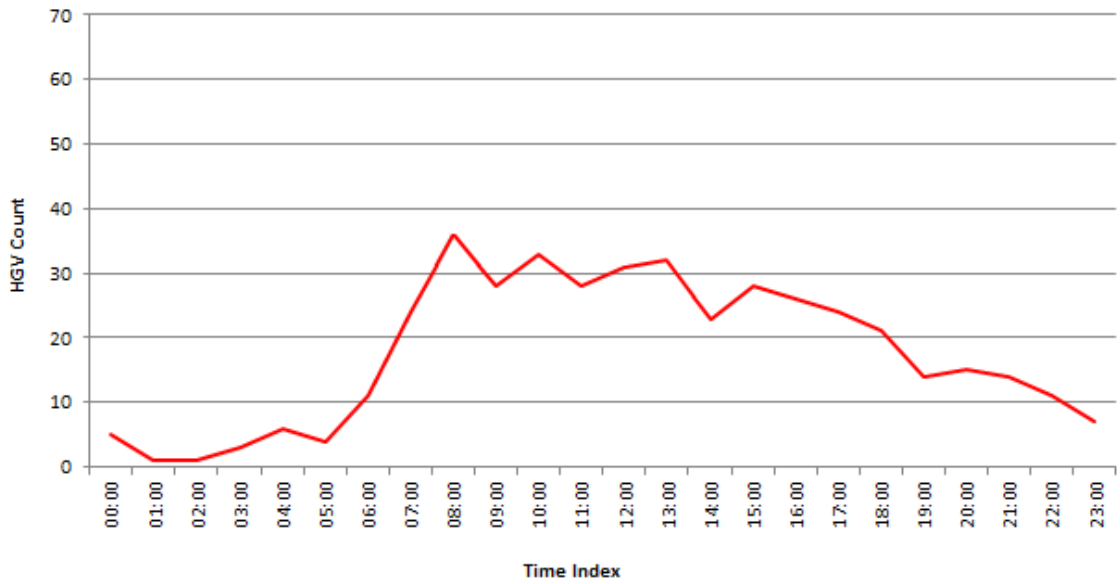

Figure 7-11
Saturday Two-way HGV Traffic Profile

7.81 The Saturday two-way HGV traffic profile shows the volumes are significantly smaller in comparison with weekday volumes, equating to around 57% of the weekday average. There is only one relative defined peak occurring at 08:00hrs after which volumes decline steadily, with a maximum variance of 5 movements per hour, until 01:00hrs. Saturday HGV movements account for 2.5% of total movements at peak times, and 3% of total movements in a 24hr period.

7.82 The Sunday total traffic profile is shown in graph form at Figure 7-12.

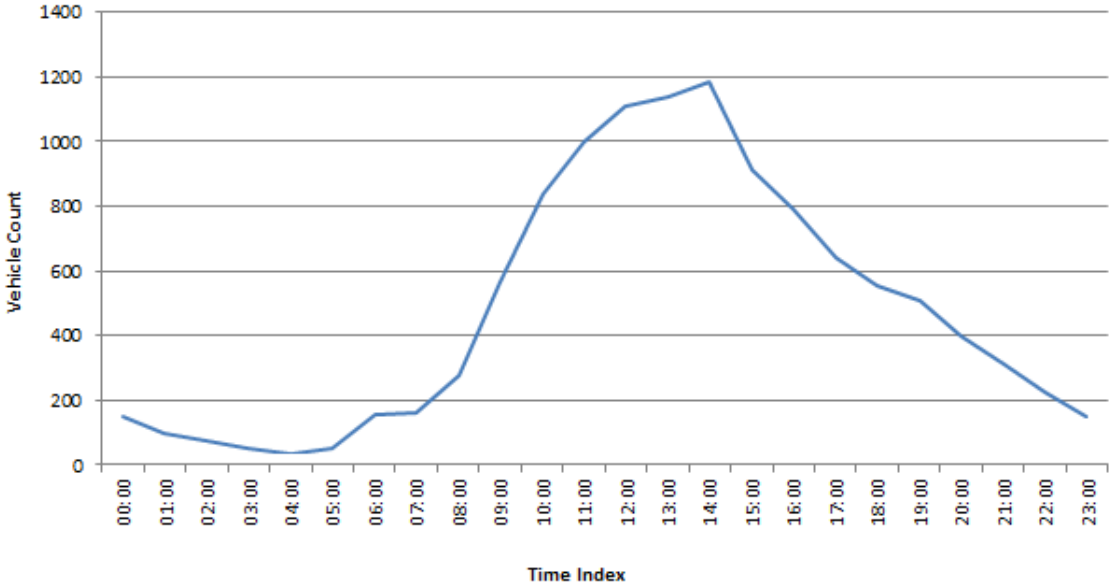

Figure 7-12
Sunday Two-way Traffic Profile

7.83 The Sunday traffic profile shows a gradual increase of traffic throughout the morning resulting in a single peak between 13:00-14:00hrs. From 14:00hrs onwards, traffic flows fall at a steady rate of decline until 04:00hrs.

