

SECTION 12: TRAFFIC

121 INTRODUCTION

12.1.1 Background

This chapter of the Environmental Impact Statement (EIS) has been prepared by WSP Ireland Ltd and reviews the impact of the proposed Inert Soil Recovery Facility at Milverton on the local road network and traffic flows thereon.

Quarrying and the production of aggregate and other construction materials at Roadstone Dublin's site in Milverton has been suspended in recent months and the former retail shop has also closed. It is proposed to commence backfilling of the existing quarry void in order to restore the quarry to near its original ground level. Information from a number of sources has been utilised by WSP in preparing this chapter. This includes :

- Information provided SLR Consulting Ltd. (formerly John Barnett and Associates) and.
- Quarry and Retail Centre sales dockets provided by Roadstone Dublin Ltd.

12.1.2 Scope of Work

This EIS chapter includes a description of the local road network, an estimation of the likely traffic generated by the proposed inert soil recovery facility, the impact of generated traffic upon the local road network, review of the proposed haulage route to and from the quarry, identification of any planned transport improvements for the area that may impact on the quarry haulage route and any mitigation measures required.

An on-site inspection of the application site and haulage route used by quarry traffic was undertaken on Thursday 29th January 2009. This site visit included initial inspections of traffic flow patterns and the geometry and layout of the local road network.

12.1.3 Difficulties Encountered in Compilation

No difficulties were encountered in the compilation of this chapter

12.2 RECEIVING ENVIRONMENT

12.2.1 Site Location and Local Road Network

The application site is located within Roadstone Dublin's landholding at Milverton, 1.5km south west of Skerries in north County Dublin. The total area of the landholding is approximately 8.6ha. (20.7 acres).

The access to the former quarry site at Milverton is located directly off the R127 Regional Road. This road runs in a predominantly north-east / south-west alignment from its junction with the R132 Regional Road to the town of Skerries and bounds the application site to the north. The cross-sectional width of this road generally varies from 6.5m to 7.0m. There are a number of side road "T" junctions and staggered crossroads located along the length of the R127 between its junction with the R127 and Skerries. On the approach to Skerries, there is a low bridge with a maximum height of 3.44m. A photograph of this bridge is reproduced in Plate 12.1.

The R127 is the main route connecting Lusk and Skerries. The town of Lusk is located approximately 5km south of Milverton Quarry along the R127. It is served by a relief road which alleviates congestion and allows vehicles wishing to travel efficiently along the R127 to by-pass the town.

Travelling further south, the R127 then intersects with the R132, which was previously the old N1. This junction is 3km south of Lusk and is locally known as "Blakes Cross". This intersection is in the form of a priority junction, with priority in favour of the R132. On approach to this junction along the R127, there is a left turn slip lane provided for traffic heading south, enabling it to merge with the R132. Vehicles travelling northbound along the R132 wishing to turn on to the R127, are facilitated by a ghost island right turn lane. Vehicles travelling from a southbound approach to the

junction and making a left turn, are provided with a left turn slip lane. A photograph of this junction is provided in Plate 12.2.

The Lissenhall junction on the M1 Dublin to Belfast Motorway is located 3km south of the R127 / R132 junction at Blakes Cross. This grade separated dumbbell interchange consists of a left slip on and a left slip off in both northern and southern directions.

The Balbriggan junction on the M1 Motorway is located 5km north of Blakes Cross. This is also a grade separated dumbbell interchange consisting of a left slip on and a left slip off in both northern and southern directions

12.2.2 Traffic Volumes and Link Traffic Count

Traffic volumes generated by the former quarry and construction materials production plant at Milverton have been determined from two sources.

- Information provided by Roadstone for the calendar years 2006, 2007, 2008
- Information provided by SLR (formerly JBA)
- Link Traffic Count undertaken by WSP.

Information provided by Roadstone Dublin

Traffic volumes generated by activities at the former quarry over a three year period between 2006 and 2008 were obtained by detailed analysis of information gathered by Roadstone Dublin on the numbers of HGV and light vehicle traffic accessing the site.

Roadstone Dublin Ltd collated sales data over this three year period and related the number of sales dockets issued for loads of readymix concrete and structural fill (crushed stone) to the number of HGVs accessing the quarry. Each sales docket is the equivalent of 1 HGV accessing and egressing the site.

A maximum and an average number of daily HGV trips to the Milverton Quarry have been established through the assessment of the daily figures obtained for each of the assessment years. A variation factor of 3.3 has been derived from the ratio between the maximum HGV trips and average HGV trips observed over the three year period between 2006 and 2008.

