West Sussex Minerals Local Plan

Transport Assessment

December 2015

West Sussex County Council

paulbasham ASSOCIATES

www.paulbashamassociates.com

DELIVERING SUSTAINABLE, TRANSPORT PLANNING AND ENGINEERING SOLUTIONS

WEST SUSSEX COUNTY COUNCIL
MINERALS LOCAL PLAN

TRANSPORT ASSESSMENT

CONTROLLED DOCUMENT

PB-Associates Document No:	037.0017/TA/3		
Status:	Final	*Copy No:*	

	Name	*Signature*	*Date*
Prepared by:	Karen Brisley		18/09/2015
Checked:	Paul Basham		23/09/2015
PBA Approved:	Paul Basham		23/09/2015

Revision Record

Rev.	*Date*	*By*	*Summary of Changes*	*Chkd*	*Aprvd*
2	19/09/15	KB	Incorporating client comments	PB	PB
3	29/10/15	KB	Incorporating clients final comments	PB	PB
4	04/12/15	JR	Incorporating further client comments	PB	PB

West Sussex County Council
County Hall
Chichester
PO19 1RH

Paul Basham Associates Ltd
Lancaster Court
8 Barnes Wallis Road
Fareham
Hampshire
PO15 5TU

WEST SUSSEX COUNTY COUNCIL
MINERALS LOCAL PLAN

TRANSPORT ASSESSMENT

Contents

Figures

Tables

Drawings

037.0017.0001 – Hambrook Proposed Access Visibility Splay and Swept Path
037.0017.0002 – Brick Kiln Farm Proposed Access Visibility Splay and Swept Path
037.0017.0003 – Severals West Proposed Access Visibility Splay and Swept Path (Option 1)
037.0017.0004 - Severals West Proposed Access Visibility Splay and Swept Path (Option 2)
037.0017.0005 – Chantry Lane Proposed Access Visibility Splay and Swept Path
037.0017.0006 – Ham Farm Proposed Access Visibility Splay and Swept Path

Appendices

Appendix A – Site Visit Form
Appendix B – Summary Results of Site Visits
Appendix C – District Growth Factors
Appendix D – Fontwell West LINSIG Results
Appendix E – Chantry Lane Proposed New Access
Appendix F – A24 Washington Roundabout ARCADY Results
Appendix G – Horncroft Proposed Access Arrangements

1. EXECUTIVE SUMMARY

1.1 Paul Basham Associates (PBA) have on behalf of West Sussex County Council and the South Downs National Park Authority, undertaken the strategic transport assessment of 14 potential minerals sites across the County. The strategic transport assessment forms part of the evidence base that West Sussex County Council and the South Downs National Park Authority are preparing for a new Joint Minerals Local Plan, to replace the existing Minerals Local Plan which was adopted in 2003.

1.2 The selection of sites for the strategic transport assessment commenced in 2011, and through various studies the number of sites have been shortlisted down from 30 to the 14 sites which are considered in this report.

1.3 The study objectives, for the strategic transport assessment were to;

- Review the strategic highway impact of all potential strategic mineral sites operating individually and cumulatively;
- Evaluate the existing or proposed access on to the public highway and review deliverability issues relating to the implementation of any improved or new access to serve sites;
- Provide relevant advice on preferred vehicle routing between individual sites and the Strategic Road Network (SRN); and
- Consider the overall suitability of potential sites in transport terms and provide advice relating to preference and acceptable scales of development.

1.4 The assessment of the traffic impact of the potential minerals sites on the highway network has taken a systematic approach based on a 5 stage process (described in **Section 3**) which has also been informed by site visits and background data (traffic volumes and personal injury accident data) provided by the County Council.

1.5 The cumulative impact of the sites on the local road network is also important. Therefore, where sites are located in close proximity to one another, and/or, are likely to route through the same key junctions on the highway network, their cumulative impact has been assessed.

1.6 A tabulated summary of the results and recommendations of the study is provided in **Section 16**.

2. INTRODUCTION

2.1.1 Paul Basham Associates (PBA) were appointed by West Sussex County Council (WSCC) in August 2015 to undertake the Transport Assessment (TA) for the West Sussex Joint Minerals Local Plan. The Joint Minerals Local Plan (herein referred to as 'the Plan') for West Sussex is being prepared by the County Council in partnership with the South Downs National Park (SDNP) Authority. The Plan once formally adopted after an Examination in Public will replace the existing Minerals Local Plan which was adopted in 2003.

2.1.2 A high level TA covering 30 Minerals and 35 Waste sites was undertaken by the County Council in February 2011. This report provided an overall review for each site covering and each site was scored using traffic light scoring (Red, Amber, Green) to indicate the sites overall deliverability based on five assessment criteria, which included;

- Carriageway width;
- Visibility and access requirements;
- Access location where no existing point of access; and
- Improvements and highlighting sensitive areas.

2.1.3 The Minerals Sites Study (Version 2) March 2015, also considered Transport and Access amongst a range of other criteria for 21 sites across the County. The shortlisting process undertaken by the County Council and SDNPA following on from the production of this report has further reduced the number of Minerals sites to a final 14, which are taken forward for assessment within this report.

2.1.4 The purpose of this TA is to assess the strategic traffic impacts and the highways access implications of the 14 proposed minerals sites. Where sites are located in close proximity to one another and or where there is significant development proposed as part of the Local Plan (prepared separately by the relevant Local Planning Authority), the assessment also considers the cumulative impact of development on the surrounding highway network.

2.1.5 The study objectives, as defined in the Request for Proposal, are to;

- Review the strategic highway impact of all potential strategic mineral sites operating individually and cumulatively;
- Evaluate the existing or proposed access on to the public highway and review deliverability issues relating to the implementation of any improved or new access to serve sites;
- Provide relevant advice on preferred vehicle routing between individual sites and the Strategic Road Network (SRN); and

- Consider the overall suitability of potential sites in transport terms and provide advice relating to preference and acceptable scales of development.

2.1.6 In preparation of this report, PBA have consulted with the County Council and the land owners / site operators / potential site operators. WSCC Transport Assessment Guidance, Guidance for the Environmental Assessment of Road Traffic (Institute of Environmental Management (IEMA)) and Design Manual for Roads and Bridges (DMRB) have all been consulted and applied where appropriate in the development and assessment of this study.

2.1.7 The remainder of the report is structured as follows to guide the reader through the assessment process PBA.

- Section 3: Methodology
- Section 4: Hambrook Cluster
- Section 5: Brick Kiln Farm
- Section 6: East of West Heath Common
- Section 7: Minsted West
- Section 8: Severals West
- Section 9: A22 Cluster Cumulative Assessment
- Section 10: Chantry Lane Extension
- Section 11: Rock Common
- Section 12: Ham Farm
- Section 13: A283 Cluster Cumulative Assessment
- Section 14: Horncroft
- Section 15: Land Adjacent to West Hoathly
- Section 16: Summary and Recommendations

3. METHODOLOGY

3.1 Introduction

3.1.1 The purpose of this section is to describe the methods used in the course of the study to collect, analyse and interpret the various forms of data. It will also state where necessary and for the avoidance of doubt, where assumptions have been applied for transparency.

3.2 Site visits

3.2.1 PBA undertook all 14 site visits between the 8th and 12th May 2015. Prior to undertaking the site visits PBA developed a bespoke site visit form to ensure that consistent data was collected at each site, a copy of the site visit form is included for reference in **Appendix A**. The key items of data to collect during the site visit were;

- Existing or proposed access arrangement onto local roads and or the Lorry Route Network (LRN) including measurements of road width, junction arrangement and width and photographs of visibility splays;
- Traffic regulation orders in the vicinity of sites;
- Existing traffic conditions;
- Existing conditions for non-motorised road users;
- Constraints and opportunities to make improvements to local road network;
- Observations of any particularly sensitive receptors in the vicinity of the site or along the preferred routes (e.g. primary schools, playgrounds, landscape);
- Suitability of proposed routing strategies for individual and where appropriate cumulative assessment sites.

3.2.2 The findings from the site visits were written up and submitted to the County Council and SDNPA. A copy of the findings is provided in **Appendix B**.

3.3 Site history / local plan context

3.3.1 The planning history for each site was investigated prior to the final reporting, using Local Authority Planning Portal searches and from information provided directly by the County Council and SDNPA. The purpose of the planning history review was to uncover any previous information that might be useful to explaining the operation of each site and any specific highway considerations, for example the requirement for off-site improvements.

3.4 Personal Injury Collision data

3.4.1 Personal injury collision (PIC) data for the whole of West Sussex was obtained from the County Council Road Safety Team for the most recent three years available (March 2012 to February 2015). The PIC data was uploaded into a Geographic Information System (GIS) and subsequently cropped to the preferred routing strategies up to the point where it joins the LRN.

3.4.2 The analysis of the PIC data has concentrated on 'conflict points', which have been identified as elements or sections of the public highway which may be sensitive with regards to the introduction of additional traffic movements associated with the potential minerals sites.

3.4.3 Conflict points have been identified in terms of the following criteria;

- The point where the existing or potential access joins the public highway; and
- Where a vehicle may be required to make a movement which conflicts with the dominant flow of traffic for example right turns or U-turning at a roundabout.

3.4.4 Further querying of the dataset has also highlighted PICs involving heavy goods vehicles (HGVs). The results of the PIC data assessment will be presented as both tables and maps, with written summaries provided where necessary to explain the impact this could potentially have on the suitability of the potential minerals site from a highway perspective.

3.5 Traffic Impact

3.5.1 To determine the overall traffic impact of each potential minerals site, a five stage process has been followed.

Stage 1a: Routing Strategy

3.5.2 Previous work undertaken by the County Council (February 2011 and March 2015) or site promoters has identified potential HGV routing strategies. The suitability of the routing strategies was assessed along with a number of alternatives during the site visits.

3.5.3 The criteria for determining suitability included the following aspects;

- Distance to the LRN;
- Presence of an Air Quality Management Area or Low Emission area;
- Existing junction arrangements;
- Constraints on the local highway network; and
- Environmental factors such as severance, amenity, noise disturbance, proximity to residences or other such sensitive receptors i.e. schools.

3.5.4 Where there was more than one routing option per site, the options were assessed in terms of the criteria listed above. In some cases amendments were made to routing options following discussion with the Project Team in response to specific issues. The best performing option was then selected as the preferred routing strategy and used as the basis for the traffic impact assessment (TIA).

3.5.5 The preferred routing strategies have also been discussed with the potential site operators and in some cases amended in response to operational considerations.

3.5.6 Preferred routing strategies have been identified as the basis for the TIA to ensure a realistic and robust assessment of sites can be undertaken. However, as plans for mineral development come forward, routing strategies may change for a variety of reasons. Therefore, preferred routing strategies identified in this report should not be viewed as fixed.

Stage 1b: Development Traffic Distribution

3.5.7 The distribution of development-related traffic onto the LRN was assessed once the preferred routing strategies had been agreed. As with the routing strategies, the potential site operators were given the opportunity to comment on the development-related traffic distribution, as they are best placed to understand the location of future markets. Where the operators have not provided feedback on the development traffic distribution or routing strategy, where possible information from previous planning applications has been used, or in cases where there is no planning history, professional judgement has been applied.

Stage 2: Baseline data

3.5.8 The County Council provided PBA with access to traffic count data. Traffic counts along the preferred routes were identified using the mapping feature, and classification and volume data downloaded for the most recent (and neutral) timeframe.

3.5.9 Where data was unavailable for the baseline year of 2015, the most recent data was downloaded and adjusted to the baseline using growth factors for the appropriate District from TEMPRO version 6.2 with National Trip End Model (NTEM) dataset 62. The District growth factors used are provided in **Appendix C**.

3.5.10 Where the preferred route crosses out of West Sussex into neighbouring authorities, the respective Traffic Monitoring Teams were contacted to obtain relevant traffic count data for these areas.

3.5.11 Based on the preferred routing / distributions strategies, there were four links where there was a notable gap in the existing traffic data;

- Common Road (Chichester District);
- Cheesemans Lane / Broad Lane (Chichester District);
- Tripp Hill (Horsham District); and
- Top Road (Mid Sussex District).

3.5.12 Traffic counts, recording volume, vehicle classification and speeds were commissioned to take place on the roads listed in **Paragraph 3.18** during the week commencing 18th May 2015 to ensure that all sites can be assessed on a consistent basis.

3.5.13 In terms of assessing the traffic impact of the potential minerals sites on the surrounding highway network, the survey has focused on weekday peak hours AM (08:00-09:00) and PM (17:00– 18:00). This ensures the assessment has taken account of traffic levels during normal weekday conditions. Where available, an average of traffic volumes over the five days during these timeframes has been applied, when this has not been possible the average has been taken over four days.

Stage 3: Future year data

3.5.14 The future year of assessment is 2031 as this is consistent with the end of the current Local Plan period for Chichester, Horsham and Mid Sussex District Councils.

3.5.15 The end of the plan period for the Joint Minerals Local Plan will be 2033. However the future year assessment has been retained at 2031 as this is consistent with other local plan periods in West Sussex. Actual traffic growth is dependent on a range of factors such as population, economic growth and car ownership rates which will undoubtedly vary during the plan period. Therefore, there is a degree of uncertainty about future traffic forecasts and it considered appropriate to use 2031 as the forecast year for traffic assessment purposes.

3.5.16 The 2031 traffic forecasts have been calculated by adjusting 2015 traffic data using TEMPRO NTEM adjustment factors. Adjustment factors have been obtained from TEMPRO NTEM for each local authority area (i.e. district or borough).

3.5.17 To take the cumulative impact of development into account, for sites which are close to committed or allocated development sites, a more detailed methodology has been applied to calculate forecast traffic levels. This applies to the Hambrook grouping and Brick Kiln Farm sites where the findings of the Chichester District Council - Local Plan Transport Study of Strategic Development Options and Sustainable Transport Measures (2013) (the Chichester Strategic Transport Study) have been taken into account.

3.5.18 At the time of the assessment, due to uncertainties regarding the nature of the A27 Chichester bypass improvements being progressed by Highways England, detailed junction assessments for Fishbourne, Stockbridge, Whyke, Bognor Road and Portfield roundabouts have not yet been undertaken.

Stage 4: Minerals Sites Traffic Generation

3.5.19 Traffic generation for the potential minerals sites was calculated using the anticipated annual yield and extraction period data provided by the County Council, SDNPA and site promoters. Where annual yield and extraction period data was missing, information from sites of a similar scale / size were used as a proxy, e.g. Severals West and Funtington West.

3.5.20 Traffic generation assumptions have been shared with the operators and in some cases amendments have been made in response to feedback; for example it is industry standard for minerals sites to operate on Saturdays mornings, therefore the total number of days per year increased to 275 and the size of vehicles increased to 20 tonne capacity. For consistency in the assessment and with other assessments, development related traffic was calculated in passenger carrying units (PCUs), with one HGV being the equivalent of two PCUs. However, baseline traffic was not converted to PCUs.

3.5.21 In the case of the Land at West Hoathly, the operator (Cemex), is not proposing to increase its output, only the number of years extraction of minerals will occur. As the site is in operation the development-related traffic associated with the brickworks was accounted for in the baseline traffic surveys. As such there was no additional requirement to calculate development-related traffic as per the other sites which are not operational, and apply it to the baseline, as this would result in double counting, and consequently an over estimation of the traffic impact. At the recommendation of the project team, the baseline traffic levels have been factored up to 2031 using the relevant TEMPRO growth factors.

Stage 5a: Traffic Impact Assessment

3.5.22 For the purpose of this assessment it has been agreed that the threshold for further assessment will be junctions where there is a predicted increase in total entry flows of 50 or more vehicles in any hour (converted to PCUs this equates to 25vph) or if the junction is already know to experience peak period congestion.

3.5.23 Where sites are located remotely from the others, as is the case for Horncroft and Land at West Hoathly Brickworks, and the proposed development distribution is either not expected to use the same roads or be a negligible amount of traffic, these sites have been subject to an individual assessment.

3.5.24 For six of the sites it will be necessary to consider the cumulative impact upon the strategic highway network should one or more mineral sites come forward for extraction at the same time. This applies to the following sites:

- A272 cluster: Minsted West, Severals West and Land East of West Heath Common; and
- A283 cluster; Chantry Lane extension, Rock Common and Ham Farm.

3.5.25 Further consideration of the likely traffic impact on the A24/A283 Washington roundabout will also be considered as part of the study based on information provided by the County Council.

Stage 5b: Chichester Cluster

3.5.26 For the remaining six sites (Brick Kiln Farm and the Hambrook cluster of five sites) it was agreed that PBA should undertake more detailed junction / capacity assessment at the A27/A29 Fontwell roundabouts. Although these junctions are not subject to any (at the time of writing) Highways England improvement scheme, they will be affected by the quantum of development and mitigation measures proposed in Chichester and Arun districts.

3.5.27 Where the County Council have requested further detailed junction analysis of the strategic highway network, industry standard junction assessment programs; ARCADY for roundabouts, PICADY for priority junctions and LINSIG for signalised junctions, have been used. The County Council have provided PBA with 'approved' traffic models for these junctions, and PBA will update these models with the necessary traffic flows for this study. PBA will not however undertake any updates to the configuration of the model parameters.

3.6 Access options / Off-site Highway Works

3.6.1 The County Council have provided highway boundary information, and it has been assumed that any access arrangement / highway improvement scheme would need to be undertaken on land within the highway boundary and or within the control / ownership of the operator. Where works to the highway are proposed in the SDNP, this will be highlighted on the drawing as an item for future consideration.

3.6.2 For the purpose of this assessment where there is an existing access to a site and or the site is still in use, then it is assumed that the access is fit for purpose and no remediation works are required, unless the findings of the previous high level studies undertaken by the County Council advise differently. Where there is currently no site and/or no access to the site, then one potential access arrangement will be proposed as part of the study in accordance with the appropriate highway design guidelines.

3.7 Acceptability Criteria

3.7.1 To arrive at an overall conclusion in relation to for each site's suitability in highway terms, an acceptability rating was applied based upon the evidence presented. Access and Highway

Impact were considered separately to reflect that it would be possible to have an unacceptable access arrangement but a highly acceptable development in terms of traffic impact. **Table 3.1** outlines the criteria used to determine the overall acceptability of each site.

	Access	Highway Impact
Low Acceptability	• There are uncertainties with regards to whether a safe and achievable access into the site can be provided; or • Land outside the highway boundary will be required to provide for the access; or • The cost of providing a new or improved access onto the highway is considered prohibitive for the scale of development proposed.	• The site location and/or traffic routing may be routed through sensitive receptors, without the possibility of mitigation; or • Highway improvements are considered necessary to mitigate the impact of the development; or • Further work is required to assess the impact of the site on the highway network; or • The costs of mitigation works is expected to be prohibitive for the scale of development proposed.
Medium Acceptability	• The site can be accessed from the highway network; or • There may be a requirement for land outside the highway boundary to provide for the necessary junction dimensions and visibility splays; or • The cost of providing a new or improved access is considered to be reasonable for the scale of development proposed.	• The site may be located and/or traffic may be routed through sensitive receptors, although it may be possible to mitigate some of the development traffic through appropriate routing strategies or movement restrictions; or • There may be a requirement for highway improvements to mitigate the impact of the development traffic, subject to further detailed assessments; or • Further work may be required to assess the impact of the site

		on the highway network; or • The cost of mitigation works is considered reasonable for the scale of development proposed.
High Acceptability	• The site can be accessed from the highway network with no requirement for land outside the highway boundary to provide the necessary access and visibility splays; or • The site may already have an existing access which the Highway Authority have previously considered acceptable.	• Development traffic routing has minimal impact on sensitive receptors and requires minimal / no mitigation measures to be put in place; or • Further work may be required to assess the impact of the site on the highway network; or • There are either no or minor mitigation measures required on the highway to mitigate the impacts of the development; or • The cost of mitigation works is considered reasonable for the scale of development proposed.

Table 3.1: Acceptability Criteria

4. HAMBROOK CLUSTER

4.1 Introduction

4.1.1 The following section covers the sites located within Chichester District (not including sites in SDNP), specifically;

- Woodmancote (M/CH/1A)
- Common Road West (M/CH/1B)
- Common Road East (M/CH/1C)
- Slades Field (M/CH/1D)
- Funtington West (M/CH/1G)

4.1.2 The location of the sites / cluster is illustrated in **Figure 4.1**, which fall to the south of the SDNP the border of which follows Hares Lane / Foxbury Lane.

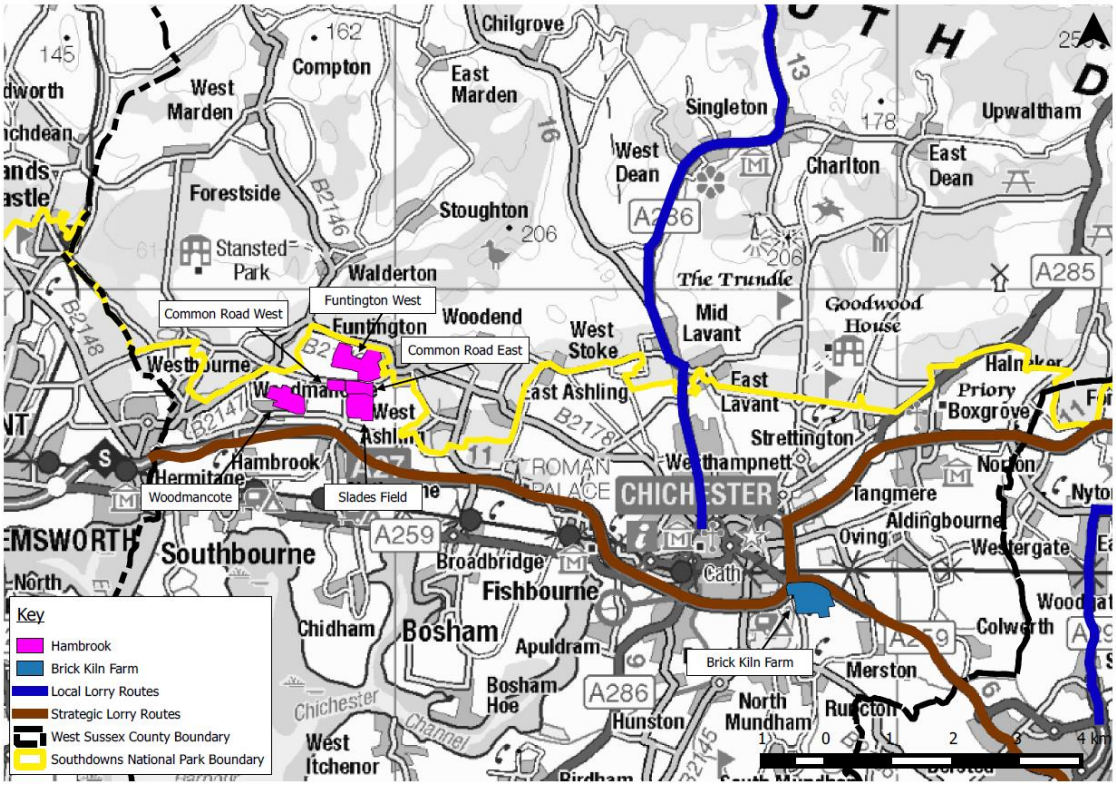


Figure 4.1: Hambrook Cluster Location Map

4.1.3 It is Hanson's intention to operate all five sites concurrently. A system of conveyor belts crossing Common Road, Cheesemans Lane and Marlpit Lane would transport the minerals to the Woodmancote site. The proposed main point of access is onto Common Road to the west of Marlpit Lane, north of the Woodmancote site. This access will be considered in more detail later in this section.

4.1.4 There will still be a requirement for individual accesses, however, they will primarily be for plant and maintenance and have minimal traffic associated with them. Consequently they have not been included in the traffic impact assessment for this cluster.

4.2 Location / Context

4.2.1 The Hambrook cluster is located near the western border of West Sussex. The sites are all north of the A27 trunk road, which forms part of the LRN in this part of the County. There is no direct access onto the A27 in the immediate vicinity of the sites, with the closest points of access being at Warblington to the west of Emsworth, or Fishbourne roundabout to the east, both via the A259. As illustrated in **Figure 4.1**, the A259 does not form part of the LRN.

4.2.2 The sites are in a rural area surrounded by small villages and served by C or D class rural roads. The site visits recorded the following carriageway widths and speeds (**Table 4.1**) on the roads immediately fronting the five sites.

Site	Frontage access	Carriageway Width (m)	Speed Limit (mph)
Woodmancote	Marlpit Lane Woodmancote Lane	4.5m 5m	derestricted derestricted
Common Road West / East	Common Road Cheesemans Lane	5.5m 5.2m	60 40/ derestricted
Slades Farm	Cheesemans Lane	5.2m	40/ derestricted
Funtington West	Common Road	5.5m	60

Table 4.1: Road Widths Surrounding the Hambrook Cluster

4.3 Planning History

4.3.1 The following planning applications have been previously lodged with West Sussex County Council in Westbourne and Funtington Parishes in relation to the proposed sites.

- *WSCC/007/12/WE, Proposed restoration of Hambrook Marl Pit and agricultural improvement scheme using imported inert materials on-site derived materials – Granted*
- *WE/00/035, Review of mineral planning permissions WE/2/69 for winning of gravel and WE/41/71 and WE/62/87 for the extraction of sand and gravel at Hambrook West and Little Hambrook Farm gravel pits comprising land south of Common Road Hambrook, Westbourne – Granted*
- *WE/97/586, Review of Planning permission WE/3/53A for the excavation and winning of minerals – Granted.*

4.3.2 Previous applications show there is a history of mineral extraction in the Hambrook area.

4.4 Baseline Traffic Conditions

4.4.1 The baseline traffic conditions on the road network surrounding the Hambrook cluster have been obtained from a variety of sources. The location and type of the traffic counter used to build up the background picture of traffic levels in the surrounding area is demonstrated in **Figure 4.2**.

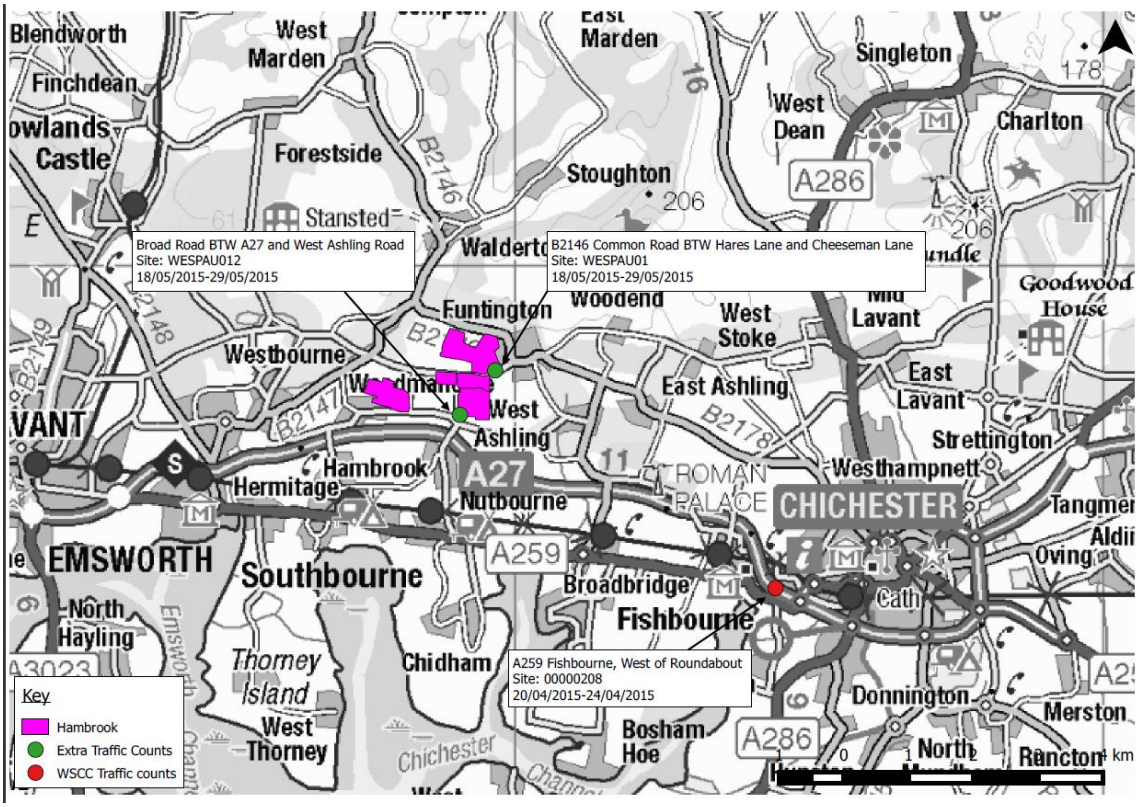


Figure 4.2: Traffic Counter Locations for Hambrook cluster

(*Contains OS data © Crown copyright [and database right] (2015)*

4.4.2 Traffic data for the key roads is summarised in **Table 4.2**.

Hambrook Cluster		2015 Traffic AM	PM	Daily	HGV %	2031 Traffic AM	PM	Daily
Common Rd	Eb	597	293	3730	1%	756	375	4815
	Wb	232	667	3823	1%	293	853	4935
Cheesemans Lane / Broad Lane	Nb	205	109	1389	1%	259	139	1793
	Sb	103	200	1380	1%	130	256	1782
A259 east to Fishbourne Rbt	Eb	478	407	5,021	4%	605	520	6482
	Wb	464	424	4,978	4%	587	542	6427

Table 4.2: Traffic data for Hambrook Cluster (all flows in vehicles)

4.4.3 The data shows that Cheesemans Lane / Broad Lane is very lightly trafficked with a very low

proportion of HGV movements. Common Road carries a higher volume of traffic than Broad Lane but also carries a relatively low proportion of HGV traffic. The traffic data for Common Road demonstrates a strong tidal traffic flow towards Chichester in the AM peak and towards Hampshire in the PM peak, this could however be due to the location of the traffic counter between Cheesemans Lane and Hares Lane. As there is no other traffic count data available in the immediate area, this cannot be verified. The A259 carries a higher level of traffic and more HGVs and also has more balanced flows but with a slight preference for journeys towards Chichester in the AM peak and towards Hampshire in the PM peak.

