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INTRODUCTION

General

- 14.1 This Chapter describes the existing road network and provides an assessment of the receiving road network traffic conditions and an assessment of likely traffic effects arising from the proposed increase in the total intake capacity at an existing soil recovery facility (SRF) at Halverstown, south of Kilcullen, Co. Kildare. In view of recent changes in regulation to promote the circular economy, a key feature of the proposed development is that the additional intake to the existing facility, over and above that previously approved, will comprise a mix of soil and stone managed as waste (as heretofore) and as (non-waste) by-product. Full details of the proposed development are provided in Chapter 2 of this EIAR.
- 14.2 This Chapter considers a 'baseline' scenario, identifies the prevention, mitigation and monitoring measures that will be implemented to reduce the significance of any traffic effects and assesses the residual effects. The aim of the Chapter is to provide sufficient roads and traffic related information to determine the baseline and likely future traffic effects arising from the proposed extension (to the life and capacity) of the existing development at Halverstown.
- 14.3 Trafficwise Ltd. is familiar with the receiving road network having carried out a previous traffic study in relation to planning application Ref. 18/453 which provided for the establishment of an inert soil waste recovery facility and the importation, backfilling and recovery of approximately 1,200,000 tonnes of natural inert soil and stone waste materials. The current application is for continued permitted use of the site which, in terms of traffic generation arising, includes for an extension of the duration of ongoing backfilling / restoration activities and the life of the existing facility by 3 years.
- 14.4 A junction traffic turning count and an automatic traffic counter survey were undertaken in June 2023 to inform the current traffic study and thus the preparation of this Chapter. The survey data set provides a base from which to evaluate traffic patterns on the receiving road network and also provides a sound baseline upon which to evaluate likely future effects arising from the proposed development.
- 14.5 This Chapter is structured generally in accordance with TII Publication PE-PDV-02045 'Traffic and Transport Assessment Guidelines' (2014) and also has regard to the advises of the Chartered Institution of Highways & Transportation (CIHT) document 'Guidelines for Traffic Impact Assessment' (September 1994). The Chapter describes the receiving roads environment and reports upon past, present and forecast future traffic conditions on the receiving road network. The quantum of traffic generated by the development has been reviewed together with network traffic survey data which provides a frame of reference with respect to present, baseline and future forecast traffic flows on the receiving road network.
- 14.6 The comprehensive appraisal of the existing and future receiving road network in this EIAR is intended as a desktop aid to the Planning Authority in assessing the receiving roads environment. This Chapter of the EIAR provides an assessment of the current and forecast traffic generation arising at the existing Kilsaran recovery facility at Halverstown. The Chapter assesses and evaluates the likely effects of the proposed development on the existing transportation system in the vicinity of the site. It also identifies proposed mitigation measures to minimise effects arising from the proposed development. The material assets considered in this Chapter include transport infrastructure and associated services.

Competency of Chapter Author

- 14.7 This Chapter has been prepared by Julian Keenan an Engineer in practice and a director of Trafficwise Ltd. holding the degree of Bachelor of Engineering (Hons.) in civil engineering conferred by University College, Galway, in 1990. Mr Keenan is a member of the Institution of Engineers of Ireland and a member of the Chartered Institution of Highways and Transportation.
- 14.8 Mr Keenan has over 30 years engineering experience, including approximately seven years in local government in the United Kingdom and over 25 years of private engineering consultancy services in Ireland, of which 22 years are with Trafficwise Ltd. His consultancy experience includes advising clients in relation to road schemes, as well as residential, commercial, industrial and leisure developments for which the key work involved provision of professional services in the design and appraisal of schemes, including the preparation of planning applications and appeals.
- 14.9 Mr Keenan has represented clients at An Bord Pleanála oral hearings for commercial development, strategic infrastructure development and represented landowners and stakeholders in relation to various road schemes and infrastructural works. He has given sworn evidence before the Property Arbitrator, including in relation to road schemes, and has provided expert witness testimony to the High Court.

Legislation, Policy and Guidance

- 14.10 The scope of the traffic and transport assessment was developed having regard to the following guidance and legislation:
- The requirements of EU Directives and national legislation (primary and secondary) concerning Environmental Impact Assessment (especially having due regard to the revised provisions of Directive 2014/52/EU);
 - EPA (2002) Guidelines on the Information to be Contained in Environmental Impact Statements;
 - EPA (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports
 - EPA (2003) Advice Notes on Current Practice in the Preparation of Environmental Impact Statements;
 - EPA (September 2015) Advice Notes for Preparing Strategic Environmental Assessments;
 - EPA (August 2017) Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports;
 - DHPCLG (15/05/17) Circular Letter PL 1/2017 Implementation of Directive 2014/52/EU on the effects of certain public and private projects on the environment (EIA Directive): Advice on Administrative Provisions in Advance of Transposition;
 - DHPCLG (May 2017) Transposition of 2014 EIA Directive (2014/52/EU) in the Land Use Planning and EPA Licencing Systems: Key Issues Consultation Paper;
 - Kildare County Development Plan 2023-2029;
 - Department of Transport, Tourism and Sport (2019) 'Traffic Signs Manual';
 - Transport Infrastructure Ireland (TII) (May 2014) PE-PDV-02045 'Traffic and Transport Assessment Guidelines', referred to hereafter as the TTA Guidelines;
 - TII (Oct 2016) PE-PAG-02039 Project Appraisal Guidelines for National Roads 'Unit 16.1 – Expansion Factors for Short Period Traffic Counts';
 - TII (Oct 2021) PE-PE-PAG-02017 Project Appraisal Guidelines for National Roads 'Unit 5.3 – Travel Demand Projections';

- TII (Oct 2016) PE_PE-PAG-02016 Project Appraisal Guidelines for National Roads 'Unit 5.2 – Data Collection';
- TII (May 2023) 'Rural Road Link Design' DN-GEO-03031;
- TII (May 2023) 'Geometric Design of Junctions' (priority junctions, direct accesses, roundabouts, grade separated and compact grade separated junctions) DN-GEO-03060-02; and
- Other relevant TII Publications (Standards).

Planning Authority Policies and Objectives

General

- 14.11 In summarising current transportation related policies and future objectives for the general area, reference has been made to the Kildare County Development Plan 2023-2029 which sets out the vision, policies, strategies and objectives for planning and sustainable development of County Kildare. Some general policies and objectives together with specific Traffic and Transport related policies and objectives considered relevant to the location of the proposed development are summarised below.
- 14.12 Kildare County Development Plan 2023-2029, Chapter 5, 'Sustainable Mobility & Transport', Section 5.10 'Traffic and Transportation Management' sets out policy TMO108 relating to waste management and extractive sites as follows:
- Policy TM O108: *"Seek to channel HGV traffic associated with: (i) landfill and extractive sites onto the regional and national road networks insofar as possible and to seek appropriate and proportionate contributions towards the cost of road improvements which benefit a specific development, in accordance with Sections 48 or 49 of the Planning and Development Act 2000 (as amended) and (ii) to assess the potential for HGV management measures in town centres where appropriate."*
- 14.13 Kildare County Development Plan 2023-2029, Chapter 9, 'Our Rural Economy', Section 9.9 'Mineral Resources and Extractive Industry' sets out objective RD O50 which seeks to *"Ensure the satisfactory and sensitive re-instatement and/or re-use of disused quarries and extraction facilities, where active extraction use has ceased."*
- 14.14 Kildare County Development Plan 2023-2029, Chapter 15, 'Development Management Standards', Section 15.7 'Transport' sets out various requirements relating to traffic and transportation and sets out the following requirements in Section 15.7.4 'Road and Street Network'.
- *The standards set out in the TII publication DN-GEO-03031 Rural Road Link Design (2017) applies to Single and Dual Carriageway roads (including Motorways) in rural areas. It also applies to single carriageway Urban Relief Roads and Urban Dual Carriageways and Motorways.*
 - *The Council requires the submission of a Traffic and Transport Assessment (TTA) as part of planning applications for larger developments, as outlined in Table 15.6 below, in accordance with the TII publication PE-PDV-02045 Traffic and Transport Assessment Guidelines (2014). These guidelines advise that applicants should consult with the Transportation Department of the Council prior to submission of an application.*
 - Traffic to and from the proposed development exceeds 10% of the traffic flow on the adjoining road;
 - Traffic to and from the proposed development exceeds 5% of the traffic flow on the adjoining road where congestion exists or the location is sensitive.
 - Residential development in excess of 200 dwellings
 - Retail and leisure development in excess of 1,000 sq.m;

- Industrial development in excess of 5,000 sq.m, and; and
- Distribution and warehousing in excess of 10,000 sq.m.

14.15 Kildare County Development Plan 2023-2029, Chapter 15, 'Development Management Standards', Section 15.7 'Transport' sets out various requirements relating to traffic and transportation and sets out the following requirements in Section 15.7.5 'Stopping Distances and Sightlines'.

- *Sightline requirements are determined by the Council on a case-by-case basis. Factors including the type, speed limit and condition of the road are taken into consideration.*
- *Where sightlines are inadequate and would give rise to a traffic hazard, development will not be permitted.*
- *Where the improvement of sightlines requires the removal of hedgerow, developers must retain as much of the existing hedgerow as possible and must provide a clear justification for the extent of removal of any hedgerow which will be considered by the Planning Authority when assessing planning applications. Planning permission may be refused where the Planning Authority concludes that excessive hedgerow is being removed in order to achieve adequate sightlines. Notwithstanding the above, where any hedgerow is being removed, with the consent of the Planning Authority, the applicant shall submit detailed landscape proposals to minimise the impact.*
- *In cases where an access already exists with inadequate sightlines, it is Council policy to recommend the closing-up of this entrance prior to the use of an alternative access with adequate sightlines.*
- *All applications for planning permission must clearly indicate the sightlines available at the proposed access.*

14.16 Kildare County Development Plan 2023-2029, Chapter 15, 'Development Management Standards', Section 15.7 'Transport' sets out various requirements relating to traffic and transportation and sets out the following requirements in Section 15.7.6 'Access Requirements'.