Table 12.1 below summarises the daily number of HGV trips to and from the former quarry:

| Table 12.1: Daily HGV Trips Associated with Milverton Quarry | | | | | | |
|--|---------|----------|---------------|-------|------------------|--------------------------------------|
| Year | Unit | Concrete | Crushed Stone | Total | Total In and Out | Variance between Max & Average (HGV) |
| 2006 | Max | 51 | 4 | 55 | 110 | 3.3 |
| | Average | 18 | 3 | 22 | 43 | |
| 2007 | Max | 50 | 30 | 80 | 160 | |
| | Average | 18 | 7 | 25 | 50 | |
| 2008 | Max | 45 | 48 | 93 | 186 | |
| | Average | 14 | 8 | 22 | 44 | |

There are some additional HGV movements in and out of the site over and above those recorded in the figures provided in Table 12.1. These HGV movements generally comprised deliveries to the site offices, batching plant or retail shop, and are likely to have been a fraction of overall HGV traffic levels.

The number of vehicles accessing the retail shop was attained by reviewing sales dockets for items purchased over the same three year period. Each receipt was taken to be the equivalent of 1 car or light van.

As with the HGV traffic, a maximum and an average number of daily trips associated with the retail shop was established from the data obtained during the three assessment years. In order to ensure a conservative assessment, the figure obtained for vehicle movements to the retail shop was increased by a further 20%. This increase accounts for a possible discrepancy in respect of journeys made to the retail shop which did not result in the issue of a sales docket (those visiting without buying).

Table 12.2 below summarises the number of trips generated by the former retail shop at Milverton.

| Table 12.2: Daily Trips Associated with the Retail Shop | | | | | | |
|---|---------|------|-------|-----------------|-------|---------------------|
| Year | Unit | Shop | Staff | Visitors 20% | Total | Total In and Out |
| 2006 | Max | 40 | 2 | 8 | 50 | 100 |
| | Average | 12 | 2 | 2 | 16 | 32 |
| 2007 | Max | 43 | 2 | 9 | 54 | 108 |
| | Average | 14 | 2 | 3 | 19 | 38 |
| 2008 | Max | 23 | 2 | 5 | 30 | 60 |
| | Average | 11 | 2 | 2 | 15 | 30 |

The information in Tables 12.1 and 12.2 has been combined and from this information, an hourly flow has been calculated which represents the level of former quarry traffic flow along the R127 during the over the operating hours of the Milverton Plant (0700 – 1800hours). Table 12.3 details a maximum and average hourly flow of traffic associated with the former activities operations at Milverton Quarry.

| Table 12.3: Hourly two-way traffic on R127 based on 11hr operations at Milverton Quarry | | | |
|---|-----|-----|-------|
| | HGV | CAR | Staff |
| Max | 14 | 8 | - |
| Average | 4 | 3 | - |

Information obtained from Link Traffic Count

On the 29th of January 2009 an on-site inspection was carried out by WSP. A survey was undertaken of the link movements occurring during an hour period coinciding with the morning peak hour from 08:00 – 09:00, these survey results are represented in Table 12.4.

| Table 12.4: R127 Link Traffic Count | | | |
|-------------------------------------|--------------------------------------|-----------|-----|
| 2009 R127 Link Count | Peak Hour | CAR / LGV | HGV |
| | 08:00-09:00 Northeast to Skerries | 296 | 0 |
| | 08:00-09:00 Souhwest to Lusk | 392 | 4 |

The Annual Average Daily Traffic (AADT) is an estimate of the mean daily traffic volume experienced on a road over the course of a year. This figure has been calculated by means of the An Foras Forbartha Teoranta (AFF) document "Expansion Factors for Short Period Traffic Counts". The expansion factor was determined by using Table 3b "Expansion factors for each hour ending on rural intertown routes" of the AFF document. Since the link count was conducted on a Thursday in January with an hour ending of 09:00, the expansion factor is established to be 26.77. The AADT on the R127 has been calculated to be 18,752 plus/minus 53% with a 68% confidence level.

12.2.3 Existing Site Entrance

The prevailing speed limit on the R127 Regional Road is 80kph. Therefore to provide for an 85km design speed, the existing access junction at the application site must have a sight visibility distance of 160m at a minimum 4.5m setback from the R127 road edge along the access road, as defined in NRA DMRB (TD 42/95). A photograph of the achievable visibility is depicted in Plates 12.3 and 12.4.

Visibility at the access junction onto the R127 is quite good to the right (east). To the left (west) visibility is slightly obstructed by signage and flag poles relating to the former retail centre. A number of mitigation measures are proposed to address this aspect in Section 12.4 (Proposed Mitigation Measures).

In the vicinity of the site entrance, the alignment of the R127 is predominately straight and offers motorists good forward site stopping visibility of any vehicles turning into the application site.

12.2.4 Existing Site Infrastructure

The existing infrastructure facilities provided at Milverton Quarry include:

- Weighbridge
- Fuel storage tanks
- Office/canteen facilities
- Security gates
- Hard-standing areas and internal road network
- Environmental monitoring system
- Utilities
- Designated waste storage areas

The infrastructure will be upgraded to accommodate a wheelwash facility and temporary surface water management systems.