4.5 Traffic Generation

4.5.1 This assessment will only consider the impact of one access onto Common Road.

4.5.2 The following assumptions have been applied to arise at the traffic generation potential of the Hambrook cluster;

Annual Yield	150,000 tonnes	
	Vehicles	PCU
1 way daily movements	27	54
2 Way daily movements	54	108
2 way hourly movements	5	10

Table 4.3: Traffic Generation for Hambrook cluster

4.6 Routing Strategy

4.6.1 The preferred routing strategy is;

Common Road→ Cheesemans Lane / Broad Road → A259 → A27

Common Road / Cheesemans Lane

4.6.2 This is a priority junction, with Common Road the major arm and Cheesemans Lane the minor arm. The bellmouth measures approximately 23m. As demonstrated in **Photograph 4.2**, there was some degradation to the carriageway around the kerb line. To reduce the impact on the junction it is recommended that an overrun area is provided on the corner radii to reduce the potential for verge damage.

4.6.3 Visibility at the Common Road / Cheesemans Lane junction was assessed on the site visit and photographs of the visibility splay in the primary and secondary directions are provided in **Photograph 4.1** and **Photograph 4.2**.

Photograph 4.1: Cheesemans Lane / Common Road Primary Direction Visibility

Photograph 4.2: Cheesemans Lane / Common Road Secondary Direction Visibility

A259 / Broad Road

4.6.4 This major / minor priority junction has a right turn lane on the A259 and a flare for left turning traffic onto Broad Road. There is a pedestrian crossing point on Broad Road and an advisory cycle lane across the bellmouth. There is a further crossing point over the A259 to the west of Broad Road to connect with the shared use path on the southern side of the carriageway. No improvements are considered necessary to this junction.

A259 / A27 Fishbourne Roundabout

4.6.5 Fishbourne roundabout is the junction of the A259 / A27 / Terminus Road, and is a sensitive junction with well documented capacity constraints during the peak hours. Although the proposed distribution indicates that the level of development traffic using this junction will be below the threshold for further assessment, there are significant non-mineral development proposals in and around Chichester, which will place further demands on this junction. A mitigation strategy for the junction (Hamburger roundabout) was devised as part of the Chichester Strategic Transport Study.

4.6.6 Highways England is currently investigating options for the A259/A27 Fishbourne junction as part of the A27 Chichester improvement scheme. A preferred option is expected to be announced in 2016 which may need to be taken into account through further assessment. Therefore, the assessment of the impact of potential mineral sites on the Fishbourne roundabout will be deferred until Highways England have confirmed their preferred option.

4.7 Traffic Distribution

4.7.1 The development-related traffic distribution is illustrated in **Figure 4.3**.

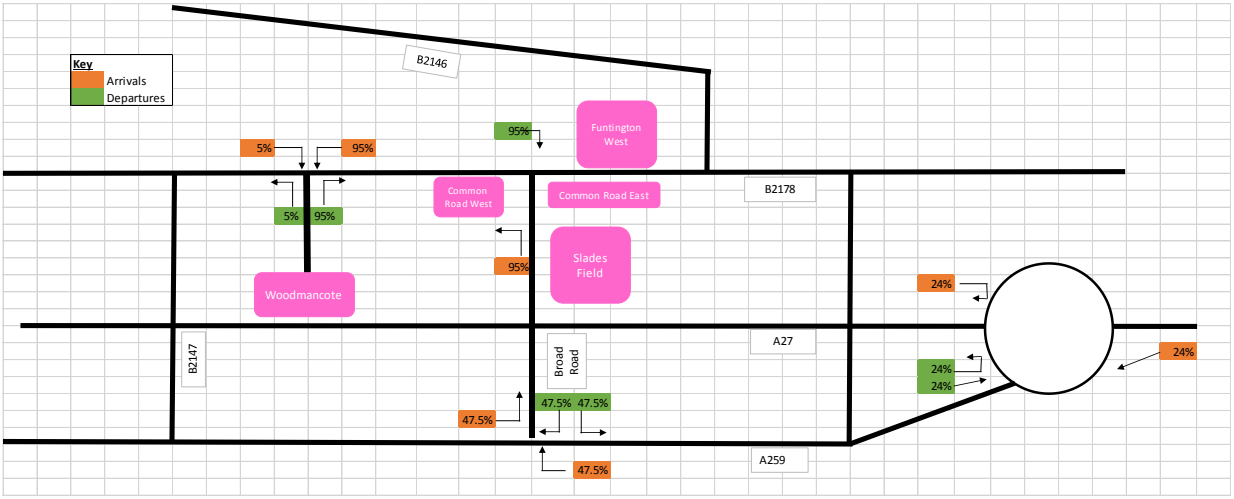


Figure 4.3: Development Traffic Distribution for Hambrook cluster

4.7.2 As specified only a small proportion of the development-related traffic (5%) is expected to arrive / depart from the west, resulting in 1 additional trip in the peak periods. It is expected that the HGV traffic travelling in this direction's main origin / destination would be the A3(M) and specifically the junction for Cowplain / Horndean (B2149).

4.7.3 95% of the development traffic, 20 trips in the peak periods, are expected to arrive / depart from the east (Common Road) and then specifically travel along Cheesemans Lane / Broad Road. This route is considered to be of an acceptable design standard for HGV traffic, although the level crossing at Nutbourne is noted as a local constraint from an environmental and operational perspective.

4.7.4 At the junction of Broad Road and the A259, half the development-related traffic is expected to travel east towards Chichester (12 HGVs) and the A27 and the remaining half travel west through Emsworth towards the A27 (M27). As the volume of development-related traffic is well below the threshold for further assessment, the impact on A259/A27 Warblington junction has not been assessed further.

4.7.5 **Table 4.4** demonstrates the development-related traffic impact in 2031 on the local roads.

Hambrook Cluster		Hourly Development Two-way Traffic Movements (PCU)		2031 (vehicles) + Development (PCU)		% impact as a proportion of overall traffic	
		Arrivals	Departures	AM	PM	AM	PM
Common Rd	Eb	1	9	766	384	1%	3%
	Wb	9	1	303	863	3%	1%
Broad Lane	Nb	9	0	269	149	4%	7%
	Sb	0	9	139	266	7%	4%

A259 east to Fishbourne rbt	Eb	0	4	610	525	1%	1%
	Wb	4	0	592	547	1%	1%

Table 4.4: Traffic impact from Hambrook cluster

4.7.6 **Table 4.4** shows that the addition of the development-related traffic would have the greatest impact as a proportion of overall traffic on Cheesemans Lane / Broad Lane with at worst a 7% increase in southbound movements in the AM peak. This is not unexpected as the route is currently very lightly trafficked with very few HGV movements. The impact on Common Road is c.3% and the impact on the A259 east of Broad Lane is c.1%.

4.7.7 The site is expected to generate a total of c.10 two way movements per hour, c.20 one way movements. The total amount of traffic generated by the site therefore falls below the agreed threshold for further junction assessments as detailed in the methodology section.

4.8 Personal Injury Accident Assessment

4.8.1 PIA data covering the preferred routing strategy for the most recent three year period is presented in **Figure 4.4**. Along the routes there have been a total of 57 PIA, of which 47 (82%) were classified slight and 10 (18%) classified as serious, there have been no fatal PIA's recorded in the most recent three year period.

4.8.2 The distribution of PIA shows that 68% occurred on Local Authority roads and 32% on Highways England roads, of which;

- 51% occurred on the A249,
- 30% occurred on the A27,
- 12% occurred on unclassified roads; and
- 7% occurring on the B2146, B2147, B2148 and local C roads.

4.8.3 A review of the main causation factors for each PIA reveals that 91% were attributable to the driver / rider, with 7% attributable to a road environmental factor, and less than 2% down to pedestrians.

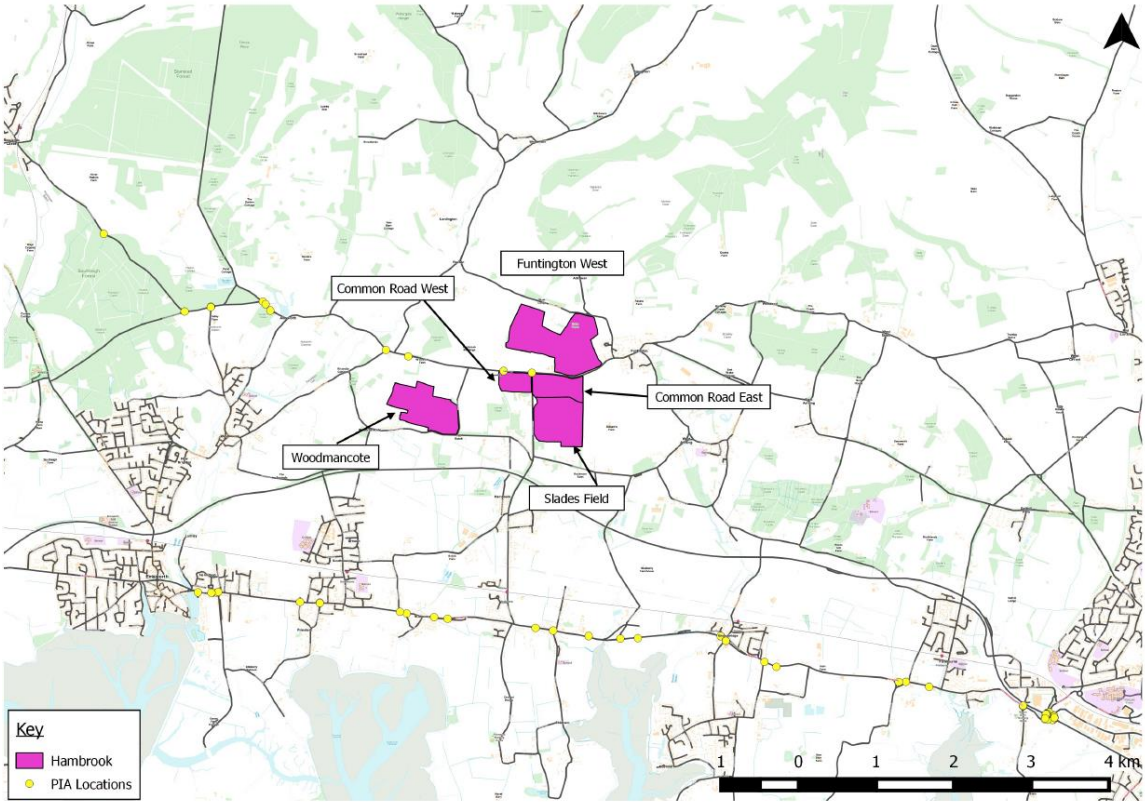


Figure 4.4: Hambrook Cluster PIA data (*Contains OS data © Crown copyright [and database right] (2015)*

4.8.4 The PIA data presented in **Figure 4.4** does not demonstrate any accident clusters around the proposed point of access into the site. One PIA did occur at the junction of Common Road / Cheesemans Lane where a vehicle (turning out of Cheesemans Lane) collided with a cyclist travelling along Common Road. There have however been no PIAs reported at the junction of Broad Road / Main Road (A259) which would be the main route for the majority of development-related traffic. A total of 24 PIA's have occurred at the Fishbourne roundabout over the assessment period, 3 serious and 21 slights. The causation factors for these accidents did not indicate any specific highway defect, with the majority caused by driver / rider error.

4.9 Access Options

4.9.1 Hanson propose a new access onto Common Road as the main point of access for HGVs. There will be access points into the individual sites, for maintenance / plant vehicles which will be used infrequently. This strategic assessment therefore only considers the main access and not the individual points of access. Any smaller accesses onto the highway network should be considered as part of a detailed Transport Assessment for the site at the planning application stage.

4.9.2 Common Road is a single carriageway road circa 5.5m wide, benefitting from a good quality

surface and a straight alignment. There is a 60mph speed limit, with verges flanking either side of the carriageway, and on the southern side of the carriageway a mixture of hedgerow and tall trees. It was observed during the site visit that the straight alignment encourages faster vehicle speeds. There is no pedestrian / cyclist provision on the highway.

4.9.3 Based on Design Manual for Roads and Bridges (DMRB) slight stopping distances for a road with a 100kph design speed (the equivalent to 60mph) results in a visibility splay requirement of 215m. **Drawing 037.0017.0001** demonstrates that this is achievable in both the primary and secondary direction. The predominant movement for the site, left in / right out onto Common Road, is also achievable from the proposed access point. Based on the location and the speed on traffic on Common Road, it is recommended that future access design takes into consideration the requirement for two way traffic movements.

4.9.4 The daily traffic movements from the site (110 two way trips) falls significantly below the threshold set within DMRB (TD 42/95) for the requirement for a right turn lane. Furthermore, the traffic distribution assumes that only 5% of the movements into the site would be turning right, therefore, negating the requirement for such a feature. The traffic generation also falls below the threshold for the provision of merging/ diversifying tapers, as does the volume of traffic on Common Road. A simple priority junction as per the previous arrangement to the east of the B2147 junction with a c.25m wide bellmouth and 4.8m wide access road should be sufficient (see **Photograph 4.3**).

Photograph 4.3: Previous Access to Hambrook Site

4.9.5 Diverging tapers need only be provided where the volume of left turning traffic is greater than 450 vehicles AADT. However, should the major road flow be greater than 7,000-8,000 AADT then the 450 vehicle figure should be halved. Based on the above principles, neither merge /

diverge tapers would not be required at the Hambrook cluster, as the traffic generated is well below the 450 threshold and traffic flows on Common Road are also well below the requirement (7000 - 8000 AADT).

4.10 Summary

4.10.1 Hanson propose to operate the Hambrook cluster of five sites concurrently with one main point of access onto Common Road, to the north of the Woodmancote site.

4.10.2 The extraction of minerals at the Hambrook cluster is expected to generate 110 two way vehicle movements per day whilst the site is worked. The greatest impact as a proportion of overall traffic is expected to be on Cheesemans Lane / Broad Lane where a 7% increase in traffic is expected to occur in the peak period.

4.10.3 Once information on the preferred option for A259/A27 Fishbourne junction has been released by Highways England, the need for further detailed capacity assessments will be considered. However, at 10 two way vehicle movements per hour, the impact is expected to be minimal.

4.10.4 To accommodate the development onto the existing public highway network minor works to improve the junction of Common Road / Cheesemans Lane are recommended.

4.10.5 The overall acceptability of this site is currently assessed as ***Medium Acceptability***, until such time that the details of Highways England A27 Bypass Improvements can be considered.

5. BRICK KILN FARM

5.1 Introduction

5.1.1 The following section covers the site located at Brick Kiln Farm (M/CH/4F);

5.1.2 The location of the site, alongside the Hambrook cluster, is illustrated in **Figure 5.1**.

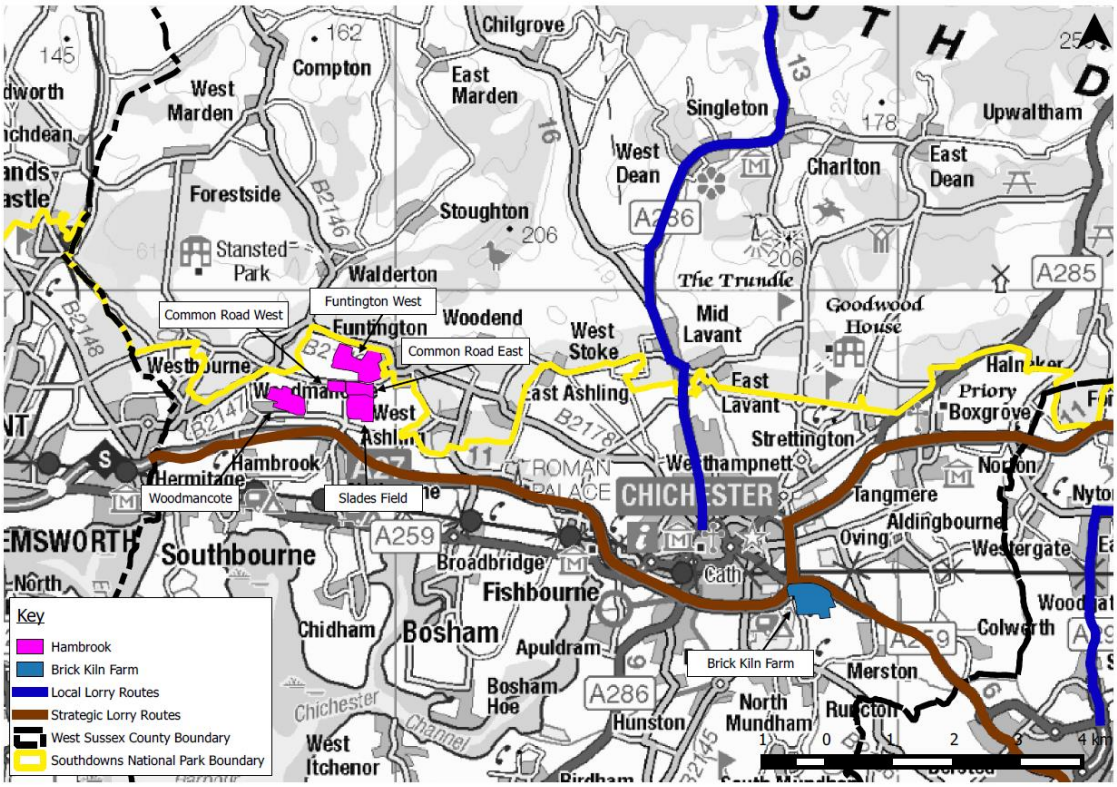


Figure 5.1: Brick Kiln Farm Location Map (*Contains OS data © Crown copyright [and database right] (2015)*

5.2 Location / Context

5.2.1 Brick Kiln Farm is located on the parcel of land between Bognor Road (A259) and Vinnetrow Road, to the south east of the A259/A27 Bognor Road roundabout and the A27 Chichester bypass.

5.2.2 A259 Bognor Road is a dual carriageway separated by a central reservation. For vehicles to access the site, which is located adjacent to the northbound carriageway, it is necessary for vehicles travelling south from the A27 to U turn at the A259 / B2144 / Chichester Food Park roundabout. Both the A259 and A27 are part of the LRN.

5.2.3 The site is in a semi industrial area with a proposal for a waste site on the adjacent side of the carriageway and Chichester Food Park to the south of the potential minerals site.

5.3 Planning History

5.3.1 Whilst there have been no specific applications for the Brick Kiln Farm site relating to minerals extraction or waste, there have been a number of applications for Portfield Quarry (WSCC/041/15/O) and the Fuel Depot Site (WSCC/058/13/O). There is currently a live planning application for Portfield Quarry for;

"a variation of condition 1 of planning permission WSCC/049/10/O to permit the continued importation, stacking, recycling and resale of heavy buildings material as secondary aggregates until 30 June 2018".

5.3.2 Highways England have been consulted on the application and raised no objection.

5.4 Baseline Traffic Conditions

5.4.1 The location and type of the traffic counter used to build up the background picture of traffic levels in the surrounding area are demonstrated in **Figure 5.2**.

Figure 5.2: Traffic Counter Locations for Brick Kiln Farm

(*Contains OS data © Crown copyright [and database right] (2015)*

5.4.2 Traffic data for the key roads is summarised in **Table 5.1**.

Brick Kiln Farm		2015 Traffic AM	PM	Daily	HGV %	2031 Traffic AM	PM	Daily
A259 towards Bognor between (Bognor Rd rbt and B2144)	EB	710	954	9636	7%	899	1220	12441
A259 west between B2144 & Bognor Rbt	Wb	1183	848	10372	6%	1498	1085	13390
A27 (west of A259)	Eb	1726	2017	20303	10%	2184	2580	26211
	Wb	2162	1703	20680	9%	2737	2179	26699
A27 (east of A259)	Eb	1347	1341	15487	9%	1706	1716	19995
	Wb	1406	1223	15276	9%	1780	1565	19722
A259 towards Bognor south of B2144	Eb	653	1111	9656	5%	827	1421	12467
	Wb	1095	725	10130	5%	1387	927	13078

Table 5.1: Traffic Counter Data for Brick Kiln Farm (all flows in vehicles)

5.4.3 As demonstrated in **Table 5.1**, both the A259 and the A27 carry very high volumes of traffic with peak hour traffic comprising 7% - 11.5% of daily traffic flows. The flows on the A259 exhibit tidal flows with the dominant movement towards Chichester in the AM peak and towards Bognor Regis in the PM peak. The A27 (W) is also tidal with higher flows westbound in the AM and eastbound in the PM. The A27 (E) has less variation in the flows.

5.4.4 HGV traffic makes up between 5% and 10% of the total traffic which is to be expected on the LRN.

5.5 *Traffic Generation*

5.5.1 The following assumptions have been applied to arise at the traffic generation potential of the Brick Kiln Farm site;

Annual Yield	100,000 tonnes	
	Vehicles	PCU
1 way Daily Movements	18	36
2 way Daily Movements	36	72
2 way Hourly movements	3	7

Table 5.2: Brick Kiln Farm Traffic Generation

5.6 *Committed Development Traffic*

5.6.1 The built waste facility at The Fuel Depot site on the parcel of land between the A27 east and Bognor Road was assessed as part of the 2012 WSCC Waste Plan Evidence Base and following allocation of the site in the 2014 West Sussex Waste Local Plan, the site has been included as committed development. As mentioned in **Section 5.3**, a planning application for The Fuel Depot site was submitted and granted approval in September 2013.

5.6.2 The Supplementary Transport Statement (August 2013) provided details on development-related traffic generation, which was accepted by WSCC Highways as the worst-case scenario of 166 movements per day (58 in / 58 out) in the order of 12 per hour (6 in / 6 out). In the absence of any quantification of the units applied, we have assumed that the figures presented in the STS are in vehicles and have therefore converted the flows to PCUs for the purpose of this study.

5.6.3 Neither the Transport Assessment nor Supplementary Transport Statement provided details on the distribution of this traffic onto the local highway network. Therefore for the purposes of this assessment, the committed development traffic will be distributed as per the preferred routing strategy proposed in **Section 5.7**

5.7 Proposed Routing Strategy

Preferred Routing Strategy

5.7.1 The dual carriageway section of the A259 means that all development-related traffic has to access the site via A259 Bognor Road northbound. This is expected to add 7 trips (one way movement) during the peak hours.

5.7.2 At the A259/A27 Bognor Road roundabout, traffic is expected to travel in three directions, 45% west onto the A27 (3 trips per hour), 45% east onto the A27 (3 trips per hour) and the remaining 10% U-turning (1 trip per hour) to travel back down the A259 with an onwards destination towards Bognor Regis. 10% of traffic is expected to arrive from Bognor Regis, with 90% of traffic originating from the A27 east (45%) and west (45%). The dual carriageway will mean that traffic arriving at the site from the A27 will need to U-turn at the A259 / B2144 roundabout.

A259 / A27 (Bognor Road Roundabout)

5.7.3 The A259/A27 Bognor Road roundabout makes up one of the five roundabouts on the A27 Chichester bypass. This five arm roundabout (ICD 64m) provides routes to Chichester city centre via Bognor Road (A259), towards Worthing via A27 (east), Bognor Regis via Bognor Road (A259), North Mundham via Vinnetrow Road and towards Portsmouth via A27 (west).

5.7.4 There are currently three lane approaches on both the A27 arms, with separate lanes for left turning traffic. On the A259 (south) arm there is a two lane approach and a one lane approach from the northern side of the roundabout, and a single lane entry width from Vinnetrow Road. The circulating carriageway is two lanes wide with spiral markings directing traffic into the correct lane. The distances between the entry and exit lanes are relatively small, resulting in difficulties for vehicles to find sufficient gaps within the traffic to safely pull onto the circulating carriageways.

5.7.5 The roundabout has capacity problems in the peak periods, and during the site visit (lunchtime, mid-week) there were vehicles queuing on all arms. Highways England are currently reviewing the mitigation measures proposed for this junction as part of the Chichester Strategic Transport Study, and it is understood that a more complex solution could be proposed as part of the A27 Chichester bypass improvements. Once details of a preferred option for this junction are available, then consideration will be given to the need for further assessment of the traffic impact on this junction.

A259 / B2144 Drayton Lane Roundabout

5.7.6 The A259/ B2144 Drayton Lane roundabout is moderate in scale and has an ICD of circa 46m. With two lanes on each approach arm of the A259 it is unlikely that U-tuning traffic at this roundabout would result in inappropriate conflict, particularly given that there is currently no obvious accident problem here.

5.7.7 Although there do not appear to be any obvious capacity issues at this roundabout, the level of traffic using this junction should be assessed as part of any future Transport Assessment should development at Brick Kiln Farm come forward. This should also take into account the traffic for the built waste facility at the Fuel Depot Site and other committed development in the area.

Alternate Routing Strategy

5.7.8 The alternative routing strategy assumed that all traffic would arrive and depart via the A27, and that there would be no traffic travelling between the B2144 roundabout and Bognor Regis. This option was not pursued as there is expected to be a significant amount of development occurring in Arun District which will require aggregates, so it is reasonable to assume that some traffic will originate from, or be destined for, Bognor Regis.

