Report

Heavy Goods Vehicle (HGV) Routes in Oxted

Investigation Report

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Executive Summary

TPS was commissioned by Surrey County Council (SCC) to investigate and report on possible solutions for the problems associated with the Heavy Goods Vehicle (HGV) movements to and from the Oxted Chalk Quarry.

Oxted Chalk Quarry is located on Chalkpit Lane approximately 1.5km northwest of Oxted town centre. The site is an operational chalk quarry which has been active for more than 150 years with permission to continue until 2042. The site has permission for extracting 18,000 tonnes of minerals per year, equivalent to approximately 8 daily trips; and infilling the site at a rate of 100,000 tones per year, equivalent of up to 38 daily trips. The Environment Agency indicated that the site received a total of 81,369 tonnes of waste, equivalent to 30 daily trips, for the12-month period April 2007 to March 2008. Existing routing for HGVs is via roads in Oxted onto the A25.

On 7th March 2008, a petition with 425 signatures was presented by local residents at the Tandridge Local Committee meeting demanding that the local authority address the potential issues arising from the operations from the site. In May 2008, a second petition with over 1,200 signatures from residents of Chelsham & Farleigh, Godstone, Limpsfield, Tatsfield, Titsey Warlingham, Whyteleafe and Woldingham was presented to SCC requesting the prevention of HGV traffic travelling through Woldingham.

On 7th May 2008 a report entitled 'Chalkpit Lane and Oxted Quarry Traffic' was produced by SCC which considered the possibilities for amelioration of the problems being caused by traffic accessing Oxted Chalk Quarry. The report recommended that the County Council continues to encourage the submission of a planning application for a new haul road within the Quarry site; and a scheme for HGV amelioration measures in Oxted to be considered for prioritisation with other integrated transport schemes. The report was submitted to the Tandridge Local Committee which requested a more considered independent technical appraisal of the suggested various options.

This Study has considered possible measures to reduce the impact of the HGV traffic to and from the Quarry. The possible measures range from changing the type of vehicles transporting materials to and from the site, placing Traffic Orders along local roads to restrict HGV movements, to diverting all material movement to the local rail network.

All options were evaluated by assessing the potential to enhance safety for other road users; impact/effect on the Areas of Outstanding Natural Beauty; impact on the operation of the local transportation network; reduction of traffic levels within Oxted without disproportionately increasing traffic within other neighbouring towns; the chosen route in terms of suitability of the road, number of properties and people affected; the cost of implementation, legal implications and timescales.

The Study concludes that the Consultants' preferred option is a staged approached to the problem that includes widening the Quarry access, signalising Chalkpit Lane close to the bridge arch, provision of traffic calming along Chalkpit Lane and re-routing the HGVs via Barrow Green Road be implemented in the short to medium terms and then monitoring the success of the measures.

This preferred option has been selected as it performs best in terms of ability to reduce the impact of the traffic on the local road network, enhance safety for other road users and legal implications. The cost of implementation and timescales for this option are relatively low when compared to diverting traffic from the local community in the form of rail connection, which would minimise the number of HGVs on the local road network.

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1 Introduction

1.1 INTRODUCTION

TPS was commissioned by Surrey County Council (SCC) to investigate and report on possible solutions for the problems associated with the Heavy Goods Vehicles (HGV) movements to and from the Oxted Chalk Quarry.

This is further to the 7th May 2008 report entitled 'Chalkpit Lane and Oxted Quarry Traffic' produced by SCC, which considered the possibilities for amelioration of the problems being caused by traffic accessing Oxted Chalk Quarry. The report recommended that the County Council continues to encourage the submission of a planning application for a new haul road within the quarry site; and a scheme for HGV amelioration measures in Oxted to be considered for prioritisation with other integrated transport schemes. The report was submitted to the Tandridge Local Committee which requested a more considered independent technical appraisal of the suggested various options.

1.2 BACKGROUND

In December 2007 the Tandridge Local Committee became aware of the potential problems associated with HGV traffic when the Local County Member raised the issue.

SCC subsequently identified that the type and nature of traffic using local roads within Oxted is heavier than can be sustained without increased deterioration and higher maintenance costs as the traffic was damaging local public highways.

On 7th March 2008, a petition with 425 signatures was presented by local residents at the Tandridge Local Committee meeting, demanding that the local authority address the potential issues arising from the operations from the site.

Following this, the site operator Southern Gravel Limited (SGL) offered to construct a haul road from the site to The Ridge but this caused further concern for the residents, especially those further afield.

In May 2008, a second petition with over 1,200 signatures from residents of Chelsham & Farleigh, Godstone, Limpsfield, Tatsfield, Titsey, Warlingham, Whyteleafe and Woldingham requesting measures to prevent HGV traffic affecting their communities was presented to the Tandridge Local Committee.

The Parish Councils around the Study area have also articulated their concerns over the HGV traffic.

1.3 OBJECTIVES

TPS was commissioned to consider options for mitigating the impacts arising from the HGV movements; to cost the proposals and to provide a two-tiered solution comprising items can be done in the short to medium along with the longer term options.

In finding a solution to the problems of the HGV movements, the selected measure, or set of measures, aim to meet a set of objectives. The objectives have been adopted from the SCC Local Transport Plan (LTP), the principal means of delivering the objective of managing travel demand within Tandridge District. The objectives are:

- Congestion (Tackling congestion to limit delays)
- Accessibility (Increasing accessibility to key services and facilities)
- Safety (Improving road safety and security)
- Environment (Enhancing the environment and quality of life)
- Maintenance (Improving management and maintenance of our transport network)

1.4 SCOPE OF REPORT

This study investigates possible implications, in terms of potential impact on the use of the local roads and discusses likely costs and benefits of different measures that could be adopted to address the impact of HGV movements within Oxted.

Following this brief introductory Chapter, the report is set out as:

- Chapter 2 outlines the key issues to be addressed
- Chapter 3 outlines the constraints to the measures
- Chapter 4 sets out a number of possible measures
- Chapter 5 gives an evaluation of possible measures
- Chapter 6 identifies the Consultant's preferred option
- Chapter 7 presents a summary and conclusion to the report

2 Problem Definition

2.1 OXTED CHALK QUARRY

Oxted Chalk Quarry can be seen on the **Figure 2.1 Site Location Plan** and is located on Chalkpit Lane approximately 1.5km northwest of Oxted town centre and north of the M25.

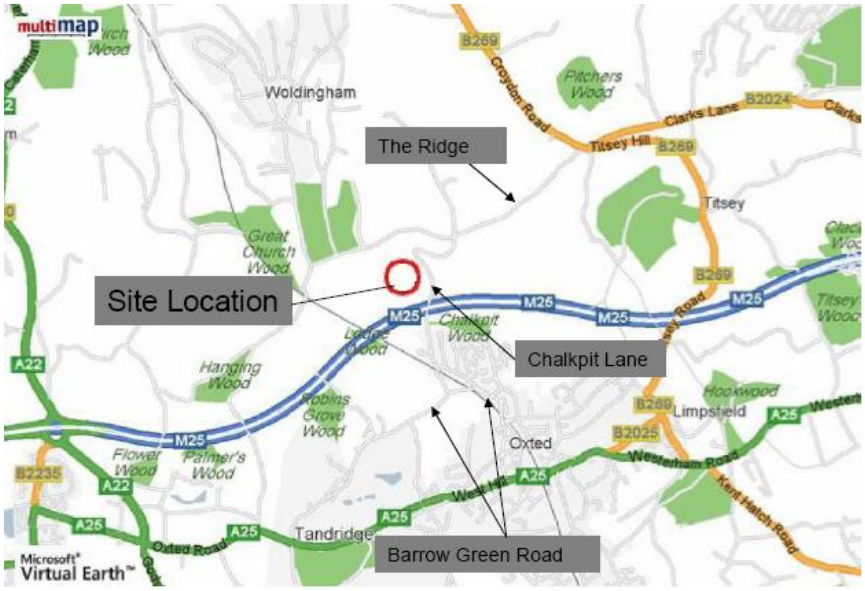

Figure: 2.1 Site Location

The site is an operational chalk quarry which has been active for more than 150 years with permission to continue until 2042. The site is owned by Oxted Sand & Gravel Limited and operated by SGL.

The Quarry operates under a 1947 Interim Development Order (IDO) which broadly defines the use of the site and does not include any restrictions on traffic movements. The 1947 IDO granted the extraction of chalk for export over south east England and the deposit of waste to restore the site. In the late 1950s, the site generated up to 250 vehicles loads per week.

The 1991 Planning and Compensation Act sought to modernise the conditions at the site in terms of environment and amenity aspects of the working of the site but specifically excluded conditions that would affect the asset value of the site, i.e. restrict the total quantity of mineral that could be extracted or restrict the traffic movements.

Changes to the operation at the site were set out in a planning application for the site TA93/0765, under the Town and Country Planning Act 1990. Under this permission, the site would continue extracting minerals and undertaking operations involving the deposit of waste until 21 February 2042. Hours of operation would be limited to 0700 to 1800 hours Monday to Friday; 0700 to 1500 hours Saturday with no operation undertaken on Sundays or any Public Holiday. Facilities would be provided to prevent the deposition of extraneous matter on the highway. Access to the site would be via the access point(s) on Chalkpit Lane.

The site already had permission to extract chalk at a rate of 18,000 tonnes per year but in 2006 the Environment Agency issued a waste disposal licence for the site to accept inert materials at a rate of 100,000 tonnes per year. Assuming waste disposal is at a rate of 20 tonnes per HGV and chalk removal at a rate of 16 tonnes per HGV; if the Quarry operates 5 and half days a week for 48 weeks a year, this equates to 46 daily trips to and from the site. According to SGL, on a busy day total trips to and from the Quarry range from 70 to 80 HGVs. Observations by a local resident on 3rd March 2008 identified that 11 trips occurred before 0830, with 9 of these occurring in the period 0800 and 0820. Further observations by the local resident identified 40trips in and out of the Quarry on 12th March 2008 between 0915 and 1600.

The Environment Agency supplied information relating to waste imports for the period April 2007 to March 2008 contained in Appendix C to this report. In the first quarter, April to June, 9,260 tonnes of waste were received by the site and the next quarter, July to September, 24,866 tonnes were received. The third quarter, October to December, 25,483 tonnes of waste were received by the site and the next quarter, January to March, 21,760 tonnes were received. This total of 81,369 tonnes, equivalent to 30 daily trips, for the12-month period is within the rate agreed by the Environment Agency.

Access to the site can be seen in Picture 1 and is via an access point on Chalkpit Lane, south of a regulated width restriction. The existing access point is restrictive for HGVs turning in and out of the Quarry site. The location is restricted by residential properties on either side of entrance.

Picture 1 –Access to Oxted Chalk Quarry

The existing routing for HGVs leaving the site is via roads in Oxted onto the A25.

There is a 'good faith' agreement between the site operator and HGV drivers to travel along a designated route to and from the Quarry. HGVs travel to the site via the junction of A25 with Barrow Green Road, then onto the western section of Barrow Green Road before taking Chalkpit Lane. The exit route is via Chalkpit Lane then left onto the eastern section of Barrow Green Road to Church Lane and East Hill Road to the A25.

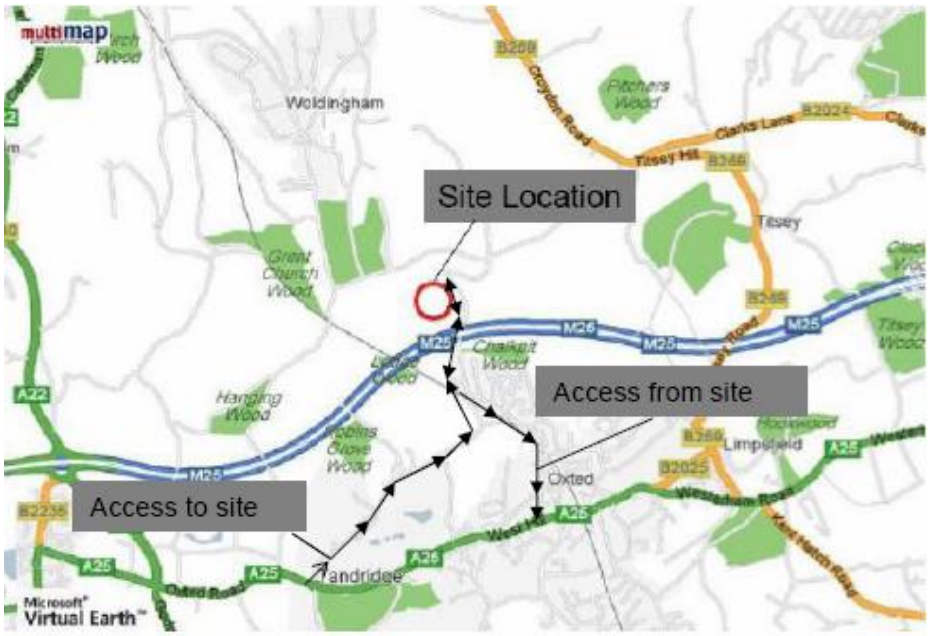

Figure: 2.2 Existing agreed HGV routing

2.2 RESIDENT CONCERNS

In summer 2007, residents in the vicinity of the Quarry noticed a sudden increase in the number of HGVs to and from the site, which caused concern in terms of interference with their use of the public highway and implications in terms of safety.

Local residents and business property occupiers of and visitors to Oxted, Limpsfield, Woldingham and Barrow Green Road articulated their concerns over the perceived implications of the increased number of HGVs in the form of letters to their local councillors, Two petitions were also received; one a 425 signature petition demanding action from the local authority to address the potential issues arising from the operations from the site and the other, a petition with more than 1,200 signatures requesting the Tandridge Local Committee to prevent HGV traffic travelling through Woldingham. Some of the main concerns raised by residents were:

- Over-running verges, particularly in Chalkpit Lane near to the site access
- Congestion around the site access in Chalkpit Lane
- Congestion in Chalkpit Lane, north of Gordons Way
- Speed of HGVs
- Noise and Vibration caused by HGVs
- Congestion due to single HGV track under the railway bridge in Chalkpit Lane

- Reduced walking and commitment to 'Safe Route' to schools
- Lack of footway in southern section of Chalkpit Lane
- Lack of footway in Barrow Green Road; between Gordons Way and Chalkpit Lane
- Unsuitability of Church Lane and East Hill Road for high volume of HGV traffic
- Unsuitability of Barrow Green Road for two-way HGV traffic
- Effects of volume and speed of HGVs on roads within wider area of Tandridge
- Speed of HGVs down narrow and bendy roads
- Protection of the utility companies' equipment in the vicinity of the site.