7.84 The Sunday two-way HGV traffic profile is shown in graph form at Figure 7-13.

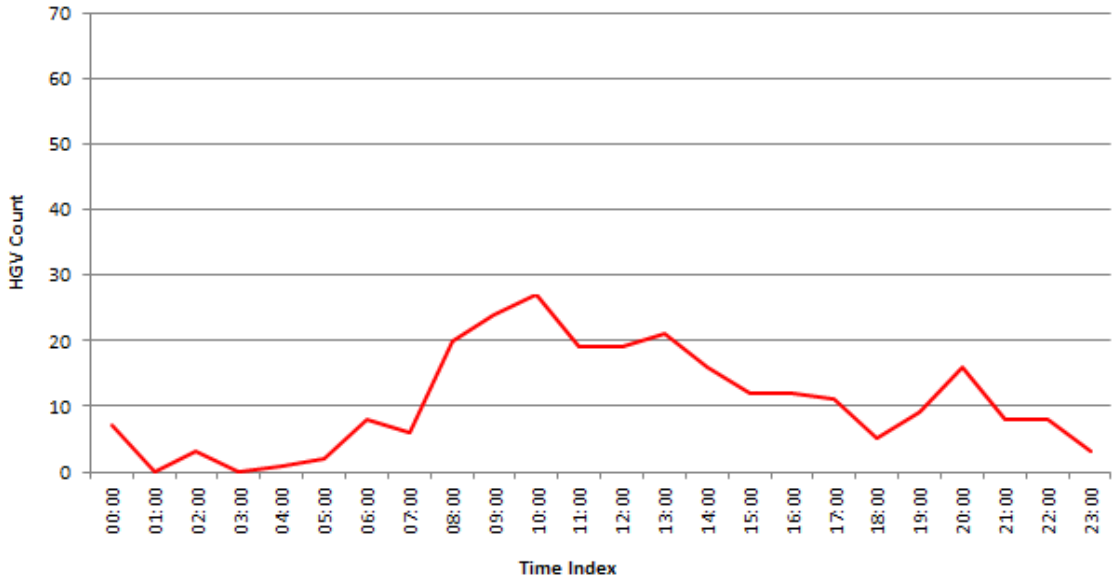

Figure 7-13
Sunday Two-way HGV Traffic Profile

7.85 The Sunday two-way HGV traffic profile shows the volumes are significantly smaller in comparison with weekday volumes, equating to around 35% of the

weekday average. HGV movements on Sunday, peak at 27 movements per hour at approximately 10:00hrs and decline relatively steadily thereafter, until 20:00 where a second lesser peak of 16 movements per hour can be observed. Sunday HGV movements account for 1.3% of total movements at peak times, and 2.25% of total movements in a 24hr period.

Vehicle Speeds

7.86 The A1057 Hatfield Road in proximity of the southern boundary of the application site is subject to a 40mph speed restriction.

7.87 The ATC also provides speed data across the study period. A summary of the recorded vehicle speeds is provided at Table 7-3.

Table 7-3
Vehicle Speed Summary

Direction	85th %ile Speed	Mean Speed
Eastbound	40.0	35.2
Westbound	39.3	33.4

7.88 The above summary confirms that the 85th %ile vehicle speeds in both directions adhere to the posted speed limit.

Accident Records

7.89 Hertfordshire County Council has provided details of recorded road traffic incidents over the most recent five year period available (up to 30/11/2014) within an identified study area.

7.90 The study area includes 1.4km of the A1057 Hatfield Road/St Albans Road West, between and including the roundabouts at Hatfield Rd/Station Rd and St Albans Road West/Ellenbrook Lane.

7.91 The data was forwarded by email on 23rd April 2015 in a report format, which featured an incident location plan and details of each incident in the form of raw data. The report did not include any plain text summaries of the listed accidents, and as such the summaries below are interpretations of the raw data supplied.

7.92 The raw data provided a description of each incident and vehicle group, broken down into individual categories and collisions and resulting casualty severities; fatal, serious and slight, as defined below:

- **Fatal** (a crash resulting in a death);
- **Serious** (detention in hospital; includes paralysis, fractures and severe lacerations); or

- **Slight** (includes whiplash, sprains and minor lacerations).

7.93 The raw incident data as received is included at Appendix 7/2. A summary of the data is shown within Table 7-4 below.