5.8 Traffic Distribution

5.8.1 The proposed traffic distribution for the Brick Kiln Farm and The Fuel Depot site is shown in **Figure 5.3**.

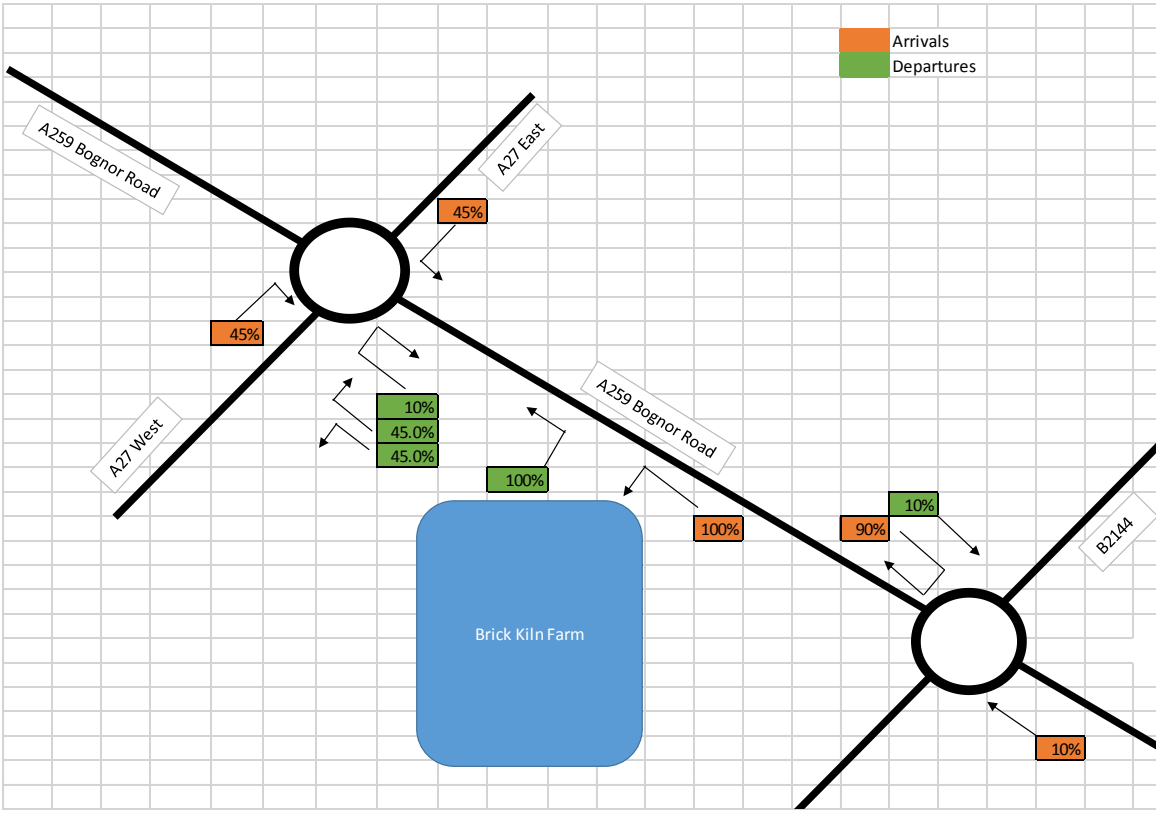


Figure 5.3: Brick Kiln Farm Development Traffic Distribution

5.8.2 The impact of Brick Kiln Farm and the Fuel Depot site on the LRN is provided in **Table 5.3**.

Brick Kiln Farm		Hourly Development Two-way Traffic Movements (PCU)		The Fuel Depot Committed Development Traffic		2031 (vehicles) + All Development (PCU)		% impact	
		Arrivals	Departures	Arrivals	Departures	AM	PM	Arrivals	Departures
A259 towards Bognor between (Bognor Rd rbt & B2144)	EB	6	1	18	18	942	1263	5%	4%
A259 west between B2144 & Bognor Rbt	Wb	7	7	2	16	1530	1117	2%	3%
A27 (west of A259)	Eb	3	0	8	0	2196	2591	1%	0%
	Wb	0	3	0	8	2748	2190	0%	1%
A27 (east of A259)	Eb	0	3	0	8	1717	1727	1%	1%
	Wb	3	0	8	0	1791	1576	1%	1%
A259 towards Bognor south of B2144	Eb	1	0	0	2	829	1424	0%	0%
	Wb	0	1	2	0	1389	930	0%	0%

Table 5.3: Brick Kiln Farm and Fuel Depot Site Traffic Impact Assessment (vehicles)

5.9 Cumulative Impact

5.9.1 The traffic impact assessment also needs to take into consideration the potential cumulative impact of the Hambrook cluster. As illustrated in **Figure 4.3**, 47.5% of the traffic associated with the Hambrook cluster is expected to arrive / depart via A27 (through Fishbourne roundabout), equating to a worst-case scenario of an additional 5 vehicles in both directions in the respective peak periods.

Brick Kiln Farm		Brick Kiln Farm and The Fuel Depot Site		Hambrook Cluster		2031 + All Development		% impact	
		Arrivals	Departures	Arrivals	Departures	AM	PM	Arrivals	Departures
A259 towards Bognor between (Bognor Rd rbt & B2144)	EB	24	19	0	0	942	1263	5%	4%
A259 west between B2144 & Bognor Rbt	Wb	9	23	0	0	1530	1117	2%	3%
A27 (west of A259)	Eb	11	0	0	0	2196	2591	1%	0%
	Wb	0	11	0	0	2748	2190	0%	1%
A27 (east of A259)	Eb	0	11	0	5	1717	1732	1%	1%
	Wb	11	0	5	0	1796	1576	1%	1%
A259 towards Bognor south of B2144	Eb	1	2	0	0	829	1424	0%	0%
	Wb	2	1	0	0	1389	930	0%	0%

Table 5.4: Cumulative Impact Brick Kiln Farm

5.9.2 The results in **Table 5.4** show that there will not be a severe cumulative impact on the A27 with the addition of the Hambrook Cluster development-related traffic.

5.9.3 The Project Team also requested that as assessment of the cumulative development-related traffic on the western Fontwell Roundabout be undertaken. As part of mitigation for development proposed in the Arun Local Plan, it is proposed that the roundabout will be signalised and a copy of the LINSIG version 3 model was provided by Highways Officers and Option 3 tested as part of the Arun Strategic Transport Study (2013). A further request was to use the turning movements from the West Sussex County Council Strategic Model for the 2031 baseline flows, as this information has recently been used in the evidence base for the Arun Local Plan. The development-related traffic for Hambrook, Brick Kiln Farm and Horncroft was loaded into the model in addition to the 2031 baseline flows. In total the three sites are expected to add a worst case of 23 vehicles between the A27 west and the A27 east, and 23 vehicles between the A27 east and the A27 west. Results of the LINSIG assessment are

provided in **Appendix D,** with a summary of the results provided in **Table 5.5**. The results were optimised to show the practical reserve capacity.

		2031		2031 + Development	
		Deg Saturation (%)	Mean Max Queue (PCU)	Deg Saturation (%)	Mean Max Queue (PCU)
A27 Fontwell Roundabout		121.2 %	-	128.9 %	-
A27 North	Left Ahead	12.1 %	132	127.8 %	182
A27 North	Ahead	121.2 %	140	128 %	196
Arundel Road	Left Ahead	105.9 %	18	58.2 %	5
A29 Fontwell Avenue	Left Ahead	108. 6%	44	128.9 %	119
A27 Arundel Road	Left	87.1 %	11	100.5 %	46
A27 Arundel Road	Left Ahead	45.4 %	4	38 %	6
PRC Over All Lanes (%)		-34.6 %		-43.3 %	
Total Delay Over All Lanes (PCUHr)		317.32		475.26	
Cycle time (Seconds)		40		90	

Table 5.5: A27 Fontwell Roundabout, LINSIG Summary Results

5.9.4 Addition of the development-related traffic does result in an overall reduction in practical reserve capacity and an increase in total delay at the roundabout.

5.10 Personal Injury Accident Assessment

5.10.1 PIA data for the most recent three-year period is presented in **Figure 5.4** for the preferred routing strategy. Along the routes as illustrated there have been a total of 86 PIA's, of which 71 (83%) were classified slight, 14 (16%) classified as serious, and 1 (1%) fatal. The fatal PIA (ref: 1206374), occurred in November 2012 on the A29 and the causation factor attributed to a poor turn / manoeuvre.

5.10.2 The distribution of PIA shows that 84% occurred on Local Authority roads and 16% on Highways England roads, of which;

- 78% occurred on the A259,
- 14% occurred on the A27,
- 2% occurred on unclassified roads; and
- 1% occurred on the B2144.

5.10.3 A review of the main causation factors for each PIA reveals that 93% were attributable to the driver / rider, with 1% attributable to a road environmental factor, 1% due to vehicle defects and 4% involving pedestrians failing to look.

Figure 5.4: PIA data for Brick Kiln Farm (*Contains OS data © Crown copyright [and database right] (2015)*

5.10.4 **Figure 5.4** shows that there is a cluster of PIAs at the A27/A259 Bognor Road roundabout, with a total of 19 incidents, 2 serious and 17 slight over the assessment period. As with the A27/A259 Fishbourne roundabout, the majority of PIAs can be attributed to driver / rider error failing to look or executing poor manoeuvres. There have been 3 slight PIAS near to the Green Lane junction, but the cause of the accidents is not related to traffic turning into or out of Green Lane. At the A259/B2144 Drayton Lane roundabout, 2 PIAs have occurred bother of which slight were attributable to driver / rider error.

5.11 Access Options

5.11.1 Access into the Brick Kiln Farm site is technically possible from both A259 Bognor Road and Vinnetrow Road, both of which present advantages and disadvantages, which are summarised in **Table 5.6**.

	Advantages	Disadvantages
A259 Bognor Road	• Wide verges to accommodate required DMRB visibility splays / merge / diverge tapers • Three existing access points • Similar land uses on opposite side of the carriageway • Two lane entry to A259/A27 Bognor Road roundabout • Better connections to Bognor Regis	• Traffic queues back from A259/A27 Bognor Road Roundabout • High speed road • Well used shared use path along site frontage • Need for a U turn at the A259/B2144 Drayton Lane roundabout
Vinnetrow Road	• Slower speed road • Two way road with no separation which could reduce U turning movements at roundabouts	• Narrow rural road • Traffic queues back from A259/A27 Bognor Road Roundabout • Smaller gap for vehicles to pull out onto A259/A27 Bognor Road roundabout • Only 1 lane approach to onto A259/A27 Bognor Road roundabout (weaving movements harder for traffic turning right) • Third party land • Holiday park on opposite side of carriageway

Table 5.6: Brick Kiln Farm Access Appraisal

5.11.2 The appraisal of both roads to accommodate the development site access presents A259 Bognor Road as the most favourable option.

5.11.3 There are three already potential/ existing access points into Brick Kiln Farm from A259 Bognor Road. The first via Green Lane, the second via the Garden Centre and the third via an access to the north of the Garden Centre.

Access via Green Lane

5.11.4 The junction of Green Lane and the A259 is a priority junction with a splitter island separating the access and egress movements. Visibility from Green Lane of approaching traffic on A259 is considered to be good with wide verges (refer to **Photograph 5.1**). Green Lane is a country lane which serves a number of residential units, a caravan site, farms and restaurant. The stub to the north of the restaurant could be continued into the site to provide a route for arriving vehicles (refer to **Photograph 5.2**).

Photograph 5.1: Primary Direction Visibility Splay from Green Lane

Photograph 5.2: Green Lane view to the Stub

Access via Garden Centre

5.11.5 The access / egress to the Garden Centre is a priority junction and as per the access into Green Lane, visibility of approaching traffic on A259 is good. There are no deceleration or acceleration lanes at the junction, although a channelising island is marked on the carriageway to guide traffic into the appropriate lane and give warning of the approaching junction.

Access north of Garden Centre

5.11.6 Access is taken via a priority junction with good visibility of approaching traffic on A259 (see **Photograph 5.3**). There are no deceleration or acceleration lanes, but there is a channelising island marked on the carriageway to guide traffic into the appropriate lane. There are markings across the access road joining the sections of shared use path which cross the access road.

5.11.7 Further into the site the access road splits into two single routes, which could facilitate a one way working arrangement (see **Photograph 5.4**)

Photograph 5.3: Primary Direction Visibility Splay from Access North of Garden Centre

Photograph 5.4: Internal Access Road to the North of Garden Centre

Feasibility Access Design

5.11.8 The access arrangements to the land uses on the opposite side of the A259 show separate IN and OUT access junctions. The site opposite the Garden Centre also has a filter lane for left turning traffic but no merging lanes.

5.11.9 Based on Design Manual for Roads and Bridges (DMRB) slight stopping distances for a road with a 120kph design speed (the equivalent to 75mph) results in a visibility splay requirement of 295m. This is achievable from the access to the north of the Garden Centre, although as shown on **Drawing 037.0017.002** it would cut across the frontage of the existing Garden Centre, and therefore this area would need to be outside the development boundary. The Fuel Depot site however is proposing visibility splay of 160m in their addendum Transport Statement. If the same principles were applied for Brick Kiln Farm then less development land would need to be retained to achieve the sight lines.

5.11.10 The daily traffic movements for the site are 36 one way trips (vehicles) per entry or exit, or a total of 72 two way trips (vehicles) and traffic flows on the A259 average 10,372 vehicles over 12 hours.

5.11.11 As the major road flow is greater than 8,000 AADT the 450 AADT vehicle figure should be halved to 225 AADT vehicle movements. The traffic generated by the site will still be less than this and therefore there is no requirement for merge / diverge tapers.

5.11.12 It is however recommended that a separate access for IN and OUT movements is investigated. This will ensure consistency with the developments on the opposite side of the carriageway, reduce the potential for vehicle conflict with two way traffic movements and reduce the potential for conflict with non-motorised users of the shared use path.

5.12 Summary

5.12.1 The extraction of minerals at Brick Kiln Farm is expected to generate the equivalent of 72 two way vehicle movements per day over the course of its 15 year lifespan. The greatest impact is on the A259 between A259/A27 Bognor Road roundabout and the A259/B2144 Drayton Lane roundabout as due to the dual carriageway all vehicles would have to U-turn at the B2144 roundabout to access the site.

5.12.2 Visibility splays for an egress onto the A259 to the north of the Garden Centre are provided in Drawing **037.0017.0002**, and a swept path analysis demonstrates that a 10.2m tipper truck is able to negotiate the turn from the proposed egress.

5.12.3 There are not expected to be any improvements required to the local highway network, save for improvements to the A259/A27 Bognor Road roundabout which are outside the scope of this piece of work and are currently being investigated by Highways England.

5.12.4 The overall acceptability of this site is currently assessed as ***Medium Acceptability***, until such time that the details of Highways England A27 Bypass Improvements can be considered.

6. EAST OF WEST HEATH COMMON

6.1 Introduction

6.1.1 This section covers the site known as East of West Heath Common (ref M/CH/7B), located to the south of the A272 between Petersfield and Midhurst within the South Downs National Park. To the east of the potential minerals site at East of West Heath Common (EWHC) there are two further sites;

- Severals West (M/CH/8A); and
- Minsted West (M/CH/8D).

6.1.2 Due to the close proximity of the three sites, the assessment will first consider each individual site and then the cumulative impact on the A272 should all three sites come forward. The location of East of West Heath Common, in relation to the other sites and also the LRN, is illustrated in **Figure 6.1**.

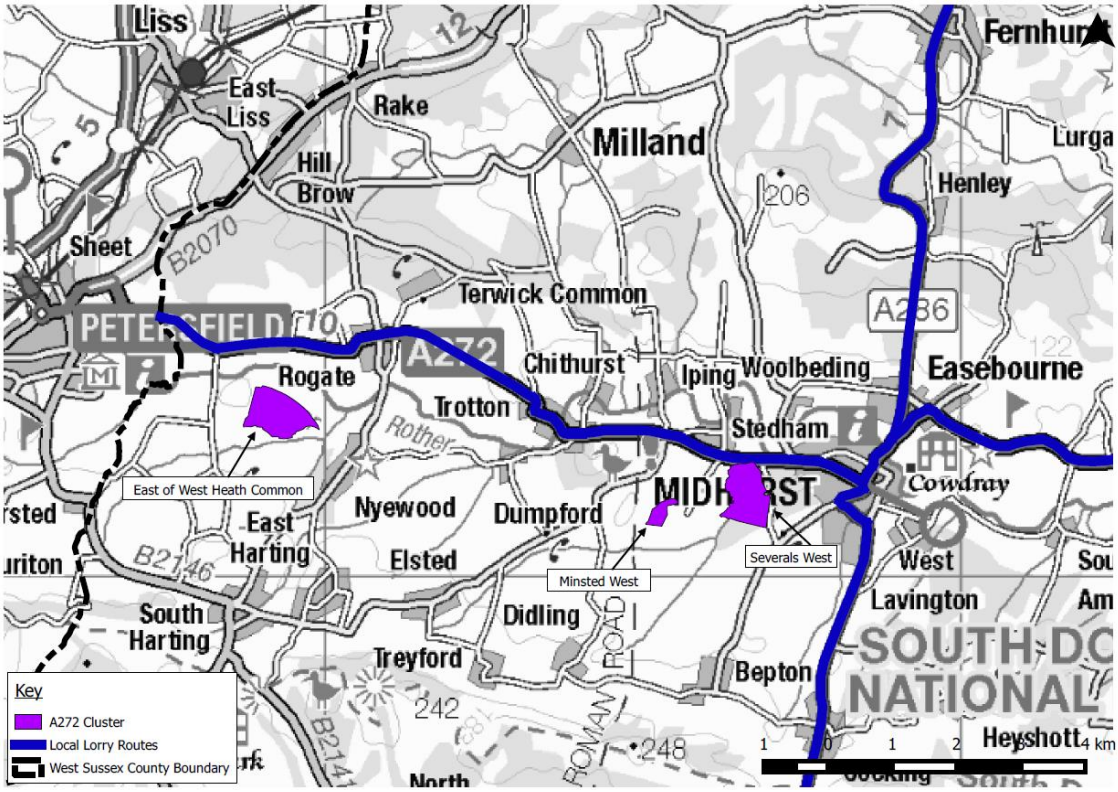


Figure 6.1: A272 Site Location Map (*Contains OS data © Crown copyright [and database right] (2015)*

6.2 Location / Context

6.2.1 West Heath Common quarry is located to the south of the A272 approximately 4.75km from the A3 at Petersfield and 12km from Midhurst. The A272 is a derestricted (60mph) single carriageway route providing a link between the A3 and Midhurst. The A272 measures

approximately 7.8m wide with reasonable verges widths and no footway or cycle ways on this section of the road. The A272 is part of the LRN, and the site is located within the South Downs National Park.

6.2.2 The site is accessed via Durford Lane, a rural lane circa 5m wide with passing places. There is a width restriction of 6'6" over the bridge over the River Rother, however, this restriction has not prevented mineral working in the existing quarry. There are some residential properties fronting onto Durford Lane near the junction with the A272 and also to the south of the quarry access. To the north of the site c.460m from the junction with the A272 is the access to The Old Orchard (a small business area), and to the south of the site access there are further farm access roads.

6.2.3 The junction onto the A272 is a priority junction with a 31m wide bellmouth. There are no merge or diverge tapers or a right turn lane. Visibility in both the primary and secondary directions is good, as demonstrated in **Photograph 6.1** and **Photograph 6.2**. It was noted that Durford Lane rises up to meeting the A272, so vehicles waiting to turn out of the lane are on a slight incline.

Photograph 6.1: Durford Lane / A272 primary direction visibility splay

Photograph 6.2: Durford Lane / A272 secondary direction visibility splay

6.3 Planning History

6.3.1 West Sussex County Council's Planning portal contains information on a previous minerals planning applications at West Heath Common quarry.

WSCC/031/10/HT, Proposed easterly extension to West Heath Quarry by CEMEX - Granted

6.3.2 The information on the application indicates that there is a long established history of quarrying at this site, dating back to the 1950s. Therefore the principle of transporting the minerals along Durford Lane is clearly well established. In respect of above application, it was agreed that there would be no intensification of use at the Quarry, and WSCC Highways noted that there

were no known issues with the existing operation of the site with regards to highway capacity or road safety.

6.4 *Baseline Traffic Conditions*

6.4.1 The location and type of the traffic counter used to build up the background picture of traffic levels in the surrounding area is illustrated in **Figure 6.2**.

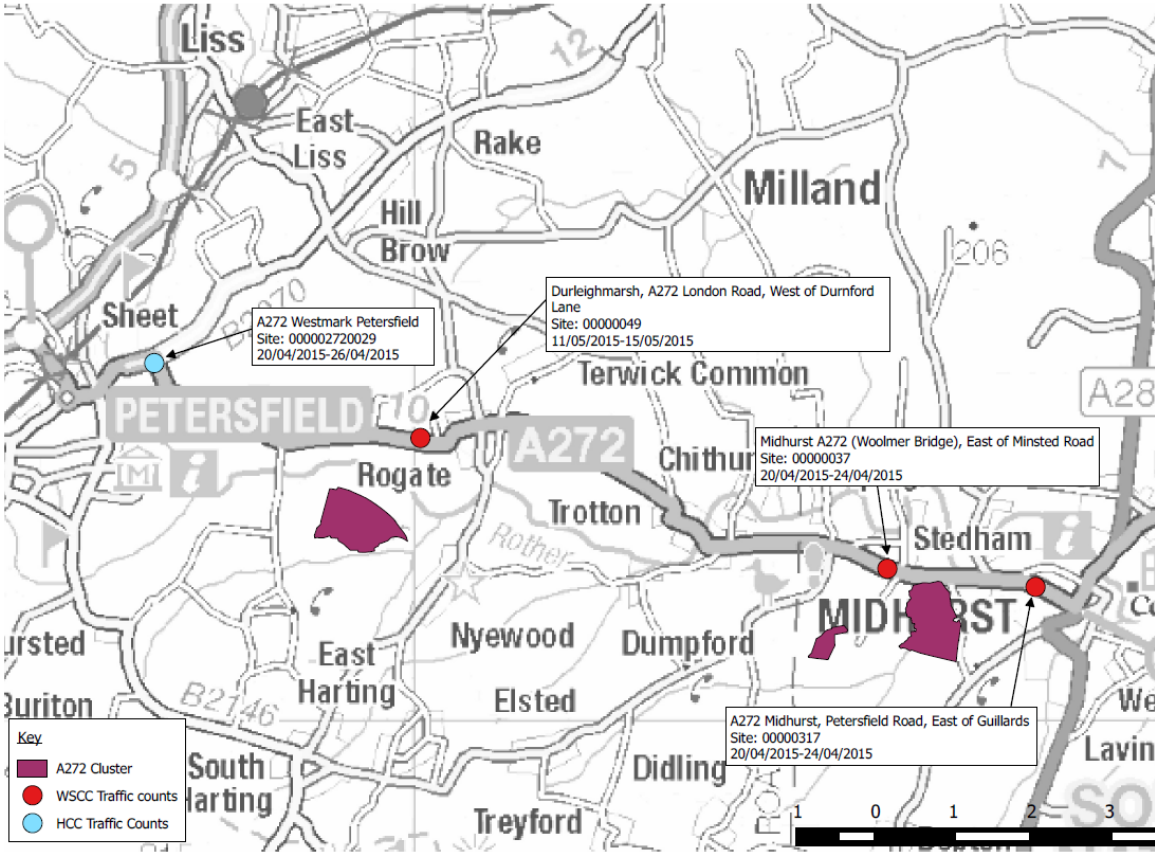


Figure 6.2: Traffic Counter Locations for A272 sites

(*Contains OS data © Crown copyright [and database right] (2015)*

6.4.2 Traffic data for the key roads is summarised in **Table 6.1**. No traffic data was obtained for Durford Lane itself as this is very lightly used.

		2015 Traffic				2031 Traffic		
East of West Heath Common		AM	PM	Daily	HGV %	AM	PM	Daily
A272 west of Durford Lane	Eb	323	293	3189	5%	409	375	4117
	Wb	261	360	3291	5%	330	461	4249
A272 east of Durford Lane towards Midhurst	Eb	357	326	3380	6%	452	417	4363
	Wb	299	386	3513	7%	379	494	4536

Table 6.1: A272 Traffic Data 2015 and 2031 (all flows in vehicles)

6.4.3 The traffic data demonstrates that traffic levels are well below the link capacity of a two lane carriageway of c.7.8m wide (TA 79/99). Traffic flows are reasonably well balanced and do not demonstrate a notable tidal flow. The proportion of HGV traffic is also relatively low given the A272 is part of the LRN and there are no alternative routes between Petersfield and Midhurst.

6.5 Development Traffic

6.5.1 The following assumptions have been applied to arise at the traffic generation potential of the East of West Heath Common;

Annual Yield	200,000 tonnes	
	Vehicles	PCU
1 way daily Movements	20	40
2 way daily Movements	40	80
2 way hourly movements	4	7

Table 6.2: East of West Heath Common Traffic Generation

6.6 Committed Development Traffic

6.6.1 There is no committed development traffic in the area to consider in the assessment for East of West Heath Common.

6.7 Routing Strategy

Preferred routing strategy

6.7.1 The preferred routing strategy assumes that the majority of traffic (70%) will arrive / depart from the west (i.e. Petersfield / A3), with only 30% arriving / departing to / from the east i.e. Midhurst. This strategy was considered to be the most realistic due to the likely eventual need for the minerals within the County. There are however, disadvantages to this routing strategy such as;

- The disturbance on the village of Rogate where the A272 narrows;
- Increased HGV traffic crossing the signal controlled bridge at Trotton Common.
- Additional HGV traffic at the mini-roundabout of the A272 / A286 in Midhurst which is constrained due to narrow lane width and development on all sides of the carriageway.

6.7.2 The route to /from the A3 is however considered suitable for carrying the majority of the development-related traffic, because;

- The junction of the A272/ B2070 provides right turn lanes and left turn filters for traffic turning onto the A272;
- The residential properties in Sheet are set back from the A272 with verges and footway on either side of the carriageway. There are crossing features for non-motorised users and right turning lanes;

6.7.3 The roundabout with the B2070 / A272 is more appropriate for HGV traffic with two lane entries

provided on all arms, therefore highway improvements would not necessarily be a required.

Alternative routing strategy

6.7.4 The alternative routing strategy focused all development-related traffic movements to and from the site via the A3, with no development-related traffic travelling to / from Midhurst. This option was considered unrealistic and would likely result in all of the extracted minerals leaving the County, or travelling long / excessive distances to get onto the West Sussex LRN.

6.8 Proposed Distribution

6.8.1 The proposed distribution for both arrivals and departures is shown in **Figure 6.3**, and **Table 6.3** shows the impact that the development-related traffic would have on the key links.

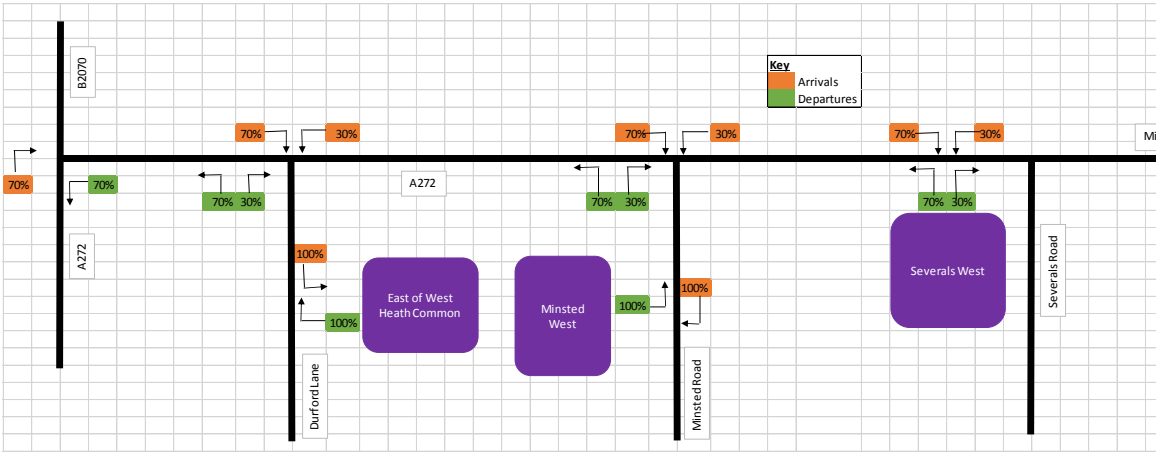


Figure 6.3: East of West Heath Common Development Traffic Distribution

East of West Heath Common		Hourly Development Two-way Traffic Movements (PCU)		2031 (vehicles) + Development (PCU)		% impact as a proportion of overall traffic	
		Arrivals	Departures	AM	PM	AM	PM
A272 west of Durford Lane	Eb	5	0	414	380	1%	1%
	Wb	0	5	336	466	2%	1%
A272 east of Durford Lane towards Midhurst	Eb	0	2	454	419	0%	1%
	Wb	2	0	381	497	1%	0%

Table 6.3: East of West Heath Common Traffic Impact Assessment

6.8.2 The impact assessment shows that the extra movements will have a minimal 2% or less, impact on the A272.

6.9 Cumulative Impact

6.9.1 The additional traffic generated by the sites at Severals West and Minsted West on the A272

will be assessed alongside East of West Heath Common in **Section 9**.

6.10 Personal Injury Accident Assessment

6.10.1 The main assessment of PIA will be undertaken in **Section 9**, as the three sites along the A272 will all take the same route to either the A3 or towards Midhurst and onwards from there. The investigation did however reveal one PIA on Durford Lane which warrants further assessment as part of the East of West Heath Common site.

6.10.2 The PIA was classed as slight in severity and occurred in December 2012, and involved one vehicle. The carriageway conditions were described as wet / damp and it was also dark at the time of the PIA. The causation factor was attributed to driver / rider error as they failed to negotiate the bend prior to Durford Bridge.

6.10.3 Based on the above information there is no pattern in the data or highway features mentioned which would be adversely affected by additional development at the quarry.

6.11 Access Options

6.11.1 The access to the West Heath Common quarry is a priority junction as shown in **Photograph 6.3**, with a 23m wide bell mouth. Durford Lane measures approximately 5.1m to the south of the access. The access is positioned on an incline. Visibility to the right (primary direction) is acceptable. To the left (secondary direction) visibility is affected by the vertical alignment of Durford Lane, however for a HGV, the higher driving position should negate this highway feature.