In December 2007 the Tandridge Local Committee became aware of this issue when the Local County Member raised the issue. Following this, SGL offered to construct a haul road from the Quarry to The Ridge but this caused further concern for the residents, especially those further afield.

3 Constraints

3.1 LOCAL ROAD NETWORK

The local road network can be seen on **Figure 2.1 Site Location Plan** and is briefly described below.

3.1.1 3.1.1 Chalkpit Lane

Picture 2 Quarry and Chalkpit Lane

Chalkpit Lane forms the eastern boundary to the Quarry. Chalkpit Lane runs from the junction with The Ridge in the north to Barrow Green Road in the south. The junction with The Ridge has poor sight lines and visibility.

Chalkpit Lane is narrow with the road width varying from approximately 4.1m to 5.3m. The road is sinuous with a hairpin radius of some 20m, and is steep at about a 1 in 5 gradient. HGVs appear to currently navigate this section in spite of the width of the road, the gradient and the bendiness.

Some 750 metres to the south of the Quarry access, a brick-arch railway bridge forms a constriction to two-way traffic movements on Chalkpit Lane. The alignment of the road and its width requires HGVs to command the centre of the road thus ensuring that only one-way operation can take place at that time. Currently, there is no formal

Picture 3a - Brick arch railway bridge, Chalkpit Lane

\traffic management in place to control this one-way working.

Picture 3b – Width restriction, Chalkpit Lane

Immediately north of the site access, the northern section of Chalkpit Lane has been recently reduced to 40mph as part of a review of speed limits in the area and is subject to a width restriction of 6 feet 6 inches. The remaining section of Chalkpit Lane is predominately residential with a 30mph speed limit and some traffic calming.

Chalkpit Lane gives access to Public Footpaths 75 and 94.

3.1.1.1 Speed and Traffic levels

Traffic and speed surveys were undertaken on Chalkpit Lane for the period 24th May 2008 to 17th August 2008. Automatic Traffic Counters (ATCs) were installed in Chalkpit Lane, south of the Quarry entrance. A sample of the survey output is included as Appendix A to this report and the full survey is available from SCC. It is briefly discussed below**.**

3.1.1.2 Traffic on Chalkpit Lane

A summary of the results from the 2008 traffic surveys is presented in Tables 3.1 and 3.2.

The 5-day average trips in both directions along Chalkpit Lane during the morning peak period were 123 in May, 185 in June, 155 in July and 138 in August; during the evening peak period the trips were 137 in May, 169 in June, 164 in July and 155 in August. The 5-day average 24 hour trips were 1,483 in May, 1,795 in June, 1, 665 in July and 1595 in August. On average there are 150 trips in the morning peak period; 156 trips in the evening peak and 1,635 trips over a 24-hour period along Chalkpit Lane.

In May, up to 8% of the total vehicles along Chalkpit Lane in a 24-hour period were HGVs and in June up to 6% of the total vehicles were HGVs.

The average total numbers of vehicles within the same period increased in June. The percentage number of HGV movements when compared to the total vehicular movements reduced from 8% in May to 6% in June.

Table 3.1 5-day average traffic movements along Chalkpit Lane						
Month/Direction	Time Period					
	AM Peak	PM Peak	07:00 - 19:00	06:00 - 22:00	06:00 - 24:00	00:00 - 24:00
May 2008						
southbound	68	64	629	711	726	736
northbound	55	73	631	717	738	747
two-way traffic	123	137	1,260	1,428	1,464	1,483
June 2008						
southbound	93	80	755	865	884	898
northbound	92	89	754	862	886	897
two-way traffic	185	169	1,509	1,727	1,770	1,795
July 2008						
southbound	78	81	702	806	827	840
northbound	77	83	680	788	814	825
two-way traffic	155	164	1,382	1,594	1,641	1,665
August 2008						
southbound	71	73	674	770	787	801
northbound	67	82	658	761	782	794
two-way traffic	138	155	1,332	1,531	1,569	1,595
Average	**150**	**156**	**1,371**	**1,570**	**1,611**	**1,635**

Source: Surrey County Council

Table 3.2 Percentage HGV movements along Chalkpit Lane									
Month/Direction	Time Period								
	07:00 - 19:00			06:00 - 24:00			00:00 - 24:00		
	HGV	Total	% HGV	HGV	Total	% HGV	HGV	Total	% HGV
May Southbound	48	629	8%	48	726	7%	48	736	7%
May Northbound	53	631	8%	54	738	7%	54	747	7%
May Two-way	101	1,260	8%	102	1,464	7%	102	1,483	7%
June Southbound	43	755	6%	43	884	5%	43	898	5%
June Northbound	45	754	6%	45	886	5%	45	897	5%
June Two-way	88	1,509	6%	88	1,770	5%	88	1,795	5%
July Southbound	13	702	2%	13	827	2%	13	840	2%
July Northbound	8	680	1%	12	814	1%	12	825	1%
July Two-way	21	1,382	2%	25	1,641	2%	25	1,665	2%
August Southbound	42	674	6%	43	787	5%	43	801	5%
August Northbound	42	658	6%	43	782	5%	43	794	5%
August Two-way	84	1,332	6%	86	1,569	5%	86	1595	5%
Average	**74**	**1,371**	**5%**	**75**	**1,611**	**5%**	**75**	**1,635**	**5%**

Source: Surrey County Council

The survey identified the maximum vehicular movements along Chalkpit Lane in a 12-hour period as 1,509 and in a 24-hour period as 1,795. In May, HGVs made up to 8% of the trips along Chalkpit Lane; in June, HGVs made up to 6% of all trips; in July HGVs made up only 2% of the total traffic and 6% of all trips in August. On average, HGVs make up 5% of all traffic along Chalkpit Lane.

A recent mini survey undertaken by a resident indicated 60 loads daily. The survey on 3rd March 2008 identified that 11 trips occurred before 0830, with 9 of these occurring in the period 0800 and 0820. Further observations by the local resident identified 40 trips in and out of the Quarry on 12th March 2008 between 0915 and 1600. According to SGL, on

a busy day total trips to and from Quarry range from 70 to 80 HGVs. The 80 trips from the Quarry would make up to 6% of the 12-hour trips and 4% of the 24-hour trips.

Whilst it is recognised that the maximum movements range from 60 to 80 daily trips; there are periods when there are no movements to and from the Quarry specifically during holiday periods when the operation closes down.

As a point of reference, in the late 1950s movements to and from the Quarry were 250 vehicles per week.

3.1.1.3 Speed levels

A summary of the speed results from the traffic surveys is presented in Table 3.3.

Table 3.3 Speeds (mph) along Chalkpit Lane

Month/Direction	12-hour		18-hour		24-hour	
May Southbound	45.00	38.90	45.00	39.22	45.00	39.22
May Northbound	45.00	37.78	45.00	38.23	45.00	38.27
May average Two-way speed	45.00	38.34	45.00	38.73	45.00	38.75
June Southbound	45.00	39.52	45.00	39.82	45.00	39.82
June Northbound	45.00	38.42	45.00	38.74	45.00	38.76
June average two-way speed	45.00	38.97	45.00	39.28	45.00	39.29
July Southbound	45.00	39.87	45.00	40.11	45.00	40.12
July Northbound	45.00	39.53	45.00	39.62	45.00	39.62
July average two-way speed	45.00	39.70	45.00	39.87	45.00	39.87
August Southbound	45.00	39.45	45.00	39.68	45.00	39.69
August Northbound	45.00	39.15	45.00	39.28	45.00	39.31
August average two-way speed	45.00	39.30	45.00	39.48	45.00	39.50
Average	**45.00**	**39.08**	**45.00**	**39.34**	**45.00**	**39.35**

Source: Surrey County Council

The survey identified the 85th percentile speeds along Chalkpit Lane as 45mph with mean speeds of 38mph in May, 39mph in June, 40mph in July and 39mph in August.

The northern section of Chalkpit Lane has recently been reduced to 40mph which would imply that the observed speeds were above those reasonably expected for the section of the road.

3.1.1.4 Speed related to Quarry Traffic

The Quarry operator SGL requested HGV drivers to observe maximum speed of 20mph. This is supported by a Police report, extracts from which are included as Appendix B to this report**,** in which the Police clarify the observed speed adopted by HGV drivers and the care taken by drivers not to use mobile phones whilst driving.

3.1.1.5 Speed Cameras

Although Speed Cameras may serve to reduce speeds along Chalkpit Lane, the Police report indicated that Chalkpit Lane was not suitable for a speed camera.

3.1.1.6 Action taken

Surrey Police have been monitoring speeds along Chalkpit Lane. The Quarry owners also agreed to a 20mph speed limit on local roads and now employ a full-time security officer to monitor speeds.

3.1.1.7 Percentage HGVs

Table 3.4 presented the number of HGV movements along Chalkpit Lane. In May 2008, up to 8% of the total traffic along Chalkpit Lane in a 24-hour period were HGVs, in June 2008 up to 6%, in July 2% and in August 6%. On average, 5% of all the traffic along Chalkpit Lane are HGVs. The national average for goods vehicles for all roads is 6% of all traffic (Department for Transport Road Statistics for 2007) which is less than the percentage for Chalkpit Lane for the period 24th May 2008 to 17th August 2008.

Table 3.4 Road Traffic by Vehicle Type and Road Class

Road Class	Goods Vehicles (bn veh km)	All motor vehicles (bn veh km)	Percentage
All Minor Roads	3.70	181.10	2%
All Major Roads	25.37	325.27	8%
Minor Roads_Urban	1.78	112.61	2%
All Roads	29.07	506.37	6%

Source: Table 1.4, National Road Traffic Survey DfT (2006)

Furthermore, a SCC report dated 23rd October 2003 entitled 'Woodhurst Lane Oxted' showed that the average daily HGV flow on Woodhurst Lane was 188, almost 100 vehicles more than 5-day average for Chalkpit Lane in June 2008. It can be concluded that the number of HGVs using Chalkpit Lane is not considered very high when compared to other residential narrow roads within Tandridge and Oxted.

3.1.1.8 Safety

The injury accident records for Chalkpit Lane for the period January 2005 to December 2007 were obtained from Surrey Police. From the records there were 4 accidents along Chalkpit Lane, none of which involved HGVs.

3.1.1.9 Key concerns associated with Chalkpit Lane

In summary, the key concerns with Chalkpit Lane are the speed and traffic levels, the road layout, the junction with The Ridge, the width restriction, the restriction at the railway bridge, the existing trees and foliage.

3.1.2 Barrow Green Road

Barrow Green Road forms part of the main route currently used by the HGVs to travel to and from the Quarry. Barrow Green Road provides frontage to a number of properties including a residential properties, a riding school and Oxted Sandpit. It is used by a variety of users including pedestrians, cyclists, horse riders and vehicles.

Picture 4a- Western section of Barrow Green Road

Picture 4b - Eastern section of Barrow Green Road

The width of the road varies from 4.30m to 6.3m, with footways provided from the junction with Chalkpit Lane on the northside for some 100m (the footway is some 1.00m to 1.20m wide). Barrow Green Road has junctions with the A25, Sandy Lane, Chalkpit Lane, Gordons Way and Church Lane.

Picture 5- A25 junction with Barrow Green Road

Table 3.5 Vehicular movements based on 2003 Survey

	Base			Base + Quarry Traffic		
	HGV	Total Vehicles	% HGV	HGV	Total Vehicles	% HGV
Barrow Green Road	785	18,572	4.2%	865	18,652	4.6%

Source: Surrey County Council

Table 3.5 above demonstrates that based on the 2003 survey, the percentage of HGVs along Barrow Green Road is lower than the national average for all roads which is 6% of all traffic (Department for Transport Road Statistics for 2007). The survey output includes the Chalkpit Quarry traffic but not the Sandpit Quarry traffic.

The use of Barrow Green Road by Oxted Sandpit is governed by a planning condition which restricts the permitted HGV movements along 110 per day (55 HGVs) on Mondays to Fridays and 60 per day (30 HGVs) on Saturdays.

Barrow Green Road provides access to up to 36 properties, with 8 properties to western section of the road, the west of the junction with Chalkpit Lane.

3.1.2.1 Safety

The injury accident records for Barrow Green Road for the period January 2005 to December 2007 were obtained from Surrey Police. From the records there were 5 accidents along Barrow Green Road during the study period, none of which involved HGVs.

3.1.2.2 Key concerns associated with Barrow Green Road

In summary the key issues with Barrow Green Road are the road layout (in terms of road widths), the junction with the A25, and the access for different road users.

3.1.3 The Ridge

The Ridge lies to north of the Quarry and has junction with Chalkpit Lane and with the B269 to the northeast of the Quarry. The Ridge is a narrow road and the junction with Chalkpit Lane has poor visibility. The Ridge gives access to a cycleway.

The Ridge has a priority junction with the B269 to the northeast of the site. The junction is relatively busy and suffers from delays and queuing especially during the peak periods. Observations by the consultant during the morning peak noted queues of up to 4 vehicles along The Ridge.

Picture 6a - The Ridge junction with Chalkpit Lane

Picture 6b - The Ridge junction with B269 Limpsfield

3.1.3.1 Safety

The injury accident records for The Ridge for the period January 2005 to December 2007 were obtained from Surrey Police. From the records there were 2 accidents along The Ridge, none of which involved HGVs.

3.1.3.2 Key concerns associated with The Ridge

In summary, the key issues with The Ridge are the speed and traffic levels, the road layout (in terms of road width), the junction with the B269 and the access for different road users.

3.2 SENSITIVE RECEPTORS/CONSTRAINTS

3.2.1 Affected Schools

The schools in Oxted affected by routing of the HGVs to and from the Quarry are listed below and shown on the **Figure 3.1**:

- Laverock School 19, Blue House Lane, Oxted, Surrey RH8 0AA (denoted as “1” in the Figure)
- Oxted School, Blue House Lane, Oxted, Surrey RH8 0AB (2)
- St Mary’s Junior School Silkham Rd, Oxted, Surrey RH8 0NP (3)
- Downs Way School Downs Way, Oxted, Surrey RH8 0NZ (4)

It is recognised that a percentage of pupils are or would be affected by the HGV movements, particularly pupils who travel to the different schools by walking, cycling and/or driving along the same routes as the HGVs.