Table 7-4
Recorded Road Traffic Incidents, 2009 to 2014

Location	Slight	Serious	Fatal	Total
A1057 Hatfield Rd/St Albans Rd West	5	0	1	6
Station Rd/Hatfield Rd Roundabout	4	1	0	5
Ellenbrook Ln/ St Albans Rd West Roundabout	2	0	0	2
Station Road	0	1	0	1
Albatross Way	1	0	0	1
TOTAL	**12**	**2**	**1**	**15**

7.94 Table 7-4 shows that there have been a total of 12 'slight' incidents recorded in the locality of the development site during the five year period. There were two incidents classified as 'serious', and one classified 'fatal' recorded during this period.

7.95 The individual incidents included within Appendix 7/2 are detailed below:

4100F0502 - Slight

Date: 22/07/12 Time: 16:25 Road Surface: Dry

Location: A1057 Smallford Roundabout Hatfield Rd St Albans j/w Station Rd

Description: Vehicle 1 is on the roundabout, vehicle 2 pulls onto the roundabout into the path of vehicle 1

Likely Causation Factors: Failure to look properly before manoeuvring

4100F0769 - Serious

Date: 16/11/13 Time: 08:00 Road Surface: Dry

Location: A1057 Hatfield Rd roundabout j/w Station Rd

Description: Motorcycle is on the roundabout, car pulls onto roundabout and collides with motorcycle

Likely Causation Factors: Failure to look properly before manoeuvring

4100F0849 - Slight

Date: 20/04/10 Time: 16:45 Road Surface: Dry

Location: A1057 Smallford Roundabout Hatfield Rd St Albans j/w Station Rd

Description: Bicycle on roundabout, car pulls onto roundabout and collides with bicycle

Likely Causation Factors: Failure to look properly before manoeuvring

4100F0144 - Slight

Date: 21/02/14 Time: 08:00 Road Surface: Dry

Location: A1057 Smallford Roundabout Hatfield Rd St Albans j/w Station Rd

Description: Collision involving three cars, details unrecorded

Likely Causation Factors: Unknown

4100F0631 - Slight

Date: 05/10/14 Time: 14:50 Road Surface: Dry

Location: A1057 Smallford Roundabout Hatfield Rd St Albans j/w Station Rd

Description: Bicycle on roundabout, car pulls onto roundabout and collides with bicycle

Likely Causation Factors: Failure to look properly before manoeuvring

4100F0294 - Slight

Date: 03/05/13 Time: 09:50 Road Surface: Dry

Location: C61 Station Rd, Smallford, 35m south of roundabout j/w Hatfield Rd

Description: Vehicle 1 moving north to south, collides with stationary vehicle 2

Likely Causation Factors: Driving without due care and attention

4100B0718 - Slight

Date: 03/11/14 Time: 06:47 Road Surface: Wet

Location: A1057 Hatfield Rd, approx. 110m northeast of roundabout j/w Station Rd

Description: Driver travelling west from roundabout loses control on wet road and skids off of carriageway into lamp post

Likely Causation Factors: Driving without due care and attention

4100F0339 - Slight

Date: 03/05/10 Time: 11:45 Road Surface: Dry

Location: A1057 Hatfield Rd, approx. 156m northeast of roundabout j/w Station Rd

Description: Vehicle 1 turns right out of garden centre into path of vehicle 2 travelling east

Likely Causation Factors: Failure to look properly before manoeuvring

4100F0780 - Fatal

Date: 31/10/10 Time: 01:55 Road Surface: Dry

Location: A1057 Hatfield Rd, approx. 263m northeast of roundabout j/w Station Rd

Description: Pedestrian steps into carriageway and is struck by vehicle travelling west

Likely Causation Factors: Failure of pedestrian to look properly before crossing

41101F0363 - Slight

Date: 15/05/10 Time: 11:22 Road Surface: Dry

Location: A1057 Hatfield Rd, approx. 300m northeast of roundabout j/w Station Rd

Description: Rear shunt between a car and a bus/coach.

Likely Causation Factors: Driver of car following too closely

4100B0237 - Slight

Date: 02/05/12 Time: 17:07 Road Surface: Dry

Location: A1057 St Albans Rd West, Approx. 17m northeast j/w St Albans Rd West Service Rd

Description: Motorcycle overtakes bicycle, clipping bicycle in process

Likely Causation Factors: Driving without due care and attention

4100B0110 - Slight

Date: 25/02/11 Time: 18:47 Road Surface: Wet

Location: A1057 St Albans Rd West j/w Poplar Ave

Description: Car heading east on A1057 turns right onto Poplar Ave and into the path of motorcycle travelling west on A1057

Likely Causation Factors: Driving without due care and attention

4100B0284 - Serious

Date: 14/05/14 Time: 15:45 Road Surface: Dry

Location: Albatross Way, 62m north of roundabout j/w A1057 St Albans Road West

Description: Car travelling north overtakes stationary vehicle. Pedestrian emerges from behind stationary vehicle and is struck by car