Photograph 6.3: Access into West Heath Common Quarry

6.11.2 As West Sussex County Council have not previously objected to the access arrangements or the use of Durford Lane for the transportation of minerals, the existing access arrangement is considered to be fit for purpose. Should however, the potential minerals site result in an intensification of traffic using Durford Lane it may be necessary to provide improvements.

6.12 Summary

6.12.1 The extraction of minerals at East of West Heath Common is expected to generate approximately 80 two way vehicle movements per day over the course of its 15 year lifespan. The impact on the LRN is expected to be minimal.

6.12.2 The existing access arrangements are considered satisfactory for the development proposals assuming that the land would not be worked until the current permission has expired and there would therefore be no intensification of use.

6.12.3 Given that the Durford Lane and A272 are routes already used by existing quarrying operations, there is no requirement for any further highway improvement works. If the site were to come forward in isolation to the other sites situated along the A272 corridor, there would be a total of 4 vehicle movements per hour (2 PCU) travelling via Midhurst. This level of traffic would not have a severe impact on Midhurst. Although a Transport Assessment for the site should consider their operation in further detail.

6.12.4 The overall acceptability of this site is assessed as ***High Acceptability***.

7. MINSTED WEST

7.1 Introduction

7.1.1 This section covers the site at Minsted West (ref M/CH/8A), located to the south of the A272 between Petersfield and Midhurst. The site is located to the east of the West Heath Common quarry (ref M/CH/7B) and to the west of Severals West (M/CH/8D).

7.1.2 Due to the close proximity of these sites to each other, the assessment will first consider the individual site and will then consider the cumulative impact on the A272 should all three sites come forward at the same time. The location of Minsted West, in relation to the other sites and also the LRN, is illustrated in **Figure 6.1**.

7.2 Location / Context

7.2.1 Minsted West is located to the south of the A272 approximately 13.8km from the A3 at Petersfield and 3.4km from Midhurst. The A272 is a derestricted (60mph) single carriageway route providing a link between the A3 and Midhurst. The A272 measures approximately 7.8m wide, with a shared use path adjacent to the westbound carriageway. The A272 is part of the LRN and is within the South Downs National Park. The site has previously been quarried and has an existing, albeit gated, access onto Minsted Road.

7.2.2 The site is accessed via Minsted Road, a country lane of varying widths (ranging from c.3.8m to c.4.5m) which benefits from passing places. The road benefits from a straight alignment and minimal residential properties. Minsted Road rises up on a gentle gradient from the A272 to the site. Minsted Road is also a no-through road.

7.2.3 The junction onto the A272 is a staggered crossroads with The Street, with right turn lanes provided for both minor arms (see **Photograph 7.1**). There is a 2m wide left turn diverge from the A272 westbound carriageway into Minsted Road and a large bellmouth with the left lane measuring approximately 13.5m. There is also hatching around the minor arm exit onto the A272, which continues along the main carriageway to visually narrow the running lane. Visibility in the primary direction is considered good and adequate in the secondary direction as illustrated in **Photograph 7.1** and **Photograph 7.2**. A shared use path is provided on the southern side of the A272 and there are pedestrian refuge islands to assist crossing the A272 on either side of the junction.

Photograph 7.1: Minsted Road / A272 view east

Photograph 7.2: Minsted Road / A272 view west

7.2.4 The access to the quarry is in the form of a priority junction but is not currently in use. Minsted Road measures c3.8m width, with the access road into the quarry c.4.2m. The bellmouth measures 21.4m, as shown in **Photograph 7.3**. Visibility in both directions is considered to be adequate for car drivers and improved for HGV drivers, due to their higher driving position.

Photograph 7.3: Access into Minsted Quarry

7.2.5 As per the methodology outlined in **Section 3**, it has been assumed that the existing access would be used should the potential minerals site be granted planning permission.

7.3 Planning History

7.3.1 The following planning applications have been submitted to WSCC in relation to minerals extraction at Minsted Quarry;

- *SJ/488/06, Continued development at Minsted Quarry in accordance with planning permission SJ/98/1472 without complying with conditions 2,3,4,8,13,14,17,19,and 21 – Withdrawn*
- *SJ/1705/06, Application for continued development for winning and working of minerals under planning permission SJ/98/1471 without complying with conditions 1&9 and the approved plant and building details required by condition 10 - Withdrawn*
- *SJ/98/1472, Review of Planning permissions SD/1/57, SD/1/57/A and SJ/32/82 for mineral working extension to sand pit and extension to sand working – Granted*
- *SJ/98/1471, Determination of conditions to which an Interim Development Order Permission registered under reference SJ/1/ICO is to be subject – Granted.*

7.3.2 There are no details available on the original application however, later applications to vary the planning conditions returned no objections from West Sussex County Council Highways department. It is therefore reasonable to assume that there are no access issues which could not be overcome should the quarry be brought back into operation.

7.4 Baseline Traffic Conditions

7.4.1 The location and type of the traffic counter used to build up the background picture of traffic levels in the surrounding area is as demonstrated in **Section 6** for East of West Heath Common quarry (refer to **Figure 6.2**).

7.4.2 Traffic data for the key roads is also as per **Section 6, Table 6.1**.

7.5 Development-related Traffic

7.5.1 The following assumptions have been applied to arise at the traffic generation potential of the Minsted West;

Annual Yield	200,000 tonnes	
	Vehicles	PCU
1 way Daily Movements	20	40
2 way Daily Movements	40	80
2 way Hourly Movements	4	7

Table 7.1: Minsted West Traffic Generation

7.6 Committed Development Traffic

7.6.1 There is no committed development traffic in the area to consider in the assessment of Minsted West.

7.7 Routing Strategy

7.7.1 Traffic will turn right in/ left out of the site onto Minsted Road to the A272, from there traffic will use to same routing/ distribution as per East of West Heath Common (refer to **Section 6.8**).

7.8 Proposed Distribution

7.8.1 The development-related traffic distribution for arrivals and departures is shown in **Figure 6.3**. **Table 7.2** demonstrates the traffic impact in 2031 on the LRN.

Minsted West		Hourly Development Two- way Traffic Movements (PCU)		2031 (vehicles) + Development (PCU)		% impact	
		Arrivals	Departures	AM	PM	AM	PM
A272 west of Durford Lane	Eb	5	0	414	380	1%	1%
	Wb	0	5	336	466	2%	1%
A272 east of Minsted Road	Eb	0	2	608	523	0%	0%
	Wb	2	0	492	622	0%	0%

Table 7.2: Minsted West Traffic Impact Assessment

7.8.2 As per the East of West Heath Common there is not a severe impact on the A272.

7.9 Personal Injury Accident Assessment

7.9.1 Personal injury accident data for the A272 will be considered jointly in **Section 9**. There were however, no PIAs recorded on Minsted Lane over the three year assessment period.

7.10 Cumulative Impact

7.10.1 The cumulative impact of the sites at Severals West and East of West Heath Common on the A272 will be assessed in **Section 9**.

7.11 Access Options

7.11.1 The existing access arrangement to Minsted West is satisfactory for the proposed level of development.

7.12 Summary

7.12.1 The extraction of minerals at Minsted West is expected to generate approximately 80 two way vehicle movements per day.

7.12.2 The existing access arrangements are considered satisfactory for the development proposals, as Minsted Road has previously been used for Quarry traffic. The A272 is currently used as a route for quarrying operations, and there is no requirement for any further highway improvement works travelling towards Petersfield based on current operations. If the site were to come forward in isolation to the other sites situated along the A272 corridor, there would be a total of 4 vehicle movements per hour (2 PCU) travelling via Midhurst. This level of traffic would not have a severe impact on Midhurst.

7.12.3 The overall acceptability of this site is assessed as ***High Acceptability***.

8. SEVERALS WEST

8.1 Introduction

8.1.1 This section covers the site at Severals West (ref M/CH/8D), located to the south of the A272 between Midhurst and Petersfield and within the South Downs National Park boundary. The site located to the east of the West Heath Common quarry (ref M/CH/7B) and Minsted West (M/CH/8A).

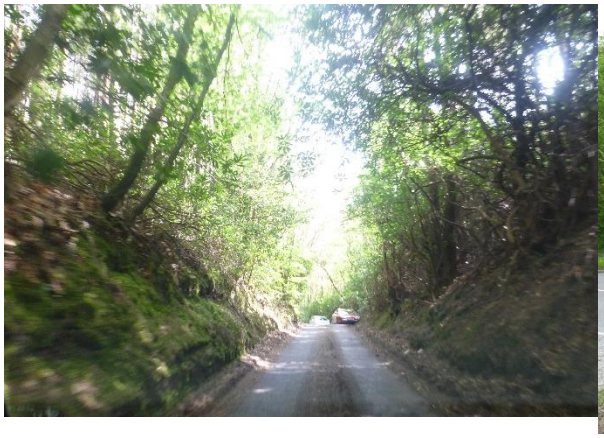
8.1.2 Due to the close proximity of these site to each other, the assessment will first consider the individual site and will then consider the cumulative impact on the A272 should all the sites come forward. The location of Severals West, in relation to the other sites and also the strategic road network, is illustrated in **Figure 6.1**.

8.2 Location / Context

8.2.1 Severals West is located to the south of the A272 approximately 15km from the A3 at Petersfield and 2.2km from Midhurst. The land is currently woodland and therefore has no associated traffic generation.

8.2.2 The A272 is a derestricted (60mph) single carriageway route providing a link between the A3 and Midhurst. The A272 measures approximately 7.4m wide, with a shared use path adjacent to the westbound carriageway.

8.2.3 The site can accessed via Severals Road, a narrow single track country lane which rises steeply from the A272 and has a sharp right turn bend which is unsuitable for heavy goods vehicles. The road has steep high sided verges and was observed to be lightly trafficked with vegetation growing in the centre of the carriageway (see **Photograph 8.1**).



Photograph 8.1: Severals Road

Photograph 8.2: Junction of Severals Road and A272

8.2.4 The junction onto the A272 is in the form of a priority junction, the bellmouth measures c.23m but does not provide merging / diverging tapers or a right turn lane. A shared use path runs along the southern side of the A272.

8.3 Planning History

8.3.1 The planning search did not return any previous planning history associated with minerals extraction at Severals West

8.4 Baseline Traffic Conditions

8.4.1 The location and type of the traffic counter used to build up the background picture of traffic levels in the surrounding area is demonstrated in **Figure 6.1**.

8.4.2 Traffic data for the key roads is summarised in **Table 6.1**, with the explanation provided in Section 7.4.

8.5 Development Traffic

8.5.1 The following assumptions have been applied to arise at the traffic generation potential of the Severals West;

Annual Yield	133,333 tonnes	
	Vehicles	PCU
1 way Daily Movements	24	48
2 way Daily Movements	48	96
2 way Hourly movements	4	9

Table 8.1: Severals West Traffic Generation

8.6 Committed Development Traffic

8.6.1 There is no committed development traffic in the area to consider as part of the assessment for Severals West.

8.7 Proposed Routing Strategy

As discussed for East of West Heath Common (Section 6.8) and Minsted West (**Section 7.8**), it has been assumed that the majority of traffic 70% will arrive from and depart to the west (i.e. Petersfield / A3, with only 30% arriving from and departing to the east i.e. Midhurst. A total of 6 vehicle movements will arrive from and depart to the west and a total of 3 vehicle movements will arrive from and depart to the east.

8.8 Proposed Distribution

8.8.1 The proposed distribution for both arrivals and departures is shown in **Figure 6.3**. **Table 8.2** shows the impact of the development traffic on the LRN.

Severals West		Hourly Development Two-way Traffic Movements (PCU)		2031 (vehicles) + Development (PCU)		% impact	
		Arrivals	Departures	AM	PM	AM	PM
A272 west of Durford Lane	Eb	6	0	415	381	2%	2%
	Wb	0	6	337	467	2%	1%
A272 east of Minsted Road	Eb	0	3	608	524	0%	1%
	Wb	3	0	493	622	1%	0%

Table 8.2: Severals West Traffic Impact Assessment

8.8.2 The impact assessment shows that the extra movements associated with the potential minerals site would have a minimal impact 2% or less on the LRN.

8.9 Personal Injury Accident Assessment

8.9.1 Personal injury accident data for the A272 will be considered jointly in Section 9. Although not a preferred route there were however no PIAs recorded on Severals Lane over the assessment period.

8.10 Cumulative Impact

8.10.1 The cumulative impact of the sites at Minsted West and East of West Heath Common on the A272 will be assessed in **Section 9**.

8.11 Access Options

8.11.1 Access to the site via Severals Road is considered to be inappropriate for the HGV traffic due to the narrow width, steep gradient, and road alignment. The alternative access arrangements are considered to be;

- Option 1: Direct access onto the A272; or
- Option 2: Access via Lane crossing Woolmer Bridge

Option 1: Direct Access onto A272

8.11.2 As noted in **Paragraph 8.2.3**, Severals Road rises up from the A272. There is a significant level difference between the A272 and the proposed mineral site. Without the benefit of a topographical survey, it is difficult to determine the actual extent of the level difference, however, from site observations it was noted that the difference between the site and the road was at its smallest towards the western edge of the site.

8.11.3 Subject to confirmation of the levels difference a feasibility design for the access design has been drawn up and is shown in **Drawing 037.0017.0003**. In the primary direction a visibility splay of 4.5m by 215m is achievable and in the secondary direction 4.5m by 215m. To allow

two way access into the site, and maintain the safe flow of traffic on the A272 corner radii of 12m are recommended. Given the level of traffic arriving at the site from the east, a deceleration lane is not considered necessary. However a Road Safety Audit of any proposed access arrangement put forward as part of a planning application for the site should be undertaken.

Option 2: Access via Lane crossing Woolmer Bridge

8.11.4 At the far west of the site there is an access lane which serves one farm property. The lane measures 4.8m wide and has a bellmouth width of 20m. The visibility splays of 4.5m by 215m are achievable in the primary and secondary directions as shown in **Drawing 037.017.004**. Without improvements to the existing junction arrangements turning left into the site from the east would be difficult and would therefore require widening on the existing access road.

8.11.5 WSCC Structures department were contacted to determine the suitability of Woolmers Bridge (unique structure reference 1029) for withstanding the anticipated usage by development-related traffic. The County Council confirmed that the bridge (a single span masonry arch which has been extended with a concrete arch of matching profile) had a 40T capacity at its last assessment and should therefore have no issues with regards to the proposed HGV loading. It was however recommended that the road would require resurfacing as in its present state, it would not be fit for purpose.

8.12 Summary

8.12.1 The extraction of minerals at Severals West is expected to generate approximately 96 two way vehicle movements per day. The length of extraction period is yet to be determined.

8.12.2 As the site is currently woodland, a new access to the site would be required. Severals Road is considered inappropriate for HGV traffic for a number of reasons, therefore access to the site would need to be obtained from the A272. Two access options have initially been investigated so from an access perspective, the site is suitable for allocation. It is however beyond the scope of this study to conclude which access arrangement is the most suitable, as further detailed technical analysis of levels would need to be undertaken at the planning application stage.

8.12.3 If the site were to come forward in isolation to the other two sites situated along the A272 corridor, there would be a total of 6 vehicle movements per hour (3 PCU) travelling via Midhurst. This level of traffic would not have a severe impact on Midhurst, although a detailed Transport Assessment of the site would be required.

8.12.4 The overall acceptability of this site is currently assessed as ***Low / Medium Acceptability***,

until such time that further investigations on accessing the site can be undertaken.

9. A272 CLUSTER CUMULATIVE IMPACT

9.1 Cumulative Traffic Impact Assessment

9.1.1 An assessment of the cumulative impact of the three sites (East of West Heath Common, Minsted West and Severals West) onto the A272 has been undertaken. A summary of the cumulative amount of traffic likely to use the LRN should all three sites be worked concurrently is presented in **Table 9.1**.

A272 Cluster		Hourly Development Two- way Traffic Movements (PCU)		2031 (vehicles) + Development (PCU)		% impact as a proportion of overall traffic	
		Arrivals	Departures	AM	PM	AM	PM
A272 west of Durford Lane	Eb	16	0	425	391	4%	4%
	Wb	0	16	347	477	5%	4%
A272 east of Minsted Road	Eb	7	0	612	528	1%	1%
	Wb	0	7	497	627	1%	1%

Table 9.1: A272 Cluster Cumulative Impact Assessment

9.1.2 The results of the cumulative assessment show that should all three sites be worked at the same time, a total of 23 PCUs would be added onto the A272, of which 70% (16) would travel westbound towards Petersfield / A3 and 30% (7) would travel eastbound towards Midhurst.

9.1.3 The greatest impact on the LRN would be on A272 west of Durford Lane which could see a 5% increase in traffic resulting from mineral development at the A272 cluster of sites. On A272 east of Minsted Road, the cumulative impact of development from the A272 cluster of sites would result in a 1% increase in traffic. The cumulative impact of development at the A272 cluster of sites is below the threshold for further assessment and is not expected to be severe.

9.1.4 In daily terms the three sites would generate a combined total of 256 vehicle movements per day, the equivalent to an 3-8% increase in on 2015 traffic levels on the A272 east of Durford Lane and A272 west of Durford Lane respectively.

9.2 Personal Injury Accident Assessment

9.2.1 PIA data for the most recent three year period is presented in **Figure 9.1** for the preferred routing strategy. Along the routes as illustrated there have been a total of 12 PIA, of which 7 (58%) were classified slight and 5 (52%) classified as serious. There have been no fatal PIA reordered in the most recent three year period for these three sites.

9.2.2 The distribution of PIA shows that 100% occurred on Local Authority roads and 0% on Highways England roads, of which:

- 92% occurred on the A272; and
- 8% occurred on Durford Lane which is an unclassified road and directly relates to the East of West Heath Common site.

9.2.3 A review of the main causation factors for each PIA reveals that 100% were attributable to the driver/rider.

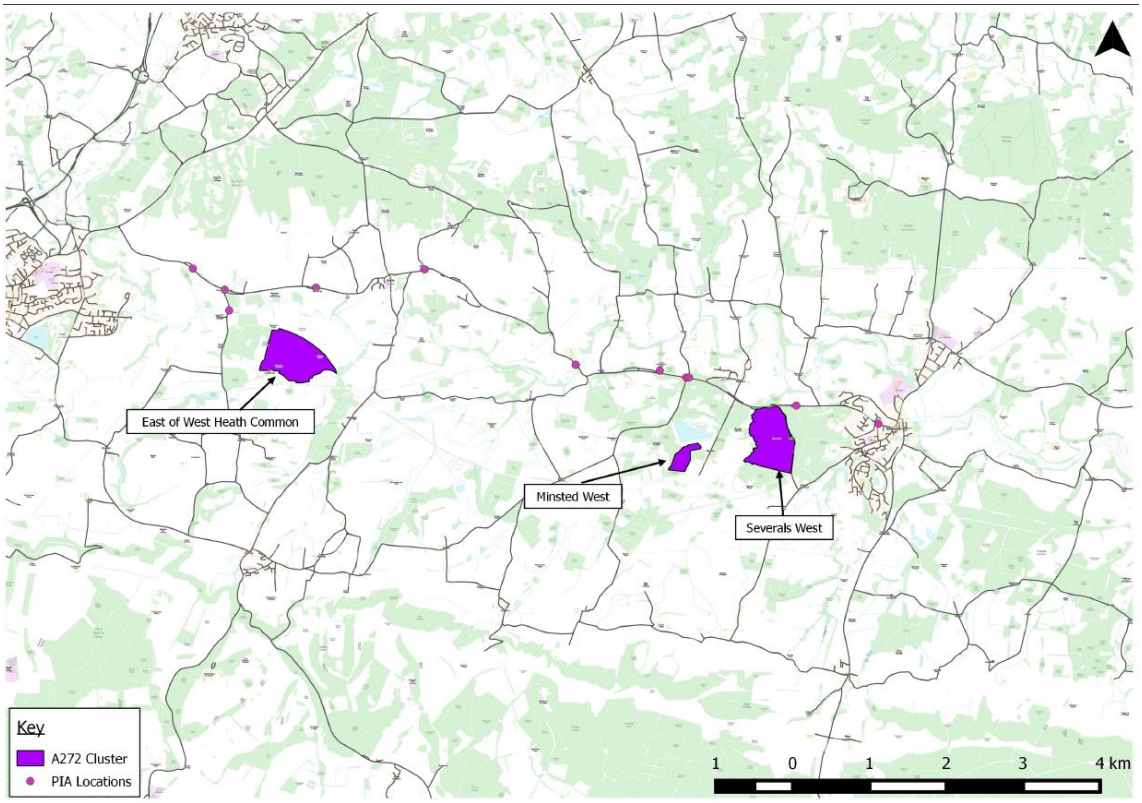


Figure 9.1: A272 Cluster PIA Locations

9.3 The distribution of PIAs along the A272 does not demonstrate any clusters of significance. One slight PIA did occur near the junction of Durford Lane and the A272 however the description provided indicates that the incident was occurred due to driver / rider error. There are no PIA clusters at the junction of Minsted Lane or the A272, nor near the proposed points of entry onto the highway for Severals West.

10. CHANTRY LANE EXTENSION

10.1 Introduction

10.1.1 This section covers the Chantry Lane extension site (ref: M/HO/2) to the east of Storrington and located on the southern side of the A283 between Storrington and A24/A283 Washington Road roundabout. To the east of Chantry Lane and the A24/A283 Washington Road roundabout there are two further sites;

- Rock Common West (ref: M/HO/3A); and
- Ham Farm (ref: M/HO/4A).

10.1.2 Due to the close proximity of the sites to each other, the assessment will first consider the individual site and then will consider the cumulative impact on the A283, the A24/A283 Washington Road roundabout and the A24 should all the sites come forward. The location of Chantry Lane, in relation to the other sites and also the LRN, is illustrated in **Figure 10.1**.

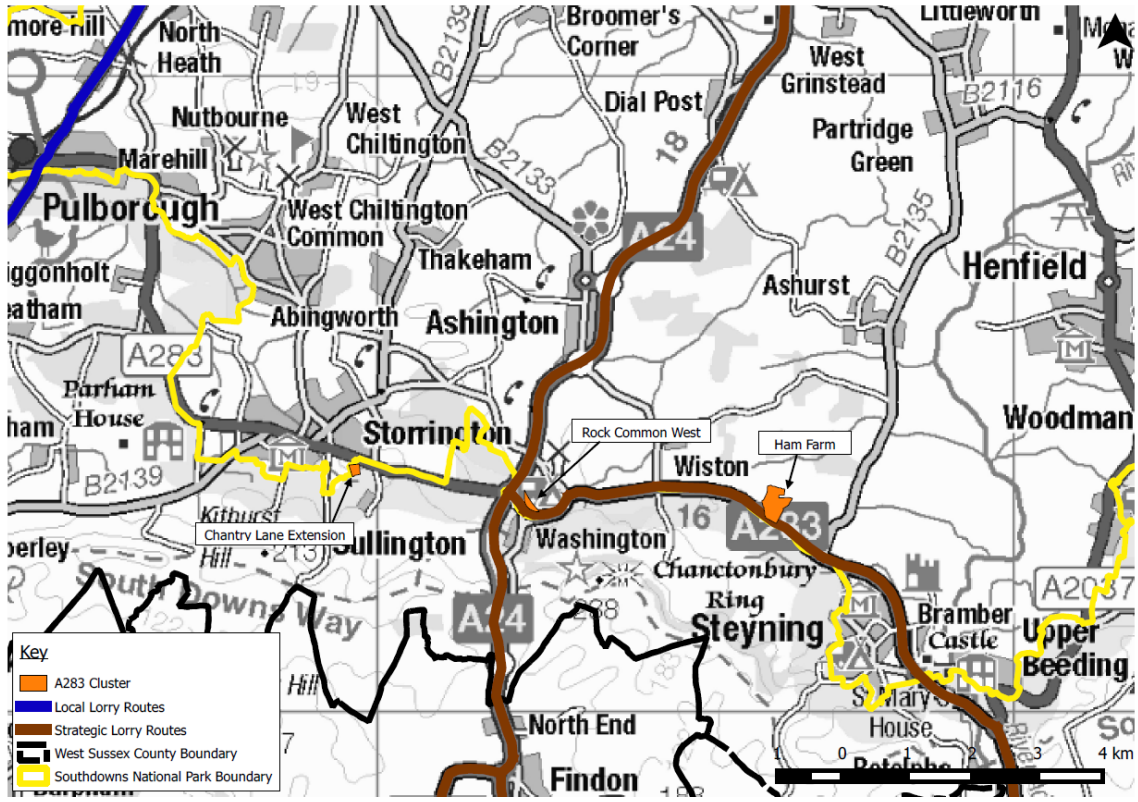


Figure 10.1: A283 Site Location Map (*Contains OS data © Crown copyright [and database right] (2015)*

10.2 Location / Context

10.2.1 Chantry Lane quarry is located to the south of the A283 approximately 1km from Storrington and 2.3km east of the A24/A283 Washington Road roundabout. The site is within the South Downs National Park and on the outskirts of Storrington and as such there are some

residential properties surrounding the site north western border of the quarry.

10.2.2 The A283 is a single carriageway route with a 40mph speed limit along the site frontage, increasing to 50mph to the east of the site. The A283 to the west of the A24/A283 Washington Road roundabout is not part of the LRN, although the A24 and the A283 to the east of the A24 are part of the LRN. The A283 along the site frontage measures approximately 5.7m wide. The road has narrow verges and a footway adjacent the northern side of the carriageway.

10.2.3 The quarry is currently accessed via Chantry Lane, a narrow and winding rural lane of poor quality surface and circa 5m wide. The lane is on a gradient with residential streets and properties fronting onto it.

10.2.4 The junction of Chantry Lane / A283 emerges into a 30mph residential area. Visibility from the junction is poor with traffic travelling from Chantry Lane having to 'STOP' before pulling out onto the A283 (as demonstrated in **Photograph 10.1**). The opportunities to improve this junction are considered to be limited due to the surrounding residential properties, ground levels and trees. Westbound traffic was observed to be queuing along the A283, past the Chantry Lane junction and along the site frontage to Sullington Lane on the site visit. Due to the poor visibility, this route is considered unsatisfactory for providing access to the Chantry Lane site.

10.2.5 It is understood that the Dudman Group have proposed a new access directly onto the A283 closer to Sullington Lane/ Water Lane cross roads (see **Appendix E**).

Photograph 10.1: View west from Chantry Lane onto A283 Washington Road towards Storrington

10.3 Planning History

10.3.1 The finding from the planning search for Chantry Lane quarry are summarised below;

- *SG/7/93, Conditions to which Interim Development Order Permission registered under reference SG/4/92 Chantry Sandpit, Chantry Lane Storrington is to be subject, submitted to this council on 18th February 1993 (and in Accordance with the relevant correspondence a copy of which is attached*) as specified hereunder - Granted*

10.3.2 The information on the planning portal indicates that there is a history of quarrying at this site. There are also numerous planning applications for the sandpits on the opposite side of the A283 e.g. Water Lane and Washington, which have established the principle of transporting minerals along the A283 Washington Road to access the LRN.