- *Generally, where the capacity, width, alignment, or surface condition of the road are inadequate, development will not be favoured.*
- *Where new development would adversely impact on road drainage, development will not be permitted unless applicants agree proposals with the Council to improve the road.*
- *Generally, it is the policy of the Council to discourage the proliferation of access points onto public roads, particularly in areas where the maximum speed limit applies or where road safety is of concern in accordance with the objectives in Section 5.6. The Council also encourages and promotes shared access points in all circumstances.*
- *Where the removal of hedgerow is required in order to achieve sight lines, the minimum amount of hedgerow shall be removed (see Section 15.2.4 above). Any new boundary should be planted with suitable indigenous species as outlined in section 15.2.4.*
- *In accordance with the Spatial Planning and National Roads Guidelines for Planning Authorities, DECLG (2012), the creation of additional access points from new development or the generation of increased traffic from existing accesses to national roads to which speed limits greater than 50kph apply shall be avoided.*

Study Scope

- 14.17 Based upon consultation with Kildare County Council and by reference to the previous application under Planning Ref. 18/453 the scope for the key transportation items to be addressed within this assessment includes the requirement for identifying the haul routes and accessibility of the site. In addition, the methodology adopted in preparing this TTA will accord with published Transport Infrastructure Ireland (TII) Publication PE-PDV-02045 'Traffic and Transport Assessment Guidelines'.
- 14.18 Traffic surveys and junction assessments include;
- Site 1: R448 Site Access Junction
 - Site 2: R448 North of Site Access Junction
- 14.19 Future year roads network capacity assessment scenarios to include;
- Opening Year 2026¹
 - Design Year 2029² (Opening Year +3 years)
- 14.20 The purpose of this assessment is to quantify traffic flows on the existing receiving transport environment and to detail the results of assessment work undertaken to identify the potential traffic and transport effects generated as a result of the proposed development.
- Background Review: This important exercise incorporated three parallel tasks which included (a) an examination of the local regulatory and development management documentation; (b) an analysis of previous 'transport' related, strategic and site specific studies of development and transport infrastructure proposals at the application site, and (c) a review of planning applications to establish the legal status of relevant various third party development schemes that were either considered within the strategic 'transport' studies or which have emerged and received full planning permission since.
 - Site Audit: A site audit was undertaken to quantify existing road network characteristics and identify local infrastructure management arrangements, in addition to establishing the level of accessibility to the site.
- 14.21 This assessment has been completed in accordance with Transport Infrastructure Ireland's 'Traffic and Transport Assessment Guidelines' PE-PDV-02045 (May 2014). Information from the Kildare County Council Development Plan 2023-2029 was used to describe the development location and its local context in relation to transportation objectives.
- 14.22 The general methodology adopted for this report is summarised as follows:
- Traffic data – 12-hour classified vehicular traffic count surveys were undertaken in June 2023 by Traffinomics Transportation Surveys. The surveys cover 07:00 and 19:00hrs at 1 site on the receiving road. In addition, an automatic traffic counter survey was undertaken on R448 over a 7-day period commencing 29 June 2023.
 - Trip Generation – A development trip generation assessment has been carried out using the first principles and the comparison methods which is underpinned by reference to empirical data for the subject site and by reference to weighbridge records so as to determine the existing and potential future vehicular trips to and from the proposed development.

¹ Assumes current rate of intake is maintained and capacity reached by end 2025

² Current permission expires December 2026, extension sought for 3 years

- Trip Distribution – Based upon existing traffic characteristics on the receiving road network, an appropriate distribution has been assigned to site development vehicular trips on the road network.
- Future Road Network Assessments – Future year traffic forecasts have been derived from the application of TII PAG growth factors to baseline survey data. Traffic generation arising from development is included in the future year road network assessments. Network traffic flows and the effects of development traffic upon the performance of the receiving road network are modelled for the proposed year of opening and further design year or horizon year (when operations cease). Assessments are undertaken both with and without the proposed development to assess the incremental effects arising directly from the continued operation of the proposed development.

- 14.23 Based upon weighbridge records, together with vehicle records and statistics relating to this and other similar sites operated by Kilsaran, this Chapter provides a review of traffic generation rates for various traffic streams arising from the current permitted and future proposed development.
- 14.24 Classified turning count surveys undertaken on the receiving road network identify baseline traffic conditions. The traffic surveys were carried out by Traffinomics Ltd. (formerly Abacus Transportation Surveys). In the interest of a comprehensive appraisal of the receiving road traffic characteristics, the report provides an assessment of the traffic flow variations recorded on the receiving road network that includes the current haul route which is Regional Road R448.
- 14.25 This Chapter provides an evaluation of the potential traffic generation of the permitted development at the application site and this is compared with the existing operation and with the forecast potential traffic scenario arising from the proposed continuation of site backfilling / recovery activities (and the extension to the life of the existing development). All assessment scenarios consider the site operating at comparative rates.
- 14.26 This Chapter also identifies how existing and future traffic associated with the development is accommodated on the existing local road network. Where considered appropriate, measures are discussed regarding the management of traffic generated by the proposed development.
- 14.27 The advice to local authorities in Spatial Planning and National Roads (Guidelines for Planning Authorities - January 2012), Chapter 3, 'Development Management and Roads' is to make sure that development located close to national roads and their junctions can be catered for by the design assumptions underpinning such roads and junctions thereby avoiding potentially compromising the capacity and efficiency of the national road. The assessments provided in this traffic study show that the traffic generated by the proposed development will not give rise to a premature or unacceptable reduction in the level of service available to road users on national roads or their junctions in the vicinity of the existing development.

RECEIVING ENVIRONMENT

Site Location and Site Access

- 14.28 The existing concrete production facility and soil backfilling / recovery facility are located approximately 4.5km south of the centre of Kilcullen. The site is accessed directly from the R448 Regional Road running from Naas in the north to Kilcullen and to Carlow and Waterford in the south. The existing site access is located on the eastern side of the R448 Regional Road, approximately 4km south of the M9 Junction 2 interchange which is located immediately south of Kilcullen village and approximately 6km south of M7 tie-in at Junction 11.

- 14.29 Subject to a speed limit of 100km/h, the R448 is the former N9 National Primary Road and is a wide single carriageway with hard shoulders on both sides. The existing site access is a stop controlled, simple priority arrangement, augmented with ahead and right turn arrows on the southbound approach.
- 14.30 The relevant technical reference for roads design standards on National Road is Transport Infrastructure Ireland (TII) Publication DN-GEO-03060 'Geometric Design of Junctions'. Section 4.2.1.1 provides information relating to 'Priority Junctions' stating that "Simple priority junctions are the most appropriate junction type for all local accesses on single carriageway roads" and *"For junctions with a lightly trafficked minor road the provision of a simple priority junction is the most appropriate junction type where the projected traffic flows (2-way Annual Average Daily Traffic - AADT) are less than those presented in Table 4.1 for both the major road and the minor road."* Table 4.1 of the document is reproduced below.

Major road AADT	Minor road AADT	
< 5,000	> 600	< 5,000
5,000 - 10,000	> 450	< 3,000
> 10,000	> 300	< 1,500

- 14.31 As the flows on the minor road (development access) are less than those in DN-GEO-03060, Table 4.1 indicates that a simple priority junction is the most appropriate layout and that a right turn lane is not required in accordance with the prevailing standard. DN-GEO-03060 further advises that *"On Type 2 and Type 3 Single Carriageway schemes, nearside passing bays shall be provided at all simple priority junctions that do not warrant a ghost island right turn lane."* It follows that not only is the need for undertaking acknowledged at simple priority junctions, but the design standards require the Roads Authority to make specific provision for undertaking at all simple junctions without right turning lanes.

Plate 14-1
Existing Access Junction



(Source: Google Street View Jun 2023)

- 14.32 Plate 14-1 above shows that the hard shoulder is used as a 'nearside passing bay' which allows through vehicles to pass right-turning traffic that slows down and may occasionally be required to wait to in the centre of the major road carriageway to turn right. The operation of the nearside passing bay is supported by restrictions on overtaking in both direction of approach to the existing site access.
- 14.33 The road surface of the R448 in the vicinity of the existing site access and on the primary haul route was observed to be in good condition during a recent site visit undertaken in November 2023. There were no signs of road structure failure and no evidence of significant distress to the wearing course.
- 14.34 The R448 Regional Road is the former N9 National Primary Route N9. The latest TII Traffic counter data for the N9 is dated 2006 and at that time recorded an AADT of approximately 13,000 (12% HGV) at 'Carlow North N09-15'. The most recent TII traffic data records for the same location when the road was reclassified to the R448 Regional Road shows that in 2010 the AADT had reduced to 7,670 (5% HGV) recorded at 'Carlow North R448-1'.
- 14.35 It follows that upon its reclassification to regional road status the receiving road traffic flows reduced by half and the number of HGV reduced by approximately 75%. Traffic surveys conducted in May 2023 are summarised in Table 14-1 and show the AADT at the site location along the R448 is approximately 4,827 (7% HGV).
- 14.36 Upon opening of the M9 and reclassification of the Old N9 to R448, it can be appreciated that the road is now subject to significantly less traffic. A reduction in the number of standard axles is typically accepted to extend the design of a road. From the evidence of the operation of the site and given that the application is for a short, extended period of 3 years, it is not thought that there would be a significant impact upon the structural capacity of the existing R448 carriageway.