Likely Causation Factors: Failure of pedestrian to look before crossing carriageway

4100B0203 - Slight

Date: 17/04/12 Time: 09:00 Road Surface: Wet

Location: Ellenbrook Ln roundabout j/w A1057 St Albans Road West

Description: Rear shunt between two cars at roundabout

Likely Causation Factors: Driving without due care and attention/following too closely

4100B0679 - Slight

Date: 17/10/14 Time: 13:40 Road Surface: Dry

Location: Ellenbrook Ln roundabout j/w A1057 St Albans Road West

Description: Bicycle on roundabout, car pulls onto roundabout and into path of bicycle

Likely Causation Factors: Failure to look properly before manoeuvring

7.96 The accident data has been considered in detail and it has been determined that there are no accident patterns that could be attributed to poor highway design. The incidents recorded are as a result of adverse weather conditions or human error, typically poor driver judgement.

7.97 There have been no accident patterns determined along the defined main HGV route which could be exacerbated by the proposed application.

PROPOSED OPERATION

Development Trip Generation

7.98 This section describes the determination of the various aspects of vehicular movements associated with the proposed development. This includes the quantity and composition of vehicle trips generated, arrival and departure profiles and route assignment from both sites due to the new development.

Trip Generation

7.99 Traffic associated with the proposal site will consist of operational HGV traffic associated with the import/export of material and light vehicle movements generated by staff and visitors.

Heavy Vehicle Trip Generation

7.100 Table 7-5 provides a forecast of the total traffic that could be generated by the proposed development based on a 275 day working year[1].

Table 7-5
HGV Traffic Forecast

	Volume	Unit	Average Load	HGV Trips
Exported Material				
Aggregates	200,000	t	17t	43
Concrete (Ave. density 2t/m3)	25,000	m^3	$6m^3$	15
Total Import HGVs	-		-	58
Imported Material				
Concrete (for concrete production)	7,500	t	30t	1
Restoration Infill	155,000	t	20t	28
Total Export HGVs	-		-	29
Total HGV Trips	-		-	87
Total HGV Movements	-		-	**174**

[1] Based on 5.5 days worked per week over 50 weeks in the year.

7.101 The above calculation indicates that the proposed site will generate a total of 87 HGV trips, which equates to 174 HGV movements.

Light Vehicle Trip Generation

7.102 For the purposes of a robust assessment, light vehicle traffic has been based on the number of staff employed, assuming they all drive individually. In reality some employees would lift share and some would use sustainable transport modes.

7.103 Therefore 10 light vehicle trips would be generated each day, arriving and leaving in line with the site's planned operational hours.

Total Vehicle Trip Generation

7.104 Table 7-6 provides a forecast of the total traffic that could be generated by the proposed development.

Table 7-6
Total Traffic Forecast

	Total Vehicles	HGV
Operational Traffic	87	87
Staff Vehicles	10	0
Total Trips	**97**	**87**
Total Movements	**194**	**174**

7.105 The above summary shows that a total of 97 trips would be generated each day of which 87 would be classified as HGV. This equates to 194 vehicle movements, of which 174 will be classified as HGV.

Trip Distribution/Assignment

7.106 Operational HGV traffic associated with the movement of material, either the importation or exportation, would utilise the principal road network remaining on the 'A' classified roads and motorways where possible.

7.107 As set out above, the application site is located conveniently within close proximity of the A1(M) at a distance of under 2km, which can be accessed directly via the A1057. The A1(M) then provides links to the wider strategic road network.

7.108 It is noted that there is a route to the A414 which could potentially be used via Station Road and Smallford Lane. However, there is a restriction on vehicles of 7.5t and above which would prevent this route being used by operational traffic.

7.109 There may be the occasional export load which travels to a local site in St. Albans, west out of the site access, but it is expected that the vast majority will travel via the east.

7.110 The study area has therefore been determined as the A1057 to the east of the proposed access to the connection with the A1 by means of Comet Way in both a north and south direction. In order to be robust it will be assumed that 100% of all traffic will be routed to/from the east.

Traffic Profiles

7.111 HGV traffic would operate throughout the working day, scheduled evenly to ensure the site operates efficiently.

7.112 It is proposed that the operational hours of the development would be from 07:00 - 18:00 Monday to Friday, and 07:00 – 13:00 Saturday.

7.113 For robustness, on the basis of a ten hour day, 18 HGV movements (in and out) would be generated per hour, or one every 3.3 minutes.

7.114 Light vehicle movement patterns would be commensurate with staff shifts, arriving at the start of the working day and leaving as the site shuts.

Construction Traffic

7.115 The level of traffic that the construction phase is anticipated to generate would be well within the level of traffic assessed for the proposal site. Therefore any assessment of the site operation would be more robust than any construction scenario.