10.4 *Baseline Traffic Conditions*

10.4.1 The baseline (current) traffic conditions on the road network surrounding Chantry Lane quarry have been obtained a variety of sources. The location and type of the traffic counter used to build up the background picture of traffic levels in the surrounding area is demonstrated in **Figure 10.2.**

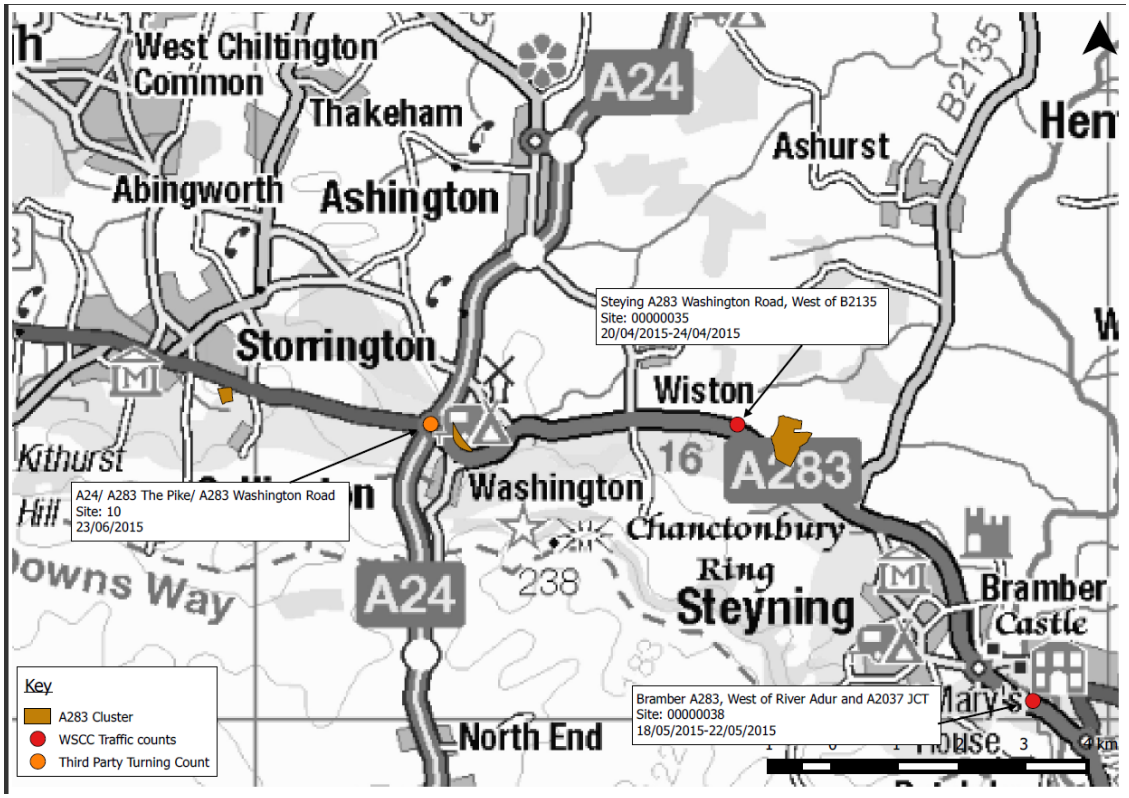


Figure 10.2: A283 Cluster Traffic Counter Locations (*Contains OS data © Crown copyright [and database right] (2015)*

10.4.2 Traffic data for the key roads is summarised in **Table 10.1**.

Chantry Lane		2015 Traffic				2031 Traffic		
		AM	PM	Daily	HGV%	AM	PM	Daily
A283 west of A24 (Washington Road)	Eb	881	934	8537	4%	1085	1167	10788
	Wb	839	843	8554	4%	1033	1054	10810
A24 North of A283	Nb	1765	1119	13314	7%	2174	1399	16825
	Sb	1185	1896	14562	7%	1460	2370	18403
A24 South of A283	Nb	1594	1119	13304	6%	1963	1399	16813
	Sb	1077	1977	14330	5%	1327	2471	18109
A283 East of A24 (The Pike)	Eb	641	580	5471	6%	790	725	6914
	Wb	662	659	5843	6%	815	824	7384

Table 10.1: Chantry Lane 2015 and 2031 Traffic Data (all flows in vehicles)

10.4.3 The traffic data indicates that the A283 Washington Road on the western side of the A24/A283 roundabout carries a higher volume of traffic than the A283 The Pike on the eastern side of the A24/A283 roundabout. However, the proportion of HGV traffic is greater on the eastern side of the A283 roundabout, which correlates with the on-going quarrying operations at Rock Common. Traffic flows on the A24 are substantially higher, but this is to be expected as it is a dual carriageway and a key north south link between Worthing – Horsham – Dorking – M25. HGV traffic also makes up a greater proportion of the traffic, however it is below 10% of the total traffic composition. The traffic count data for the A283 Washington Road indicates that the A24 is the main trip attractor in the AM peak, and that majority of traffic travels north on the A24 in the AM and south in the PM peak.

10.5 Development Traffic

10.5.1 The following assumptions have been applied to arise at the traffic generation potential of the Chantry Lane extension;

Annual Yield	100,000 tonnes	
	Vehicles	PCU
1 way Daily Movements	27	54
2 way Daily Movements	54	108
2 way Hourly movements	5	10

Table 10.2: Chantry Lane Extension Traffic Generation

10.6 Committed Development Traffic

10.6.1 There is no committed development traffic in the area to consider in the assessment of the Chantry Lane extension. The site will however be assessed alongside Rock Common and

Ham Farm to understand the impact on the A24/A283 Washington Road roundabout as part of the cumulative development section.

10.7 Proposed Routing Strategy

10.7.1 Only one option was considered for routing development-related traffic to and from the Chantry Lane site; that all arrivals and departures from the site would access the quarry via the A24/A283 Washington Road roundabout. This is because this is the shortest route to the LRN and due to the presence of an Air Quality Management Area in Storrington which would be impacted by vehicles travelling west from the site.

10.7.2 At the A24/A823 Washington Road roundabout, 40% of traffic will route north on A24, 40% will travel south on A24 and 20% will continue its journey east on the A283. This routing strategy reflects the likely demand for the minerals and also reflects that the A283 east and A24 are part of the LRN and therefore more suitable to carrying the additional demand arising from development of the site.

10.7.3 Traffic travelling to and from the site from the south east on A283 The Pike and A24 will travel through the South Downs National Park. However, as these routes form part of the LRN, they are considered to be the most appropriate routes for HGV traffic which are likely to have the least impact on the landscape and character of the National Park.

10.8 Proposed Distribution

10.8.1 The proposed distribution for both arrivals and departures is shown in **Figure 10.3**.

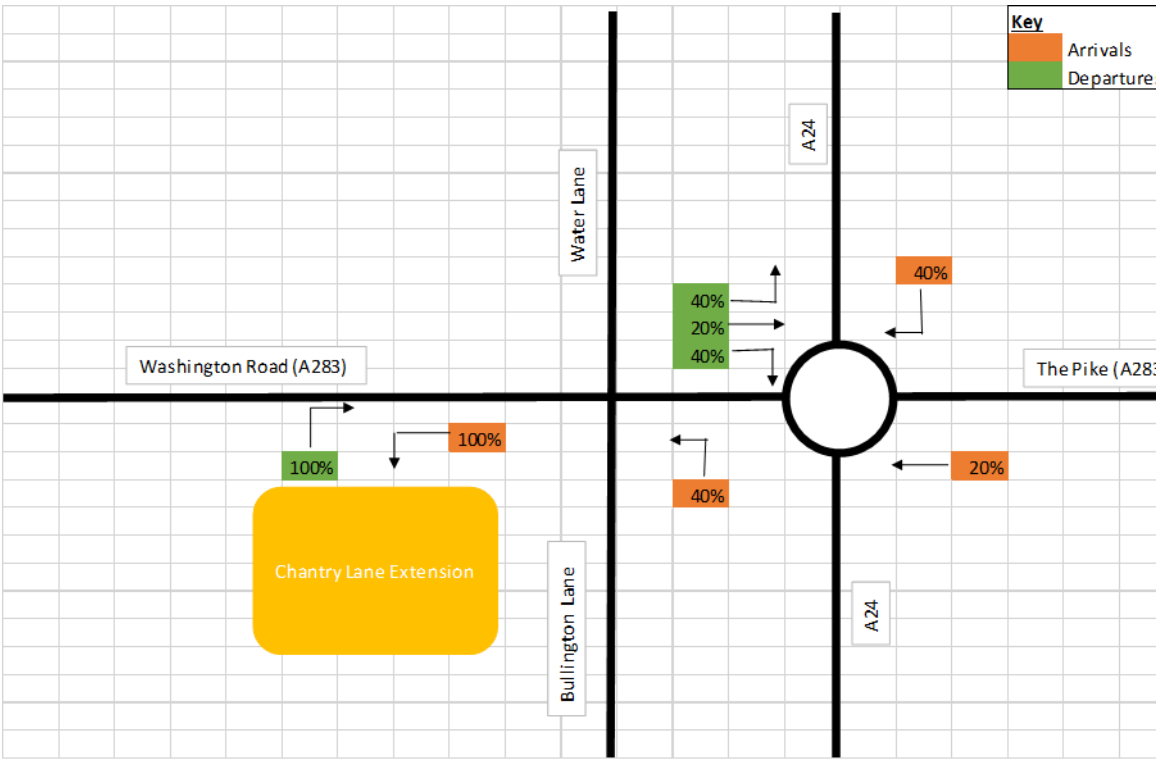


Figure 10.3: Chantry Lane Development Traffic Distribution

10.8.2 The results in **Table 10.3** show the impact of the development traffic on the surrounding roads.

Chantry Lane		Hourly Development Two- way Traffic Movements (PCU)		2031 (vehicles) + Development (PCU)		% impact as a proportion of overall traffic	
		Arrivals	Departures	AM	PM	AM	PM
A283 west of A24 (Washington Road)	Eb	0	10	1095	1177	1%	1%
	Wb	10	0	1043	1064	1%	1%
A24 North of A283	Nb	0	4	2178	1403	0%	0%
	Sb	4	0	1463	2374	0%	0%
A24 South of A283	Nb	4	0	1967	1403	0%	0%
	Sb	0	4	1330	2475	0%	0%
A283 East of A24 (The Pike)	EB	0	2	791	727	0%	0%
	WB	2	0	817	826	0%	0%

Table 10.3: Chantry Lane Extension Traffic Impact Assessment

10.8.3 The results of the traffic impact assessment demonstrate that the impact on the A283 The Pike, east of the A24/A283 Washington Road roundabout, and on the A24 north and south

of the A24/A823 Washington Road roundabout is less than 1% as a proportion of overall traffic. The A283 Washington Road west of the A24/A283 Washington Road roundabout will see a 1% increase in traffic resulting from development of the Chantry Lane site, as this road will carry all arrivals and departures to and from the site.

10.8.4 According to Table 2 of TA 79/99[1], an urban all-purpose 2 (UAP2) road with a 6.1m carriageway width has a one way hourly capacity of 1020 vehicles. On this basis, the A283 Washington Road will already be over capacity, albeit marginally, eastbound in the AM and PM peaks, and westbound in the PM peak by 2031 without the development-related traffic. The development-related traffic would push the link further over capacity. However, outside of peak periods, traffic levels on the A283 Washington Road, west of A24 fall by 200-300 vehicles per hour, therefore capacity would not be a major concern outside peak hours and limiting movements in peak hours could be considered to mitigate the impact of development-related traffic on congestion.

10.9 Cumulative Impact

10.9.1 The impact of the sites at Rock Common and Ham Farm on the eastern side of the A283 will be assessed in **Section 13**.

10.10 Personal Injury Accident Assessment

10.10.1 PIA data for the most recent three year period is presented in Figure 10.4 for the preferred routing strategy. Along the routes as illustrated there have been a total of 27 PIA, of which 22 (81%) were classified slight and 5 (19%) classified as serious. There have been no fatal PIA recorded in the most recent three year period.

[1] Volume 5 Section 1, Chapter 3, Part 3 TA 79/99, Amendment No 1, Determination of Urban Road Capacity

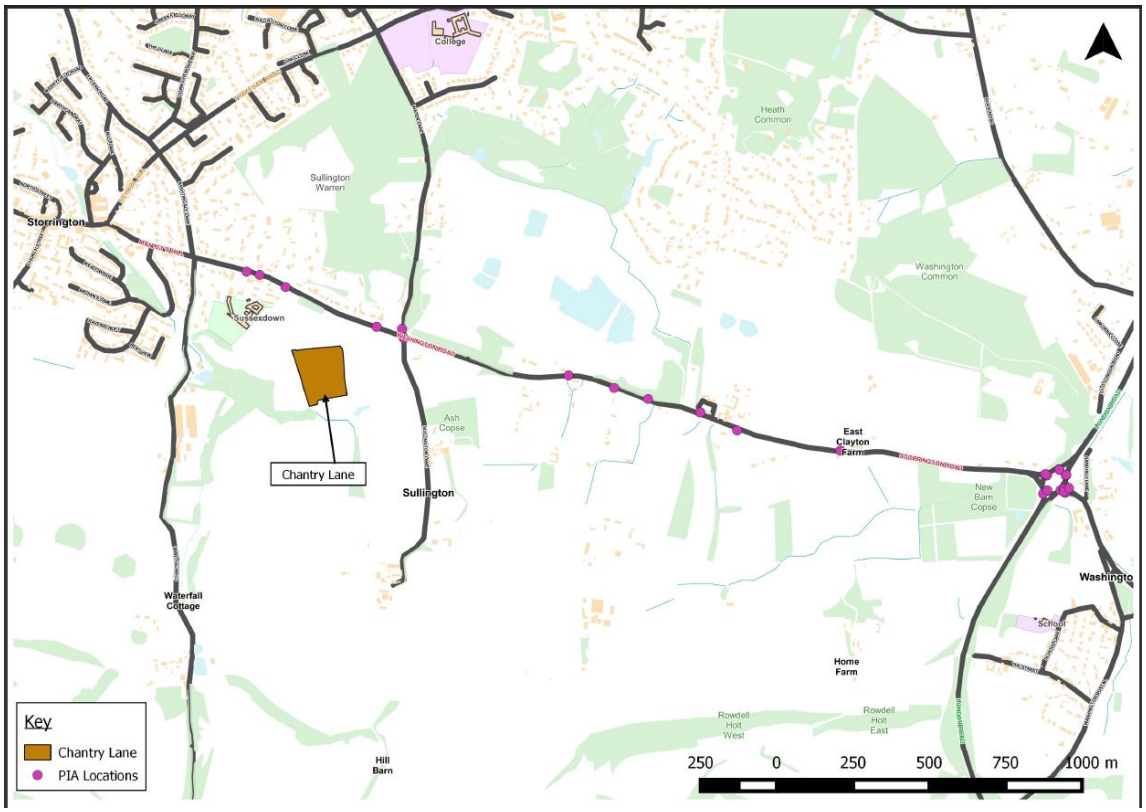


Figure 10.4: Chantry Lane PIA Locations (*Contains OS data © Crown copyright [and database right] (2015)*

10.10.2 The distribution of PIA shows that 100% occurred on Local Authority roads and 0% on Highways England roads, of which:

- 59% occurred on the A283
- 37% occurred on the A24; and
- 4% occurred on Water Lane.

10.10.3 A review of the main causation factors for each PIA reveals that 96% were attributable to the driver/rider, with 4% attributable to a road environmental factor and 0% down to pedestrians.

10.10.4 There have been a total of 9 PIAs on the A283 between the proposed access and the A24 Washington roundabout, 3 of which (2 slight and 1 serious) have occurred at or in close proximity to the A283 / Water Lane / Sullington Lane cross roads. The serious PIA occurred on Water Lane where a vehicle struck a parked car due to the driver having a medical episode, and the two slight PIAs took place on the A283 and were caused by drivers following too closely and failing to look. The cluster does not therefore demonstrate any particular highway defects that require attention. At the A24/A283 Washington roundabout there have been a total of 15 PIAs over the assessment period, 3 serious and 12 slight. All PIAs were attributable to driver error, with the majority of incidents taking place around the entry arms onto the circulating carriageway.

10.11 Access Options

10.11.1 As discussed in **Paragraph 10.2.4** above, the existing access arrangement to the Chantry Lane site via Chantry Lane is considered unsatisfactory and the Dudman Group has proposed a new access to the quarry direct onto the A283 (see **Appendix E** and **Drawing 037.0017.005**). Based on DMRB criteria visibility splays of 4.5m by 160m are achievable in both the primary and secondary directions and subject to landownership an access with 12m corner radii and 6.5m wide carriageway could support two way movement to / from the site.

10.11.2 The proposed access location has the following advantages over Chantry Lane;

- It is further away from the residential development, therefore minimising noise disruption from HGV movements to the properties fronting onto Chantry Lane and the A283;
- It will be a dedicated access for the quarry and as such, would not be open to general road traffic and non-motorised users, therefore offering a safety benefit;
- It would be closer to the LRN e.g. A24 and A283 east of A24; and
- It has potential to offer improved visibility and highway design.

10.12 Summary

10.12.1 The extraction of minerals at Chantry Lane is expected to generate approximately 108 two way vehicle movements per day over the course of its 10 year lifespan. The greatest impact will be on the A283 between the site and the A24/A283 Washington Road roundabout. The traffic impact assessment suggests that the A283 Washington Road west of the A24 will be over capacity in the AM and PM peaks by 2031 without the development-related traffic. However, outside of peak hours, traffic levels drop to approximately 200-300vph, so it may be possible to mitigate the impact of the site by restricting the hours of operation to outside peak hours.

10.12.2 The existing access to the site via Chantry Lane is considered inappropriate, and the Dudman Group propose a new priority junction to the east of site, approximately 100m west of the Water Lane / Sullington Lane / A283 cross roads to access the development site. This option is considered to offer many advantages over the existing arrangement, but does require land outside the highway boundary to implement it. Any future application would have to demonstrate that all land required to deliver a suitable means of access is under control of the applicant.

10.12.3 The A283 The Pike and A24 are both part of the LRN and therefore appropriate routes for HGV traffic. Subject to successfully mitigating the impact of development on peak hour congestion through restrictions on the hours of operation, no highway improvements, other

than the new access, are considered necessary to facilitate the extraction of minerals at this site.

10.12.4 The overall acceptability of this site is assessed as ***Medium Acceptability***.

11. ROCK COMMON

11.1 Introduction

11.1.1 This section covers the Rock Common (ref: M/HO/3A) site to the east of the A24/A283 Washington Road roundabout. There are two other sites in the vicinity of Rock Common;

- Chantry Lane extension (ref: M/HO/2) west of Washington roundabout; and
- Ham Farm (ref: m/HO/4A) east of Rock Common.

11.1.2 Due to the close proximity of the sites to each other, the assessment will first consider the Rock Common site and then will consider the cumulative impact on the A283, A24/A283 Washington Road roundabout, should all three sites come forward at the same time. The location of Rock Common, in relation to the other sites and also the strategic road network, was illustrated in **Figure 10.1**.

11.2 Location/ Context

11.2.1 Rock Common is located on the northern side of the A283 approximately 1.85km east of A24/A283 Washington Road roundabout. Rock Common sandpit is an operational quarry, and access to the site is gained from The Hollow. The main sandpits are located on the western side of The Hollow, with the processing plant located on the eastern side of the carriageway.

11.2.2 The A283 is a single carriageway route with a 50mph speed limit and forms part of the LRN. The road is characterised by sweeping bends. To prevent overtaking and improve road safety, there are solid white lines in the centre of the carriageway.

11.2.3 The quarry is accessed via The Hollow, a country lane circa 5.3m wide, with a derestricted speed limit. The gradient of the road increases from the junction with the A283, and there are minimal verges and no footway.

11.2.4 The junction of A283 and The Hollow is a priority junction. Visibility from the junction in the primary direction (to the right) was observed as good (see **Photograph 11.1**), however, due to the raising gradient of the A283, visibility in the secondary direction (to the left) was deemed to be poor (see **Photograph 11.2**). There is no right turn lane for westbound traffic turning into The Hollow. The alignment of the A283 to the west of the junction also reduces forward visibility.

Photograph 11.1: The Hollow / A283 Primary direction visibility

Photograph 11.2: The Hollow / A283 Secondary direction visibility

11.3 Planning History

11.3.1 The following planning applications have been lodged with WSCC in relation to minerals and waste at Rock Common quarry.

- *DC/2151/07 (WS), Importation of up to 10,000 tonnes per annum of aggregates to Rock Common Quarry for blending and re-sale - Granted*
- *DC/401/07 (WS) Development of a non-hazardous waste landfill site – Refused*
- *DC/2319/06 (WS) The development is the continued use of the existing concrete batching plant. The plant is supplied with sand from the adjoining sand pit which is worked by Tarmac Ltd, (not the applicant). Otherwise, the plant is supplied with aggregates and cement which are improved by road - Granted*
- *DC/554/05 (WS) - Importation of up to 5,000 tonnes per annum of soils and peat to Rock Common Sandpit for blending with indigenous sands and resale as growing medium – Granted*
- *DC/2323/04 (WS) – Importation of up to 5000 tonnes per annum of aggregates to Rock Common Quarry for blending and re-sale – Granted.*
- *WS/15/97 – Determination of Conditions to which mineral planning permissions WS/6/53, WS/19/58, WS/3/68 and WS/39/73 for the winning and working of sand – Granted.*

11.3.2 The planning information indicates that there is a long established history of quarrying at Rock Common dating back to the 1950s. An application for a non-hazardous waste landfill was refused planning permission in 2007 and West Sussex County Council Highways were consulted on the application and requested additional information from the applicant in relation to the following aspects of the Transport Assessment;

- A revised routing strategy for HGVs and the subsequent need to widen The Hollow between the site and the A283 The Pike, as the developer originally proposed routing

traffic onto the A24 via The Hollow and not via the A24/283 Washington Road roundabout;

- Undertake a capacity assessment of the impact of the proposal at the junction of The Hollow and A283 The Pike;
- Undertake a capacity assessment of the impact of the proposal at the A24/A283 Washington Road roundabout;
- Commission a stage 1 road safety audit at the junction of The Hollow and A283 The Pike;
- Undertake a review of the latest available 3 year period of PIA data; and
- Consider the adequacy, in safety terms of the proposed site access junction.

11.3.3 The landfill development was predicted to generate 91 vehicles in the AM peak (62% of which were HGVs) and 35 vehicles in the PM peak (0% HGV).

11.3.4 The landfill development was refused planning consent, although West Sussex Highways were minded to offer conditional approval, with the decision notice citing that there was;

- Insufficient evidence provided in relation to amongst other issues, the site access and also the impact on local amenity; and also
- "Quarrying activities and more recently simultaneous quarrying and landfilling activities in the area have been tolerated by the local community for over 80 years and additional landfilling for a period in excess of 25 years is considered to be unreasonable. Accordingly, due to the cumulative impacts of development in the area on the social and economic well-being of the local community, the development is contrary to guidance in PPS…."

11.4 Baseline Traffic Conditions

11.4.1 The baseline (current) traffic conditions on the road network surrounding Rock Common have been demonstrated previously in demonstrated in **Figure 10.2**.

11.4.2 Traffic data for the key roads is summarised in **Table 11.1**.

Rock Common		2015 Traffic				2031 Traffic		
		AM	PM	Daily	HGV%	AM	PM	Daily
A283 east of A24 (The Pike) west of The Hollow	Eb	641	580	5471	6%	790	725	6914
	Wb	662	659	5843	6%	815	824	7384
A24 North of A283	Nb	1765	1119	13314	7%	2174	1399	16825
	Sb	1185	1896	14562	7%	1460	2370	18403

A24 South of A283	Nb	1594	1119	13304	6%	1963	1399	16813
	Sb	1077	1977	14330	5%	1327	2471	18109
A283 east of The Hollow	Eb	833	836	6937	5%	1026	1045	8766
	Wb	791	925	7325	5%	974	1156	9257

Table 11.1: Rock Common 2015 and 2031 Traffic Data (all flows in vehicles)

11.4.3 The traffic data indicates that flows on the A283 immediately east of the A24/A283 Washington Road roundabout are below the capacity for this type of road. The proportion of HGV traffic is 6% or less which is not unusual for a road on the LRN. The traffic also exhibits a slight tidal flow in a westerly direction in the AM peak but more pronounced in the PM peak. In terms of daily traffic volumes there are approximately 375 more vehicles travelling westbound towards the A24.

11.4.4 Traffic flows on the A24 are substantially higher, but this is expected as it is a dual carriageway and a key north south link between Worthing – Horsham – Dorking – M25. HGV traffic also makes up a greater proportion of the traffic, however it is still below 10% of the total traffic composition so considered typical for a road on the LRN. The traffic flows on the A283 indicate that the A24 is the main trip attractor in the AM peak, and that majority of traffic travels north on the A24 in the AM and south in the PM peak.

11.5 Development Traffic

11.5.1 The following assumptions have been applied to arise at the traffic generation potential of the Rock Common;

Annual Yield	100,000 tonnes	
	Vehicles	PCU
1 way Daily Movements	27	54
2 way Daily Movements	54	108
2 way Hourly movements	5	10

Table 11.2: Rock Common Traffic Generation

11.6 Committed Development Traffic

11.6.1 There is no committed development traffic in the area to consider in the assessment of the Rock Common site.

11.7 Proposed Routing Strategy

Preferred Routing Strategy

11.7.1 The preferred routing strategy for Rock Common has been inferred by comments provided by West Sussex County Council Highways on the planning application for the previously proposed landfill site where the County Council disagreed with the principle of routing traffic directly onto the A24 via The Hollow. Therefore, the routing strategy is for traffic to use The

Hollow to access the A283 The Pike which forms part of the LRN.

11.7.2 As with the potential minerals site at the Chantry Lane extension, no development-related traffic is expected to travel through Storrington on the A283 as this is not part of the LRN and is the location of an Air Quality Management Area. The majority of traffic will travel either north or south on the A24 to reach their eventual destination, although some traffic is expected to travel south east on the A283 towards the A27 at Shoreham for destinations in the eastern section of the County.

11.7.3 Traffic travelling to and from the site from the south east on A283 The Pike and A24 will travel through the South Downs National Park. However, as these routes form part of the LRN, they are considered to be the most appropriate routes for HGV traffic which are likely to have the least impact on the landscape and character of the National Park.

Alternate Routing Strategy

11.7.4 The alternate routing strategy for Rock Common, considered using The Hollow to access the site, as opposed to the A24/A283 Washington Road roundabout. This option was not pursued further than the initial identification stage because;

- The Hollow has a number of residential properties fronting onto it which would be unduly disturbed by development-related HGV traffic;
- Use of this route would require northbound development-related traffic to U-turn at the A24/A283 Washington roundabout. Although this is an acceptable manoeuvre it would introduce greater potential for conflict and reduce its operational capacity; and
- The route was proposed as part of the Landfill Planning Application for Rock Common, and was rejected by WSCC Highways who preferred the existing route via the A283 as there were no merging lane on the A24 which is c.650m to the roundabout.

11.8 Proposed Distribution

11.8.1 The proposed distribution for Rock Common is shown in **Figure 11.1** and the impact of the development-related traffic on the highway network provided in **Table 11.3**.

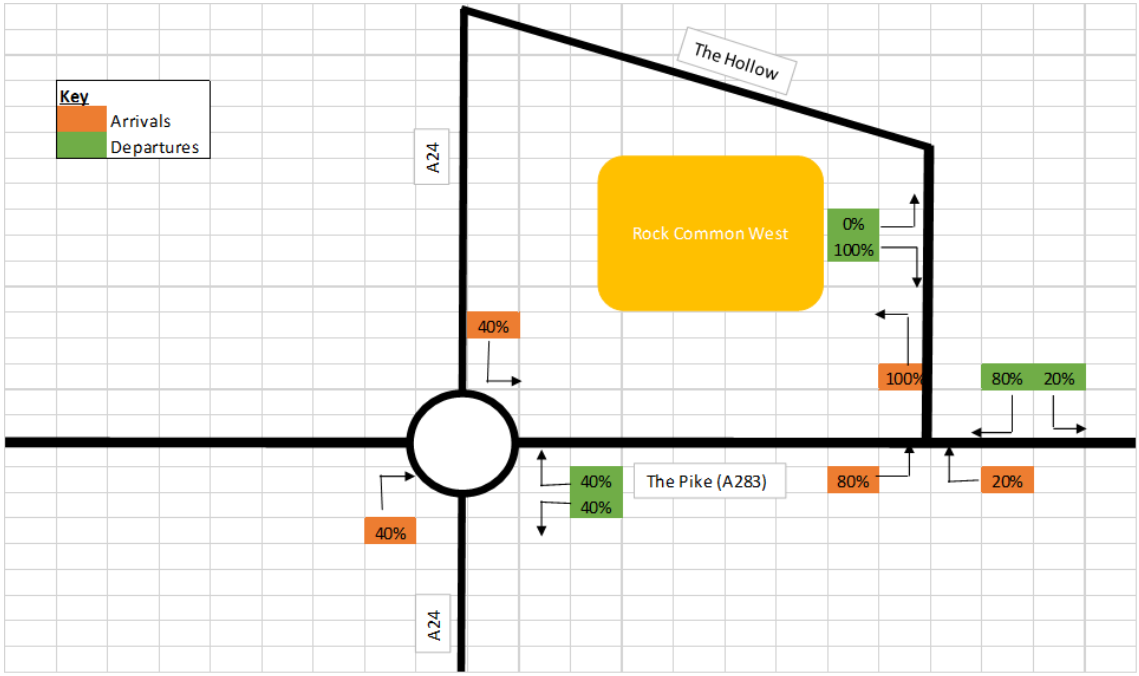


Figure 11.1: Rock Common Development Traffic Distribution

Rock Common		Hourly Development Two- way Traffic Movements (PCU)		2031 (vehicles) + Development (PCU)		% impact as a proportion of overall traffic	
		Arrivals	Departures	AM	PM	AM	PM
A283 east of A24 (The Pike) west of The Hollow	Eb	0	8	797	733	1%	1%
	Wb	8	0	823	831	1%	1%
A24 North of A283	Nb	0	4	2178	1403	0%	0%
	Sb	4	0	1463	2374	0%	0%
A24 South of A283	Nb	4	0	1967	1403	0%	0%
	Sb	0	4	1330	2475	0%	0%
A283 east of The Hollow	Eb	0	2	1028	1047	0%	0%
	Wb	2	0	976	1158	0%	0%

Table 11.3: Rock Common Traffic Impact Assessment

11.8.2 The results of the traffic impact assessment demonstrate that the impact of development-related traffic will be a 1% increase in traffic on A283 The Pike between The Hollow and the A24/A283 Washington Road roundabout. The impact on the A24 and also the A283 east of The Hollow as a result of the development proposals will be an increase of less than 1%.