12.2.5 Existing Haulage Route

The route that will be travelled by HGV trucks to and from the proposed inert soil recovery facility is the same as that travelled by trucks going to and from the former quarry. This route is illustrated in Figure 12.1.

Upon leaving the site, all HGV traffic will turn left at the site exit and head south-west towards Lusk along the R127. When approaching Lusk, HGV traffic shall use the relief road by taking the first exit on the roundabout, and subsequently travel through the next two roundabouts. They will then proceed to take the first exit on the fourth and last roundabout. HGV traffic will then continue travelling south-west until it approaches the R127 / R132 intersection at Blake's Cross. At this junction, HGV traffic will turn south and move towards the Lissenhall Interchange on the M1 to their destination site in the Greater Dublin Area, or turn north and advance towards the Balbriggan Interchange on the M1 to the intended site in North Leinster.

This route ensures that traffic travels on existing regional roads, which have been designed and classified to accommodate HGV traffic. It also avoids going through any towns or roads that are unsuitable for HGV traffic.

12.3 IMPACT OF THE SCHEME

All developments can result in an increase in traffic flows on the surrounding road network. The increased volumes of traffic directly affect all road users and the surrounding local environment.

Possible effects to road users include:

- Increased journey times for vehicular traffic;
- Increased difficulty in crossing roads for pedestrians / cyclists;
- Increased risk of accidents for all road users.

Increased traffic volumes on the road network may also result in significant impacts on the wider community and on the environment in terms of:

- Increased Noise
- Vibration
- Reduced Air Quality

This section of the EIS deals with the traffic generated by the proposed inert waste recovery facility at the former Milverton quarry; the distribution and assignment of traffic generated by this development; and the impacts it will have on the surrounding road network.

12.3.1 Evaluation Methodology

The methodology employed in the determining the impact of the proposed development upon the local road network involves the following elements;

- Determine the volume of traffic generated in the past by operations at Milverton.
- Obtain estimate for volume of traffic generated by the proposed inert soil recovery facility
- Determine link flow on the R127 during the morning peak of an average weekday.
- Compare generated traffic to and from the inert waste recovery facility to traffic generated by former quarrying and construction materials production operations at the same site up to the recent past.

12.3.2 Potential Impact

Traffic Generation

The proposed quarry backfilling operations at Milverton entail the importation of approximately 2.0 million tonnes of material over its lifetime in order to fill the bulk of the void created by recently ceased quarrying activity. This is equivalent to a total of approximately 100,000 HGV movements at 20 tonnes per load to fill the quarry void.

Taking it that there are 50 working weeks in the year, and six working days per week, this gives a total of 3,300 working hours per year for the proposed waste recovery facility. This assumes an 11 hour working day, equivalent to that which applied when the former quarry was operational.

Roadstone Dublin Ltd has estimated the facility will have an average intake of inert soil waste at the facility of around **250,000 tonnes** / year. This equates to a seven year life expectancy for the proposed facility.

From the information above, it is possible to obtain an average hourly HGV trip rate to and from the waste recovery facility associated with backfilling and restoration activities. This yields a figure of **four HGV** movements into **and four HGV movements** out of the quarry per hour on average.

However, if backfilling of the quarry was to proceed at this intensity, it is likely that this average figure will be exceeded during busy periods of the year. It was therefore necessary to obtain a maximum number of hourly trips for the backfilling operations.

A maximum figure has been arrived at by applying a variation factor of 3.3 to the average number of trips associated with the backfilling activity. This factor has been derived from the ratio between the maximum HGV trips and average HGV trips observed over the three year period

when the quarry was operational between 2006 and 2008. The variation between the average HGV trips and maximum daily HGV trips is outlined in Table 12.1 above.

As such, the maximum predicted flow associated with the backfill operations over a seven year operational period is 13 vehicles per hour, or 26 movements into and out of the quarry.

Table 12.5 below summarises the total trips along R127 in this 'worst case' peak hour scenario:

| Table 12.5: Total Waste Recovery Traffic In and Out of Milverton Facility per hour | | | |
|--|-----|-------|--------------------------------------|
| | HGV | Staff | Variance between Max & Average (HGV) |
| Max | 26 | 3 | 3.3 |
| Average | 8 | 3 | |

Comparison of Inert Waste Traffic Volumes to Those for Former Operations

An initial comparison of the volume of traffic generated from former operations at Milverton Quarry to those calculated for the proposed inert waste recovery facility reveal that there is a potential increase in HGV trips related to the development. It can be deduced from comparison of the data calculated in the Table 12.3 and 12.5 that a maximum increase of 12 HGV movements / hour along the R127 could, in a worst case scenario, arise from the establishment of the proposed inert waste recovery facility.