Site Access

7.116 A 1.16km internal road would connect the site access from the A1057 to the processing facilities at the north of the application site. This would run along the western boundary of the application site.

7.117 Technical guidance provided within DMRB TD42/95[2] states that the use of 'simple' priority junctions, in new build situations, is appropriate up to a level of 300 vehicles Annual Average Daily Traffic (AADT) 2-way flow on the minor arm. An AADT 2-way flow of 500 vehicles is quoted as being the desirable maximum level of use for an existing junction without upgrading being considered, or where vehicles waiting on the major road to turn right inhibit the through flow and create a hazard.

7.118 It is considered that in view of the 40mph speed restriction in place on the A1057 at the site entrance and the fact that there have been no existing highway issues identified within proximity of the application site, a 'simple' priority junction would be acceptable where there would be no significant queuing into the proposal site causing stacking on the highway.

[2] Design Manual for Roads & Bridges TD42/95 Geometric Design of Major/Minor Priority Junctions.

7.119 The site access is designed with a carriageway width of 8m which forms a simple priority junction with the A1057. The junction would have 15m entry and exit kerb radii and a 1 in 12 taper, designed in order to comfortably accommodate all vehicle requirements. The internal access bends would also have a centreline radius of 20m to accommodate the necessary HGV swept-paths.

7.120 The traffic surveys recorded 85th %ile speeds of 40mph eastbound and 39.3mph westbound, which demonstrate that the vehicle speed restrictions in the proximity of the proposed site access junction are adhered to. Junction visibility levels would therefore be required to meet the standards set within DMRB TD42/95, which states that for 70kph roads a 120m visibility splay ('Y' distance) would be required when set back from the give way line by 4.5m ('X' distance).

7.121 A fence would be erected behind the line of the visibility splay, behind which would be planted a double row of hedgerow plants. In view of the need to deter unauthorised access into the site the fence would be post and rail topped with barbed wire.

7.122 Soils would be stripped from the footprint of the site entrance and internal access road. These soils would be placed into storage mounds located on the periphery of the site, in the vicinity of the site entrance. These bunds would be located so as not to impede visibility

7.123 The junction design, with the design dimensions detailed, is provided at Drawing HQ 3/2 in Chapter 3 of this volume.

7.124 Stretching 30m into the site from the point of access, the access road would be constructed as a typical section of highway (e.g. from hard-core and tarmac), and thereafter from as-dug sand and gravel from the UMH. A wheel wash would be installed at the point of transition.

7.125 Installation of the access would require clearance of a section of hedgerow which currently forms the southern boundary of the application site.

IMPACT OF THE PROPOSALS

7.126 The following section combines the determined existing highway conditions and proposed traffic forecast to assess the likely level of impact that the proposed development would bear on the local highway network.

Safety and Capacity

Suitability of Operational Traffic Route

7.127 Operational HGV traffic associated with the movement of material, either the exportation of aggregates/concrete or importation of inert fill, would utilise the principal road network, remaining on the 'A' classified roads and motorways where possible.

7.128 The application site is located conveniently within close proximity of the A1(M) at a distance of under 2km, which can be accessed directly via the A1057. The A1(M) then provides links to the wider strategic road network.

7.129 The A1057 Hatfield Road is a classified 'A' road which currently accommodates an Annual Average Weekday Traffic (AAWT) flow of over 15,000 vehicles (of all sizes). It has a consistent standard carriageway width suitable for HGV movement and all of the junctions between the site access and the A1(M) are of sufficient size to accommodate large vehicles without any concerns.

7.130 The accident data has been considered in detail and it has been determined that there are no accident patterns that could be attributed to poor highway design. The incidents recorded are as a result of adverse weather conditions or human error, typically poor driver judgement.

7.131 It is considered that the proposed operational traffic route is suitable for the development proposals would provide access to the county's principal roads, whilst limiting impact to residential areas.

Link Capacity

7.132 The adequacy of the A1057 Hatfield Road taking into account the volume of traffic recorded has been considered. Link capacity can be determined by reference to DMRB TA79/99[3].

7.133 The guidance (DMRB TA79/99) describes types of urban roads and the features that distinguish them Referring to Table 1 of the guidance the A1057 Hatfield Road has been identified as an Urban All Purpose 3 Road (UAP3, which has the following characteristics:

'Variable standard road carrying mixed traffic with frontage access, side roads, bus stops and at-grade pedestrian crossings'.

7.134 Theoretical capacity is based upon Table 2 of the guidance, which provides capacities of urban roads based on one-way hourly flows in each direction. It assumes a 60/40 directional split. A 7.3m wide UAP3 road should have a theoretical capacity of 1,300 vehicles per hour in a single direction.