Sightlines and Advance Warning Signing

- 14.37 The R448 is straight or nearly straight to the south of the access junction. There is a large radius left-handed bend for southbound traffic approaching the existing site access location. The verge on the inside of this bend is locally wide and provides increased forward visibility to southbound drivers. The standard stopping sight distance requirement and sightline distance is 215m which is exceeded in both directions at, and on the approaches to, the site access. Plate 14-2 and Plate 14-3 show visibility from the existing development access as measured from a set-back distance of 3.0m along the centreline of the existing access.
- 14.38 The existing site access is permitted development and previously approved in the determination of the application for existing development at the application site. Condition No.16 of the current planning permission (Planning Ref. 18/453) required that prior to commencement, sightlines at the existing site access road junction with the R448 were provided in accordance with the requirements of TII standards. It is evident from Plate 14-2 and 14-3 that the specified works have been completed.
- 14.39 Since the grant of permission, national roads design standards have not significantly altered as they relate to the fundamental geometric features such as stopping distance and sight lines. It follows therefore that since the sightlines afforded the existing access have been determined satisfactory under the current permission, they remain so under the current application.
- 14.40 In accordance with Condition No.17 of the current planning permission the Applicant, as operator at the application site, undertakes regular site access maintenance including hedge cutting and trimming to maintain unobstructed visibility sightlines at the existing site access.

- 14.41 It is not proposed to alter in any way or to make any permanent changes to the geometry of the permitted development access, so it follows that there is no need to undertake a Road Safety Audit since there is no subject matter to be considered.

Plate 14-2
Visibility Sightline to South (Right) of Existing Access Junction



Plate 14-3
Visibility Sightline to North (Left) of Existing Access Junction



- 14.42 Condition No.15 of the current permitted development (Planning Ref. 18/453) required that the developer provide advance warning signs. The combined warning signs of 'works entrance' ahead and 'speed limit' have been erected on both the northbound and southbound approaches to the existing development access. Plate 14-4 shows the existing sign in the western verge on the southbound approach indicating the right turn ahead. A corresponding left turn sign informs northbound traffic approaching the existing development access junction.

Plate 14-4
Advance Signing on Southbound Approach to Existing Access Junction



Overview of Existing Development

- 14.43 Kilsaran Concrete operates a concrete block manufacturing facility to the north of the application site at Halverstown which comprises a production plant and open- sided block curing shed, as well as shared infrastructure with the adjoining soil recovery / backfilling facility. Historically aggregates were sourced on site at Halverstown, but these resources were worked-out some time ago, which necessitates the importation of all the aggregates and cement used in the block manufacturing process.
- 14.44 Sand and gravel extraction was first established at the application site at Halverstown in the early 1940's, pre dating implementation of the Planning Act in 1964. This pre-1964 authorised area has been fully exhausted of sand and gravel reserves since before 1988. Under Planning Ref. 18/453 the former extraction site was permitted to receive approximately 1,200,000 tonnes of imported inert natural materials, principally excess soil, stones and/or broken rock to fill, to restore the disturbed landform created by previous extraction activities and to raise / improve lands in agricultural use. The maximum rate of importation was set at 300,000t per annum, with work to backfill the site to be phased over a period of 8 years which is due to expire in December 2026.

- 14.45 Prior to this, in September 2016, Kildare County Council had granted planning permission for a much small-scale soil backfilling / recovery facility (Planning Ref. 15/189) which provided for partial backfilling and restoration of the same lands, as well as a shared use of pre-existing site infrastructure with the adjoining concrete block manufacturing facility.
- 14.46 The relatively modest scale of the scheme, involving the importation and placement of less than 100,000 tonnes of excess soil and/or rock waste over a 5-year period meant that the recovery activity was regulated by way of a waste facility permit (WFP) issued by Kildare County Council in August 2016 (WFP Ref. No. WFP KE 16 0085 01). Operations under that earlier permission had an import rate of 20,000 to 25,000 tonnes per annum and were recorded to generate an average of 5 HGV trips and 1 private car trip per day.

Traffic Surveys

- 14.47 In establishing the scope of this updated traffic study, it is considered that the influence of traffic generated by the proposed development is not likely to be significant beyond the immediate haul route serving the application site. The existing principal haul route is the R448 Regional Road, the former N9 National Primary Road, which has excellent connectivity to the national road network, including the M7 and M9 motorways. A map showing existing (and continuing future) haul routes is provided in Drawing 14-1.
- 14.48 In the interest of a comprehensive assessment of traffic patterns on the local roads network in the vicinity of the proposed development, classified traffic turning count surveys were commissioned at the entrance to the existing site along the R448. The traffic data collection surveys included a 7-day automatic traffic counter (ATC) survey to the north of the exiting site access. The manual traffic surveys were carried out by Traffinomics Ltd. during school term on Thursday 25-May-2023 and covered the period 07:00-19:00hrs. The ATC survey commenced at midnight on Wednesday 24-May-2023. A copy of the base survey data including location mapping is provided in Appendix 14-1.
- 14.49 As is standard industry practice, the surveys were carried out on a 'neutral' day of the week. Generally, traffic flows manifest on a neutral day are considered more likely to be representative of typical traffic conditions on the local roads network. It is also acknowledged that May is a representative month in traffic terms and includes for normal schools related traffic, which can have a significant impact on the operation of the general roads network during the commuter peak hour. A preliminary review of TII traffic counter data at Counter Site TMU M09 006.0 N, located on M9 between Junction 2 Kilcullen and M7 Junction 11 (at Coordinates: 53.12724, -6.76141) indicates that in terms of annual average traffic flows, May in both 2022 and 2023 is likely to be a representative month.
- 14.50 A summary of the classified ATC traffic survey results at ATC Site 1 is presented in Table 14-1 below and shows the total daily volume of each type of vehicle recorded travelling in either direction. The category LV includes all light vehicles (cars/vans), HGV comprises both rigid body and articulated commercial vehicles. A detailed vehicle classification chart is provided in Appendix 14-1.

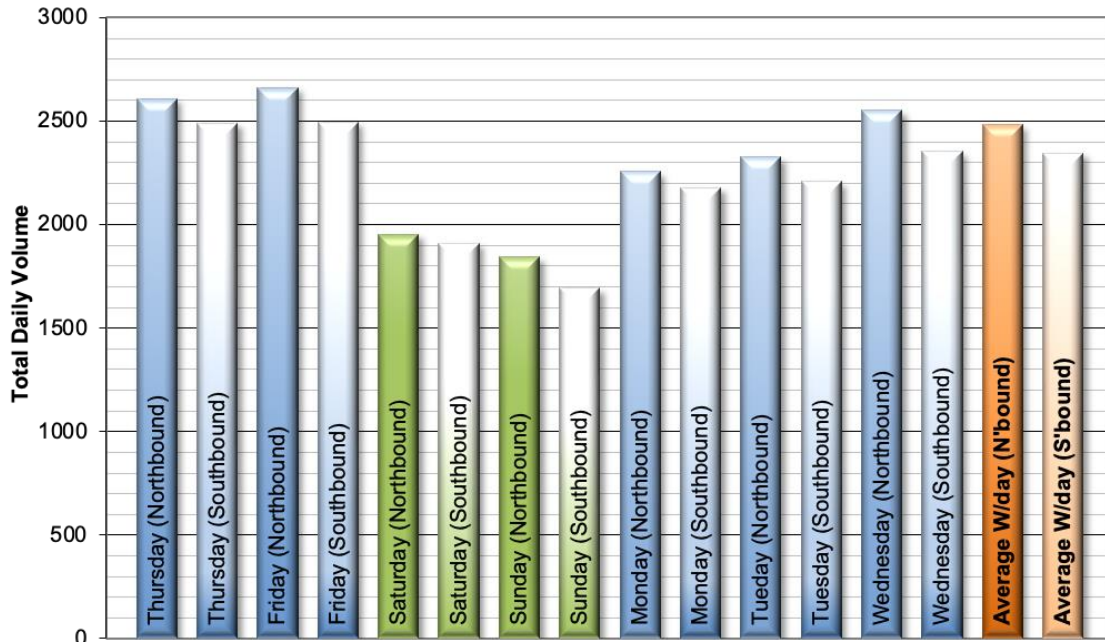
Table 14-1
Surveyed Traffic Flows R448

Day	Northbound			Southbound		
	LV	HGV	Total	LV	HGV	Total
Thurs 25 May	2,436	174	2,610	2,324	168	2,492
Fri 26 May	2,469	193	2,662	2,327	170	2,497

Day	Northbound			Southbound		
	LV	HGV	Total	LV	HGV	Total
Sat 27 May	1,903	51	1,954	1,847	64	1,911
Sun 28 May	1,815	28	1,843	1,670	24	1,694
Mon 29 May	2,098	159	2,257	1,989	190	2,179
Tue 30 May	2,157	169	2,326	2,039	170	2,209
Wed 31 May	2,382	170	2,552	2,178	177	2,355
W/day Average	2,308	173	2,481	2,171	175	2,346