Figure: 3.1 Schools whose pupils could be affected by the existing HGV routing

3.2.2 Affected Communities

The affected communities by current and/ or proposed routing of the HGV to and from the Quarry are listed below and shown on the **Figure 3.2 Local Communities**:

- Woldingham, Warlingham and Tatsfield (to the north)
- Titsey and Westerham (to the east)
- Oxted, Limpsfield and Tandridge (to the south)

Figure: 3.2 Local Communities Affected by HGVs Movement

3.2.3 Areas of Outstanding Natural Beauty and Woodlands

The areas of outstanding natural beauty likely to be affected by current and/ or proposed routing of the HGV to and from the Quarry are listed below and shown on **Figure 3.3 AONB Location Plan:**

- Woldingham Nature Reserve immediately to the west of Quarry
- North Downs Way to the northwest
- Oxted Downs to the east

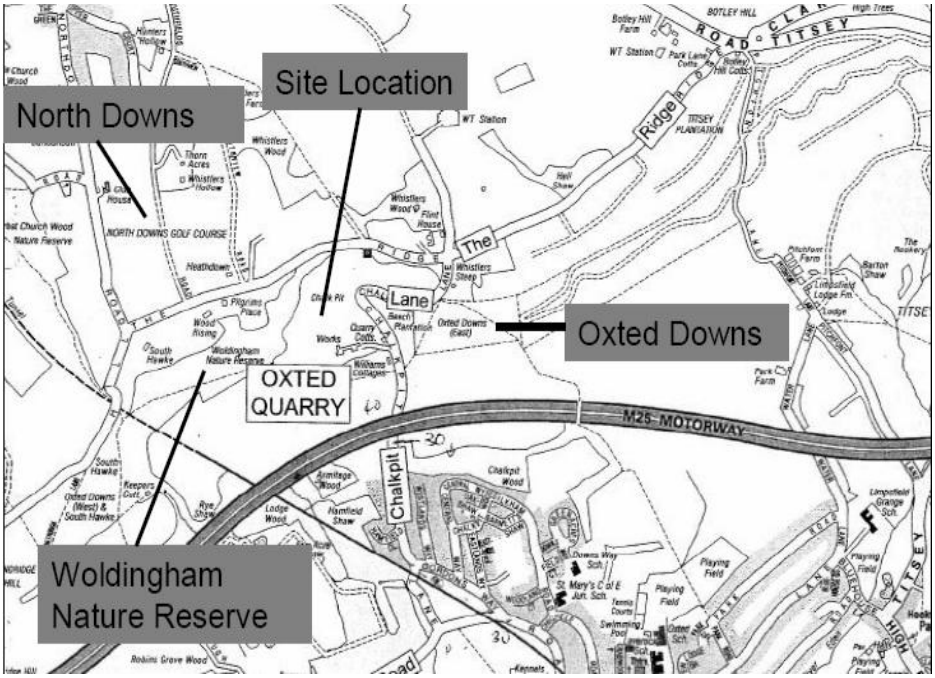

Figure: 3.3 Areas of Outstanding Natural Beauty

3.2.4 Summary

The effect of all identified constraints is considered further in **Chapter 5** when evaluating the potential for suggested measures to form part of the solution.

4 Possible Measures

4.1 INTRODUCTION

This chapter considers a number of measures that may be able to meet the objectives individually or be bundled together to make a comprehensive solution.

In devising measures that may influence which solution would be best to adopt, access to and from the site has been divided into:

- access via the north, via Woldingham or via The Ridge
- access via the south, via Barrow Green Road; via Oxted and/or via Sandy Lane.

The measures are further divided into three categories, short term, medium term and long term. The short term measures are likely to be implemented within shorter timescales, meet some of the objectives and could be combined with other measures (are not standalone measures). Medium term measures are likely to require slightly longer time scales and would meet more objectives than the short term measures. Long term options are likely to require longer timescales and would meet more objectives but may be more costly in terms of capital expenditure.

Each measure is briefly described outlining the implications, both positive (benefits) and negative (disbenefits) and potential issues likely to arise from the option.

The costs are merely indicative at this stage and do not take account of land costs (whether for purchase or in pursuit of Compulsory Purchase Orders), or for public utility undertaker diversions, as the need and scale of these can only be determined at the detailed design stage.

4.2 MEASURES

4.2.1 Measure 1: Change of Type of Vehicle used to transport material

Proposals:

- Use of smaller trucks or more environmentally friendly vehicles to transport materials to and from the site.

Benefit:

- Environmentally friendly vehicles could potentially reduce the noise and vibration associated with the HGVs and would result in less damage to the road surface
- Potentially reduce damage to road surface

Potential Issues:

- Increase to the number of trips to and from site as smaller trucks would inevitable carry less (would potentially exacerbate the frequency and speed problem)

Routing:

- This option would retain the existing routing.

Estimated Costs:

- New fleet £Unknown (as depends on technology)

4.2.2 Measure 2: Widen Existing Access point to Chalkpit Quarry

Proposals:

- Widen access to Quarry

Benefit:

- Ease of access for HGV turning in and out Quarry

Potential Issues:

- The location is restricted by residential properties both sides of the access and would require possible lengthy negotiations.
- Speed of vehicles and frequency would still cause concern for other road users

Routing:

- This option would retain the existing routing.

Estimated Costs

- Upgrade access to Quarry site £25,000
- Acquisition of land Unknown

4.2.3 Measure 3: Widen Chalkpit Lane (south of Quarry)

Proposals:

- Widen Chalkpit Lane at three sections:
    - South of the Quarry and north of the residential section from the end of footway on east side (just south and north of the Motorway);
    - the residential section just north of the railway
    - the residential section south of the railway. The road width is approximately 5m and proposals would be to extend the carriageway to up to 7.3m, the standard width for single carriageway identified in Design Manual for Roads and Bridges TD27/05.

Benefits:

- Ease of travel along Chalkpit Lane
- Potential reduction in damage to Chalkpit Lane road surface.

Potential Issues

- Chalkpit Lane is fronted by a number of residential properties and proposals would possible require lengthy negotiations. Any widening would also have to take into account the existing trees and foliage along Chalkpit Lane.

Routing

- This option would retain the existing routing.

Estimated Costs

- Upgrade road surface (patching maintenance) £50,000
- Improve footways either side of road £100,000
- Acquisition of land Unknown

4.2.4 Measure 4: Traffic Calming

Proposals

- Introduce traffic calming (by way of horizontal deflection in form of chicanes) in the residential section of Chalkpit Lane

Benefits:

- Improve safety for vulnerable road users
- Less damage to road

Potential Issues:

- Traffic may “rat-run” through nearby communities to avoid the routes along traffic-calmed sections of the roads resulting in a redistribution of traffic

Routing:

- This option would retain the existing routing.

Estimated Costs

- Traffic calming measures for Chalkpit Lane £100,000

4.2.5 Measure 5: One Way System along Chalkpit Lane

Proposals:

- Introduce a one-way traffic in Chalkpit Lane just north of the residential properties on Chalkpit Lane, north of the northern entrance to the Quarry with a no left turn for HGVs. The HGVs would leave the Quarry in a northerly direction. The one-way system would be supported by a designated HGV route from the A25/ Tandridge Lane roundabout, along Barrow Green Road and Chalkpit Lane
- Inward journey: from the south via Barrow Green Road then onto Chalkpit Lane
- Outward journey: northbound along Chalkpit Lane then onto The Ridge giving access to the B269

Benefits

- Remove conflict arising from two-way HGV movement
- Avoid local roads within Oxted
- Reduce number of movements along Chalkpit Lane

Potential Issues

Design

- Removal of existing 6 feet 6 inch width restriction
- Design implications – improved sight lines and forward visibility
- Improve the width and structure of The Ridge
- Removal of trees and foliage

Traffic

- Redistribution of southbound traffic from The Ridge either to Clarks Lane and into Westerham or to Titsey Hill and Limpsfield High Street
- Concerns about increasing traffic and safety concerns on Gangers Hill, Tandridge Hill Lane and Flower Lane
- Possible diversion of traffic into Woldingham and Limpsfield

Safety

- Concerns for pedestrians and cyclists
- Adverse impact on amenity and safety of Oxted residents and visitors
- Access for residents likely to be adversely affected and might require a Traffic Regulation Order (associated Public Inquiry with potential objection from residents)

Enforcement

- A Traffic Regulation Order to enforce movement restrictions could take a minimum of 40 weeks but can take longer

Routing:

- The routing for this option is shown on **Figure 4.2.**

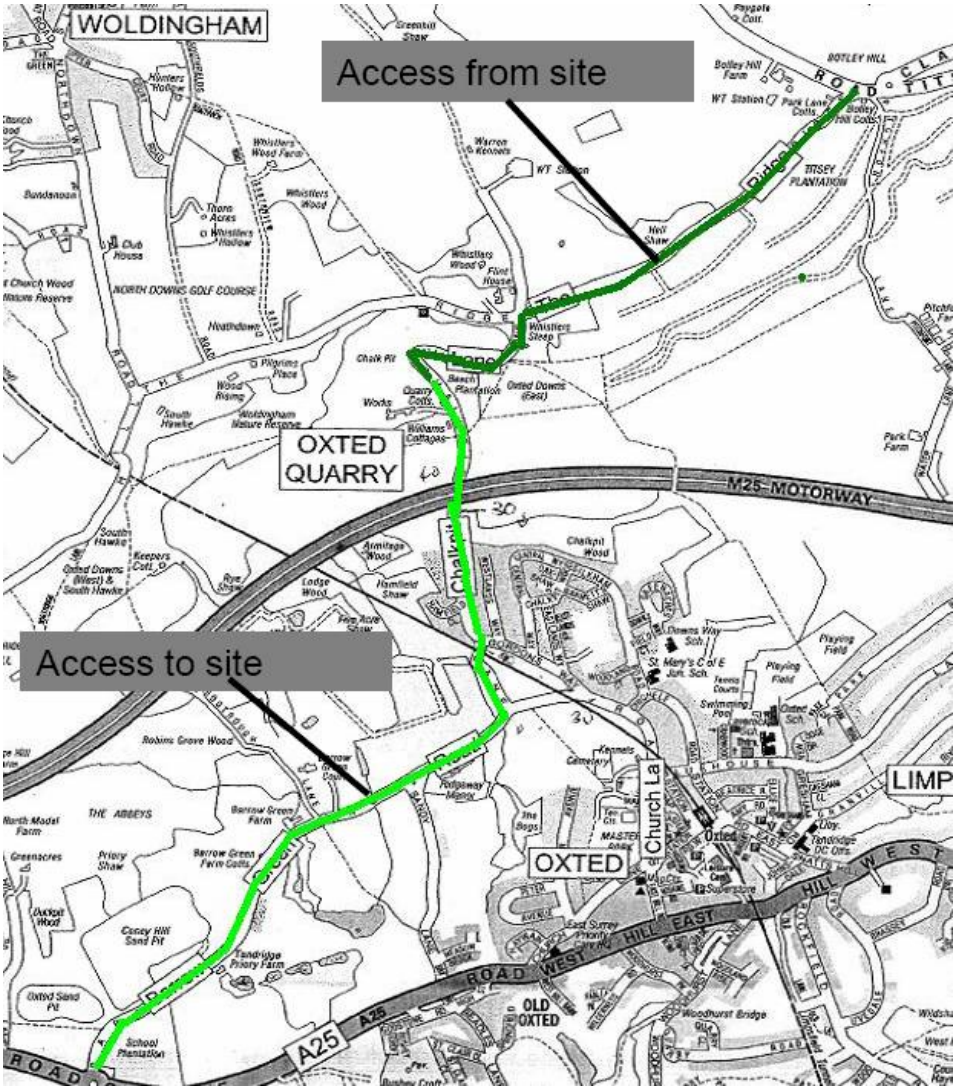

Figure 4.2 Possible one-way system along Chalkpit Lane route

Estimated Costs (taken from the April 2003 report):

- Permanent Traffic Order and signs £10,000
- Removing Width Restriction £50,000
- Improving width and structure of The Ridge £250,000
- Improving The Ridge junction with Chalkpit Lane Unknown

4.2.6 Measure 6: Railings and Bollards

Proposals:

- Provision of railings or bollards on the eastside of Chalkpit Lane from Gordon's Way northwards to the existing limit of the footway and provision of barriers to enhance the separation of vehicles from other road users, specifically pedestrians

Benefits

- Enhance pedestrian safety

Potential Issues

- Could compromise access to vehicular crossovers or pedestrian crossing points
- Pedestrians might still feel vulnerable along Barrow Green Road

Routing:

- This option would retain the existing routing.

Estimated Costs

- Provision of railings and bollards £100,000

4.2.7 Measure 7: Signal Control Chalkpit Lane close to the brick arch railway bridge

Proposals:

- Provision of signals and associated works to allow traffic to proceed in only one direction at a time at the bridge

Benefits:

- Reduce congestion
- Enhance safety by reducing conflicts
- Provision of a new footway if carriageway width is reduced

Potential Issues:

- Some widening of Chalkpit Lane at Gordon's Way to allow for queuing traffic

Routing:

- This option would retain the existing routing.

Estimated Costs:

- Provision of traffic signals and associated works £100,000

4.2.8 Measure 8: Waiting Restrictions

Proposals:

- Provide waiting restriction to some locations along Chalkpit Lane to reduce the potential for parked cars to contribute to congestion

Benefits:

- Enhance safety
- Ease traffic moving through area

Potential Issues:

- May increase HGV speeds if parking removed
- Length of time to raise a Traffic Regulation Order
- Potential Public Inquiry if any objections are not resolved

Routing:

- This option would retain the existing routing.