11.8.3 According to Table 3 TA 79/99[2] an urban all-purpose 1 (UAP1) road with a 6.1m – 6.75m carriageway width has a one way hourly capacity of 1020 - 1320 vehicles. On this basis, the A283 The Pike, west of The Hollow will be well within its theoretical capacity in 2031 even with the addition of development-related traffic from Rock Common.

11.9 Cumulative Impact

11.9.1 The impact of the sites at Chantry Lane extension and Ham Farm will be assessed in **Section 13**.

11.1 Personal Injury Accident Assessment

11.1.1 Personal injury accident data for Ham Farm and Rock Common will be discussed in the cumulative impact assessment **Section 13**. There were however, no PIAs recorded on The Hollow over the assessment period which is the main route for HGV traffic accessing the A283.

11.2 Access Options

11.2.1 The existing access arrangements are considered suitable for the existing quarry travelling to and from Rock Common. It is assumed that as long as the proposals do not result in an intensification of use of The Hollow, that the existing access arrangements would still be appropriate.

11.2.2 However, the WSCC Highways response to the previously refused application for landfilling, did request that The Hollow be widened to 6m to mitigate the impact of development. This was likely to have arisen from the substantial increase in traffic that the proposals would have generated, circa 91 trips in the AM. A Stage 1 Road Safety Audit also highlighted that forward visibility on the A283 could be a potential issue and recommended that an improved corner radii into The Hollow could be a possible solution although it could result in higher entry speed.

[2] Volume 5 Section 1, Chapter 3, Part 3 TA 79/99, Amendment No 1, Determination of Urban Road Capacity

11.3 Summary

11.3.1 The extraction of minerals at Rock Common Lane is expected to generate approximately 106 two way vehicle movements per day over the course of its 15 year lifespan. The greatest impact will be on the A283 The Pike between the site and the A24/A283 Washington Road roundabout junction where there will be 8 additional two way traffic movements in the peak hour. At the A24/A283 Washington Road roundabout, traffic will then distributed north and south, with no development traffic routing via the A283 towards Storrington. Existing traffic levels on the A283 The Pike between The Hollow and A24/A283 Washington Road roundabout are well below capacity and can therefore accommodate the development-related traffic.

11.3.2 Development at Rock Common will also have an impact on A283 The Pike, east of the Hollow. The impact equates to 2 additional two way traffic movements in the peak hour during the 15 year lifespan of the site. This road is operating below its theoretical operational capacity and forms part of the LRN. Therefore, the impact of development-related traffic is not expected to be severe.

11.3.3 The existing access arrangements using The Hollow are considered appropriate for the transportation of minerals as per the existing quarrying operations, as long as there is no intensification of use. If there was to be intensification of use, then any future application should be mindful of the comments raised by West Sussex County Council Highways in relation to the application for a landfill site at Rock Common.

11.3.4 The overall acceptability of this site is assessed as ***High Acceptability***.

12. HAM FARM

12.1 Introduction

12.1.1 This section covers the proposed site at Ham Farm (ref: M/HO/4A) site to the east of the Washington roundabout. There are two other sites in the vicinity of Ham Farm;

- Chantry Lane extension (ref: M/HO/2) to the west of A24/A283 Washington Road roundabout; and
- Rock Common (ref: M/HO/3A) to the east of A24/A283 Washington Road roundabout.

12.1.2 Due to the close proximity of three sites, the assessment will first consider the Ham Farm site and then will consider the cumulative impact on the A283 The Pike, the A24 and the A24/A283 Washington Road roundabout should all the sites come forward at the same time. The location of Ham Farm, in relation to the other sites and also the strategic road network, is illustrated previously in **Figure 10.1**.

12.2 Location / Context

12.2.1 Ham Farm is located on the northern side of the A283 approximately 4.75km east of the A24/A283 Washington Road roundabout, 2.8km north west of Steyning and 1km west of B2135 Horsham Road. The site at Ham Farm is currently agricultural land, with an access gate set back from the A283.

12.2.2 The A283 is a single carriageway route with a 50mph speed limit with an approximate carriageway width of 6.2m. It is part of the LRN, is classed as an urban all-purpose 1 road based on the criteria set out in Table 2 TA 79/99[3]. The frontage of the site benefits from a c.2m verge, and there is minimal level difference between the carriageway and the potential minerals site.

12.2.3 Visibility from the gated field access is adequate in the primary direction (to the right) and could be improved by some vegetation clearance (**Photograph 12.1**) and clear in the secondary direction (to the left) (**Photograph 12.2**).

[3] Volume 5 Section 1, Chapter 3, Part 3 TA 79/99, Amendment No 1, Determination of Urban Road Capacity

Photograph 12.1: Primary Direction Visibility onto A283

Photograph 12.2: Secondary Direction Visibility onto A283

12.3 Planning History

12.3.1 There is no previous minerals or waste planning history for Ham Farm.

12.4 Baseline Traffic Conditions

12.4.1 The location and type of the traffic counter used to build up the background picture of traffic levels in the surrounding area is demonstrated previously in **Figure 10.2**.

12.4.2 Traffic data for the key roads is summarised in **Table 12.1**.

Ham Farm		2015 Traffic				2031 Traffic		
		AM	PM	Daily	HGV%	AM	PM	Daily
A283 east of A24 (The Pike)	Eb	641	580	5471	6%	790	725	6914
	Wb	662	659	5843	6%	815	824	7384
A24 North of A283	Nb	1765	1119	13314	7%	2174	1399	16825
	Sb	1185	1896	14562	7%	1460	2370	18403
A24 South of A283	Nb	1594	1119	13304	6%	1963	1399	16813
	Sb	1077	1977	14330	5%	1327	2471	18109
A283 between site and A27	Eb	1058	879	8346	4%	1303	1099	10547
	Wb	959	1110	8835	4%	1181	1387	11166

Table 12.1: Ham Farm 2015 and 2031 Traffic Data (all flows in vehicles)

12.4.3 **Table 12.1** demonstrates the baseline traffic flows on the LRN, the only difference between the previous baseline scenarios for Rock Common and Chantry Lane is the addition of the data for the A283 Washington Road between Ham Farm and the A27 at Shoreham. The data for the southern section of the A283 demonstrates a strong tidal flow towards Steyning and Shoreham in the AM peak and towards the A24 in the PM peak. The current level of HGV traffic on the route is less than 10% so considered typical for a road on the LRN. Based on a carriageway width of between 6.75m and 7.3m, the theoretical capacity of the route based on Table 2 TA 79/99[4] is between 1320 and 1590 vph, which suggests the maximum theoretical capacity is greater than 2031 forecast traffic flows.

12.5 Development-related Traffic

12.5.1 The following assumptions have been applied to arise at the traffic generation potential of Ham Farm;

Annual Yield	85,000 tonnes	
	Vehicles	PCU
1 way Daily Movements	23	46
2 way Daily Movements	46	92
2 way Hourly movements	4	8

Table 12.2: Ham Farm Traffic Generation

12.6 Committed Development Traffic

12.6.1 There is no committed development traffic in the area to consider in the assessment of the Ham Farm.

12.7 Proposed Routing

Preferred Routing

12.7.1 As per the routing strategy for Rock Common, a proportion of the traffic is expected to arrive from and depart to the east. As the potential minerals site at Ham Farm is closer to the A27, development-related traffic has been equally distributed east and west from the potential site. At the A24/A283 Washington Road roundabout, the development-related traffic will again divide equally between the A24 north and the A24 south, with no traffic arriving from or departing to the A283 Washington Road, east of A24.

12.7.2 Traffic travelling to and from the site from the south east on A283 The Pike and A24 will travel through the South Downs National Park. However, as these routes form part of the LRN, they are considered to be the most appropriate routes for HGV traffic which are likely to have the least impact on the landscape and character of the National Park.

[4] Volume 5 Section 1, Chapter 3, Part 3 TA 79/99, Amendment No 1, Determination of Urban Road Capacity

12.8 Proposed Distribution

12.8.1 The proposed distribution for both arrivals and departures is shown in **Figure 12.1**, with **Table 12.3** providing the assessment in relation to the impact on the LRN.

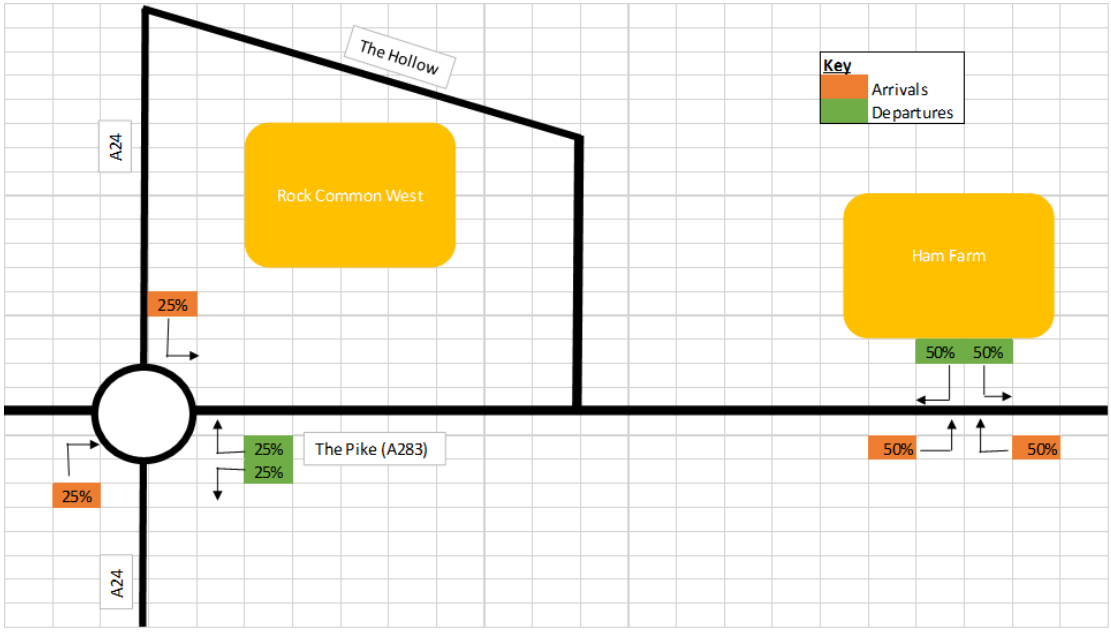


Figure 12.1: Ham Farm Development Traffic Distribution

Ham Farm		Hourly Development Two- way Traffic Movements (PCU)		2031 (vehicles) + Development (PCU)		% impact as proportion of overall traffic	
		Arrivals	Departures	AM	PM	AM	PM
A283 east of A24 (The Pike)	Eb	0	4	794	729	1%	1%
	Wb	4	0	820	828	1%	1%
A24 North of A283	Nb	0	2	2176	1401	0%	0%
	Sb	2	0	1462	2372	0%	0%
A24 South of A283	Nb	2	0	1965	1401	0%	0%
	Sb	0	2	1329	2474	0%	0%
A283 between site and A27	Eb	4	0	1307	1103	0%	0%
	Wb	0	4	1186	1391	0%	0%

Table 12.3: Ham Farm Traffic Impact Assessment

12.8.2 The results of the traffic impact assessment demonstrate that the increase in traffic on the LRN will be 1% on the A283 between the A24/A283 Washington Road Roundabout and The Hollow. The development-related increase in traffic on A24 north and south of the A24/A284 Washington Road roundabout and the A283 Washington Road east of Ham Farm will equate to less than 1%.

12.9 Cumulative Impact

12.9.1 The impact of the sites at Chantry Lane and Rock Common be assessed in **Section 13**.

12.10 Personal Injury Accident Assessment

12.10.1 Personal injury accident data for the site will be assessed in the A283 cumulative impact **Section 13**.

12.11 Access Options

12.11.1 The access options for the site are a priority junction directly onto the A283 in the approximate location of the existing gated access. Sight stopping distances for a 100kph road, require a 215m visibility splays based on DMRB standards which is achievable as demonstrated in **Drawing 037.0017.006**. To ensure that there is minimal disruption to the other traffic on the A283 it is proposed that any junction design be able to accommodate two way movement, which would therefore require 12m corner radii and a 6.5m carriageway. A right turn lane for vehicles arriving at the site from the A27 is not considered necessary based on the predicted traffic levels.

12.12 Summary

12.12.1 The extraction of minerals at Ham Farm is expected to generate approximately 92 two way vehicle movements per day over the course of its 10 year lifespan. It is estimated that the HGV traffic associated with the movement of minerals from this site would be equally distributed along the A283 eastbound and westbound. The results of the traffic impact assessment show that the development related traffic would not have any adverse impact on the LRN and would not, therefore, have a severe impact if the site were to come forward on its own.

12.12.2 The location of the existing gated access to the agricultural land is considered to be in the optimum position.

12.12.3 The overall acceptability of this site is assessed as ***High Acceptability***.

13. A283 CLUSTER

13.1 Introduction

13.1.1 The cumulative impact of development-related traffic from the A283 cluster of sites is presented in **Table 13.1** with a cumulative total should all three sites be worked concurrently.

Combined		Hourly Development Two-way Traffic Movements (PCU)		2031 (vehicles) + Development (PCU)		% impact as proportion of overall traffic	
		Arrivals	Departures	AM	PM	AM	PM
A283 west of A24	Eb	0	10	1095	1177	1%	1%
	Wb	10	0	1043	1064	1%	1%
A283 east of A24 (The Pike)	Eb	0	14	803	739	2%	2%
	Wb	14	0	829	837	2%	2%
A24 North of A283	Nb	0	10	2184	1409	0%	1%
	Sb	10	0	1469	2380	1%	0%
A24 South of A283	Nb	10	0	1973	1409	1%	1%
	Sb	0	10	1336	2481	1%	0%
A283 between Ham Farm and A27 (south of Steyning)	Eb	4	2	1309	1103	0%	0%
	Wb	2	4	1188	1391	1%	0%

Table 13.1: A283 Cluster Cumulative Impact Assessment

13.1.2 The results of the cumulative assessment show that should all three sites be worked at the same time an additional 88 vehicles per hour could be loaded onto the A24/A263 Washington Road roundabout (two way). The proportional impact assessment indicates that all three sites working concurrently would result in a marginal increase in traffic, the greatest impact (+28vph) of which would be on the section between The Pike and the Washington roundabout (two way).

13.1.3 As a further test of the impact that the cumulative impact would have on the operation of the A24/A283 Washington Road roundabout, an assessment using ARCADY version 7 has been undertaken. The modelling information was obtained from the May 2008 Supplementary Transport Paper for the Proposed Landfill Facility at Rock Common Quarry which used ARCADY version 5. For the purpose of this assessment all geometries and modelling parameters proposed in the previous assessment have been assumed to be acceptable to West Sussex County Council.

13.1.4 A full set of ARCADY results are provided in **Appendix F**, and a summary of the 2015 base,

2031 base and 2031 base plus development are given in **Table 13.2**.

		AM Peak Hour		PM Peak Hour	
		Max RFC	**Max Queue**	**Max RFC**	**Max Queue**
2015 Base	A24 London Road	0.63	2	***0.95***	***15***
	A283 The Pike	0.51	2	0.72	3
	A24 Horsham	0.71	3	0.52	2
	A283 Storrington Road	***0.88***	***7***	0.72	3
2031 Base	A24 London Road	0.77	4	***1.26***	***271***
	A283 The Pike	0.70	3	0.94	11
	A24 Horsham	***0.94***	***14***	0.68	3
	A283 Storrington Road	***1.38***	***169***	***1.02***	***33***
2031 Base + Development	A24 London Road	0.78	4	***1.27***	***286***
	A283 The Pike	0.71	3	***0.95***	***13***
	A24 Horsham	***0.95***	***15***	0.68	3
	A283 Storrington Road	***1.40***	***178***	***1.04***	***39***

Table 13.2: A24 Washington Roundabout ARCADY Results No Mitigation

13.1.5 As shown in **Table 13.2** the results of the ARCADY assessment indicate that the roundabout is already over theoretical capacity on the A283 Storrington Road arm in the AM peak and on the A24 London Road is the PM peak. By 2031 AM, the A24 Horsham Road and A283 Storrington Road will be over capacity, with Storrington Road predicted to experience an increase of 162 queuing vehicles compared to 2015. In the PM peak there is expected to be an increase of 30 vehicles queuing on Storrington Road, pushing the Ratio of Flow to Capacity (RFC) value over 0.85 and adding 256 vehicles to the queue on London Road. This suggests that highway improvements will be required to accommodate 2031 forecast traffic flows. The addition of the development traffic in 2031 AM peak adds 1 vehicle to the queue on A24 Horsham Road, and 9 vehicles to the queue on Storrington Road. In the PM peak 15 vehicles are added to the queue on London Road, 2 vehicles added to The Pike and 26 vehicles to the queue on Storrington Road.

13.1.6 The addition of the development-related traffic to A24/A283 Washington Roundabout will have an impact on the operation of the junction and require mitigation. The 2008 Supplementary Report proposed improvement works to the roundabout which included localised widening of the A24 London Road / Horsham Road and A283 Storrington Road from two lanes to three. The impact of these changes has been modelled to test whether the same proposals would be sufficient to mitigate the impact of all three sites coming forward at the same time and the results shown in **Table 13.3**.

		AM Peak Hour		PM Peak Hour	
		Max RFC	**Max Queue**	**Max RFC**	**Max Queue**
2015 Base	A24 London Road	*0.55*	*2*	*0.83*	*5*
	A283 The Pike	*0.51*	*2*	*0.73*	*3*
	A24 Horsham	*0.66*	*2*	*0.48*	*1*
	A283 Storrington Road	*0.73*	*3*	*0.61*	*2*
2031 Base	A24 London Road	0.70	3	***1.11***	***130***
	A283 The Pike	0.72	3	***1.12***	***55***
	A24 Horsham	***0.87***	***7***	0.62	2
	A283 Storrington Road	***1.12***	***70***	***0.85***	***6***
2031 Base + Developmen	A24 London Road	0.70	3	***1.12***	***139***
	A283 The Pike	0.73	3	***1.13***	***60***
	A24 Horsham	***0.88***	***7***	0.63	2
	A283 Storrington Road	***1.14***	***78***	***0.86***	***6***

Table 13.3: A24 Washington Roundabout ARCADY Results With Mitigation

13.1.7 The mitigation works proposed by the Landfill site are more than adequate to mitigate the impact of the development-related traffic and a proportion of the background traffic growth. These, or similar mitigation measures, will be required to ensure the cumulative impact of development is acceptable in planning terms and further assessment of the impact on this junction will be required at the planning application stage.

13.2 Personal Injury Accident Data

13.2.1 PIA data for the most recent three year period is presented in **Figure 13.1** for the preferred routing strategy for Rock Common and Ham Farm. Along the routes as illustrated there have been a total of 100 PIAs, of which 75 (75%) were classified slight and 25 (25%) classified as serious. There have been no fatal PIAs recorded in the most recent three year period.

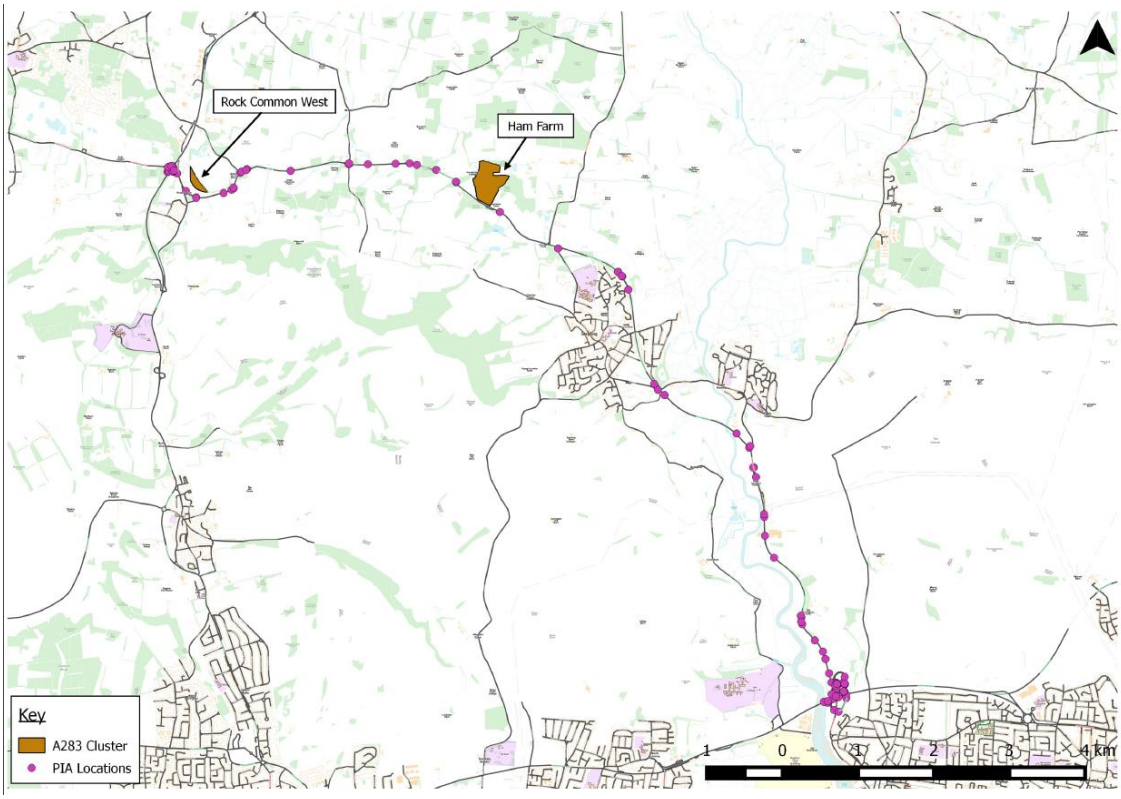


Figure 13.1: A283 Cluster Personal Injury Accident Locations
(*Contains OS data © Crown copyright [and database right] (2015)*

13.2.2 The distribution of PIA shows that 80% occurred on Local Authority roads and 20% on Highways England roads, of which:

- 68% occurred on the A283;
- 21% occurred on the A27;
- 10% occurred on the A24; and
- 1% occurred on unclassified roads.

13.2.3 A review of the main causation factors for each PIA reveals that 96% were attributable to the driver/rider, with 2% attributable to road environmental factor and 2% attributable to vehicle defects.

13.2.4 As discussed in **Paragraph 10.10.4** there have been 15 PIAs on the A24 Washington roundabout, all attributable to driver / rider error. Near the A283 / The Hollow junction there have been 2 slight PIAs, although only 1 specifically mentions The Hollow. The incident in question was caused by a driver following too closely to the vehicle in front. 2 slight PIAs have occurred to the west of Ham Farm, near to the proposed access, although on closer investigation of the causation factors, these can be attributed to driver / rider error. The number of PIAs does increase to the south of Steyning however, traffic volumes on this section of the A283 are greater and therefore the probability of an accident occurring

therefore increases.

13.3 Summary

13.3.1 The cumulative impact of development-related traffic from the A283 cluster of sites has been assessed and should all three sites be worked at the same time an additional 88 vehicles per hour could be loaded onto the A24/A263 Washington Road roundabout (two way). The traffic impact is not likely to be severe but the ARCADY assessment of forecast traffic flows with development-related traffic suggest that traffic flows will exceed capacity of the junction and require mitigation.

13.3.2 The mitigation works proposed by the Landfill site are more than adequate to mitigate the impact of the development-related traffic and a proportion of the background traffic growth. These, or similar mitigation measures, will be required to ensure the cumulative impact of development is acceptable in planning terms and further assessment of the impact on this junction will be required at the planning application stage.

14. HORNCROFT

14.1 Introduction

14.1.1 This section covers the proposed mineral site known as Horncroft (ref: M/CH/11) to the west of the B2138 (Tripp Hill) and the A29. There are no other sites in the vicinity of Horncroft.

14.1.2 The location of Horncroft, in relation to LRN, is illustrated in **Figure 14.1**.

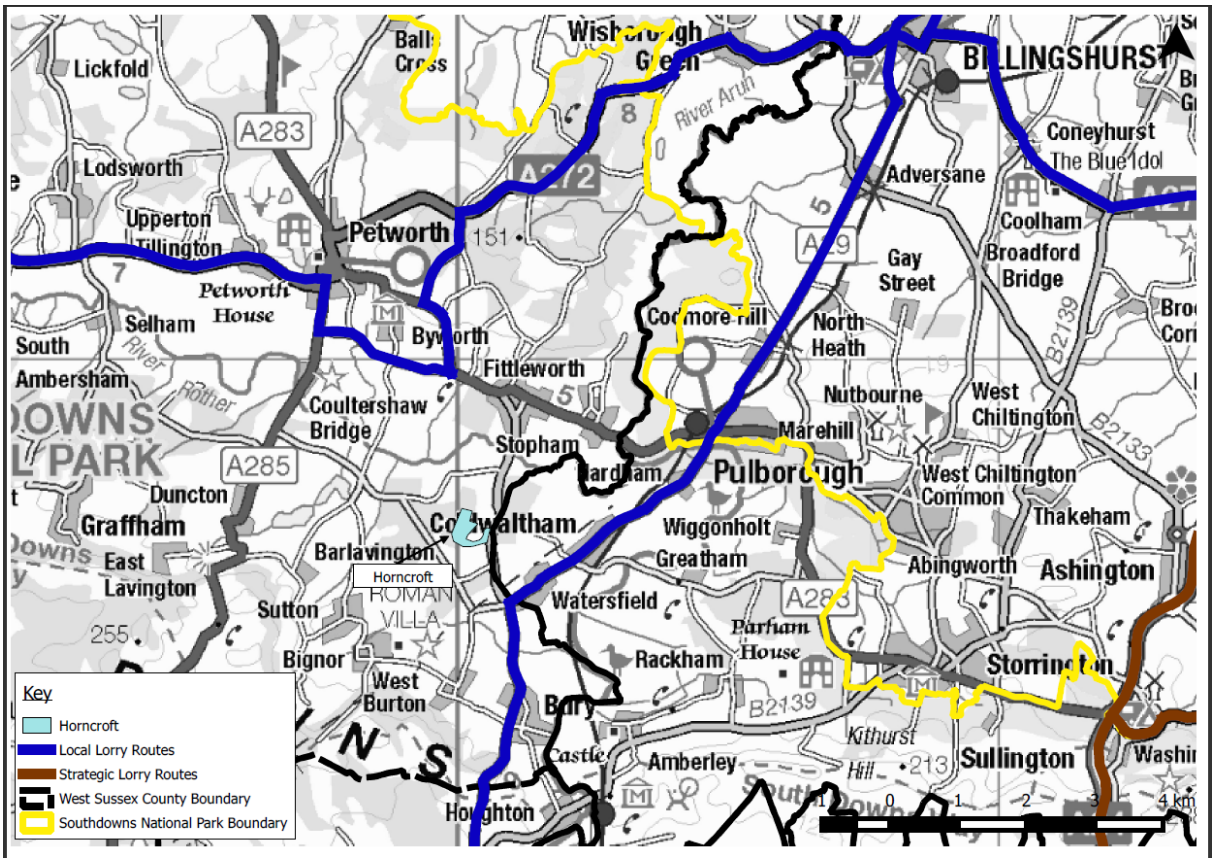


Figure 14.1: Horncroft Location (*Contains OS data © Crown copyright [and database right] (2015)*

14.2 Location / Context

14.2.1 Horncroft is located in the South Downs National Park on the western side of the B2138 Tripp Hill and approximately 1.75km north of the A29. The site at Horncroft is agricultural land, with various breaks in the hedgerow where access to the fields is currently gained.