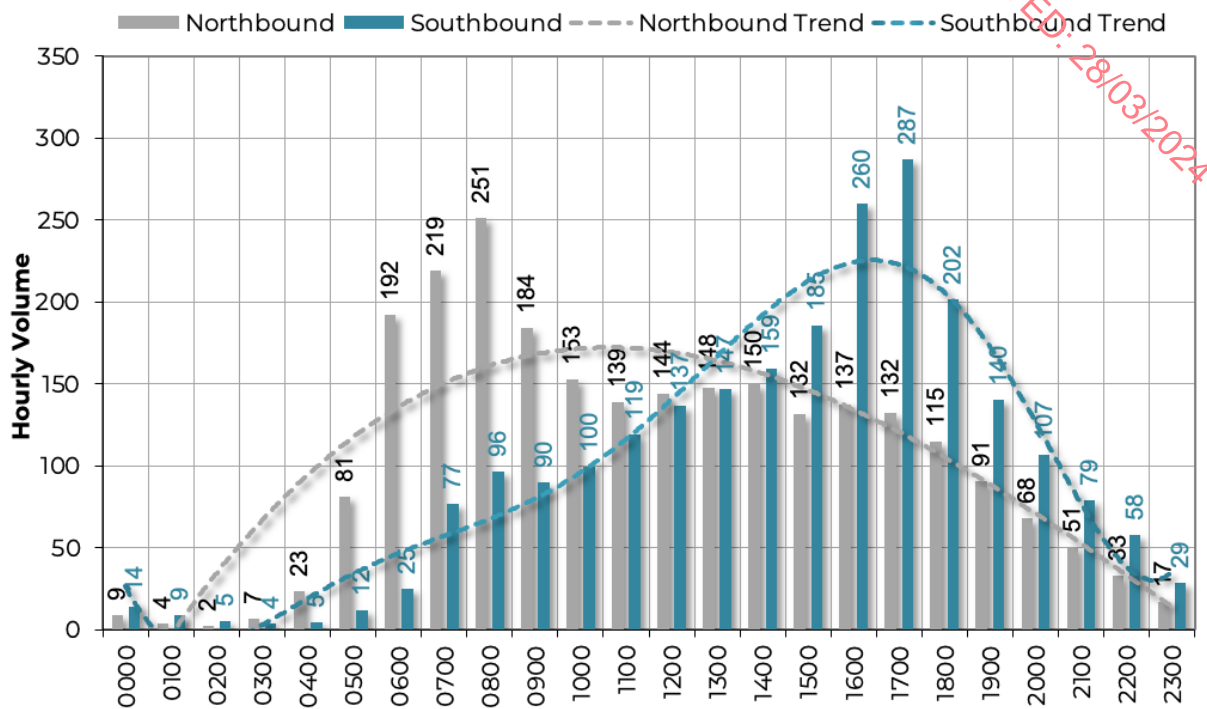
- 14.51 The total traffic flows by direction are balanced, with 2,481 vehicles including 173 HGVs travelling northbound and 2,346 vehicles including 175 HGVs travelling southbound.
- 14.52 The average weekday total daily traffic flow by direction is summarised in Figure 14-1 whilst average weekday total hourly traffic flow is summarised in Figure 14-2. The corresponding average weekday daily HGV traffic flow by direction is summarised in Figure 14-3, whilst average weekday HGV hourly traffic flow is summarised in Figure 14-4.

Figure 14-1
Weekday Average Total Daily Traffic Flow R448



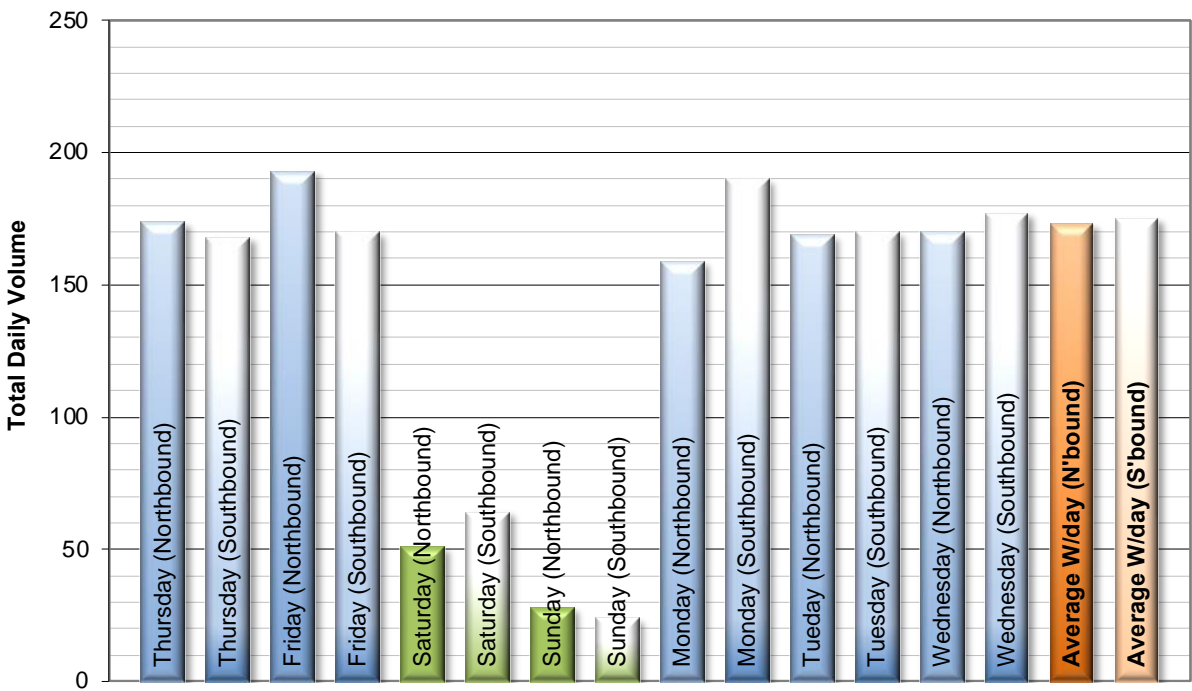
- 14.53 Figure 14-1 shows a relatively consistent weekday 24-hour total traffic flow which is balanced by direction of flow. Traffic volumes on Saturday and Sunday are comparable and are similarly balanced by direction. The total two-way traffic flow during the weekend is approximately 23% lower than on weekdays.
- 14.54 Figure 14-2 confirms that traffic flows on R448 are tidal in nature with a pronounced northbound flow toward Dublin in the morning and a reversal in the evening. Both peaks are reasonably assumed to correspond to the traditional commuter periods.

Figure 14-2
Weekday Average Total Hourly Traffic Flow R448



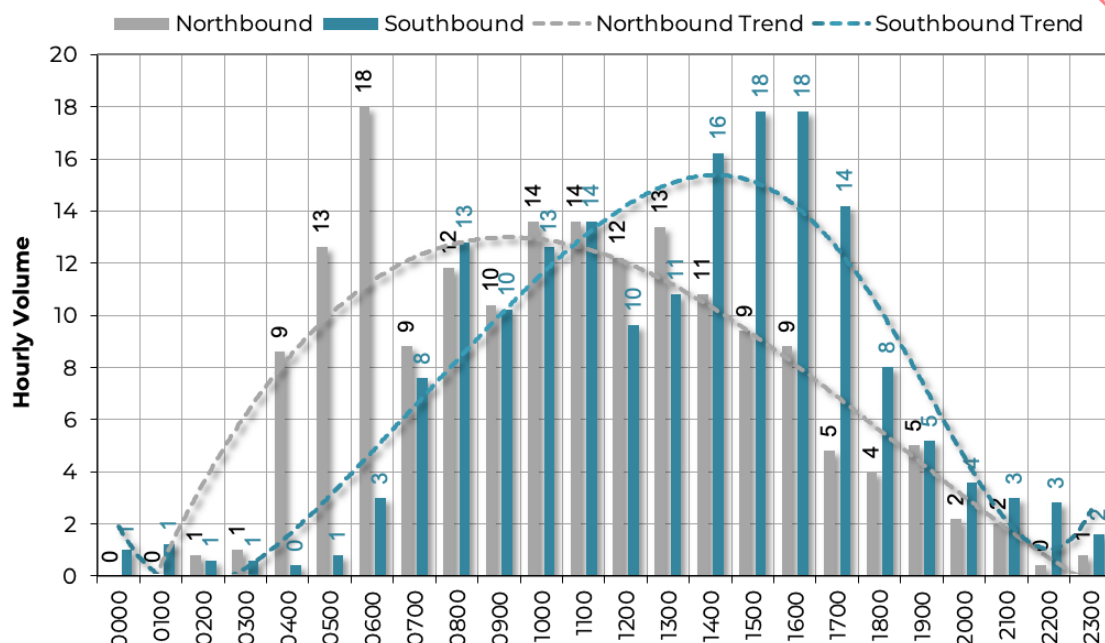
14.55 Figure 14-3 shows a relatively consistent weekday 24-hour HGV traffic flow which is balanced by direction of flow. Traffic volumes on Saturday and Sunday are comparable and a similarly balanced by direction. The total two-way traffic flow during the weekend is approximately 75% lower than on weekdays.

Figure 14-3
Weekday Average HGV Daily Traffic Flow R448



- 14.56 Figure 14-4 shows HGV flows have a slight tidal component but that tidal nature is not as pronounced as for the total traffic flow shown in Figure 14.2. In general HGV traffic flows are broadly consistent or steady from 07:00-17:00hrs during which period flows are relatively balanced by direction.

Figure 14-4
Weekday Average HGV Hourly Traffic Flow R448



- 14.57 Including all traffic, the total two-way traffic flow recorded on R448 to the north of the site access between 07:00 and 19:00hrs was 3,750 vehicles (north of existing access). Although HGV traffic flows remain relatively constant in both directions throughout that period of the day there is a tidal pattern to total traffic flows which is reflective of the traditional commuter travelling periods. The morning and evening peak hour periods for network traffic flow on the R448 past the site were recorded in the traffic survey as being 08:00-09:00hrs and 17:00-18:00hrs respectively. These times correspond to the typical network commuter peak hour periods and are again confirmed as representative by reference to TII traffic counter data at Site TMU M09 006.0 N.
- 14.58 The automatic traffic count survey recorded an average weekday morning peak hour cumulative two-way traffic flow on the R448 occurred in the period of 08:00-09:00hrs and comprised 347 two-way vehicle movements; 322 of which are cars and light vans and 25 HGVs. In total 249 cars / vans and 12 HGVs travelled northbound whilst 96 cars / vans and 13 HGVs travelled southbound.
- 14.59 The recorded evening peak hour cumulative two-way traffic flow on the R448 occurred in the period of 16:30-17:30hrs and comprised 419 two-way vehicle movements; 400 of which are cars and light vans and 19 are HGVs. In total 127 cars / vans and 5 HGVs travelled northbound whilst 273 cars / vans and 14 HGVs travelled southbound.
- 14.60 The following summary of traffic movements is based upon the 12 hours of classified traffic turning survey at the existing site access undertaken on Thursday 25-May-2023 and covering the period 07:00-19:00hrs.
- 14.61 Figure 14-5 corresponds to Figure 14-2 and Figure 14-3 above and shows the total two-way traffic flow on R448 passing the existing site access. Figure 14-5 excludes traffic generated by the existing development. The turning count survey confirms the data set out above as recorded from the ATC survey. Figure 14-6 shows separately the volume of HGV traffic travelling northbound and southbound at the existing site access.