Estimated Costs

- Waiting restrictions £25,000

4.2.9 Measure 9: Width restriction restricting access to The Ridge only

Proposals:

- Width restrictions forcing HGVs to access Quarry from the northern section of Chalkpit Lane and The Ridge

Benefits:

- Reduction of traffic levels along the southern section of Chalkpit Lane

Potential Issues:

- Need to widen The Ridge and improve structure of carriageway if HGV flows are to increase
- Increase traffic levels at The Ridge junction with the B269
- Length of time to raise a Traffic Regulation Order
- Redistribution of southbound traffic from The Ridge either to Clarks Lane and into Westerham or to Titsey Hill and Limpsfield High Street
- Concerns about increasing traffic along Gangers Hill, Tandridge Hill Lane and Flower Lane
- Safety concerns on Gangers Hill, Tandridge Hill Lane and Flower Lane
- Possible diversion of traffic into Woldingham and Limpsfield
- Potential Public Inquiry if any objections are not resolved

Routing:

- The routing for this option is shown in **Figure 4.3.**

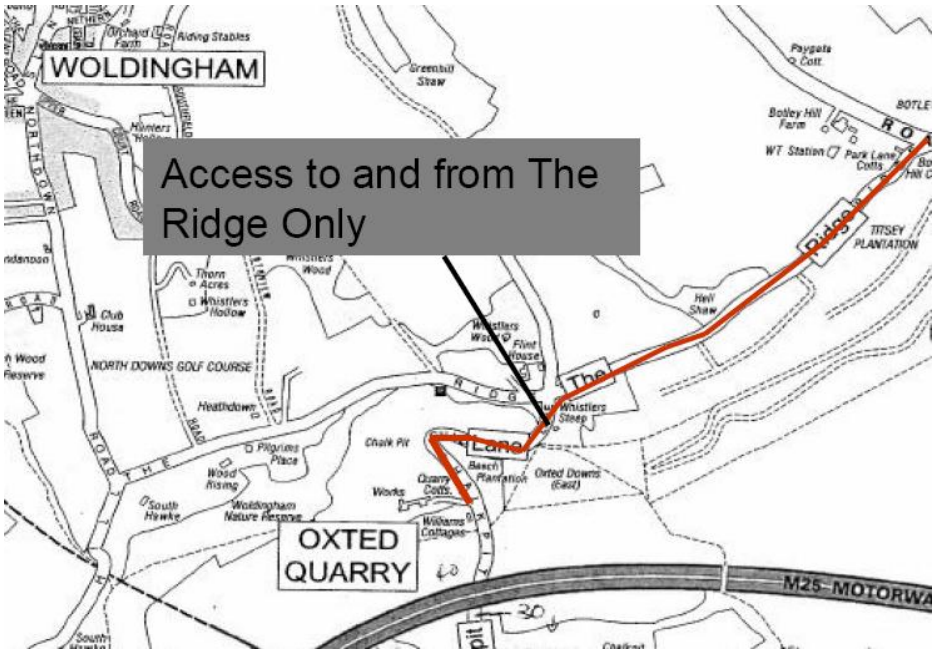

Figure 4.3 Access via The Ridge only

Estimated Costs

• Traffic Orders	£100,000
• Improve The Ridge	£250,000
• Improve The Ridge Junction with Chalkpit Lane	Unknown

4.2.10 Measure 10: Haul Route (Quarry to The Ridge)

Proposals:

- Construct a new haul road within the Quarry site to The Ridge
- Access to and from the Quarry would be via The Ridge.

Benefits:

- Traffic would be diverted from Oxted town centre
- Potential to upgrade The Ridge to make provision for other road users specifically pedestrians, cyclists and horse riders.

Potential Issues:

- Would require applicant to apply for planning permission and SCC would not have power to ensure planning application was submitted
- The site is in the AONB and adjacent to a SSSI therefore a Phase 1 Habitat Survey is required. There is the potential to secure a management plan to support a chalk grassland restoration for the northern margin of the site.
- Could result in HGV traffic using Titsey Hill/ Titsey Road /Limpsfield High Street/ Detillens Lane or Clarks Lane(into Westerham)
- Need to consider traffic impact on The Ridge
- Need to restrict HGV movement to avoid re-routing through Woldingham and/or Limpsfield

Routing:

- The routing for this option is shown on **Figure 4.4.**

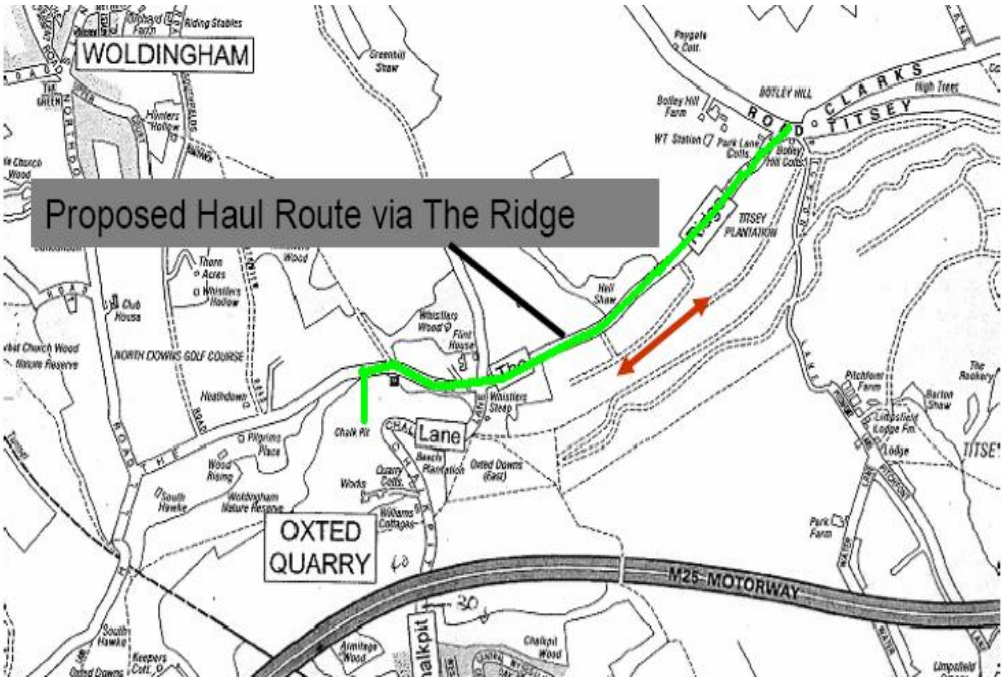

Figure 4.4 Haul Route (Quarry to The Ridge)

Provisional Estimated Costs

• Haul route to The Ridge	£750,000
• Improve The Ridge	£250,000
• Acquisition of land	Unknown

4.2.11 Measure 11: Haul Route (Quarry to the M25)

Proposals:

- A direct route connecting the Quarry to the M25

Benefits:

- Would divert all Quarry traffic from nearby communities onto main roads

Potential Issues:

- Lengthy negotiations with different parties including local land owners, Highway Agency
- Highway Agency will undoubtedly oppose a direct works access onto the motorway as this would be considered contra-policy

Routing:

- The routing for this option is shown on **Figure 4.5.**

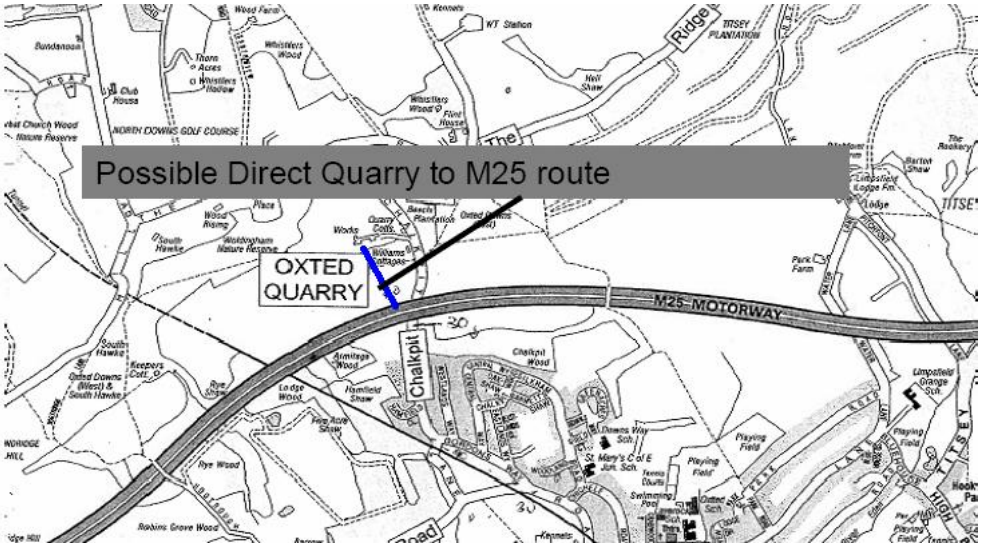

Figure 4.5 Haul Route (Quarry to M25)

Estimated Costs

- Haul route to M25 £750,000
- Acquisition of land Unknown

4.2.12 Measure 12: Re-route via Western section of Barrow Green Road

Proposals:

- Designated HGV route from the A25/Tandridge Lane roundabout along Barrow Green Road and Chalkpit Lane with a 30mph speed limit.
- Upgrade the road to accommodate the traffic levels
- Make provision for other road users in form of designated footways/cycleway and safe route for horse riders.

Benefits:

- Divert traffic from Oxted town centre

Potential Issues:

- Need to widen road and change road surface to accommodate traffic levels
- Need to make provision for other road users specifically pedestrians, cyclists and horse riders
- Potential of doubling HGV trips along section of road
- Introducing a 30mph would need to accord with SCC policy

Routing:

- The routing for this option is shown on **Figure 4.6**.

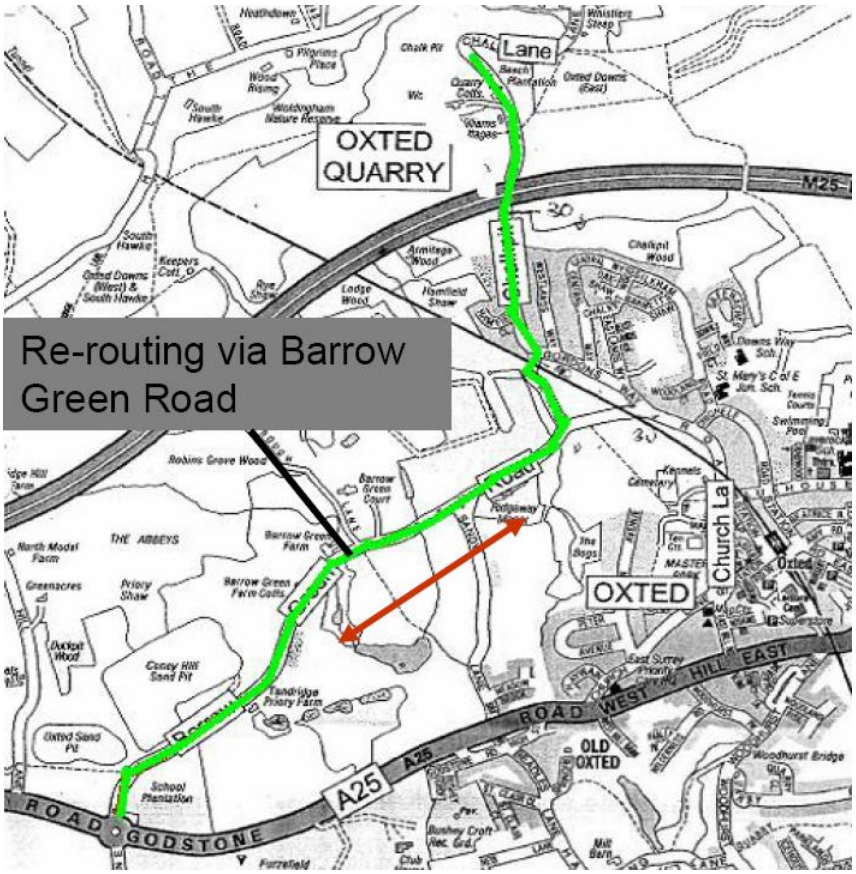

Figure 4.6 Re-route traffic via western section of Barrow Green Road

Estimated Costs

• Traffic Orders/Traffic Calming	£100,000
• Upgrade Barrow Green Road	£750,000
• Acquisition of land	Unknown

4.2.13 Measure 13: Re-route via Limpsfield

Proposals:

- The designated HGV route to and from the Quarry would be the B269 Titsey Hill, Titsey Road, Bluehouse Lane, Barrow Green Road to Chalkpit Lane.

Potential Issues:

- Titsey Road is only entry to the north of Oxted and Limpsfield for traffic from Croydon and London
- The tight bends at Bluehouse Lane junction with Water Lane and Bluehouse Lane junction with Titsey Road could be issues
- Inclination of Titsey Hill could lead to congestion from slow moving HGV traffic heading northwards
- Bluehouse Lane is a residential road close to four schools
- Southbound HGVs would potentially find alternative routes to reduce journey length

Routing:

- The routing for this option is shown in **Figure 4.7**.