14.2.2 The B2138 Tripp Hill is a single carriageway route with a 40mph speed limit and an approximate carriageway width of 5.8m. It is not part of the LRN, but based on TA 79/99 classification the B2138 Tripp Hill could be classified as an urban all-purpose 2 road. The B2138 Tripp Hill has a good verge width along the site frontage, but minimal verge adjacent to the southbound carriageway. There are no footways on either side of the carriageway. The gradient of the road also rises gradually from the junction with the A29.

14.2.3 The A29 is part of the LRN and is a strategic route which connects A27 at Fontwell in the south of the County with Pulborough, Billingshurst, and the A29 to the south of Dorking. The A29 is generally suitable for HGVs although it is single carriageway with some steep gradients and travels through various small settlements.

14.2.4 To the south of the site the B2138 forms a priority junction with the A29. The bellmouth of the junction measures c.45m with the left hand lane measuring c.27m. There is red surfacing denoting a channelising island in the centre of the B2138 and around the southern corner radii and buff surfacing on the approach to the A29 (see **Photograph 14.1**). On the A29 the north and southbound carriageways both feature slow markings.

Photograph 14.1: A29 / B2138 (view north on A29)

14.2.5 There is also a one-way route to the north of the priority junction which is a better option for vehicles travelling north on the A29. Visibility along the site frontage is demonstrated in **Photograph 14.2** and **Photograph 14.3**

Photograph 14.2: Primary Direction Visibility on B2138

Photograph 14.3: Secondary direction visibility on B2138

14.3 Planning History

14.3.1 The following minerals planning application for Horncroft, was received by West Sussex County Council in March 2010 from the Barlavington Estate. Details of the application are;

- *WSCC/053/10/BY, Extraction of 1.5 million tonnes of sand, new temporary access, landscaping, erection of temporary office and plant to process the sand, weighbridge, wheel washing, water extraction borehole, earthworks and landscaping and restoration - Withdrawn*

14.3.2 The decision to withdraw the planning application was made on the grounds of the diminished requirement for minerals, given that house building was at an historic low in 2011.

14.3.3 Two sets of comments were provided by WSCC Highways on the development proposal, both of which returned no objection subject to appropriate planning conditions and legal agreements.

14.3.4 The May 2010 comments on the Transport Assessment stated that *"…Local Development would not raise a highway objection to the proposed development subject to detailed design S278 / S38 agreement for the site access and off-site highway improvements and S106 Agreement including routing agreements and appropriate enforcement measures to restrict HGV movements north of the site access."*

14.3.5 The February 2011 comments stated that there was *"…no highway objected raised on highway safety or capacity grounds."* but did note that *"The Planning Authority may wish to consider the environmental impact of increased HGV flows upon the surrounding highway network."*

14.3.6 Information from the Transport Assessment (January 2009) and the comments from WSCC Highways have been used to inform this assessment.

14.4 Baseline Traffic Conditions

14.4.1 The location and type of the traffic counter used to build up the background picture of traffic levels in the surrounding area is demonstrated in **Figure 14.2**.

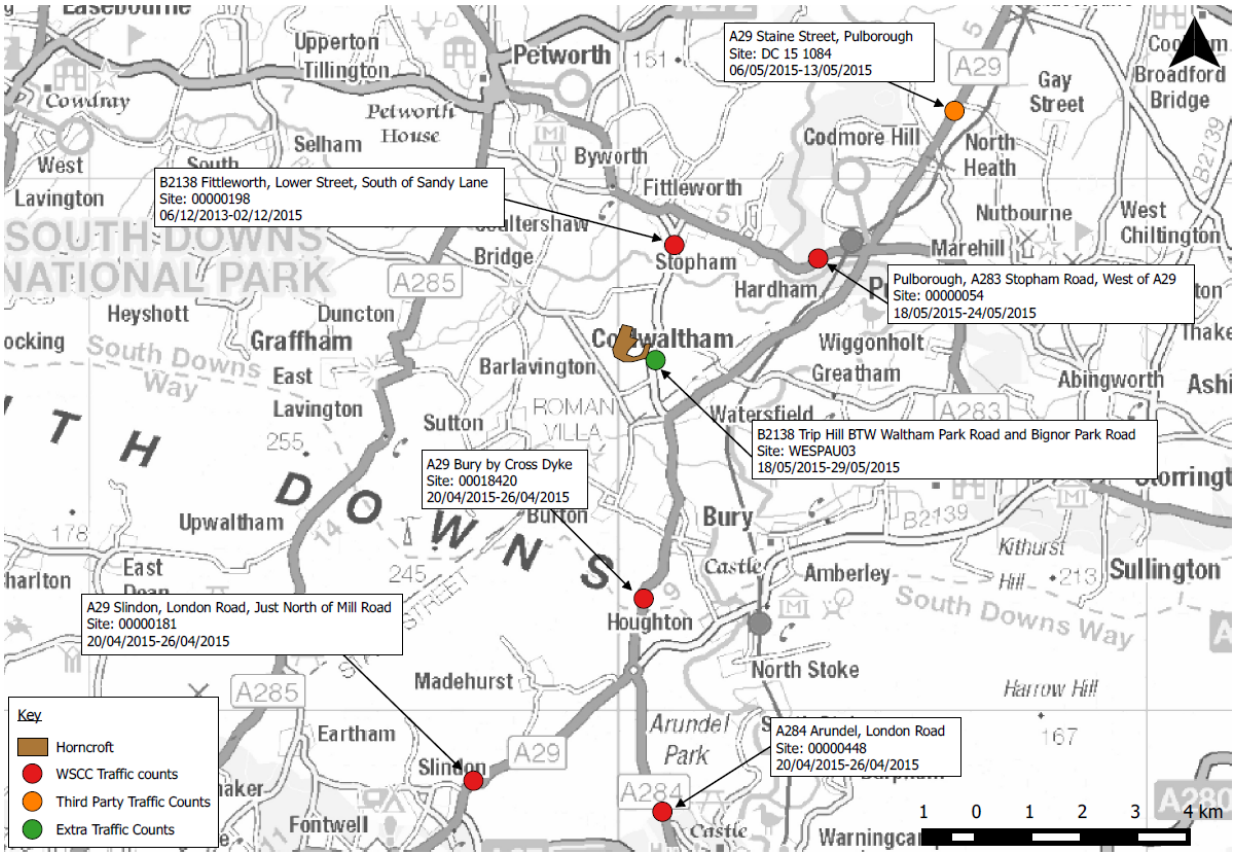


Figure 14.2: Horncroft Traffic Counter Locations (*Contains OS data © Crown copyright [and database right] (2015)*

14.4.2 Traffic data for the key roads is summarised in **Table 14.1**.

Horncroft		2015 Traffic				2031 Traffic		
		AM	PM	Daily	HGV %	AM	PM	Daily
B2138 Tripp Hill north of site	Nb	220	121	1683	0%	278	155	2173
	Sb	152	220	1862	0%	193	282	2404
B2138 Tripp Hill south of site	Nb	184	118	1461	1%	233	151	1887
	Sb	138	227	1802	1%	175	290	2326
A29 south of B2138 Tripp Hill junction	Nb	586	401	4666	5%	742	513	6024
	Sb	402	712	5183	5%	509	911	6691
A284 London Road south of A29 junction towards A27 east	Nb	391	254	2897	3%	495	325	3740
	Sb	254	510	3473	3%	321	652	4484
A29 south A284 junction towards A27 West	Nb	596	696	5876	5%	754	890	7586
	Sb	566	812	6353	4%	717	1039	8202
A29 north of Pulborough	Nb	664	457	5595	N/A	840	585	7224

Horncroft		2015 Traffic				2031 Traffic		
		AM	PM	Daily	HGV %	AM	PM	Daily
	Sb	501	750	5949	N/A	634	959	7680
A283 west of Pulborough	Eb	232	299	2891	3%	293	383	3732
	Wb	280	256	2944	3%	355	328	3801

Table 14.1: Horncroft Traffic Data 2015 and 2031

14.4.3 Traffic data shows that the B2138 Tripp Hill is lightly trafficked with minimal HGV traffic to the south of the potential mineral site and no HGV traffic recorded north of the site. The recommendation from WSCC Highways to the 2010 planning application was that the B2138 to the north of the site is not suitable for HGV traffic due to the advisory traffic sign "Unsuitable for heavy goods vehicles" at the junction of the A283 / B2138, discouraging HGV traffic from travelling through Fittleworth to the north of the potential minerals site. The majority of traffic is however travelling in a northerly direction in the AM peak towards the A283 / Petworth, and in a southerly direction in the PM peak away from the A283 / Petworth.

14.4.4 The A29 carries a much higher volume of traffic, which is consistent with its A road classification, and carries a higher volume of traffic north of Pulborough. The overall proportion of HGV traffic on the A29 is 5% or less which is considered to be roughly half that which would typically be expected on the LRN. The road is considered to be of an urban all purpose1 – urban all purpose2 status, with a link capacity of between 1020 and 1320 vph. Based on the traffic flows above, there are no capacity issues on this link.

14.5 Development Traffic

14.5.1 The following assumptions have been applied to arise at the traffic generation potential of the Horncroft;

Annual Yield	133,333	
	Vehicles	PCU
1 way Daily Movements	36	72
2 way Daily Movements	72	144
2 way Hourly movements	7	13

Table 14.2: Horncroft Traffic Generation

14.6 Committed Development Traffic

14.6.1 There is no committed development traffic in the area to consider in the assessment of the Horncroft.

14.7 Proposed Routing Strategy

Preferred Routing Strategy

14.7.1 The preferred routing strategy has been shaped by West Sussex Country Councils comments in response to the 2010 planning application. The routing strategy discounted any development-related traffic arriving / departing from the north (A283), due to the adverse impact that it would have on Fittleworth and Lower Fittleworth. All HGV development-related traffic would therefore arrive to and depart from the site via the A29 / B2138 Tripp Hill junction.

14.7.2 The 2009 Transport Assessment for Horncroft proposed a 70% (south) / 30% (north) distribution of traffic at the A29 / B2138 junction, and this has assumption has been kept for consistency. The previous Transport Assessment also assumed that development-related traffic travelling north would use the one-way route to the north of the main junction, following minor highway improvements.

14.7.3 Once vehicles reach the A29 / A284 (Whiteways Lodge) roundabout the traffic will split equally onto the A29 towards the A27 west at Fontwell or onto the A284 towards Arundel. The traffic routing north from the B2138/A29 junction is expected to travel to Pulborough, at the A29 / A283 roundabout traffic will continue north on the A29 towards Dorking. If the development-traffic does have destinations to the east of the A29, it should use the A272 to access these sites.

14.7.4 As the site is located within the South Downs National Park, all traffic arriving to and departing from the site will travel through the National Park. However, routes which form part of the LRN are considered to be the most appropriate routes for HGV traffic which are likely to have the least impact on the landscape and character of the National Park.

Alternate Routing Strategy

14.7.5 Alternative routes for development-related traffic included

- routing 100% traffic south from the B2138 / A29 junction; or
- routing a proportion of the development-related traffic north from the site, through Fittleworth onto the A283 to Petworth and then onto the A272 or the A286; or
- routing a proportion of the development-related traffic east along the A283 through Storrington.

14.7.6 All alternative routing options were discounted; the first as it was considered unrepresentative of the eventual destination of the minerals, the second to accord with the recommendations of WSCC highways officers in relation to the 2010 planning application and the third as it would involve development-related traffic travelling through Storrington through an Air Quality Management Area (AQMA).

14.8 Proposed Traffic Distribution

14.8.1 The traffic distribution for both arrivals and departures is shown in **Figure 14.3**, with Error! Reference source not found. providing the assessment in relation to the impact on the LRN.

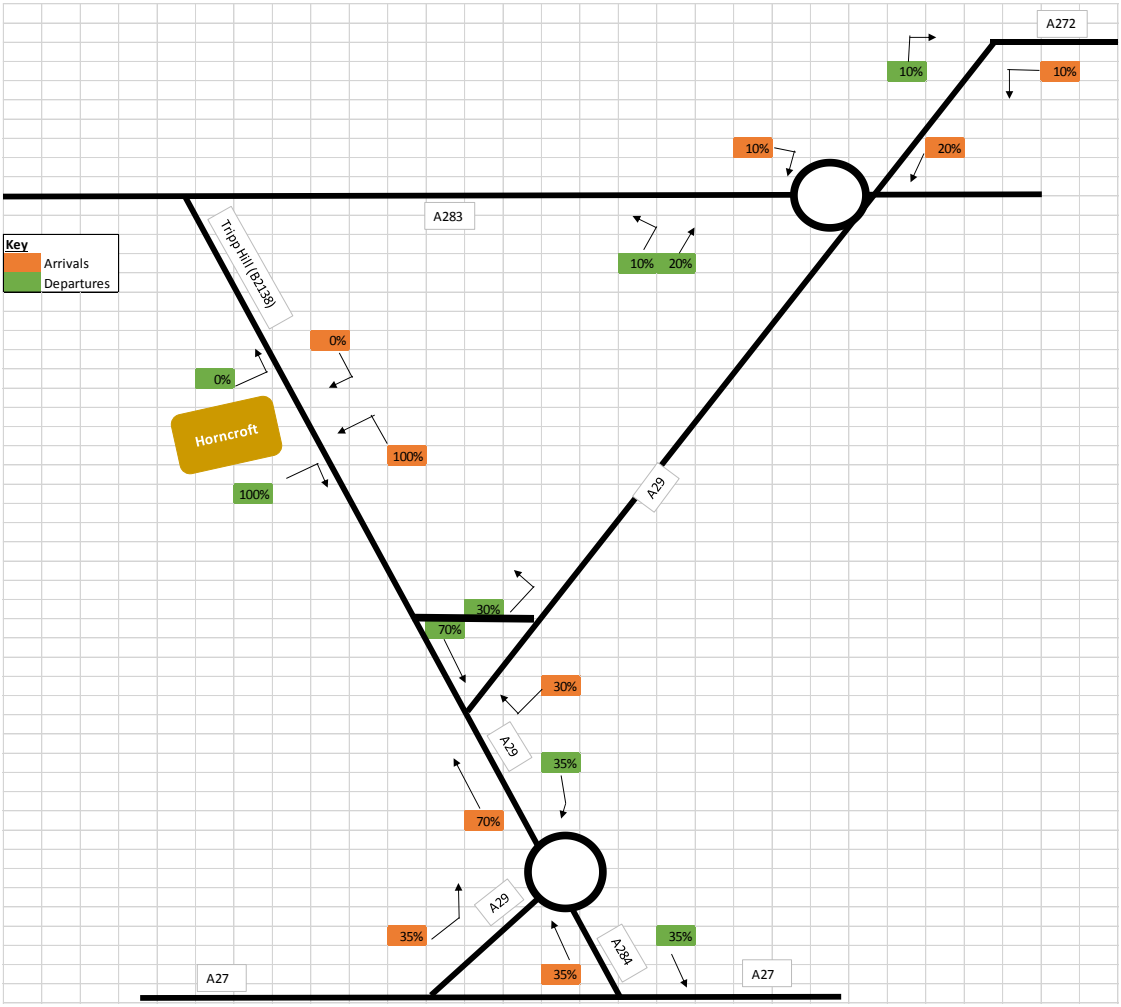


Figure 14.3: Horncroft Development Traffic Distribution

Horncroft		Hourly Development Two- way Traffic Movements (PCU)		2031 (vehicles) + Development (PCU)		% impact	
		Arrivals	Departures	AM	PM	AM	PM
B2138 north of site	Nb	0	0	278	155	0%	0%
	Sb	0	0	193	282	0%	0%
B2138 south of site	Nb	13	0	246	164	6%	9%
	Sb	0	13	188	303	7%	5%
A29 south of B2138 junction	Nb	9	0	751	522	1%	2%
	Sb	0	9	518	920	2%	1%
A284 south of A29 junction towards A27 east	Nb	5	0	499	330	1%	1%
	Sb	0	5	326	657	1%	1%
A29 south A284 junction towards A27 West	Nb	5	0	759	895	1%	1%
	Sb	0	5	722	1044	1%	0%
A29 north of Pulborough	Nb	0	3	843	587	0%	0%
	Sb	3	0	637	962	0%	0%
A283 west of Pulborough	Eb	1	0	295	384	0%	0%
	Wb	0	1	356	329	0%	0%

Table 14.3: Horncroft Traffic Impact Assessment

14.8.2 The results of the traffic impact assessment above shows that the B2138 south of the site will experience the greatest increase in traffic movements of between 5% - 9% during the peak hours. In relative terms the development proposals would add a total of 26vph two way, or 13vph one way. This number of movements would not result in any material impact on the operation of the highway and also falls below the criteria for detailed junction capacity assessments as set out in the **Section 3**. The other routes are expected to experience slight increases in traffic (of 1% - 2%), which will not have a material impact on the operation of the highway network.

14.9 Personal Injury Accident Assessment

14.9.1 PIA data for the most recent three year period is presented in **Figure 14.4** for the preferred routing strategy. Along the routes as illustrated there have been a total of 104 PIA, of which 73 (70%) were classified slight, 26 (25%) classified as serious and 5 (5%) classified as fatal.

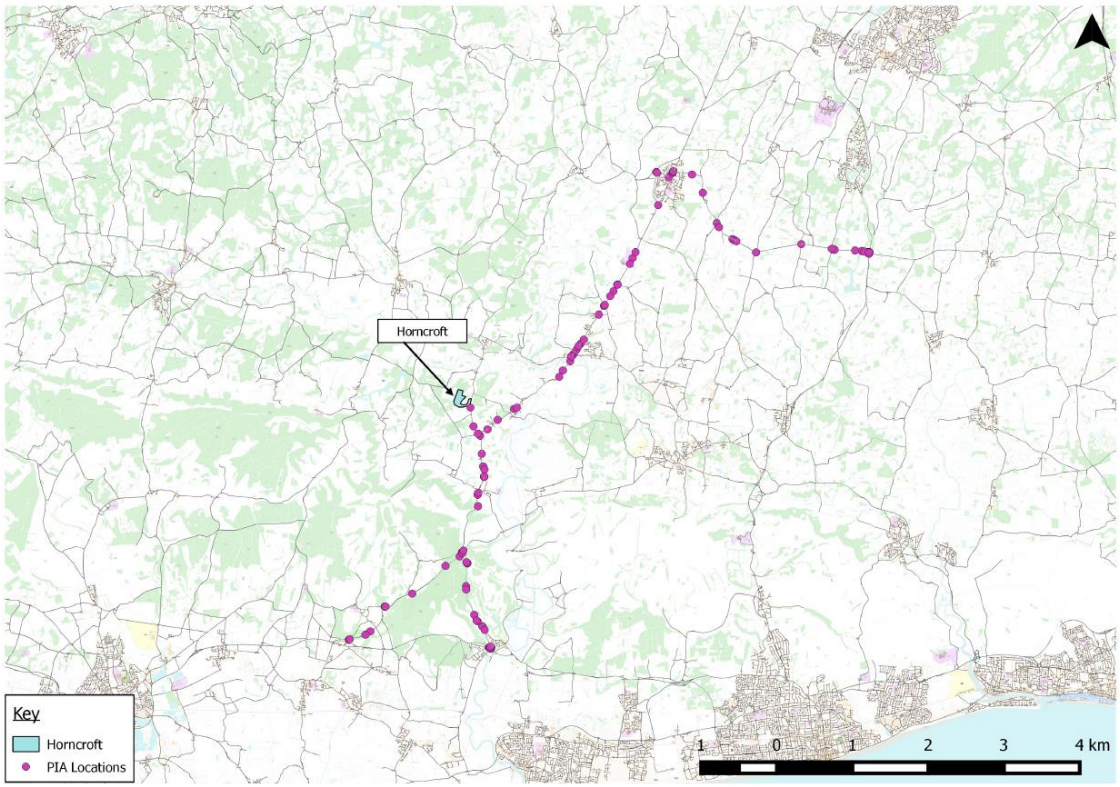


Figure 14.4: Horncroft PIA Locations (*Contains OS data © Crown copyright [and database right] (2015)*

14.9.2 The distribution of PIA shows that 93% occurred on Local Authority roads and 7% on Highways England roads, of which:

- 52% occurred on the A29;
- 20% occurred on the A272;
- 13% occurred on the A284;
- 6% occurred on the A27;
- 5% occurred on the B2138 and B2133;
- 3% occurred on the A24; and
- 1% occurred on unclassified roads.

14.9.3 A review of the main causation factors for each PIA reveals that 87% were attributable to the driver/rider, with 8% attributable to road environmental factor, 3% attributable to special codes, 1% attributable to vehicle defects and less than 1% attributable to pedestrians.

14.9.4 As shown in **Figure 14.4**, there have been 5 PIAs on Tripp Hill to the south of the proposed access and the junction with the A29. Of these PIAs all were slight, and 4 of the 5 PIAs were caused by failure to look and the remaining PIA was due to illness or disability. There is a cluster of 4 PIAs on the A284 near Green Doors Lodge to the north of Arundel. All the PIAs were slight and the vehicles were travelling south at the time. 3 of the 4 PIAs occurred in the

dark or whilst it was raining. The causation factors related to travelling too fast (2 PIAs), careless / reckless driving (1 PIA) and adverse weather (1 PIA). As the A284 is not part of the LRN it may be more appropriate to not route development-related traffic along this route and instead continue on the A29 to join up with the A27 at Fontwell.

14.10 Cumulative Impact

14.10.1 The development traffic travelling to / from the site via the A29 from the A27 west has been included in the assessment of the Fontwell west roundabout, which has previously discussed as part of the combined Hambrook cluster / Brick Kiln Farm assessment (**Section 5.10**).

14.11 Access Options

14.11.1 The access arrangement options proposed in the 2009 Transport Assessment were considered appropriate by WSCC Highway Officers.

14.11.2 The access to the site itself (drawing 3715/F/08 Rev B) was prepared in line with DMRB guidance and informed by the traffic generation calculations and speed surveys. Specific features to ensure compliance with the routing strategy include bullnose kerbing on the northbound side of the access road, signage and traffic island to restrict left out right in HGV movements. Visibility splays from the proposed priority junction were informed by a speed survey, and the County Council were happy with proposals for 2.4m by 120m in the primary direction and 2.4m by 160m in the secondary direction. Vertical / forward visibility on the B2138 was also addressed and found to be acceptable. A Stage 1 Road Safety Audit was undertaken on the proposals and the designers accepted the issues raised so there are considered to be no issues which cannot be overcome. Details of the previous scheme are included in **Appendix G**.

14.11.3 To ensure that HGVs can safely access the A29, improvements to the one way slip road between the B2138 and the A29 were proposed, these included localised widening, resurfacing, new carriageway markings, and additional signing (drawing 3715/F/07 rev C). The A29 is a single carriageway route which forms part of the LRN and no highway improvements are considered necessary to facilitate the minimal increase in traffic associated with the proposed minerals site.

14.12 Summary

14.12.1 The traffic impact of mineral extraction at Horncroft has been previously assessed as part of a 2010 planning application. The application was withdrawn due to the decline in house building and the subsequent reduction in demand for sand. The County Council had however provided comprehensive comments on the Transport Assessment, which have been used to

inform this assessment.

14.12.2 The proposals are expected to generate approximately 144 two way vehicle movements per day over the course of a 15 year lifespan.

14.12.3 The routing strategy, enforced by the proposed access arrangements, do not allow for traffic to turn left out or right into the site. At the B2138 Tripp Hill / A29 junction, 70% of the traffic is expected to travel south and 30% of the traffic is expected to travel north on the A29. The access strategy in the previous Transport Assessment proposed improvements to the one-way slip road to the north of the B2138 Tripp Hill / A29 junction, to improve the route for northbound traffic. The results of the PIA investigation suggest that it may be more appropriate for development-related traffic to not use the A284, and instead use the A29 / A27 via Fontwell.

14.12.4 The traffic impact assessment shows that there will be minimal impact on the LRN which will not have a severe impact on the operation of the LRN.

14.12.5 The proposed access arrangements into the site were considered acceptable by the County Council and were supported by a Stage 1 Road Safety Audit and are considered to still be appropriate for this development.

14.12.6 The overall acceptability of this site is assessed as ***High Acceptability***.

15. LAND ADJACENT TO WEST HOATHLY

15.1 Introduction

15.1.1 This section covers the proposed mineral site known as Land adjacent to West Hoathly (ref: M/MS/1) to the north of the Top Road (C319) and east of the A22. There are no other sites in the vicinity of land adjacent to West Hoathly.

15.1.2 The location of land adjacent to West Hoathly, in relation to LRN, is illustrated in **Figure 14.1**.

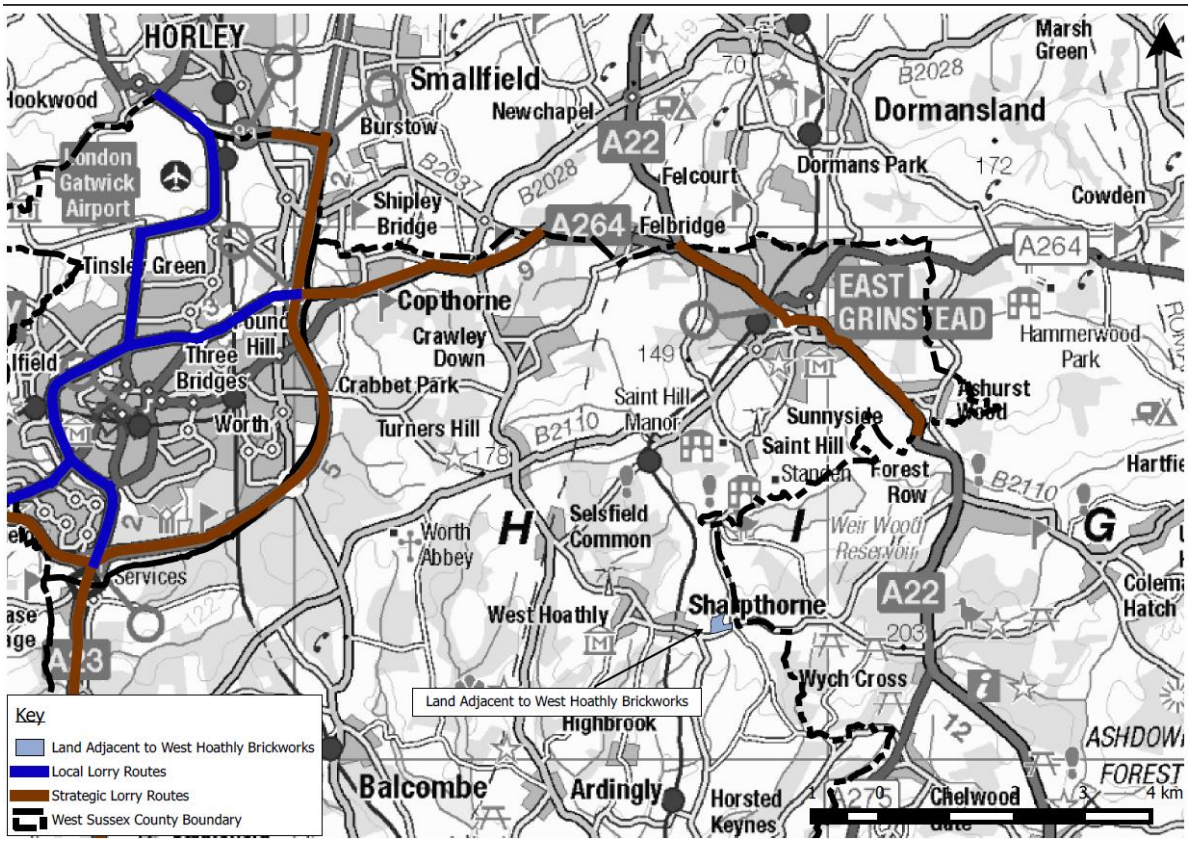


Figure 15.1: Land Adjacent to West Hoathly Brickworks Location
(*Contains OS data © Crown copyright [and database right] (2015)*

15.2 Location / Context

15.2.1 The land adjacent to West Hoathly is located immediately north of the C319 Top Road to the east of the village of Sharpthorne. Access to the site is however taken from Top Road via Station Road and Hamsey Road which are both residential streets of a relatively steep gradient. There is a footway along the northern side of Station Road, and footways flanking both sides of Hamsey Road. The footway flanking the western side of Hamsey Road c.4m wide so that vehicles do not park on the main carriageway (refer to **Photograph 15.1**)

15.2.2 The site is an operational Brickworks, all the clay quarried on site is used for the brickmaking process, with only the end product being transported off to markets.