7.135 The maximum directional flow recorded on the A1057 Hatfield Road occurred during the Saturday peak period where 725 vehicles were recorded heading westbound, this was very similar to the weekday peak period. This made up 57% of the total flow so broadly a 60/40 split in line with the guidelines.

7.136 This indicates that based on the link capacity alone, the A1057 Hatfield Road currently operates at 56% of its theoretical operational capacity.

7.137 Based on this theoretical assessment it is concluded that the study link can comfortably accommodate the additional traffic likely to be generated by the proposed application.

[3] TA46/97 Traffic Flow Ranges for use in Assessment of new Urban Roads

Junction Capacity

7.138 Technical guidance provided within DMRB TD42/95[4] states that the use of 'simple' priority junctions, in new build situations, is appropriate up to a level of 300 vehicles Annual Average Daily Traffic (AADT) 2-way flow on the minor arm. An AADT 2-way flow of 500 vehicles is quoted as being the desirable maximum level of use for an existing junction without upgrading being considered, or where vehicles waiting on the major road to turn right inhibit the through flow and create a hazard.

7.139 The proposed application is forecast to generate a total of 194 vehicles daily of which 174 would be classified as HGV.

7.140 This level of vehicular traffic across the day would comfortably be accommodated within the proposed access junction arrangements without any capacity concerns.

7.141 The A1057/Oaklands Lane/Station Road roundabout junction has been observed during the weekday peak periods and no congestion occurred. The proposals will not be routeing very much operational traffic to/from a westerly direction and the level of light vehicle traffic would be minimal. Therefore it is deemed that the proposals will not impact the existing operation of this junction.

Environmental Impact

Methodology

7.142 This section assesses the environmental impact associated with the movement of vehicles associated with the development. The assessment refers to guidance provided by the Institute of Environmental Management and Assessment (IEMA) in 'Guidelines for the Environmental Assessment of Road Traffic' (the 'IEMA guidelines').

7.143 The IEMA guidelines provide two broad rules which can be used to determine the need for a full environmental assessment. The rules form a threshold, below which the predicted environmental impact is considered to be insignificant:

- highway links where traffic flows would increase by more than 30% (or where the number of HGVs would increase by more than 30%); or
- in sensitive areas where traffic flows increase by more than 10%.

7.144 Given the determined existing conditions of the local highway network, road classification, lack of sensitive receptors and its lack of accident history, for the purposes of this assessment the links studied are not considered to be sensitive. Based on this, the 30% threshold as defined in the IEMA Guidelines is deemed to apply for assessment purposes.

[4] Design Manual for Roads & Bridges TD42/95 Geometric Design of Major/Minor Priority Junctions.

7.145 If the above thresholds are exceeded then a full environmental impact assessment must be undertaken to determine the level of transport related impact borne of the proposed development. The IEMA guidelines advise that traffic flow variations within +/-10% of baseline levels are indiscernible from the day-to-day fluctuations in traffic flow, creating no material environmental impact. Therefore, increases in traffic of less than 10% are considered to have a negligible impact. Based on the guidance, the following criteria are used to determine the environmental impact of the proposed development:

- noise & vibration – a doubling of traffic flow leads to a 3dB(A) increase in noise level, below which is deemed imperceptible to change receptors;
- dust & dirt – the potential effects arising from dirt and detritus being brought onto the highway, assessment is required where the increase in traffic is above 10%;
- driver severance & delay – capacity assessments are required where traffic levels change by 10% or more, or where the links/junctions experience congestion in the baseline situation;
- community severance & delay – the existing level of community severance is determined and the relative impact of additional traffic assessed based on a sliding scale; and
- vulnerable road users and road safety – assessment is required where the increase in traffic is above 10%.

7.146 Based on the above, the assessment would determine the sensitivity and magnitude of transport related impacts according to the criteria established in Table 7-7 below.

Table 7-7
Transport Impact Criteria

Impact	Sensitivity			Magnitude			
	Low	Medium	High	Negligible	Minor	Moderate	Major
Noise & Vibration	No sensitive receptors	Presence of sensitive receptors	Presence of sensitive receptors adjacent to the road	<99% increase in traffic i.e. a doubling of traffic flow	Quantitative assessment based on predicted increase in traffic against measured baseline		
Dust & Dirt	Limited presence of sensitive receptors	Low to medium presence of sensitive receptors	High presence of sensitive receptors	No off-road vehicle movements /no loose material transport	Qualitative assessment based on type of traffic generated, materials transported and traffic speeds through sensitive areas		
Driver Severance & Delay	Road network not affected	Road network not experiencing congestion at peak times	Road network experiencing congestion at peak times	<10% increase in traffic	Quantitative assessment of road capacity based on existing traffic flows and predicted future traffic levels		
Community Severance & Delay	Moderate to high baseline traffic flows / presence of existing severance	Moderate baseline traffic flows / presence of existing severance	Low baseline traffic flows / no presence of existing severance	<10% increase in traffic	<30% increase in traffic	<60% increase in traffic	>60% increase in traffic
Vulnerable Road Users	N/A	Limited presence of vulnerable road users	Presence of vulnerable road users	<10% increase in traffic	Qualitative assessment of existing provision and future traffic levels		
Road Safety	N/A	No existing safety risk	Existing safety risk	<10% increase in traffic	Quantitative assessment of existing accident records and predicted increases in traffic		