It should be noted that this maximum will only occur at peak hours of periods during the course of the postulated seven year backfilling period and will only occur on an intermittent basis. Further comparison shows that the average hourly increase is in the order of an additional four HGV movements over that generated by former quarrying related activities.

Notwithstanding the increase in HGV traffic; it is considered that this increase is of an acceptable level. In rational terms this equates to one HGV every two minutes during the maximum peak hour of a peak seasonal period, and one HGV every six minutes in the average season scenario. Therefore no adverse impact on the local road network would be envisaged.

Impact upon R127

The increase in traffic flows upon the R127 due to the change in use at the application site will result in a maximum increase of 12 HGVs per hour during peak operational periods of the inert waste recovery facility. This would equate to an increase of approximately 4.3% in traffic volumes upon the R127.

As the increase in traffic upon the R127 is less than the 10% "area of influence" threshold noted within the NRA document "Traffic and Transport Assessment Guidelines 2007", it can be concluded that the impact of this additional traffic is negligible and that the adjoining roads are outside of the area of influence of the site traffic.

12.3.3 Do-nothing Scenario

In the do-nothing scenario, the volume of HGV traffic accessing from the site onto the R127 will be zero, as the existing quarry has ceased operation. The large void at Milverton quarry will remain, and the land will serve no purpose to either the local community or the surrounding environment. Also sites within the Dublin and North Leinster area wishing to forward inert soil waste for recovery may have to travel further afield, resulting in increased mileage, traffic volumes and related environmental impacts.

12.4. MITIGATION MEASURES

The traffic mitigation measures in respect of the proposed facility are outlined below:

12.4.1 Proposed Mitigation Measures

Improvements to Visibility

To mitigate the impact of the obstruction due to signage and flag poles to the left (west) upon exit from the application site, it is recommended that the sign and the two outer flag poles be removed, particularly as the retail centre is no longer in operation. Maintenance (cutting back) of any vegetation which could also have potential impact on visibility should also be addressed.

Improvements to Signage

In addition to this, introduction of advanced warning signage within 300m east and west of the site entrance should be erected and incorporate a distance marker to inform motorists of their approach to the site access and slow down. It is acknowledged that there is a sign located in advance of the access on approach from the west. This should remain but a distance information plate should be mounted beneath this sign.

In order to minimise dirt and debris from being transferred from the quarry onto the public road network, it is recommended that a wheel wash facility be provided on site. It is acknowledged that the site infrastructure is to be upgraded to include this facility.

12.4.2 Residual Impacts

The mitigation element will improve the visibility from the existing access / R127 junction, thereby improving road safety for all users.

12.5 INTERACTIONS

The principal environmental interactions with traffic are noise and air quality. These impacts are assessed separately in Sections 7 and 8 of this EIS.

For inspection purposes only.
Consent of copyright owner required for any other use.

REFERENCES

Department of Environment, Heritage and Local Government et al (2003) “Traffic Management Guidelines”.

National Roads Authority (2007) “Traffic and Transport Assessment Guidelines”.

National Roads Authority “Geometric Design of Major/Minor Priority Junction”. **Design Manual for Roads and Bridges (DMRB) Volume 6, TD-42-95,**

For inspection purposes only.
Consent of copyright owner required for any other use.

FIGURES

For inspection purposes only.
Consent of copyright owner required for any other use.

PLATES

For inspection purposes only.
Consent of copyright owner required for any other use.



Plate 12.1 Low Rail Bridge along R127 on Approach to Skerries



Plate 12.2 R132 / R127 Priority Junction



Figure 12.3 Visibility to the Right (East) of Site Entrance



Plate 12.4 Visibility to the Left (West) of Site Entrance



NOTES

1. Extract from 1:50,000 O.S Discovery Series Map No. 43
2. Ordnance Survey of Ireland Licence No. SU 0000709 (c) Ordnance Survey of Ireland & Government of Ireland

LEGEND

-  Site Location
-  Motorway (M1)
-  National Primary Road (N1)
-  Regional Road

 **roadstone**
 ROADSTONE DUBLIN LTD.
 FORTUNESTOWN
 TALLAGHT
 DUBLIN 24

 **SLR**
 SLR CONSULTING IRELAND
 7 DUNDRUM BUSINESS PARK
 WINDY ARBOUR
 DUBLIN 14
 T: +353-1-2964867
 F: +353-1-2964878
 www.slrconsulting.com

ROADSTONE DUBLIN LTD.
WASTE LICENCE APPLICATION
WASTE RECOVERY FACILITY,
MILVERTON, SKERRIES, CO. DUBLIN
TRAFFIC ROUTE TRANSPORT PLAN

FIGURE 12.1
 Scale 1:5,000 @ A3 Date AUGUST 2009