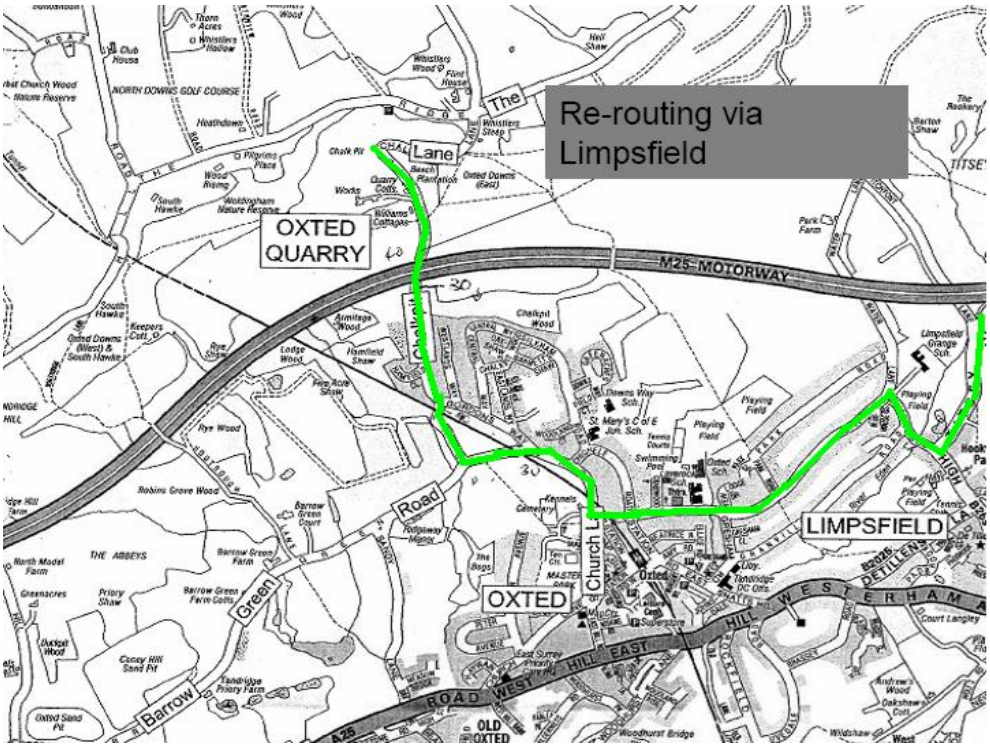

Figure 4.7 Re-route traffic via Limpsfield

Estimated Costs

- Management Plan/Legal costs £50,000

4.2.14 Measure 14: HGV re-routed in an east to west direction

Proposals:

- HGV to be routed in an east to west direction, parallel with the A25 until access to the A22 and from there onto the M25 via The Ridge, Gangers Hill and then Tandridge Hill Lane or Flower Lane

Benefits:

- Removes traffic from Oxted local roads

Potential Issues:

- Need to upgrade The Ridge to accommodate traffic levels
- Gangers Hill and Tandridge Hill Lane are unsuitable for HGV movements since Gangers Hill is a single lane road off Flower Lane and has a width restriction of 6'6" along its length
- Tandridge Hill Lane and Flower lane also have width restrictions
- Potential increase in traffic levels particularly HGVs on very narrow roads
- Land purchase

Routing:

- The routing for this option is shown on **Figure 4.8.**

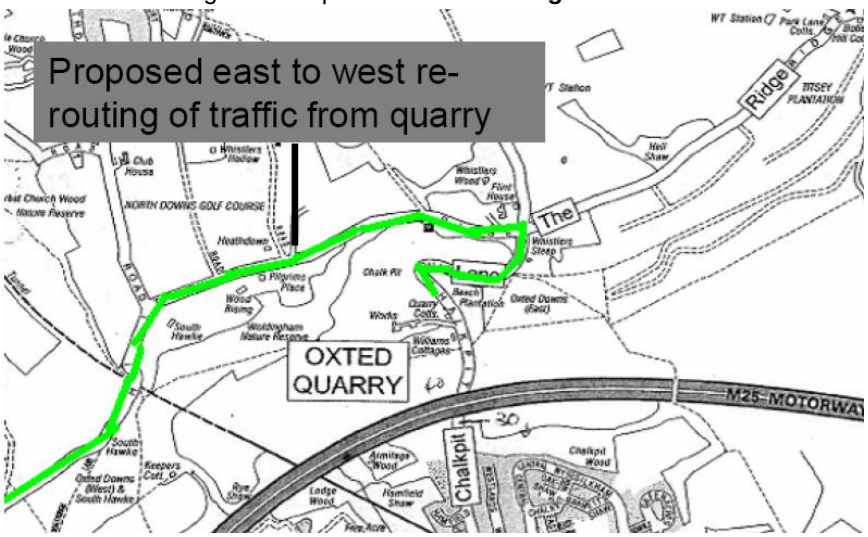

Figure 4.8 Re-route traffic on east-west axis

Estimated Costs

• Re-route on east-west axis	£750,000
• Remove width restriction	£250,000
• Acquisition of land	Unknown

4.2.15 Measure 15: Overhead Conveyor from Quarry to depository place

Proposals:

- Use a conveyor to transport materials to and from Quarry to bulk handling site on The Ridge

Benefits:

- Remove all Quarry related traffic from Chalkpit Lane, Barrow Green Road and Oxted town centre

Potential Issues:

- Identifying suitable depository location
- Potential increase in traffic along The Ridge and roads to the north of the site
- Chalk requires crushing prior to conveyance

Routing

- The routing for this option is shown on **Figure 4.9.**

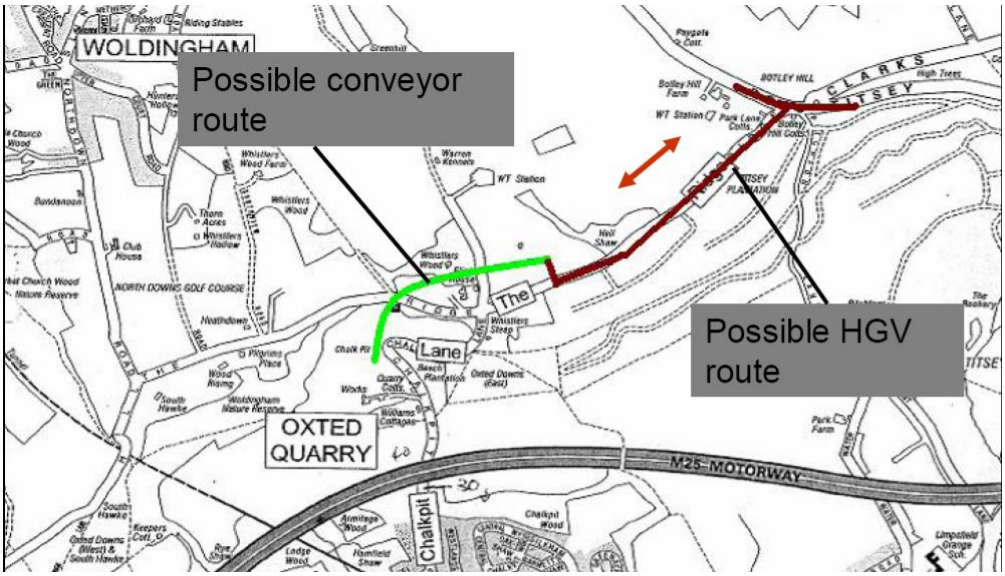

Figure 4.9 Transporting materials from quarry using a conveyor

Estimated Costs

- Conveyor/land assembly/associated equipment £millions
- Upgrade The Ridge £250,000
- Acquisition of land Unknown

4.2.16 **Measure 16: Tunnel from Quarry to depository place**

Proposals:

- Use a tunnelled conveyor to transport materials to and from Quarry to bulk handling site on The Ridge

Benefits:

- Remove all Quarry related traffic from Chalkpit Lane, Barrow Green Road and Oxted

Potential Issues:

- Identifying suitable depository location
- Potential increase in traffic along The Ridge and roads to the north of the site
- Chalk requires crushing prior to conveyance

Routing

- The routing for this option is shown on **Figure 4.10.**

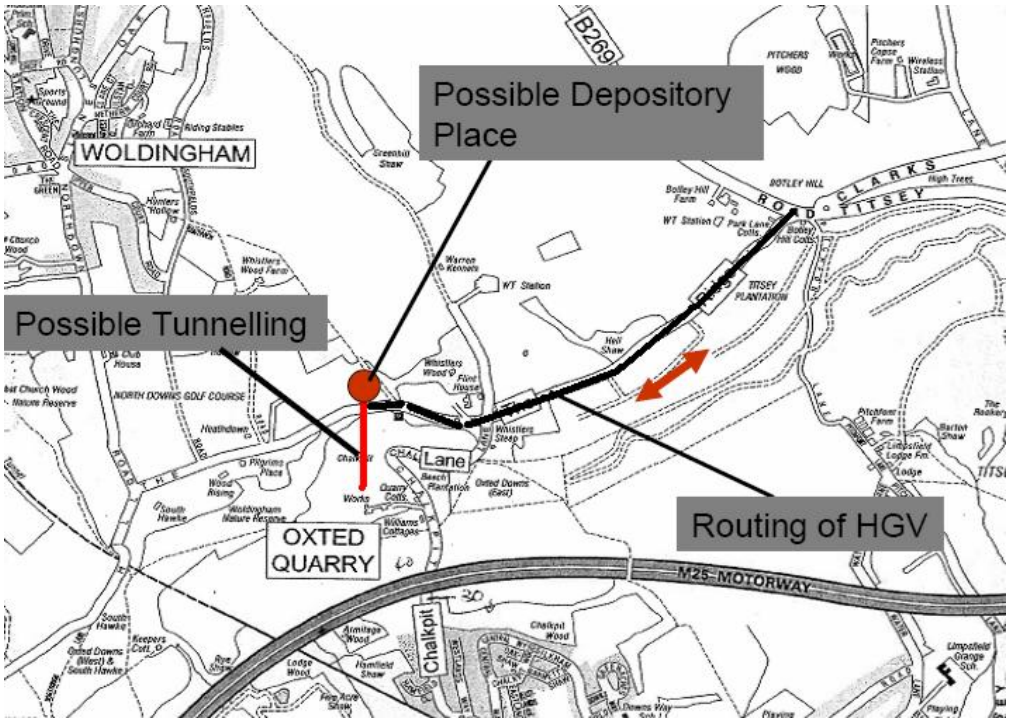

Figure 4.10 Transporting materials from quarry through tunnel

Estimated Costs

- Tunnel/conveyor/land assembly/associated equipment £millions
- Upgrade The Ridge £250,000
- Acquisition of land Unknown

4.2.17 Measure 17: Rail connection

Proposals:

- Use a railway connection to transport materials to and from Quarry
- Construct a railhead near to the site

Benefits:

- Remove all Quarry related traffic from local roads

Potential Issues:

- Cost connected with construction of the railway connection
- Length of time to secure proposals

Routing:

- The routing for this option is shown on **Figure 4.11.**

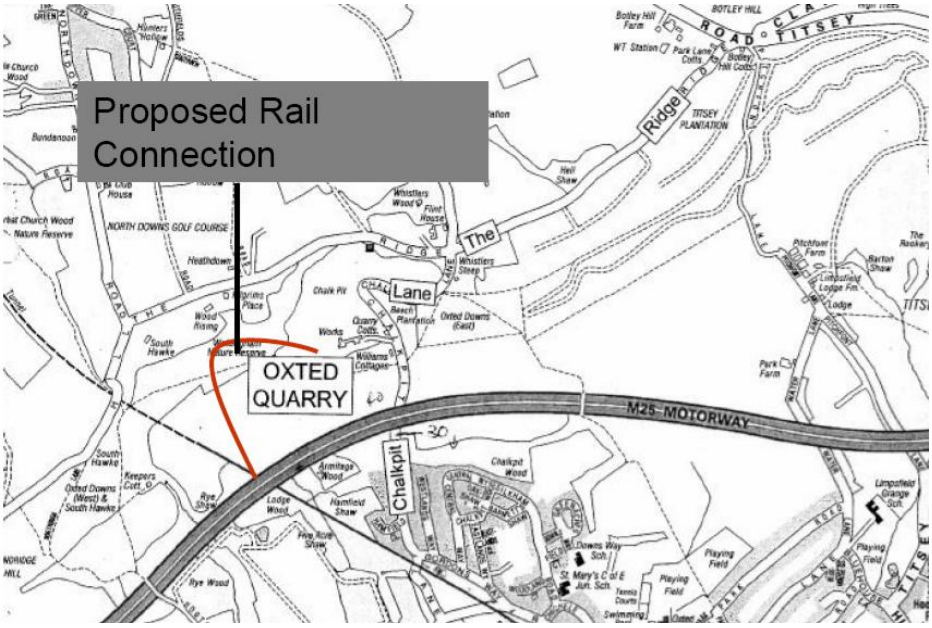

Figure 4.11 Proposed Rail Connection

Estimated Costs

- Rail connection and railhead £millions
- Acquisition of land Unknown

4.2.18 Measure 18: Haul Route (Quarry to Tandridge Hill Lane)

Proposals:

- Construct a haul route from the site to Tandridge Hill Lane
- Route would be from the western boundary of the Quarry across the farm field over the top of the Oxted Tunnel then tie into the Hogtrough Lane M25 overbridge then continue to connect with Tandridge Hill Lane near North Model Farm

Benefits:

- Remove all Quarry related traffic from Oxted

Potential Issues:

- Proposals would require acquisition of land and/or permission to construct road through third party land(farm field);
- Require permission to construct road above rail structure
- Concerns about increasing traffic and safety concerns on Hogtrough Lane and Tandridge Hill Lane
- Tandridge Hill Lane has a width restriction
- Hogtrough Lane M25 overbridge is a bridleway, the bridge would need to be upgraded to accommodate the volume and type of traffic as well as providing facilities for other road users(pedestrians, cyclists and horse riders)

Routing:

- The routing for this option is shown on **Figure 4.12.**

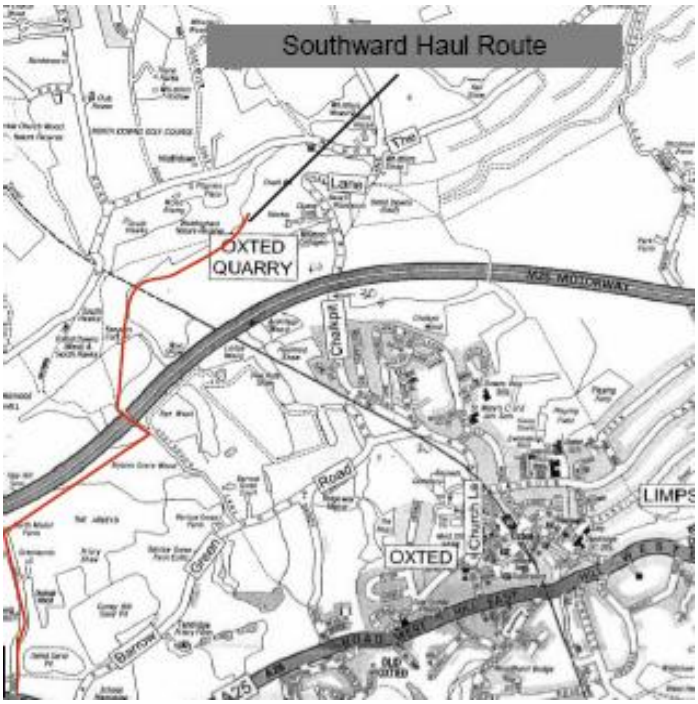

Figure 4.12 Haul Route (Quarry to Tandridge Hill Lane)

Estimated Costs

- Haul route to Tandridge Hill Lane £500,000
- Improve Tandridge Hill Lane £250,000
- Upgrade Hogtrough Lane M25 overbridge Unknown
- Strengthen Oxted Tunnel Unknown
- Strengthen Network Rail structure to support carriageway Unknown

4.3 SUMMARY OF IDENTIFIED MEASURES

Table 4.1 Summary of Identified Measures

Reference	Measure
1	Change of vehicles
2	Widen Existing Access point to Oxted Chalk Quarry
3	Widen Chalkpit Lane
4	Traffic Calming
5	One Way System along Chalkpit Lane
6	Railing and Bollards
7	Signal Control Chalkpit Lane close to the bridge arch
8	Waiting Restrictions
9	Width restriction from The Ridge only
10	Haul Route (Quarry to The Ridge route)
11	Haul Route(Quarry to The M25)
12	Re-route via western section of Barrow Green Road
13	Re-route via Limpsfield
14	HGV re-routed in an east to west direction
15	Conveyor from Quarry to depository place
16	Tunnel from quarry to depository place
17	Rail connection
18	Haul Route (Quarry to Tandridge Hill Lane)

Source: Consultants' Estimates

5 Evaluation

5.1 PREFACE

In the evaluation of the possible measures four key aspects have been considered:

- impact on local road network
- impact on the identified constraints
- ability to meet the objectives
- likely costs and timescales.