Figure 14-5
Hourly Traffic Flow R448 – Turning Count 25-05-2023

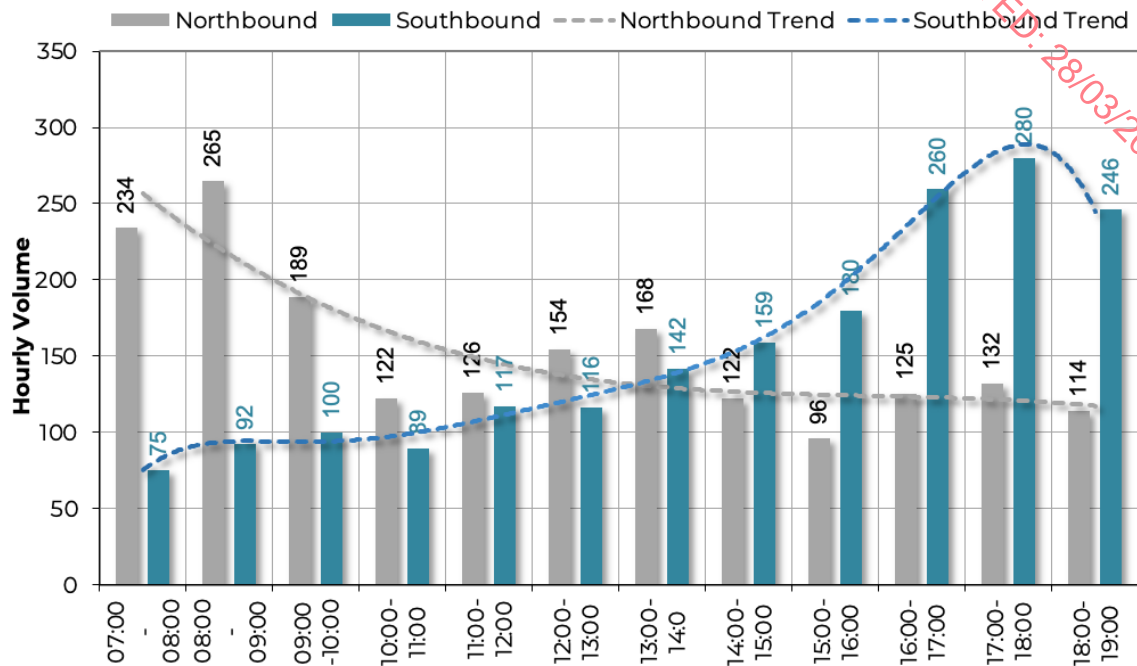
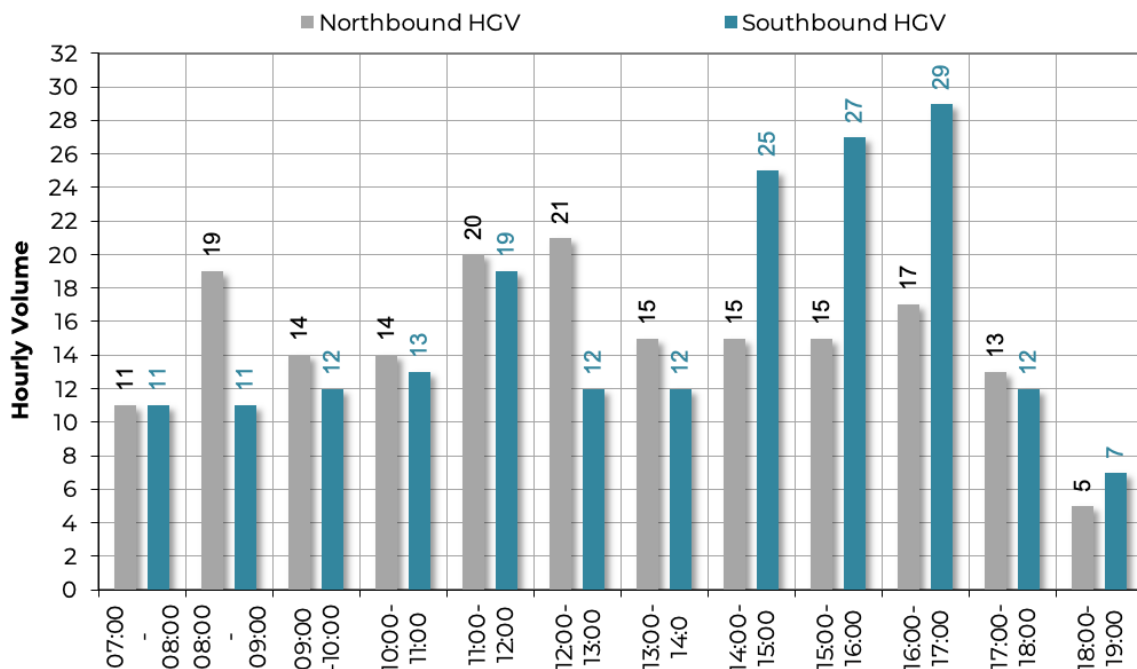


Figure 14-6
Hourly HGV Flow R448 – Turning Count 25-05-2023



Existing Development Traffic Generation

14.62 In the following Figure 14-7 and Figure 14-8, the HGV traffic flow data is broken down further. Figure 14-7 shows the volume of HGV traffic arising at the existing development site travelling on the section of the R448 to the north of the site access. Figure 14-8 shows the corresponding site generated HGV traffic travelling on the section of R448 to the south of the site access.