7.147 The sensitivity and magnitude of each impact are combined to determine the significance, from which the need for mitigation can be identified. The significance definitions are detailed in Table 7-8 below. In terms of the EIA Regulations, an 'Moderate/substantial' and 'Substantial' effect are taken as being a 'significant' effect

Table 7-8
Determination of Impact Significance

Magnitude	Sensitivity		
	Low	Medium	High
Negligible	Negligible	Slight	Slight/Moderate
Minor	Slight	Slight/Moderate	Moderate
Moderate	Slight/Moderate	Moderate	Moderate/Substantial
Major	Moderate	Moderate/Substantial	Substantial

Link Impact

7.148 The A1057 Hatfield Road has been considered in terms of the link impact that would occur as a result of the traffic forecasted for the proposed application.

7.149 All traffic forecasted to be generated by the site has been routed via the A1057 to/from the A1(M).

7.150 No traffic growth has been applied to this assessment as it would only serve to reduce the traffic impact. Therefore 2015 background traffic levels have been used.

7.151 Furthermore, despite staff shifts starting before the AM peak period and finishing after the PM peak period all light vehicle trips have been applied to peak periods to ensure a robust link impact assessment.

7.152 Table 7-9 identifies the maximum total and HGV traffic increases on each of the key links over the course of a typical weekday.

Table 7-9
Link Impact

	All Vehicles			HGVs		
	2015 Base	Proposed Traffic	% Change	2015 Base	Proposed Traffic	% Change
Daily 0000-2400hrs	15,420	194	1.3	744	174	23.4

7.153 The link impact assessment shows that the proposed traffic forecasted would result in a total increase in 1.3% of the total existing traffic flow, and an increase in 23.4% in HGV traffic.

7.154 This level of increase is within the advisory thresholds classified as 'slight' in terms of significance on the basis that it is a minor increase in an area deemed to have low level of highway sensitivity.

Noise & Vibration

7.155 As stated in the IEMA Guidelines, variation of +/-3dB(A) represents the minimum perceptible change in noise to nearby receptors, which is typically produced by a doubling or halving of traffic flow. As demonstrated within the link impact assessment the proposals would not result in a doubling of background traffic levels.

7.156 As development traffic would not travel outside of the typical operational hours, the assessment of traffic noise during the night time is not required.

7.157 The above assessment confirms that the proposed development traffic would lead to no perceptible change in noise or vibration along any link within the study area road network during hours of operation. The magnitude of the proposed development impact on noise and vibration would therefore be negligible.

7.158 It should be noted that transport related noise is also addressed in Chapter 9 of this Volume.

Dust and Dirt

7.159 The sensitivity to the impact of dust and dirt is based upon the proximity of sensitive receptors to the roadside. The IEMA Guidelines state that "*problems with dust and dirt are unlikely to occur at distances greater than 50m from the road*". The site access is not located within 50m of any sensitive receptors.

7.160 The IEMA guidelines explain that the impact of dust and dirt will depend, to a large extent, upon the management practices undertaken on site. This includes the washing down of wheels and sheeting of material during transport on the public highway. This assessment determines the level of impact generated by the proposed development under the assumption that no management practices are undertaken.

7.161 The transportation of materials in uncovered containers could lead to dust and dirt impacts throughout the proposed access route network.

7.162 It is expected that, without sufficient mitigation measures, the magnitude of the impact of dust and dirt throughout the study area road network would be high. Appropriate mitigation measures are proposed in order to minimise any impact that is caused in terms of dust and dirt. Such mitigation measures follow best practice guidelines and are routinely used at quarry operations

throughout the UK. The effectiveness of the mitigation measures is therefore well understood.

7.163 As noted in the next section, the residual impact in terms of dust and dirt would therefore be slight.

Driver Severance and Delay

7.164 The A1057 Hatfield Road is a classified 'A' road which currently accommodates an Annual Average Weekday Traffic (AAWT) flow of over 15,000 comprising mixed size vehicles.

7.165 The link capacity assessment undertaken has demonstrated that the A1057 currently operates within its theoretical capacity and it would continue to do so comfortably with the addition of the proposal traffic.