The method adopted indicates if the measure will address the identified issue on the local road network, will not have an impact on the identified constraint and will meet the objective. Each key aspect is considered individually to derive a score for each measure before a final overall score is calculated by simply adding up the individual aspect scores.

5.2 IMPACT ON LOCAL ROAD NETWORK

5.2.1 Introduction

The existing road conditions have been presented in Chapter 2 and the possible measures presented in chapter 4. This section considers the ability of the different measures to address the identified concerns, especially along Chalkpit Lane, Barrow Green Road and The Ridge together with the wider communities.

5.2.2 Chalkpit Lane

The potential concerns related to Chalkpit Lane are listed in the Table 5.1 below and the likely impact of the different measures presented in Table 5.2.

Table 5.1 Chalkpit Lane issues

Issue	Reference
Reduce or control speed	C1
Reduce or ease one-way movements	C2
Reduce or ease two-way movements	C3
Ease access in and out Quarry	C4
Improve access for other road users	C5
Improve The Ridge junction	C6
Improve carriageway(width)	C7
Improve carriageway(surface) or reduce damage to surface	C8

Source: Consultants' Estimates

Table 5.2 Likely performance of the different measures for Chalkpit Lane

Measure		Likely Performance of Measure							
		C1	C2	C3	C4	C5	C6	C7	C8
1.	Change of vehicles								P
2.	Widen Existing Access point to Oxted Chalk Quarry				P				
3.	Widen Chalkpit Lane		P	P					P
4.	Traffic Calming	P							
5.	One Way System along Chalkpit Lane			P					
6.	Railing and Bollards								
7.	Signal Control Chalkpit Lane close to the bridge arch	P	P	P		P			
8.	Waiting Restrictions								
9.	Width restriction from The Ridge only								
10.	Haul Route (Quarry to The Ridge route)		P	P					P
11.	Haul Route(Quarry to The M25)								
12.	Re-route via western section of Barrow Green Road			P					
13.	Re-route via Limpsfield								
14.	HGV re-routed in an east to west direction								
15.	Conveyor from Quarry to depository place		P	P					P
16.	Tunnel from Quarry to depository place		P	P					P
17.	Rail connection		P	P					P
18.	Haul Route (Quarry to Tandridge Hill Lane)		P	P					P

Source: Consultants' Estimates

5.2.2.1 Analysis

Measure 2, widening the Quarry access, would ease movement in and out of the Quarry.

Measure 7, signal controlling Chalkpit Lane close to the bridge arch, would potentially address most concerns with Chalkpit Lane. The signals would potentially ease or control movement along the road with potential to provide improved access for other road users if the road is widened.

Traffic calming (measure 4) would potentially reduce speeds along Chalkpit Lane. The one-way system (measure 5) is likely to ease movements along the road. Widening the road (measure 3) with possible upgrading of the surface; and haul routes (measures 10, 11 and 18) would potentially ease movement along the road and reduce damage to the road surface. This is also likely with using a conveyor, tunnel or the railway network to transport materials to and from the Quarry (measures 15, 16 and 17).

5.2.3 Barrow Green Road

The potential concerns related to Barrow Green Road are listed in the Table 5.3 and the likely impact of the different measures presented in Table 5.4.

Table 5.3 **Barrow Green Road Issues**

Issue	Reference
Reduce or control speeds	B1
Reduce or ease two-way movements	B2
Provide on-road facilities for pedestrians	B3
Provide on-road facilities for cyclists	B4
Provide on-road facilities for horse riders	B5
Widen carriageway	B6
Improve road surface	B7
Improve the A25 junction	B8

Source: Consultants' Estimates

Table 5.4 Likely performance of the different measures for Barrow Green Road

Measure		Likely Performance of Measure							
		B1	B2	B3	B4	B5	B6	B7	B8
1.	Change of vehicles								
2.	Widen Existing Access point to Oxted Chalk Quarry								
3.	Widen Chalkpit Lane								
4.	Traffic Calming	P							
5.	One Way System along Chalkpit Lane		P						
6.	Railing and Bollards								
7.	Signal Control Chalkpit Lane close to the bridge arch								
8.	Waiting Restrictions								
9.	Width restriction from The Ridge only		P						
10.	Haul Route (Quarry to The Ridge route)		P						
11.	Haul Route(Quarry to The M25)		P						
12.	Re-route via western section of Barrow Green Road		P	P	P	P	P	P	P
13.	Re-route via Limpsfield		P						
14.	HGV re-routed in an east to west direction								
15.	Conveyor from Quarry to depository place		P						
16.	Tunnel from Quarry to depository place		P						
17.	Rail connection		P						
18.	Haul Route (Quarry to Tandridge Hill Lane)		P						

Source: Consultants' Estimates

5.2.3.1 Analysis

Measure 12, re-routing all Quarry related traffic through Barrow Green Road, which would entail widening the road, providing facilities for other road users and improving the Barrow Green Road junction with The A25, would potentially address the identified concerns with Barrow Green Road.

Other measures, specifically the one-way system (measure 5), a haul route from the Quarry to The Ridge (measure 10), conveyor (measure 15), tunnelling (measure 16), using the railway network to transport materials to and from the Quarry (measure 17) and

a haul route from the Quarry to Tandridge Hill Lane (measure 18) would potentially ease movement along the road by diverting traffic away from it.

5.2.4 The Ridge

The potential concerns related to The Ridge are listed in the Table 5.5 below and the likely impact of the different measures presented in Table 5.6.

Table 5.5 The Ridge Issues

Issue	Reference
Reduction or control speeds	R1
Reduction or ease two-way movements	R2
Provide on-road facilities for pedestrians	R3
Provide on-road facilities for cyclists	R4
Provide on-road facilities for horse riders	R5
widen carriageway	R6
Improve road surface	R7
Improve the B269 junction	R8

Source: Consultants' Estimates

Table 5.6 Likely performance of the different measures for The Ridge

Measure		Likely Performance of Measure							
		R1	R2	R3	R4	R5	R6	R7	R8
1.	Change of vehicles								
2.	Widen Existing Access point to Oxted Chalk Quarry								
3.	Widen Chalkpit Lane								
4.	Traffic Calming								
5.	One Way System along Chalkpit Lane								
6.	Railing and Bollards								
7.	Signal Control Chalkpit Lane close to the bridge arch								
8.	Waiting Restrictions								
9.	Width restriction from The Ridge only								
10.	Haul Route (Quarry to The Ridge route)			P	P	P	P	P	P
11.	Haul Route(Quarry to The M25)		P						
12.	Re-route via western section of Barrow Green Road		P						
13.	Re-route via Limpsfield		P						
14.	HGV re-routed in an east to west direction		P						
15.	Conveyor from Quarry to depository place								
16.	Tunnel from Quarry to depository place								
17.	Rail connection		P						
18.	Haul Route (Quarry to Tandridge Hill Lane)		P						

Source: Consultants' Estimates

5.2.4.1 Analysis

Measure 10, a haul route from the Quarry, which would entail widening The Ridge, providing facilities for other road users and improving its junction with the B269, would potentially address the identified concerns with The Ridge.

Other measures, specifically the haul route from the Quarry to the M25 (measure 11), re-routing via the western section Barrow Green Road (measure 12), re-routing via Limpsfield (measure 13), haul route from Quarry to Tandridge Hill Lane (measure 18) and using a conveyor, tunnel or the railway network to transport materials to and from the Quarry (measures 15, 16 and 17), would potentially ease movement along the road by diverting traffic away from Oxted town centre.

5.2.5 Summary

The section has considered the potential of measures to address concerns specifically related to the local road network. Widening the Quarry access would ease movement in and out of the Quarry.

Measure 7, signal controlling Chalkpit Lane close to the bridge arch would potentially address most concerns with Chalkpit Lane. The signals would potentially ease or control movement along the road with potential to provide improved access for other road users if the carriageway is widened and provision made for the pedestrians and cyclists.

Measure 12, re-routing all Quarry related traffic through the western section of Barrow Green Road, which would entail widening the road, providing facilities for other road users and improving the Barrow Green Road junction with the A25 would potentially address the identified concerns with Barrow Green Road.

Measure 10, a haul route from the quarry, which would entail widening the road, providing facilities for other road and improving The Ridge junction with the B269 would potentially address the identified concerns with The Ridge.

5.3 Impact on Identified Constraints/Sensitive Receptors

The constraints identified in Section 2.1 were divided into three categories:

- local road users and communities
- areas of natural beauty
- legal implications

These are presented in the Table 5.7 below and the effect of each measure considered.

Table 5.7 Identified Constraints	
Areas of Outstanding Natural Beauty	**Reference**
Woldingham Natural Reserve immediately to the west of Quarry	A1
North Downs Way to the north	A2
Legal Implications	
Remove width restriction	L1
Require Acquisition of Land	L2
Require Public Inquiry	L3
Require Traffic Regulation Order	L4
Require Planning Permission	L5
Require additional enforcement	L6
Road users and Communities	
Pedestrians along Chalkpit Lane	U1
Pedestrians along Barrow Green Road	U2
Cyclists	U3
Chalkpit Lane residents	U4
Barrow Green Road residents	U5
Oxted residents	U6
Oxted Schools	U7
Limpsfield residents	U8
Woldingham residents	U9

Source: Consultants' Estimates

Table 5.8 Constraints not affected by measures or having legal implications

	Measure	Constraints not affected by each Measure																
		A1	A2	L1	L2	L3	L4	L5	L6	U1	U2	U3	U4	U5	U6	U7	U8	U9
1.	Change of vehicles	P	P	P	P	P	P	P	P	P	P			P	P	P		
2.	Widen Existing Access point to Oxted Chalk Quarry	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
3.	Widen Chalkpit Lane	P	P	P					P			P	P	P	P	P		
4.	Traffic Calming	P	P		P		P		P	P			P					P
5.	One Way System along Chalkpit Lane	P	P						P		P			P		P	P	
6.	Railing and Bollards	P	P		P	P	P		P			P	P	P	P	P		
7.	Signal Control Chalkpit Lane close to the bridge arch	P	P	P	P		P		P			P					P	P
8.	Waiting Restrictions	P	P		P				P			P	P	P	P	P		
9.	Width restriction from The Ridge only	P			P		P					P	P	P	P	P		P
10.	Haul Route (Quarry to The Ridge route)						P		P			P	P	P	P	P		P
11.	Haul Route(Quarry to The M25)	P	P				P		P			P	P	P	P	P	P	P
12.	Re-route via western section of Barrow Green Road	P	P						P	P		P	P				P	P
13.	Re-route via Limpsfield	P	P		P		P					P	P	P	P	P	P	
14.	HGV re-routed in an east to west direction	P	P				P					P	P	P	P	P	P	
15.	Conveyor from Quarry to depository place			P			P		P			P	P	P	P	P		P
16.	Tunnel from Quarry to depository place			P			P		P			P	P	P	P	P		P
17.	Rail connection		P	P			P			P	P		P	P	P	P	P	P
18.	Haul Route (Quarry to Tandridge Hill Lane)	P	P				P		P			P		P	P	P	P	P

Source: Consultants' Estimates

5.3.1 Analysis

An assessment of the implication of the measures on the identified constraints is considered in the next sections and summarised in Table 5.8. An indication is given

whether the measure will not impact on the local users, affect the natural reserves or require the legal implication.

5.3.2 Road users and local communities

All measures will potentially affect the ease with which other road users use of the road in some form unless facilities are specifically provided for them, such as footways and cycleways.

In terms of affecting local communities, all access to and from the site from the south via Barrow Green Road; via Oxted and via Sandy Lane would affect Oxted residents whilst all access to and from the site from the north via Woldingham; via Gangers Hill/ Tandridge Hill Lane and via The Ridge would affect communities in Woldingham. That is to say, moving traffic from Oxted to travel north means that communities such as Woldingham and Warlingham would be affected unless measures to divert traffic away from them are put in place; whilst moving all routes through Limpsfield/Westerham affects those local communities.

The one-way system would affect pedestrians and cyclists access along Chalkpit Lane and would potentially increase the number of movements likely to use local roads within Woldingham; as would a haul road to The Ridge.

5.3.3 Areas of Outstanding Natural Beauty and Natural Reserves

Changing the vehicle type (measure 1) and widening the Quarry access (measure 2) are least likely to affect the natural reserves.

The haul route from the Quarry through to The Ridge (measure 10) would have to pass through the woodland reserve and would have implications such as relocating the habitat. A measure to remove traffic from the local roads onto rail (measure 17) is also likely to affect natural reserves because the track would need to pass through the reserved land. The conveyor (measure 15) and tunnel (measure 16) are also likely to utilise natural reserve land.

5.3.4 Legal Implications

Changing the vehicle type (measure 1) and widening the Quarry access (measure 2) are least likely to have many legal implications.

Most measures to widen roads, with the exception of the southern part of Chalkpit Lane, would require acquisition of land. Measures that require speed alterations, one-way systems and waiting restrictions would require some form of traffic regulation which may require a public inquiry.

Other measures such as re-routing via the western section of Barrow Green Road (measure 12) that require a change of road speed limit would require compliance with SCC policy.

Of the measures, the one-way system (measure 5) would involve more legal implications, may require acquisition of land and a traffic regulation order, in order to implement the system.

5.3.5 Summary

Widening the Quarry access (measure 2) is least likely to impact on local communities, natural reserves or have many legal implications.