Photograph 15.1: Hamsey Road

15.2.3 The A22 is the closest LRN, which is accessed via Top Road / Plawhatch Lane and Hindleap Lane. The junction with the A22 is a signal controlled cross roads with Colemans Hatch Road forming the eastern arm. There is a right turn lane for vehicles turning from the A22 southbound into Hindleap Lane, but there are no pedestrian crossing facilities at this junction.

15.2.4 The route from the A22 to the site travels through Ashdown Forest with vehicles travelling through the Priory Road / Hindleap Lane / Plawhatch Lane / Legsheath Lane junction. Priory Road and Plawhatch Lane form the main line through the junction, although the dominant movement is between Plawhatch Lane and Hindleap Lane. There is however, no right turn lane for vehicles turning from Plawhatch Lane onto Hindleap Lane, as visibility splays are good with grassed verges on all corners of the junction.

15.2.5 Travelling north the A22 connects the site with East Grinstead (c.8.5km), M25 junction 6 (Godstone / Caterham) or travelling west from East Grinstead on the A264 to the M23. To the south the A22 terminates at Eastbourne via Halisham and Polegate.

15.2.6 The border of East Sussex County Council is to the east of Grinstead Lane c.1.15km from the junction of Top Road / Station Road.

15.3 Planning History

15.3.1 The following minerals planning applications for West Hoathly Brickworks have been received by West Sussex County Council. Details of the applications are summarised below;

- WSCC/081/14/HO, Variation of Conditions 2, 4, 5, 6 and 17 of planning permission HO/36/98 to extend the time limit for working and final restoration of the site from 31 March 2018 to 31 March 2028 - Granted
- HO/36/98, Consolidation of existing mineral planning permissions together with proposals to extend the existing quarry. Restoration of the site to woodland, agriculture and nature conservation areas – Granted

15.3.2 There are no documents provided for the 1998 planning application. WSCC Highways were however consulted on the 2014 application and had no objection to the extension of time proposals on the grounds that the Brickworks had clearly been operating for a number of years without "any known significant highway issues associated with the operation of this site." and that the proposals were not seeking to increase the amount of traffic.

15.4 Baseline Traffic Conditions

15.4.1 The location and type of traffic counter used to build up the background picture of traffic levels in the surrounding area is demonstrated in **Figure 15.2**.

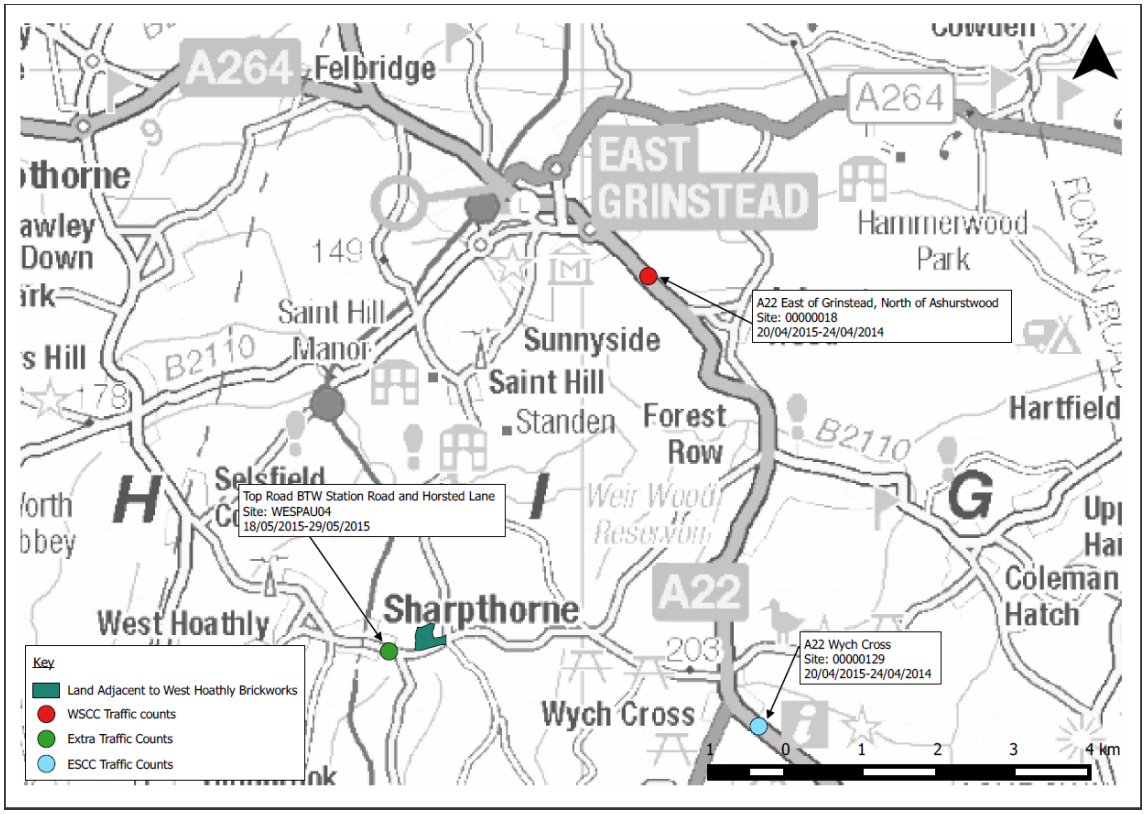


Figure 15.2: West Hoathly Traffic Counter Locations (*Contains OS data © Crown copyright [and database right] (2015)*

15.4.2 The traffic data for the key roads is summarised in **Table 15.1**.

Land adjacent to West Hoathly Brickworks		2015 Traffic				2031 Traffic		
		AM	PM	Daily	HGV%	AM	PM	Daily
Top Road	Eb	307	435	3650	1%	373	534	4521
	Wb	409	326	3458	1%	498	399	4283
A22 south of A275	nb	709	402	5330	N/A	864	494	6601
	Sb	340	844	5417	N/A	414	1036	6709
A22 North of Ashurst Wood	nb	868	748	7880	9%	1057	918	9760
	Sb	754	867	7828	4%	918	1064	9695

Table 15.1: West Hoathly Traffic Data 2015 and 2031

15.4.3 The traffic data shows that Top Road is a lightly trafficked route with minimal HGV traffic considering that the existing haulage movements associated with the Brickworks were captured by the survey.

15.4.4 The A22 carries a much higher volume of traffic, which is commensurate with its A road and LRN classifications. HGV traffic as a percentage of total volume are much greater representing between 4% - 9% of total flow. As a single carriageway the A22 reflects the characteristics of an urban All-purpose 1 road with a link capacity of between 1320 – 1590vph (as per TA79/99). Based on the traffic levels demonstrated in Table 15.1, there are no capacity issues on this section of the link.

15.5 Development-related Traffic

15.5.1 As the Brickworks is an existing and active site with established traffic movements which as noted in **Section 15.2** were accounted for by the traffic survey, the project team decided that there was no need to calculate any additional development-related traffic.

15.6 Committed Development Traffic

15.6.1 There is no committed development traffic within the immediate area to consider as part of this assessment.

15.7 Proposed Routing Strategy

Preferred routing strategy

15.7.1 The preferred routing strategy will remain as per the existing arrangement, whereby all traffic from the A22 arrives at the site via Top Road / Station Road and Hamsey Road. HGV traffic leaving the site would follow the aforementioned route in reverse. As discussed in **Section 15.3**, West Sussex Highways have no issues relating to development-related traffic using this routing strategy.

Alternative routing strategy

15.7.2 An alternative routing strategy would have allowed for a proportion of the development-related traffic to arrive / depart from the west, thereby travelling through Sharpthorne village. This routing is considered to be inappropriate for a number of reasons;

- Difficult turning manoeuvres for HGVs turning right out of Station Road or left onto Station Road, given limited carriageway width and the presence of parked cars on Station Road;
- Residential properties fronting onto Top Road, with relatively narrow footways flanking the carriageway which represents a safety concern.
- Onward routes along B and C classification roads, unsuitable for HGV traffic.

15.7.3 A Traffic Management Strategy for the C319 has recently been undertaken by CH2M Hill for West Hoathly Parish Council. The purpose of the study was "… to consider previous ideas and to develop a Traffic Management Strategy that would provide practical and deliverable scheme for the implementation of physical and softer measures to reduce the impact of vehicle speeds and to discourage the use by traffic of inappropriate routes through the villages of both West Hoathly and Sharpthorne. "[5]

15.7.4 It is considered that routing the Brickworks traffic west would jeopardise the success of any future Traffic Management scheme to be implemented on the C319 to improve the environment for non-motorised / vulnerable users in the two communities.

15.8 Proposed Distribution

15.8.1 The development-related traffic is already included on the network, however for consistency with the other sites assessed as part of this study, the distribution diagram is presented in **Figure 15.3**.

[5] Paragraph 1.3 West Hoathly Traffic Calming Study – C319 West Hoathly, CH2M Hill

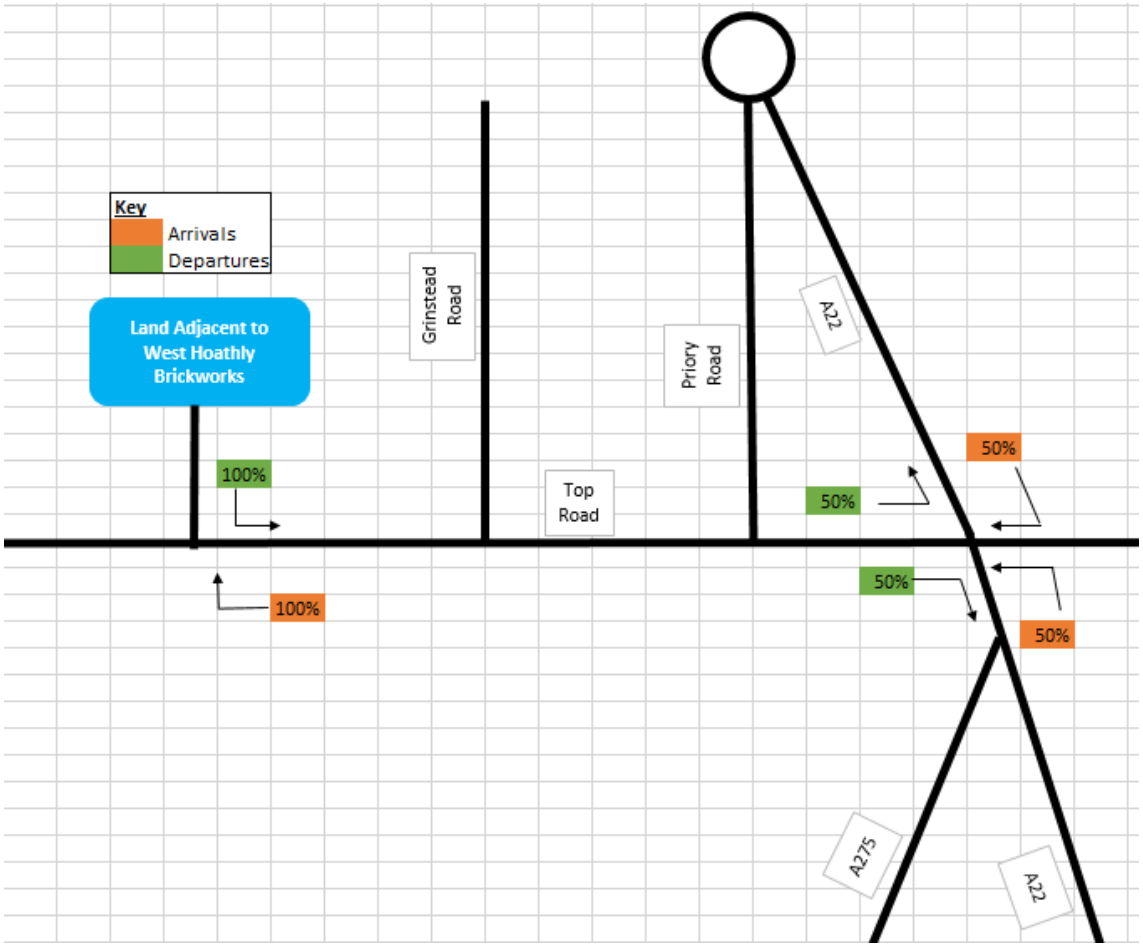


Figure 15.3: West Hoathly Development Traffic Distribution

Land adjacent to West Hoathly Brickworks		Hourly Development Two- way Traffic Movements (PCU)		2031 (vehicles) + Development (PCU)		% impact	
		Arrivals	Departures	AM	Arrivals	Departures	AM
Top Road	Eb	Included within the 2015 baseline traffic		373	534	0%	0%
	Wb			498	399	0%	0%
A22 south of A275	nb			864	494	0%	0%
	Sb			414	1036	0%	0%
A22 North of Ashurst Wood	nb			1057	918	0%	0%
	Sb			918	1064	0%	0%

Table 15.2: West Hoathly Traffic Impact Assessment

15.8.2 The results of the traffic impact assessment show that there will be no impact on the highway network.

15.9 Cumulative Impact

15.9.1 There is no cumulative impact to assess, as the site is remote from all others considered as

part of this study and the development-related traffic is distributed across roads which have not previously been considered.

15.10 Personal Injury Accident Assessment

15.10.1PIA data for the most recent three year period is presented in **Figure 15.4** for the preferred routing strategy. Along the routes as illustrated there have been a total of 7 PIA, of which 3 (43%) were classified slight and 4 (57%) classified as serious. There have been no fatal PIA reordered in the most recent three year period.

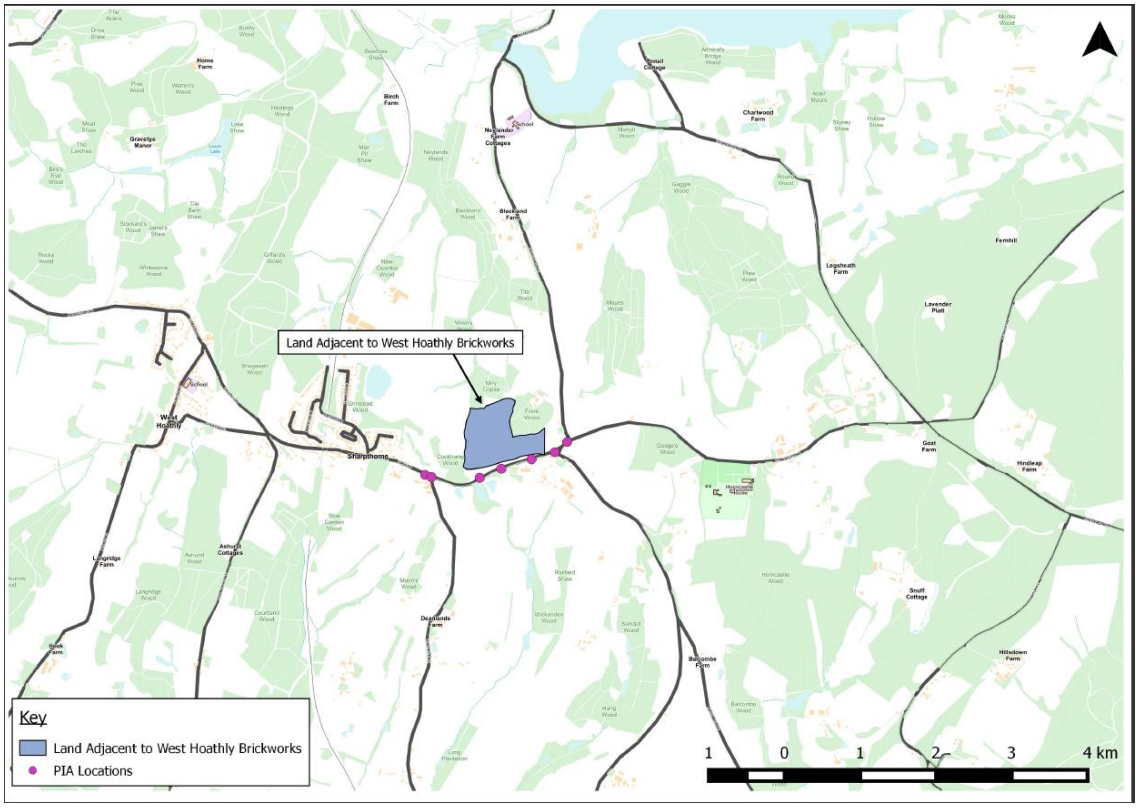


Figure 15.4: West Hoathly Personal Injury Accident Data
(*Contains OS data © Crown copyright [and database right] (2015)*

15.10.2A review of the main causation factors for each PIA reveals that 86% were attributable to the driver/rider and 14% attributable to special codes. **Figure 15.4** shows that no PIAs have occurred at the junction of Top Road / Station Road nor along the routes to the Brickworks, confirming the suitability of this route. 1 serious and 1 slight PIA occurred near the junction with Horsted Lane, these incidents were related to driver error with the serious PIA attributed to driving too fast and the slight PIA failure to look.

15.11 Access Options

15.11.1The access options for the site are to remain as per the existing situation as stipulated in

Planning Condition 13 of the 2014 application for an extension of operating time, which states that there should be no access to the site other than through the existing access to the Brickworks onto Hamsey Road.

15.12 *Summary*

15.12.1 The traffic impact of further mineral extraction on land adjacent to West Hoathly Brickworks will have a negligible impact on the local highway network, as the proposals would extend the lifespan of the quarry and would not look to increase production.

15.12.2 The routing strategy via the A22 to the east of the site, ensures minimal impact on residential properties and non-motorised road users, although it does route traffic through Ashdown Forest which is part of the High Weald Area of Outstanding National Beauty.

15.12.3 The PIA investigation does not reveal any accident history with the current arrangements to the Brickworks, and in the 2014 planning application West Sussex Highways did not raise any issues with the access arrangement.

15.12.4 The overall acceptability of this site is assessed as ***High Acceptability***.

16. SUMMARY AND RECOMMENDATIONS

Site	Preferred Routing	Key Junctions Affected	Access	Areas to be Addressed	Overall Suitability in Highways Terms
Hambrook	Common Road – Cheesemans Lane – A259 = 95% Common Road west – A3 = 5% A259 – A27 east = 47.5% A259 – A27 west = 47.5%	A27/A259 Fishbourne Road Roundabout	One new point of access onto Common Road to the west of Marlpit Lane as proposed by Hanson. Appropriate visibility splays can be achieved to DMRB standards. Access should be in the form of a bellmouth and should allow for two way vehicle movements to minimise the delay onto Common Road. There are no PIA clusters at the proposed access location.	Improvements to Common Road / Cheesemans Lane junction to facilitate the left out movement are recommended. The impact of development traffic on the Fishbourne Roundabout (and the other junctions along the A27 bypass) will require further detailed assessment once Highways England have identified a preferred scheme. This will also require the consideration of the development traffic for Brick Kiln Farm and Horncroft. Any future Transport Assessment of the site should take into consideration the impact of the development traffic on HCC roads.	**Medium Acceptability –** Dependant on the outcome of Highways England proposals for the A27 Chichester bypass. The impact of development-related traffic (both singular and cumulative) on the proposed junction schemes will therefore need to be assessed for the future year scenario, before any decisions on sites suitability (in terms of traffic impact) can be made. The site has the disadvantage of being located c.9km from the LRN, and in order to access the LRN it will be necessary for development-related traffic to travel through residential areas.
Brick Kiln Farm	A259 – Bognor Road Roundabout = 100% A27 east = 45% A27 west = 45% U turn onto A259 Bognor = 10%	A27/A259 Bognor Road Roundabout A259/B2144 Drayton Lane Roundabout	Separate access for IN / OUT movements should be investigated. Visibility splays in the primary direction are achievable to DMRB standards, although if taken from the access to the north of the Garden Centre there may be the requirement for third party land. Actual speeds should be confirmed by a speed survey. The proposed IN / OUT arrangement would be consistent with approved The Fuel Depot Waste site on the opposite side of the carriageway. It would also ensure pedestrian and cyclist safety along the shared use path flanking the northbound carriageway. There are no PIA clusters at the proposed access location which are attributable to highways design.	The impact of development traffic on the Bognor Road Roundabout (and the other junctions along the A27 bypass) will require further detailed assessment once Highways England have a preferred scheme in place. This will also require the consideration of the development traffic for Hambrook and Horncroft.	**Medium Acceptability –** Dependant on the outcome of Highways England proposals for the A27 Chichester bypass. The impact of development-related traffic (both singular and cumulative) on the proposed junction schemes will therefore need to be assessed for the future year scenario, before any decisions on sites suitability (in terms of traffic impact) can be made. The site has the benefit of being located in an industrial area and has direct access onto the LRN.

Site	Preferred Routing	Key Junctions Affected	Access	Areas to be Addressed	Overall Suitability in Highways Terms
East of West Heath Common	A272 towards Petersfield =70% A272 towards Midhurst = 30%	None	The existing access to West Heath Common quarry onto Durford Lane would be used, with no proposed improvements required. Durford Lane is a lightly trafficked rural road and previous planning applications have raised no issue from WSCC Highways with regards to development-related traffic using this route. There is no PIA history on Durford Lane attributable to quarry operations that would be worsened by the development proposals coming forward.		**High Acceptability –** Provided there is no material increase in traffic onto Durford Lane and subject to an appropriate TA detailing the impact (included cumulative if necessary) and any necessary mitigation measures if needed.
Minsted West	A272 towards Petersfield =70% A272 towards Midhurst = 30%	None	The existing access to Minsted West quarry onto Minsted Lane would be re-opened. The road benefits from a relatively straight alignment and therefore oncoming vehicles would have good forward visibility and be able to give way accordingly. There is no PIA history on Minsted Lane, or at the junction of Minsted Lane / A272 which has been subject to extensive improvement works including a left turn deceleration lane into Minsted Lane, pedestrian crossing islands, and right turn lanes.	A high proportion of development-related traffic would need to travel through Rogate village where the A272 narrows. Issue of severance and disturbance from traffic movements should therefore be considered.	**High Acceptability –** Provided no material increase in traffic onto Minsted Lane and subject to an appropriate TA detailing the impact (cumulative if necessary) and providing any mitigation measures if needed.
Severals West	A272 towards Petersfield =70% A272 towards Midhurst = 30%	None	Access to the site via Severals Lane is not considered feasible, due to the relatively steep gradient, narrow carriageway width and tight right turn. Alternate access solutions onto the A272 have been investigated, but would require further technical input with regards to levels and local structures before a decision on their overall suitability could be confidently made.	A high proportion of development-related traffic would need to travel through Rogate village where the A272 narrows. Issue of severance and disturbance from traffic movements should therefore be considered.	**Low Acceptability –** Subject to further detailed technical investigations relating to the feasibility (design and costs) of constructing an access road to connect the site with the A272.
Chantry Lane Extension	A283 west – A24 Washington Roundabout (100%) A24 rbt north = 40% A24 rbt east = 20% A24 rbt south = 40%	A24/A283 Washington Roundabout.	The existing access to Chantry Lane is considered unsuitable for future development-related traffic and options to improve the junction are limited. Furthermore if the existing access arrangement via Chantry Lane was pursued, it would mean that development-related traffic would be sitting in traffic queues on the A283 Washington Road into Storrington which should be avoided where possible, due to Storrington being an AQMA and Low Emission area.	Modelling works undertaken to assess the cumulative impact of Chantry Lane extension, Rock Common and Hams Farm on the Washington Roundabout show that the junction is approaching capacity in 2015 and by 2031 certain arms will be over capacity without the addition of development-related traffic.	**Medium Acceptability –** Subject to an appropriate TA detailing the impact (cumulative is necessary). The site benefits from being located close to the LRN and the area is well established for quarrying activities.

Site	Preferred Routing	Key Junctions Affected	Access	Areas to be Addressed	Overall Suitability in Highways Terms
			A new access to the east of A283 / Water Lane / Sullington Lane junction has been proposed by the Dudman Group. The proposed access would be located further from Storrington and would therefore have less impact on the surrounding residential properties and in comparison to Chantry Lane reduce development-related traffic sitting in a traffic queue towards Storrington impacting on the AQMA/ Low Emission area.	Should improvement works at the junction come forward, the impact of the development-related traffic should be taken into consideration. The proposed access arrangement requires land outside of the highway boundary and clarification on land ownership would therefore be required.	If a new access is achievable then the development-related traffic will be pushed further away from the residential areas and the AQMA. Works may be required at the A24 / A283 roundabout to mitigate the cumulative impacts should multiple sites come forward at the same time.
Rock Common	A283 towards A27 (Shoreham) = 20% A283 towards A24 (Washington rbt) = 80% A24 rbt north = 40% A24 rbt south = 40% As per WSCC Highway recommendations on a previous application for Landfill at Rock Common quarry there should be no development related traffic accessing the site directly from the A24, due to the lack of acceleration lanes back onto the A24 from The Hollow.	A24/A283 Washington Roundabout.	Existing access to Rock Common quarry from The Hollow would be retained for any future use of the site. There is no PIA associated with this route / access arrangement.	Modelling works undertaken to assess the cumulative impact of Chantry Lane extension, Rock Common and Hams Farm on the Washington Roundabout show that the junction is approaching capacity in 2015 and by 2031 certain arms will be over capacity without the addition of development-related traffic. Should improvement works at the junction come forward, the impact of the development-related traffic should be taken into consideration. Any future development at the site would need to be mindful of the conditions proposed by WSCC Highways Officers on the 2008 Landfill application (refused) to widen The Hollow between the site access and A283 to 6m, and adequately demonstrate that the proposed traffic levels would not result in a material increase in traffic using The Hollow.	**High Acceptability –** Subject to an appropriate TA detailing the impact (cumulative is necessary). There have been quarrying activities at Rock Common since the 1950s, indicating that the principle of HGV traffic using The Hollow for this purpose is well established. There is no existing PIA issue on the preferred routing strategy which raises any cause for concern. If the site were to come forward in isolation to the others, then a detailed Transport Assessment should assess the impact on The Hollow / A283 junction and the A24 Washington Roundabout. It is possible that works may be required at the A24 / A283 roundabout to mitigate the cumulative impacts should multiple sites come forward at the same time.
Ham Farm	A283 towards A27 (Shoreham) = 50% A283 towards A24 (Washington rbt) = 50% A24 rbt north = 25% A24 rbt south = 25%	A24/A283 Washington Roundabout. .	A new bellmouth access into the site would be required and it is recommended that this be able to facilitate two way movements, to avoid disruption to the traffic on A283.	Modelling works undertaken to assess the cumulative impact of Chantry Lane extension, Rock Common and Hams Farm on the Washington Roundabout	**High Acceptability –** Subject to an appropriate TA detailing the impact (cumulative is necessary).

Site	Preferred Routing	Key Junctions Affected	Access	Areas to be Addressed	Overall Suitability in Highways Terms
				show that the junction is approaching capacity in 2015 and by 2031 certain arms will be over capacity without the addition of development-related traffic. Should improvement works at the junction come forward, the impact of the development-related traffic should be taken into consideration.	The site would benefit from direct access onto the A283. It is possible that works may be required at the A24 / A283 roundabout to mitigate the cumulative impacts should multiple sites come forward at the same time.
Horncroft	Tripp Hill – A29 north = 30% Tripp Hill - A29 south =70%	B2138 Tripp Hill / A29	A previous Planning Application for the site (withdrawn due to the recession) designed a new access to the site, which included features to ensure that the routing strategy i.e. no development-related traffic to access / egress the site via Tripp Hill to the north of the site, was enforced.	The improvement works to the B2138 / A29 junction should be reassessed as part of any future application for the site to ensure that they are appropriate. Consideration of the appropriateness of routing development-related traffic on the A284 should also be reconsidered once more information on future markets is available. The impact of development traffic on the Bognor Road Roundabout (and the other junctions along the A27 bypass) will require further detailed assessment once Highways England have a preferred scheme in place. This will also require the consideration of the development traffic for Hambrook and Brick Kiln Farm.	**High Acceptability –** Subject to a revised Transport Assessment detailing any mitigation measures.
Land adjacent to West Hoathly	Top Road / Plawhatch Lane – Hindleap Lane – A22 = 100% A22 north = 50% A22 south = 50%	None considered to be adversely affected	As per existing arrangement via Top Road – Station Road – Hamsey Road	Ensure that routing strategy is implemented to ensure HGVs do not arrive / depart from the west and cause adverse disruption to the residential areas or prejudice the future traffic management scheme on the C319.	**High Acceptability –** Provided no increase in traffic movements associated with the site, it is assumed that the site would continue to operate as it currently does.