7.166 The link impact assessment has demonstrated that the likely increase would be 1.3% in terms of total vehicles, which is well within the daily fluctuations in traffic levels experienced and is therefore unlikely to be perceptible away from the site access junction.

7.167 The impact to driver severance and delay would therefore be negligible.

Community Severance and Delay

7.168 The sensitivity of this impact is based upon the presence of communities around the local road network and the existing level of severance due to traffic flow.

7.169 The A1057 Hatfield Road is a classified 'A' road which currently accommodates an Annual Average Weekday Traffic (AAWT) flow of over 15,000 comprising mixed size vehicles.

7.170 The link capacity assessment undertaken has demonstrated that the A1057 currently operates within its theoretical capacity and it will continue to do so comfortably with the addition of the proposal traffic.

7.171 The link impact assessment has demonstrated that the likely increase would be 1.3% in terms of total vehicles, which is well within the daily fluctuations in traffic levels experienced.

7.172 Furthermore, adequate pedestrian crossing facilities are provided at the A1057 Hatfield Road. Weight restrictions are also in place along Station Road and Smallford Lane which prevent any detrimental impact caused by HGVs routing through Smallford and Sleapshyde.

7.173 The magnitude of the impact on community severance would therefore be negligible.

Road Safety

7.174 The accident data obtained has been considered in detail and it has been determined that there are no accident patterns that could be attributed to poor highway design. The incidents recorded are as a result of adverse weather conditions or human error, typically poor driver judgement.

7.175 It is therefore considered that the type and quantity of additional traffic generated by the proposed development would have a negligible impact on the safety of the local road network.

Vulnerable Road Users

7.176 The review of local accident data has also demonstrated that there is currently no safety issue relating to vulnerable road users.

7.177 The link capacity assessment undertaken has demonstrated that the road operates within its theoretical capacity. The link impact assessment has demonstrated that the likely increase would be 1.3% in terms of total vehicles, which is well within the daily fluctuations in traffic levels experienced and is therefore unlikely to be perceptible away from the site access junction.

7.178 The impact to driver vulnerable road users will therefore be negligible.

MITIGATION

7.179 Mitigation measures are proposed to facilitate safe access to the site, whilst also offsetting the potential impact caused by additional HGV traffic on the surrounding road network:

- ensure that good visibility is maintained at the proposed site access junction i.e. any trees/hedges trimmed;
- the provision of wheel washing facilities at the site exit, to prevent the transfer of site material onto the public road network;
- ensure that all loose material transported to/from the site is suitably covered and that HGVs are not overloaded, to minimise the impact of dust resulting from material transport;
- the induction of drivers of all HGV traffic accessing the development, highlighting safety issues and ensuring they follow agreed access routes to and from the site;
- A road sign informing drivers of the site access location and the nature of its operation (to be designed and agreed with the local highways authority).

RESIDUAL IMPACT

7.180 The sensitivity and magnitude of impacts associated with the additional traffic generated by the proposed development are combined according to the significance definitions provided in Table 7-8 above. Table 7-10 below summarises the significance of each impact pre- and post-mitigation,

providing a number of suggested mitigation measures that could be employed to achieve the impact reduction.

Table 7-10
Significance of Traffic Impacts associated with the Proposals

Impact	Pre-Mitigation Significance	Suggested Mitigation	Residual Impact
Noise & Vibration	Negligible	N/A	Negligible
Dust & Dirt	Moderate	• No overloading of HGVs • Wheel washing facilities at site exit • Covering of materials in transit • Monitoring of dust and dirt levels	Slight
Driver Severance & Delay	Negligible	N/A	Negligible
Community Severance & Delay	Negligible	N/A	Negligible
Road Safety	Slight	• HGV driver induction	Negligible
Vulnerable Road Users	Negligible	• HGV driver induction	Negligible

CONCLUSIONS

7.181 An assessment of the impacts on the local transportation network as a result of the proposed development has been undertaken.

7.182 A detailed audit of the existing highway conditions has been undertaken which includes a review of the local accident history in the proximity of the application site.

7.183 The A1057 Hatfield Road is a classified 'A' road which currently accommodates an Annual Average Weekday Traffic (AAWT) flow of over 15,000 mixed size vehicles.

7.184 The link capacity assessment undertaken has demonstrated that the A1057 currently operates within its theoretical capacity and it would continue to do so comfortably with the addition of the proposal traffic.

7.185 The link impact assessment has demonstrated that the likely increase would be 1.3% in terms of total vehicles, which is well within the daily fluctuations in traffic levels experienced and is therefore unlikely to be perceptible away from the site access junction.

7.186 Appropriate mitigation measures are proposed in order to minimise any impacts of the proposed development relating to road safety and dust and dirt.

7.187 In conclusion, it is considered that the proposed development traffic would operate adequately have no adverse impact on the surrounding road network.