The one-way system (measure 5) would potentially have more impact on local road users and involve more legal implications. Widening Chalkpit Lane (measure 3) would affect residents and involve a number of legal implications; as would a haul route to The Ridge (measure 10).

5.4 ABILITY TO MEET SET OBJECTIVES

The objectives are:

- Congestion (Tackling congestion to limit delays)
- Accessibility (Increasing accessibility to key services and facilities)
- Safety (Improving road safety and security)
- Environment (Enhancing the environment and quality of life)
- Maintenance (Improving management and maintenance of our transport network)

For each objective, a number of indicators have been used to assess the performance of each measure.

5.4.1 Congestion

Congestion refers to the problems caused by traffic levels on the local roads and addresses these specific issues raised by the residents:

- Congestion around the site access in Chalkpit Lane
- Congestion in Chalkpit Lane, north of Gordons Way
- Congestion due to single HGV track under the railway bridge in Chalkpit Lane
- Unsuitability of Church Lane and East Hill Road for high volume of HGV traffic
- Unsuitability of Barrow Green Road for two-way HGV traffic

Indicators used to assess the potential of each measure to meet the congestion objective are given in Table 5.9 and the performance of the different measures presented in Table 5.10 below.

Table 5.9 Indicators for assessing Congestion objective

Indicator	Reference
Reduce vehicle delay	C1
Limit traffic growth	C2
Use technology to aid management of congestion	C3
Reduce congestion around site access	C4
Reduce congestion in Chalkpit Lane north of Gordons Way	C5
Reduce congestion due to single HGV track under the railway bridge arch in Chalkpit Lane	C6

Source: Consultants' Estimates

Table 5.10 Ability of measures to meet Congestion objective

Measure		Potential to Meet Objective					
		C1	C2	C3	C4	C5	C6
1.	Change of vehicles					P	
2.	Widen Existing Access point to Oxted Chalk Quarry				P	P	
3.	Widen Chalkpit Lane	P			P	P	
4.	Traffic Calming		P				
5.	One Way System along Chalkpit Lane		P		P		
6.	Railing and Bollards		P				
7.	Signal Control Chalkpit Lane close to the bridge arch			P	P	P	P
8.	Waiting Restrictions		P				
9.	Width restriction from The Ridge only		P		P	P	P
10.	Haul Route (Quarry to The Ridge route)				P	P	
11.	Haul Route(Quarry to The M25)	P	P		P	P	P
12.	Re-route via western section of Barrow Green Road				P	P	P
13.	Re-route via Limpsfield	P					
14.	HGV re-routed in an east to west direction						
15.	Conveyor from Quarry to depository place				P	P	
16.	Tunnel from Quarry to depository place				P	P	
17.	Rail connection	P	P	P	P	P	P
18.	Haul Route (Quarry to Tandridge Hill Lane route)				P	P	P

Source: Consultants' Estimates

5.4.1.1 Analysis

Measures that would best address congestion would appear to be, signal controlling Chalkpit Lane close to the bridge arch (measure 7), removing the width restriction from The Ridge(measure 9), haul route via the M25(measure 11), rerouting through Barrow Green Road(measure 12) and the rail connection(measure 17).

5.4.2 Accessibility

Accessibility deals with facilities for all road users on the local roads and addresses these particular issues:

- Lack of footway in southern section of Chalkpit Lane
- Lack of footway in Barrow Green Road between Gordons Way and Chalkpit Lane

Indicators used to assess the potential of each measure to meet the accessibility objective are presented in Table 5.11 and performance of each measure in Table 5.12 below.

Table 5.11 Indicators for Accessibility objective

Issue	Reference
Improve mobility for the impaired	A1
Promote footways along Chalkpit Lane and Barrow Green Road	A2
Promote access for all road users	A3
Ease access to public facilities and local amenities	A4

Source: Consultants' Estimates

Table 5.12 Ability of measures to meet Accessibility objective

Measure	Potential to Meet Objective			
	A1	A2	A3	A4
1. Change of vehicles				
2. Widen Existing Access point to Oxted Chalk Quarry				
3. Widen Chalkpit Lane				P
4. Traffic Calming				
5. One Way System along Chalkpit Lane				
6. Railing and Bollards		P		
7. Signal Control Chalkpit Lane close to the bridge arch		P		
8. Waiting Restrictions				
9. Width restriction from The Ridge only				
10. Haul Route (Quarry to The Ridge route)		P		P
11. Haul Route(Quarry to The M25)				
12. Re-route via western section of Barrow Green Road		P		P
13. Re-route via Limpsfield				
14. HGV re-routed in an east to west direction				P
15. Conveyor from Quarry to depository place				
16. Tunnel from Quarry to depository place				
17. Rail connection				P
18. Haul Route(Quarry to Tandridge Hill Lane)				

Source: Consultants' Estimates

5.4.2.1 Analysis

Measures that provide access for other road users specifically upgrading/re-routing through the western section of Barrow Green Road west of the junction with Chalkpit Lane (measure 12) would potentially meet this objective. Other measures that do not limit or in any way hinder access to public facilities such as schools and town centre would also meet this objective.

5.4.3 Safety

The 425- signature petition raised safety as the key concern for residents. Safety refers to concerns for vulnerable road users and addresses these particular issues:

- Reduced walking and commitment to 'Safe Route' to schools
- Speed of HGVs down narrow and bendy roads

Indicators used to assess the potential of each measure to meet the safety objective are presented in Table 5.13 and performance of each measure in Table 5.14 below.

Table 5.13 Indicators for Safety objective

Indicator	Reference
Reduce number of people Killed or Seriously Injured	S1
Reduce number of children Killed or Seriously Injured	S2
Reduce slight casualties	S3
Reduction in vehicle speeds	S4
Support 'Safe Route to School' initiatives	S5

Source: Consultants' Estimates

Table 5.14 Ability of measures to meet Safety objective

Measure		Potential to Meet Objective				
		S1	S2	S3	S4	S5
1.	Change of vehicles					
2.	Widen Existing Access point to Oxted Chalk Quarry					P
3.	Widen Chalkpit Lane				P	P
4.	Traffic Calming	P	P	P	P	P
5.	One Way System along Chalkpit Lane					
6.	Railing and Bollards	P	P	P	P	P
7.	Signal Control Chalkpit Lane close to the bridge arch	P	P	P	P	P
8.	Waiting Restrictions					
9.	Width restriction from The Ridge only				P	
10.	Haul Route (Quarry to The Ridge route)	P	P	P	P	P
11.	Haul Route(Quarry to The M25)				P	P
12.	Re-route via western section of Barrow Green Road	P	P	P	P	P
13.	Re-route via Limpsfield					
14.	HGV re-routed in an east to west direction				P	P
15.	Conveyor from Quarry to depository place					
16.	Tunnel from Quarry to depository place					
17.	Rail connection	P	P	P	P	P
18.	Haul Route(Quarry to Tandridge Hill Lane)					

Source: Consultants' Estimates

5.4.3.1 Analysis

Signalising section of Chalkpit Lane (measure 3), traffic calming (measure 6), provision of railings and bollards (measure 7); and provision of footways along Chalkpit Lane/ Barrow Green Road would meet the safety objective in the short term.

Haul road re-routing via The Ridge (measure 10) and re-routing through Barrow Green Road (measure 12) best meet this objective.

Assessing the ability for each proposed measure to reduce the number of fatalities and injury accidents would require undertaking safety audits and reviewing the various accident records. The 3-year recorded injury accident records for Chalkpit Lane, The Ridge and Barrow Green Road demonstrated that all three roads have good safety records in terms of number of recorded injury accidents per year. It is understood that there was a fatal accident on Titsey Hill early August 2008.

5.4.4 Environment

Environment is concerned with the impact of the traffic on the local community (interference with their enjoyment of their property), in particular loss of amenity and addresses these particular issues:

- Over-running verge particularly in Chalkpit Lane near site access
- Noise and Vibration caused by HGVs
- Damage to utility companies' equipment in the vicinity of the site.
- Effects of volume and speed of HGV on roads within wider area of Tandridge

Indicators used to assess the potential of each measure to meet the environment objective are presented in Table 5.15 and performance of each measure in Table 5.16 below.

Table 5.15 Indicators for Environment objective

Issue	Reference
Improve the Street Scene (including removing over-running verge)	E1
Reduce vehicle emissions	E2
Reduce traffic noise along local roads	E3
Reduce the impact of HGVs on local roads	E4

Source: Consultants' Estimates

Table 5.16 Ability of measures to meet Environment objective

Measure		Potential to Meet Objective			
		E1	E2	E3	E4
1.	Change of vehicles		P	P	
2.	Widen Existing Access point to Oxted Chalk Quarry	P		P	
3.	Widen Chalkpit Lane			P	P
4.	Traffic Calming				
5.	One Way System along Chalkpit Lane	P		P	
6.	Railing and Bollards				
7.	Signal Control Chalkpit Lane close to the bridge arch				
8.	Waiting Restrictions				
9.	Width restriction from The Ridge only	P			P
10.	Haul Route (Quarry to The Ridge route)	P			
11.	Haul Route(Quarry to The M25)	P		P	P
12.	Re-route via western section of Barrow Green Road	P			
13.	Re-route via Limpsfield				
14.	HGV re-routed in an east to west direction				P
15.	Conveyor from Quarry to depository place	P			
16.	Tunnel from quarry to depository place	P			
17.	Rail connection		P	P	P
18.	Haul Route(Quarry to Tandridge Hill Lane)	P			

Source: Consultants' Estimates

5.4.4.1 Analysis

A change in the type and size of vehicle (measure 1) used would potentially reduce the noise and emissions produced by the HGVs. A haul route with direct connection from the Quarry to the M25 (measure 11) would potentially reduce the traffic noise, emission and impact of the HGVs on local roads.

A rail connection (measure 17) would potentially remove the HGVs from the local roads onto the railway network thereby providing the greatest benefit in terms of the environment.

5.4.5 Maintenance

The Maintenance objective indicators aim at improving management and maintenance of the transport network; particular issues being:

- Deterioration of the road surfaces from the type and nature of traffic
- Damage to utility companies' property

Indicators used to assess the potential of each measure to meet the maintenance objective are presented in Table 5.17 and performance of each measure in Table 5.18 below.

Table 5.17 Indicators for Maintenance objective

Issue	Reference
Reduce deterioration of the road surfaces from the type and nature of traffic	M1
Reduce damage to utility company property	M2

Source: Consultants' Estimates

Table 5.18 Ability of measures to meet Maintenance objective

Measure	Potential to Meet Objective	
	M1	M2
1. Change of vehicles	P	P
2. Widen Existing Access point to Oxted Chalk Quarry		
3. Widen Chalkpit Lane	P	P
4. Traffic Calming		
5. One Way System along Chalkpit Lane		
6. Railing and Bollards		
7. Signal Control Chalkpit Lane close to the bridge arch		
8. Waiting Restrictions		
9. Width restriction from The Ridge only		
10. Haul Route (Quarry to The Ridge route)	P	P
11. Haul Route(Quarry to The M25)	P	P
12. Re-route via western section of Barrow Green Road	P	P
13. Re-route via Limpsfield		
14. HGV re-routed in an east to west direction		
15. Conveyor from Quarry to depository place		
16. Tunnel from Quarry to depository place		
17. Rail connection	P	P
18. Haul Route(Quarry to Tandridge Hill Lane)	P	P

Source: Consultants' Estimates

5.4.5.1 Analysis

In terms of meeting the maintenance objective, a change in the type and size of vehicle (measure 1); measures that upgrade the road by widening Chalkpit Lane (measure 3), re-routing via western section of Barrow Green Road west of the junction with Chalkpit Lane (measure 12), haul routes (measures 10, 11 and 18) and a rail connection (measure 17) would potentially remove the HGVs from the local roads onto the railway network would provide the greatest benefit in terms of highway maintenance.

5.4.5.2 Summary

Overall without the likely costs and timescales, measure 17 that diverts traffic from the local roads onto the railway would provide the best balance of benefits.

Re-routing via western section of Barrow Green Road (measure 12) and the Haul route from the Quarry to The Ridge (measure 10) have the potential to meet more of the objectives.

Signalising Chalkpit Lane at the arch with the railway bridge (measure 7) would ease flow of traffic and control the flow of traffic.

5.5 COSTS AND TIMESCALES

The likely costs and timescales associated with each measure are presented in Table 5.19 below. The costs have been based on the Consultants' experience rather than being "market tested" and do not include costs associated with the acquisition of land and negotiations with third parties.

Table 5.19 Likely costs and timescales for measures

	Measure	Cost(£)	Time in months
1.	Change of vehicles	unknown	unknown
2.	Widen Existing Access point to Oxted Chalk Quarry	25,000	3
3.	Widen Chalkpit Lane	150,000	18
4.	Traffic Calming	100,000	6
5.	One Way System along Chalkpit Lane	350,000	18
6.	Railing and Bollards	100,000	6
7.	Signal Control Chalkpit Lane close to the bridge arch	100,000	6
8.	Waiting Restrictions	25,000	18
9.	Width restriction from The Ridge only	350,000	48
10.	Haul Route (Quarry to The Ridge route)	1,000,000	40
11.	Haul Route(Quarry to The M25)	750,000	24
12.	Re-route via western section of Barrow Green Road	850,000	18
13.	Re-route via Limpsfield	50,000	24
14.	HGV re-routed in an east to west direction	1,000,000	24
15.	Conveyor from Quarry to depository place	Millions	60
16.	Tunnel from Quarry to depository place	Millions	60
17.	Rail connection	Millions	60
18.	Haul Route (Quarry to Tandridge Hill Lane)	Up to a million	24

Source: Consultants' Estimates

5.5.1 Analysis

It can be seen from Table 5.19 that the costs of individual measures vary significantly. The extremities of the range are relatively modest sums for widening the Quarry access or implementing waiting restrictions to major expenditure required for the more ambitious elements of a solution, such as overhead conveyor, tunnel or railhead and connection.

The timescales associated with individual measures also vary considerably from short timescales in widening the Quarry access to prevent overrun of the verges to much longer timescales for implementation of the major works such as conveyor, tunnel or railhead and connection.

6 Preferred Option

6.1 INTRODUCTION

This chapter presents the Consultants' preferred option, based on the evaluation in Chapter 5. The option is a combination of measures which should be implemented over a range of timescales.