Figure 14-7
Hourly Development HGV Flow R448 – North of Access

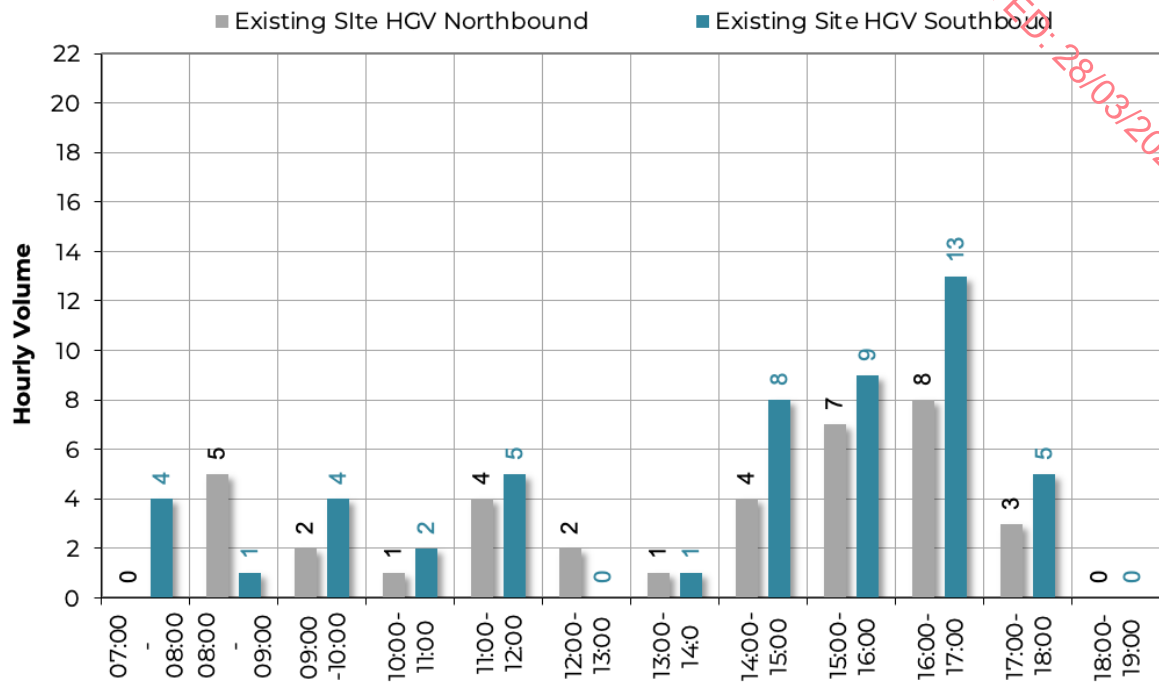


Figure 14-8
Hourly Development HGV Flow R448 – South of Access

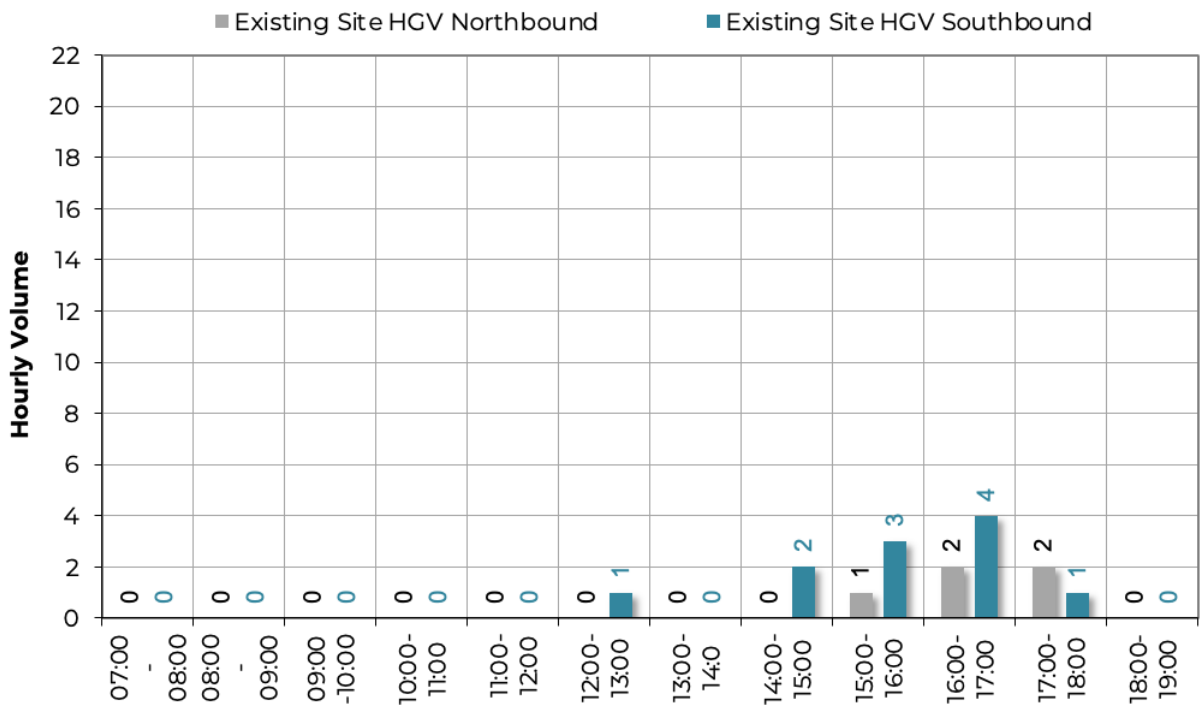


Figure 14-9
Hourly Existing Development HGV Generation

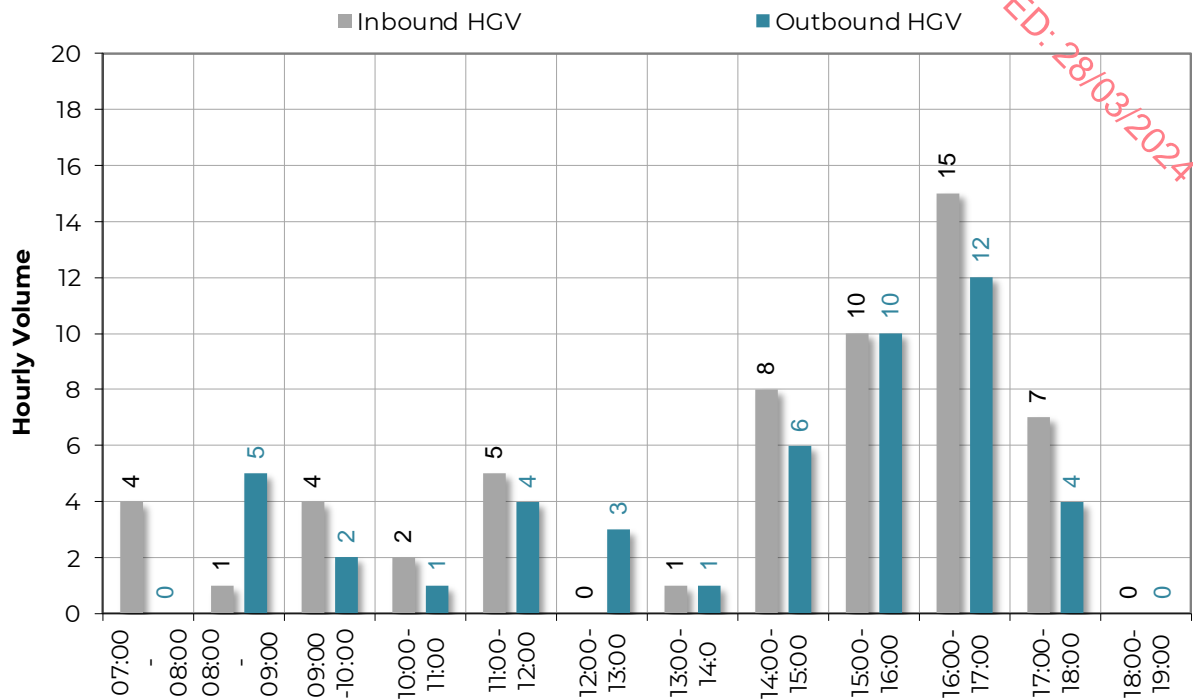
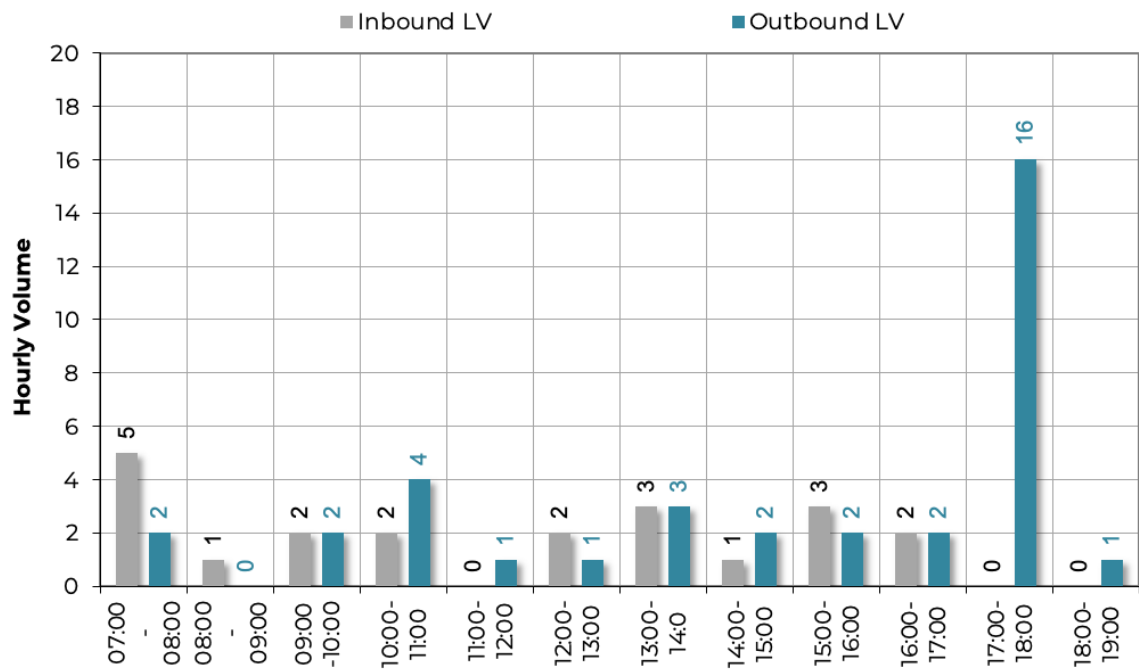


Figure 14-10
Hourly Existing Development LV Generation



- 14.63 The extractive industry and related manufacturing and restoration etc. is acknowledged to be market or demand driven and this gives rise to fluctuations not only in the weekly and monthly volumes of material or product transported to and from the development site, it also gives rise to changes in the distribution of development generated traffic to the receiving road network. This is reflected in the traffic survey data which shows 90% of inbound HGVs arriving to the site from the north and based on the outbound movements, 77% exit to the north. The surveyed traffic generation of the site is summarised in Figure 14-9 and Figure 14-10 above.
- 14.64 Figure 14-10 shows a steady flow of 2-3 light vehicles throughout the working day. This is traffic associated with the daily administration of the site, together with visitors, postman, meter readers etc. The departure of staff from the site occurs in the evening peak hour of 17:00-18:00hrs. The corresponding influx of staff occurs before 07:00hrs and thus prior to the morning commuter peak hour identified as 08:00-09:00hrs.
- 14.65 Based upon the traffic turning count data the existing development accounts for approximately 3.6% of daily traffic on the R448 to the north of the development access between 07:00hrs and 19:00hrs. The data indicates that development traffic makes up approximately 2.5% of AADT on the R448 to the north of the existing access. To the south of the access, development traffic accounts for 0.8% of total traffic on the R448 between 07:00 hrs and 19:00 hrs. The data indicates that development traffic makes up approximately 0.5% of AADT on the R448 to the south of the existing access.

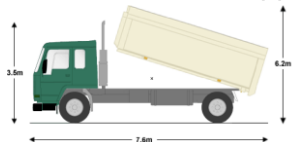


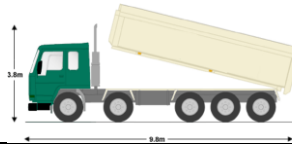
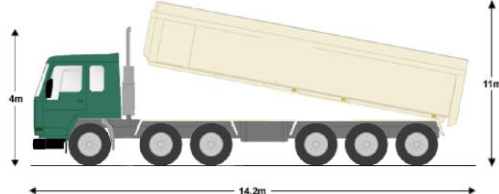
Hours of Operation

- 14.66 Normal operations do not commence before 07:00hrs and do not continue after 18:00hrs Monday - Friday, and 14:00hrs on Saturday. Loading of vehicles does not take place before 07:00hrs. No work takes place on Sunday or Bank Holidays.
- 14.67 Operations relating to the existing inert soil and stone backfilling / recovery facility (and proposed extension thereto) will not commence before 08:00hrs and will cease at the same time as the existing, adjoining concrete works operations at 18:00hrs.

Concrete Block Manufacturing Plant - Transport of Aggregate

- 14.68 The existing manufacturing plant requires deliveries of aggregates for use in the manufacture and production of concrete blocks.
- 14.69 When importing aggregates to the concrete block manufacturing plant the operators of the site generally ensure that deliveries are in as economical loads as feasible. Given that the manufacturing site has aggregate storage facilities, such supply is clearly not directly driven by demand and it follows therefore that aggregates are imported in fully laden vehicles, which in the case of rigid HGV is 20t per vehicle and for articulated HGV is 29t. The traffic surveys show that aggregates are imported by the latter vehicle type.
- 14.70 A guide to the carrying capacity of the typical HGV used in the transport of aggregates is provided in Table 14-2 below.