Although the major works components appear to offer good technical solutions to the issues, it is the Consultants' view that with the addition of the associated costs and timescales the measures do not return fair value for money, especially given the relatively small number of vehicle movements for which they cater together with the potentially limited length of operation of the Quarry.

As a result the Consultants have considered two principal "families" of solutions; those to the north and those to the south.

The preferred solution to the north would require easing the width restriction on Chalkpit Lane and upgrading The Ridge to take two-way HGV movements; it would be undesirable to have an intensification of HGV movements through Woldingham. The junction of The Ridge with the B269 would also have to be improved to cater for extra HGV movements. This solution is not without its difficulties as HGVs that emerge from The Ridge have limited routes via which they can access the wider strategic network; invariably they are led to small settlements such as Limpsfield, Westerham or Warlingham, therefore additional measures may have to be considered further from the immediate environs of the Quarry.

The preferred solution to the south would require calming or improving Chalkpit Lane, signalising Chalkpit Lane at the brick arch railway bridge and upgrading Barrow Green Road to cater for two-way HGV movements. Additional measures would be required on local roads within Oxted to prevent use by HGVs, other than those that require access.

Both solutions would benefit from widening the Quarry entrance.

On balance, the solution to the south appears to offer the fastest and hence easiest route to the strategic or principal road network (A25 and beyond).

6.2 SELECTED MEASURES

The following measures were selected following the evaluation:

- Widen existing access point to Oxted Chalk Quarry (measure 2)
- Widen Chalkpit Lane (measure 3)
- Traffic Calming (measure 4)
- Signal control Chalkpit Lane close to the bridge arch (measure 7)
- Re-route via western section of Barrow Green Road west of the junction with Chalkpit Lane (measure 12)

The measures are divided into three categories, short term, medium term and long term. The short term measures are likely to be implemented within shorter timescales, meet some of the objectives and could be combined with other measures (are not standalone measures). Medium term measures are likely to require slightly longer time scales and

would meet more objectives than the short term measures. Long term options are likely to require longer timescales and would meet more objectives but may be more costly in terms of capital expenditure.

The measures have been divided into stages according to the proposed scheduling of the possible works to address problems associated with movements of HGV from the Quarry.

6.3 SHORT TERM

The stages indicate the preferred sequence of implementation.

6.3.1 Stage 1: Voluntary Site Operator Measures

Maintain the existing voluntary measures at the site, i.e., directing HGV drivers to use the designated route, to keep within 20mph speed limit, on-site wheel washing prior to accessing the public roads and the cleaning of local roads when materials are accidentally deposited.

6.3.2 Stage 2: Widen Quarry access

Locally to prevent overrun of verges close to the site access.

6.3.3 Stage 3: Traffic Calming

Between the Quarry access and Gordons Way.

6.3.4 Stage 4: Signalise section of Chalkpit Lane

To ease the difficulties that HGVs present to general traffic and other HGVs when they command the centre of the road. There would also be the opportunity to install at least one footway to assist pedestrians.

6.3.5 Stage 5. Implement traffic management on existing route to A25

Some traffic management along the existing route to the A25 in form of temporary traffic signs re-directing traffic and/or temporary one-way working along sections of Barrow Green Road and Chalkpit Lane will be required in preparation for works to implement Medium Term measures.

6.4 MEDIUM TERM

6.4.1 Stage 6: Widen section of Chalkpit Lane

To allow two-way HGV movements between the brick arch railway bridge and Barrow Green Road.

6.4.2 Stage 7: Re-route via western section of Barrow Green Road

Requires upgrading Barrow Green Road and associated features for pedestrians, cyclists and horse riders.

6.5 LONG TERM

The Short and Medium Term measures will clearly require monitoring against the set objectives to understand if sufficient positive impact has been achieved. Should problems with the Quarry HGV traffic remain in the long term, further measures should be considered. At that point there should be a re-evaluation of the northern measures, such as the haul route from the Quarry via The Ridge.

6.6 COSTS AND CONTRIBUTIONS

6.6.1 Site Operator

On 6th March 2008, the Quarry operator SGL wrote a letter to the local MP stating that SGL was happy to implement and fund an internal road from the site to The Ridge valued at some £700,000; to alleviate the problems associated with the traffic to and from the Quarry. It is assumed that any options with a haul road and to widen the Quarry access would be funded by SGL; therefore in terms of costs to SCC, these options are the least costly.

6.6.2 SCC

Funding for different transport schemes across Surrey is set out in SCC LTP Integrated Transport Budget.

At the time of writing, the Consultant was not aware of any budget allocation or any funds that had been made available to SCC to specifically implement any of the identified schemes.

It is not known whether the SGL would be willing to partly or wholly fund the works for all other options instead of the haul road and it thus assumed the funding may require full contribution from SCC.

7 Summary and Conclusions

TPS was commissioned by Surrey County Council (SCC) to investigate and report on possible solutions for the problems associated with the Heavy Goods Vehicles (HGV) movements to and from the Oxted Chalk Quarry.

Oxted Chalk Quarry is located on Chalkpit Lane approximately 1.5km northwest of Oxted town centre. It is an operational chalk quarry which has been active for more than 150 years with permission to continue till 2042. The site has permission for extracting 18,000 tonnes of minerals per year and infilling the site at a rate of 100,000 tones per year, an equivalent of up to 46 daily trips from the site. Existing routing for HGVs is via roads in Oxted onto the A25.

The study has considered possible measures to reduce the impact of the HGV traffic to and from the Quarry. The possible measures ranged from changing the type of vehicles transporting materials to and from the site, placing Traffic Orders along local roads to restrict HGV movements, to diverting all material movement to the local rail network.

All options were evaluated by assessing the potential to enhance safety for other road users; impact/effect on the Areas of Outstanding Natural Beauty; impact on the operation of the local transportation network; reduction of traffic levels within Oxted without disproportionately increasing traffic within other neighbouring towns; the chosen route in terms of suitability of the road, number of properties and people affected; the cost of implementation, legal implications and timescales.

The study concludes that the Consultants' preferred option is a staged approached to the problem that includes widening the Quarry access, signalising Chalkpit Lane close to the bridge arch, provision of traffic calming along Chalkpit Lane and re-routing the HGVs via an improved Barrow Green Road west of the junction with Chalkpit Lane be implemented in the short to medium terms and then monitoring the success of the measures.

This preferred option has been selected as it performs best in terms of ability to reduce the impact of the traffic on the local road network, enhance safety for other road users and legal implications. The cost of the implementation and timescales involved this option were relatively low when compared to more ambitious schemes that would divert traffic from the local community in the form of rail connection and which would minimise the number of HGVs on the local road network.

APPENDICES

HOURLY DATA BY MONTH REPORT

CHALKPIT LANE (NORTH OF THE M25) OXTED Grid Ref: 538470154095

From Saturday 24 May 2008 to Saturday 31 May 2008

Site Reference C0074 12520A Direction : SOUTH BOUND Total Flow

	Sat 24-May	Sun 25-May	Mon 26-May	Tue 27-May	Wed 28-May	Thu 29-May	Fri 30-May	Sat 31-May	Average 5 Day	7 Day
00:00 - 01:00	-	9	5	0	4	5	3	11	3	5
01:00 - 02:00	-	6	2	0	2	3	2	2	2	2
02:00 - 03:00	-	2	0	1	0	1	4	3	1	1
03:00 - 04:00	-	2	0	0	0	0	0	1	0	0
04:00 - 05:00	-	1	0	0	0	0	1	0	0	0
05:00 - 06:00	-	3	0	3	5	3	9	3	4	3
06:00 - 07:00	-	4	3	20	16	16	18	6	15	12
07:00 - 08:00	-	7	8	42	52	46	42	15	38	30
08:00 - 09:00	-	20	15	84	78	87	74	42	68	57
09:00 - 10:00	-	21	23	71	46	48	51	59	48	44
10:00 - 11:00	-	33	31	52	47	59	58	59	49	47
11:00 - 12:00	59	41	43	43	47	43	41	55	43	45
12:00 - 13:00	57	33	35	42	48	54	69	57	50	48
13:00 - 14:00	40	32	33	57	61	58	66	52	55	50
14:00 - 15:00	60	36	48	55	59	48	55	45	53	50
15:00 - 16:00	42	33	17	53	50	72	70	48	52	48
16:00 - 17:00	42	34	38	57	69	57	72	55	59	53
17:00 - 18:00	35	36	38	68	71	83	58	60	64	56
18:00 - 19:00	39	24	16	62	51	54	66	27	50	43
19:00 - 20:00	40	30	24	44	34	31	37	39	34	34
20:00 - 21:00	21	17	5	27	23	27	25	19	21	20
21:00 - 22:00	12	6	6	18	12	12	14	13	12	11
22:00 - 23:00	12	9	8	18	7	10	10	2	11	10
23:00 - 24:00	12	9	4	1	5	10	2	12	4	6
12, 16, 18 & 24 Hour Totals										
07:00 - 19:00	-	350	345	686	679	709	724	544	629	571
06:00 - 22:00	-	407	383	795	764	795	818	621	711	648
06:00 - 24:00	-	425	395	814	776	815	830	635	726	654
00:00 - 24:00	-	448	402	818	787	827	849	655	736	675
am Peak	-	11:00	11:00	08:00	08:00	08:00	08:00	11:00	08:00	08:00
Peak Volume	-	41	43	84	78	87	74	55	68	57
pm Peak	14:00	14:00	14:00	17:00	17:00	17:00	16:00	12:00	17:00	17:00
Peak Volume	60	36	48	68	71	83	72	57	64	56
BANK HOLIDAY										

HOURLY DATA BY MONTH REPORT

CHALKPIT LANE (NORTH OF THE M25) OXTED Grid Ref: 538470154095

From Saturday 24 May 2008 to Saturday 31 May 2008

Site Reference C0074 12520A Direction : NORTH BOUND Total Flow

	Sat 24-May	Sun 25-May	Mon 26-May	Tue 27-May	Wed 28-May	Thu 29-May	Fri 30-May	Sat 31-May	Average 5 Day	7 Day
00:00 - 01:00	-	12	1	2	0	4	2	6	2	4
01:00 - 02:00	-	4	2	0	0	2	3	2	1	2
02:00 - 03:00	-	1	0	1	1	1	4	1	1	1
03:00 - 04:00	-	1	0	1	0	0	0	1	0	0
04:00 - 05:00	-	1	1	2	1	0	0	1	1	1
05:00 - 06:00	-	1	0	4	4	3	9	1	4	3
06:00 - 07:00	-	4	2	22	22	24	19	8	18	14
07:00 - 08:00	-	3	5	71	62	71	67	17	55	42
08:00 - 09:00	-	8	6	66	58	71	66	33	54	44
09:00 - 10:00	-	30	21	41	57	58	62	35	47	43
10:00 - 11:00	-	25	31	65	59	53	51	54	52	48
11:00 - 12:00	50	26	34	36	53	59	61	55	49	46
12:00 - 13:00	45	39	36	55	48	50	47	53	47	46
13:00 - 14:00	39	34	32	45	44	49	54	49	45	43
14:00 - 15:00	40	35	37	52	56	49	61	60	51	48
15:00 - 16:00	36	39	21	58	66	67	55	44	53	49
16:00 - 17:00	24	43	32	61	70	60	68	45	55	52
17:00 - 18:00	51	39	26	98	84	79	77	49	73	64
18:00 - 19:00	42	26	33	54	42	54	51	27	47	42
19:00 - 20:00	38	35	26	27	32	44	36	21	33	33
20:00 - 21:00	32	17	15	18	22	21	27	17	21	20
21:00 - 22:00	11	10	2	17	14	20	16	14	14	13
22:00 - 23:00	13	18	10	15	13	12	12	10	13	14
23:00 - 24:00	16	7	6	4	7	14	11	19	8	9
12, 16, 18 & 24 Hour Totals										
07:00 - 19:00	-	347	314	702	699	718	722	523	691	597
06:00 - 22:00	-	413	359	786	789	827	820	583	717	647
06:00 - 24:00	-	438	379	805	809	853	843	612	738	670
00:00 - 24:00	-	458	383	815	815	863	861	624	747	681
am Peak	-	09:00	11:00	07:00	07:00	07:00	08:00	11:00	07:00	10:00
Peak Volume	-	30	34	71	62	71	68	55	55	48
pm Peak	17:00	16:00	14:00	17:00	17:00	17:00	17:00	14:00	17:00	17:00
Peak Volume	51	43	37	98	84	79	77	60	73	64
BANK HOLIDAY										

This was made an allocated Neighbourhood issue when it was highlighted by the community. Both the Neighbourhood team and the casualty reduction officer visited the area on numerous occasions to check various issues and to be seen patrolling and checking speeds and that raod traffic law is adhered to. The Roads Policing Unit were informed and made it one of their top 10 force priority issues, they and the RPCSO units also patrol the area and have liaised with the Quarry. The Targetted Patrol Team Officers working Tandridge were also notified of the concerns and attend when possible. The casualty reduction officer has liaised with Safety camera Partnership re any actions they may be able to take but there has been no KSI's and not really suitable for mobile camera enforcement. They have agreed to carry out a speed survey in near future.

Whilst Police/PCSO's are present the lorry drivers adhere to the request from the Quarry re speed and driving routes. No lorries have been monitored exceeding the speed limit when speed checks have been carried out and generally the vehicles are in a good state of repair and all documents are in order when checked. No drivers have been seen using phones. The nature of the roads near to the Quarry do not allow the lorries to travel fast generally.

The Quarry are fully aware of the concerns of the neighbourhood and have made a concerted effort to limit the problems by issuing guideline notices to all the drivers every time they are in the Quarry. They have employed a Security Man to patrol the local area and monitor the actions of the lorries and have bought extra vehicle wheel cleaning gear and operatives to ensure the lorries leave the yard clean. Ultimately they can only ask but they will ban any drivers seen going against the notice and have done so on anumber of occassions which seem to have been effective as a deterent.

Summary of Formal returns from Oxted Quarry to Environment Agency
1 April 2007 to 31 March 2008

Quarter	Total	Crawley	Croydon	Surrey	Date of certification to Environment Agency
One	9260	1760	3820	3680	15-Oct-07
Two	24866	5600	18726	540	15-Oct-07
Three	25483	Nil	25483	Nil	21-Jan-08
Four	21760	Nil	21760	Nil	02-May-08
Totals	**81369**	**7360**	**69789**	**4220**	