Table 14-2
Aggregate Transportation Vehicle Statistics

Vehicle Type	Length	Max Weight	Capacity
4 Wheel x 2 Axle Tipper (Five-Wheeler) 	7.6m	24.5t	14.5t
6 Wheel x 4 Axle Tipper (Six-Wheeler) 	8.2m	26t	16t
8 Wheel x 4 Axle Tipper (Eight-Wheeler) 	9.8m	32t	20t
10 Wheel x 5 Axle Tipper (Ten-Wheeler) 	9.8m	32t	22t
Articulated Tipper 	14.2m	44t	29t

Concrete Block Manufacturing Plant - Import of Cement

- 14.71 Cement used in the manufacture of concrete blocks is ordinarily delivered in fully laden vehicles with a maximum payload of 25t.

Concrete Block Manufacturing Plant – Exiting Traffic Generation

- 14.72 The volume of concrete block production is relatively steady throughout the year with a modest uplift in the summer months. Excluding the months of October, November and December when production is significantly reduced, the site generates an average of 20 HGV trips per day which include 11 trips for export of concrete blocks, 8 trips for the importation of aggregates and 1 HGV every other day delivering cement to the site for use in the manufacturing process.

Soil Backfilling / Recovery Facility- Existing Traffic Generation

- 14.73 Current permitted development provides for backfilling and recovery of imported soil and stone at the application site and is authorised until December 2026 at a rate of up to 300,000 tonnes per annum. The current permission allows for a cumulative, total soil intake of 1,200,000 tonnes over the life of the facility.

- 14.74 The soil and stone material incoming to the site is transported by similar vehicles to those that are used to transport aggregates, which in the case of rigid HGVs have a payload of 20 tonne per vehicle, while that for articulated HGVs is 29 tonne. The traffic surveys show that practically all HGV movements are by articulated vehicles with the few rigid vehicles typically associated with day-to-day administration and running of the site, for instance fuel deliveries.
- 14.75 In recent years, the existing soil recovery facility has been operating close to the maximum permitted capacity of 300,000t of material per annum. Modern haulage fleets tend to carry a mix of rigid and articulated tippers. It is estimated that approximately 70% or more of loads are transported by articulated vehicles. On this basis the average payload is in the order of 26.3 tonnes. Based upon 5½ working days per week and 46 working weeks and assuming an average payload of 26.3 tonnes per vehicle, the permitted backfilling / recovery operation gives rise to an average of 45 HGV trips per day. The resultant total HGV traffic generation of the existing site is estimated to be 65 HGV per day and this is consistent with the results of the traffic surveys. At a basic level, it can be appreciated from the above calculations that the existing recovery facility generates approximately 2 HGV movements for every 1 HGV movement generated by the concrete block manufacturing plant.

CHARACTERISTICS OF PROPOSED DEVELOPMENT

Traffic Characteristics of Proposed Development

Traffic Generation - During Construction Phase

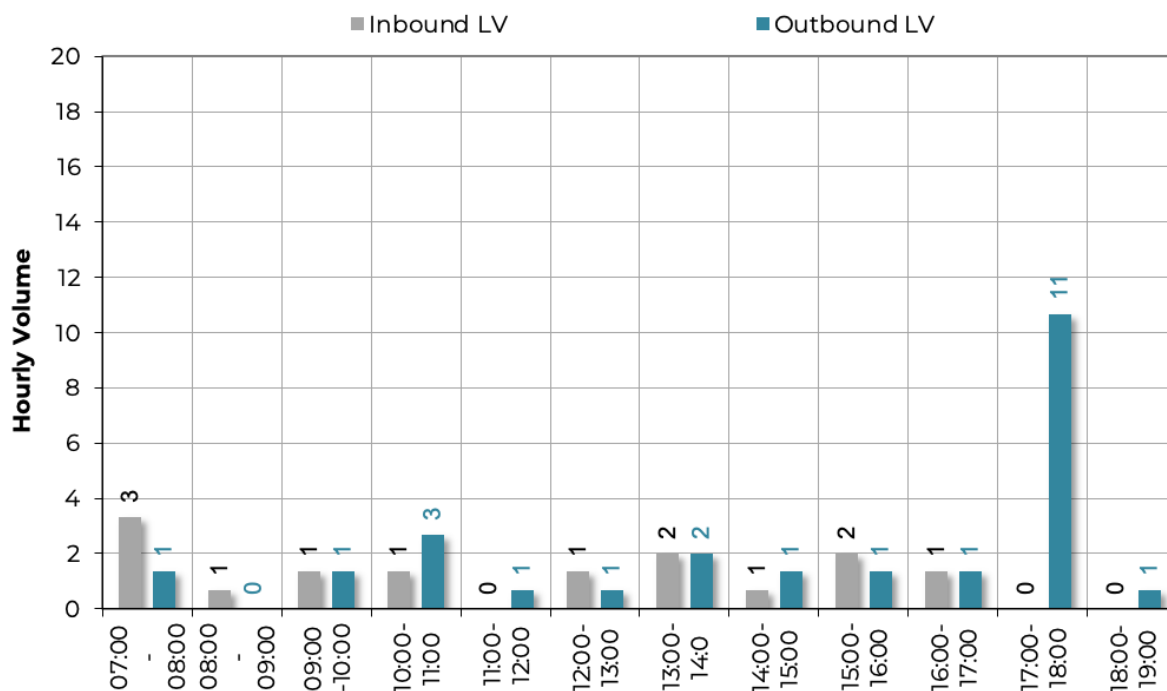
- 14.76 The proposed extension (to the life and capacity) of the existing development at Halverstown does not necessitate any construction works, only some limited site preparatory work. It does not require any decommissioning or dismantling of on-site plant, facilities or equipment. All of the site infrastructure required to support continued site activity is already in place. The effects of traffic will not be significant during the construction phase.

Traffic Generation - During Operational Phase

- 14.77 The current permitted development provides for soil backfilling / recovery activity at the application site up to December 2026 at a maximum rate of 300,000 tonnes per annum. The permitted total intake is 1,200,000t and the total intake to the end of 2023 is estimated to be 820,000 tonnes, with permitted capacity of 380,000 tonnes remaining.
- 14.78 At the forecast rate of acceptance of material, it is expected that the facility will reach the permitted intake limit by the end of 2025. In view of continued and sustained high demand for outlets providing for re-use of excess soil and/or recovery of excess soil and stone (classified as waste or by-product), Kilsaran is proposing to increase the overall soil intake tonnage to the existing facility at Halverstown for site restoration purposes by approximately 860,000 tonnes, to 2,060,000tonnes.
- 14.79 It is proposed therefore to increase the extend the duration for the intake of materials for a period of 3 years beyond the current expiry in December 2026. It is proposed to operate the facility over this extended period on that same terms as the existing facility, which allows for a maximum rate of importation of material of 300,000 tonnes per annum. As per the existing permission, this allows some flexibility for a variable / reduced rate of importation should there be a downturn in construction activity or demand for soil re-use / recovery capacity in the coming years.
- 14.80 In terms of traffic generation and traffic effects on the receiving environment the current proposal is for continuance of soil backfilling and recovery activity at the development site for a period of 3 years up to the end of 2029.

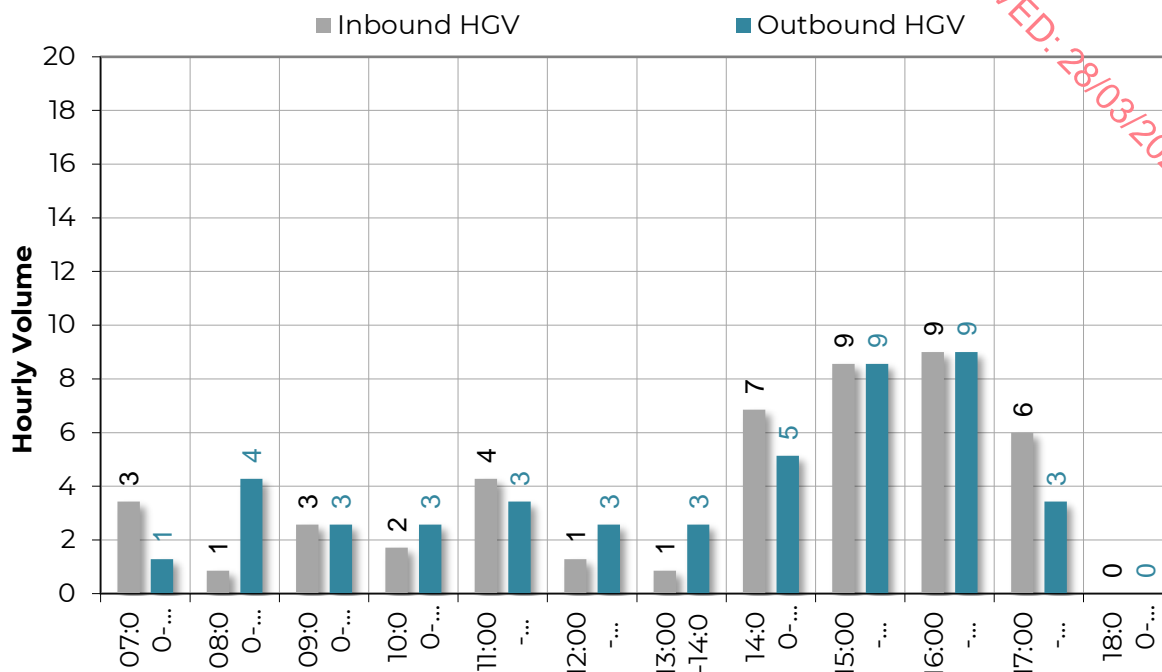
- 14.81 It is proposed that soil and stone materials incoming to the site will continue to be transported by a mix of 30% rigid with a capacity of 20 tonnes and 70% articulated HGVs with a capacity of 29 tonnes. Based upon the facility operating at the proposed maximum rate of import of 300,000 tonnes per annum the proposed further backfilling and recovery operations would give rise to an average of 45 HGV trips per day, as is the current scenario, and the scenario that was found to prevail during the May 2023 traffic surveys.
- 14.82 Based upon the May 2023 traffic surveys which are confirmed to be representative of the maximum permitted rate of intake of 300,000 tonnes per annum and assuming a simple linear relationship between the total workforce on site and the respective volumes of materials for production and for soil backfilling and recovery, Figure 14-11 shows the forecast light vehicle traffic generation of the facility over the extended operational period beyond 2026. It is estimated that the continuation of site activities, as proposed, will give rise to the generation of a total of 24 light vehicle trips daily, with approximately 11 staff vehicles arriving before 07:00hrs and the same number departing in the evening after 17:00hrs. Over the course of the day, the average hourly light traffic generation is likely to be in the order of 1-2 no. vehicle trips per hour.

Figure 14-11
Forecast Development LV Traffic Generation



- 14.83 On the same basis as above Figure 14-12 shows the corresponding forecast HGV traffic generation of the proposed development site.

Figure 14-12
Forecast Development HGV Traffic Generation



PREDICTED EFFECTS OF PROPOSED DEVELOPMENT

Construction Phase

14.84 All of the site infrastructure required to service the proposed extension (to the life and capacity) of the existing development at Halverstown is already in place. No significant traffic generation arises prior to the operational phase.

Operational Phase

14.85 The TII Traffic and Transportation Assessment Guidelines 2014, Table 2.1 Traffic Management Guidelines Thresholds for Transport Assessments sets out the following threshold to determine whether the preparation of a TTA is recommended:

- Traffic to and from the development exceeds 10% of the traffic flow on the adjoining road.

14.86 It should be noted the 10% threshold of flow is generally a prompt for whether or not a TTA is recommended, it is not typically used to determine the significance of effects. It is nonetheless standard in TTA to reference the scale of percentage increases in traffic flows when assessing the forecast long-term operational impact of proposed developments. As a measure of the potential magnitude of impact or effect on the receiving road network, the following has regard to the percentage threshold values set out in the TII guidelines. The breakdown of the magnitude of impacts is based upon judgement in the scale of percentage impacts of the additional traffic flows imposed on the receiving road network.

Table 14-3
Definition of Terms Relating to Magnitude of Traffic Effect

Magnitude of Effect	Definition
High	Scale of additional traffic exceeds 25% of do-nothing traffic flow on the receiving road network
Medium	Scale of additional traffic is between 10% and 25% of do-nothing traffic flow on the receiving road network
Low	Scale of additional traffic is between 5% and 10% of do-nothing traffic flow on the receiving road network
Negligible	Scale of additional traffic is less than 5% of do-nothing traffic flow on the receiving road network

- 14.87 In addition to establishing the magnitude of effects on traffic it is considered worthwhile that the sensitivity of the receptors (receiving road network) should also factor in the judging the level of significance of the traffic effects arising from the continued generation of traffic from the development site. The general criteria defining sensitivity for the purposes of this chapter are set out in Table 14-4 below.

Table 14-4
Definition of Terms Relating to Sensitivity of Receptor

Sensitivity	Definition
High	High importance and rarity, national scale and limited potential for substitution
Medium	High or medium importance and rarity, regional scale, limited potential for substitution
Low	Low or medium importance and rarity, local scale
Negligible	Very low importance and rarity, local scale

- 14.88 The significance of the effect of the proposed development on traffic and transportation is determined by correlating the magnitude of the impact and the sensitivity of the receptor. The matrix used in this assessment is presented in Table 14-5 where a range of significance of effects is presented the final assessment for each effect is based upon engineering judgement. For the purposes of this assessment, any effects with a significance level of slight or less are concluded as not significant in terms of EIA guidance.

Table 14-5
Matrix Assessment of Significance of Effect

	Magnitude of Impact				
		Negligible	Low	Medium	High
Sensitivity	Negligible	Imperceptible	Imperceptible or Slight	Imperceptible or Slight	Slight
	Low	Imperceptible or Slight	Imperceptible or Slight	Slight	Slight or Moderate
	Medium	Imperceptible or Slight	Slight	Moderate	Moderate or Major
	High	Slight	Slight or Moderate	Moderate or Major	Major or Profound

Scope of Assessment

- 14.89 Regarding the choice of appropriate assessment years the Transport Infrastructure Ireland (TII) publication PE-PDV-02045 'Traffic and Transport Assessment Guidelines', referred to hereafter as the TTA Guidelines, advises that assessments should incorporate an analysis of the road network traffic flows for the base year, opening year and forecast scenarios which include opening year +5yrs and opening year +15yrs.
- 14.90 The applicant aspires to have the development operational by the end of 2025. For the purposes of this traffic assessment, the year 2026 has therefore been selected as the opening year. The proposal is to extend the duration of the existing permission by 3 years giving an expiry date of December 2029. Accordingly, analyses have been carried out for the following:
- Opening Year (Assumed 2026)
 - Opening Year +3yrs (2029)

Traffic Growth Rates

- 14.91 For the purposes of this traffic assessment, traffic generation arising directly from the proposed development has been assumed not to grow over time. Background traffic flows on the receiving public road network (R448) have been assumed to grow in accordance with the latest growth factors published by Transport Infrastructure Ireland (TII) in Oct 2021 in the publication PE-PAG-02017 'Project Appraisal Guidelines for National Roads Unit 5.3 Travel Demand Projections'.
- 14.92 Central growth rate factors have been used in the derivation of the future traffic flows from the surveyed 2023 flows. The forecast central growth rate factors for Kildare (excluding Metropolitan Area) assume traffic growth rates of 1.97% per annum for light vehicles and 3.78% for heavy vehicles between 2016 and 2030.
- 14.93 Existing traffic flows are as surveyed and can be used as a baseline for comparison of the analyses for future year network performance. The growth indices used to derive Opening Year (2026) and; Opening Year +3yrs (2029) flows from the surveyed (2023) flows are as follows.

- 14.94 National Primary Road Medium Growth Rates (Applied to All Roads)
- 2023-2026 (Opening Year) 1.0603 (Cars) 1.1177 (HGV)
 - 2023-2029 (Opening Year +5yrs) 1.1242 (Cars) 1.2493 (HGV)
- 14.95 TII growth factors have been applied directly to peak hour traffic data. Growth factors are not always directly applicable to peak hour periods (the peak hour generally spreads out as opposed to intensifying). Ignoring this factor and adding growth directly to the peak hour generally results in robust calculations favoured by traffic experts in the assessment of road networks.
- 14.96 No substantial permitted developments have been identified locally that might be considered likely to give rise to significant increases on the local receiving road network in the short-term. The application of TII growth rates to the receiving network is considered likely to account for the cumulative traffic arising locally as a result of economic growth and the proposed continuation of site activities over the specified assessment period.

Assessment of Effects of Development Traffic

- 14.97 Table 14-6 below provides a summary of the forecast traffic generation of the proposed development set against the forecast 2026 year of opening network traffic flows on the receiving R448 Regional Road. The network traffic flow is derived from the weekday daily average traffic flow on the R448 recorded in the week-long ATC surveys of May 2023 *with existing development traffic removed*. The forecast traffic generation of the development site is based upon Figures 14-11 with respect to light vehicles and Figure 14-12 for HGV.
- 14.98 The traffic surveys showed variance in the distribution of traffic north / south at the site access, varying between 70%-90% to / from the north. The proposed development will be demand driven and this can influence both the quantum of intake and the origin. Based upon current estimates and in the interest of a robust assessment, it is assumed that all development traffic, both light and heavy, is distributed 80% to / from the north and 20% to / from the south.
- 14.99 Table 14-6 shows that the forecast impact on the receiving R448 to the north of the development access is a maximum 4.9% of forecast network traffic flow and this occurs in the hour beginning 15:00hrs. The forecast impact in the morning peak hour (08:00-09:00hrs) is 1.4% and in the evening peak hour (17:00-18:00hrs) the increase is 3.7%.
- 14.100 These forecast increases are well below the threshold value of 10% for an uncongested network, so based upon the assessment criteria, the impact or effect of development generated traffic is estimated to be slight in the assessment scenario where the development is operating at the maximum annual intake capacity of 300,000 tonnes.
- 14.101 The projected increase in total daily traffic flows on R448 varies from +0.5% to the south of the existing site access to +2.1% to the north. HGV volumes on the R448 are relatively low and it is noted that the proposed development would constitute an increase of approximately 19% in daily HGV traffic north of the development access (over the do nothing or no development scenario). This may potentially have an effect on traffic by lowering travelling speeds along the R448 single carriageway, however considering the receiving roads to the north comprise the motorway network, it is expected that such impact would be negligible.

Table 14-6
Forecast Traffic Impact – 2026 (Max. Intake 300,000 v/a)

Time	Network Traffic			Development Generated Traffic							
	R448 Two Way			North of Access				South of Access			
	LV	HGV	Total	LV	HGV	Total	%	LV	HGV	Total	%
00:00	24	1	25	0	0	0	0.0%	0	0	0	0.0%
01:00	12	1	14	0	0	0	0.0%	0	0	0	0.0%
02:00	7	1	8	0	0	0	0.0%	0	0	0	0.0%
03:00	9	2	12	0	0	0	0.0%	0	0	0	0.0%
04:00	20	10	29	0	0	0	0.0%	0	0	0	0.0%
05:00	85	15	100	0	0	0	0.0%	0	0	0	0.0%
06:00	208	24	232	8	0	8	3.4%	2	0	2	0.9%
07:00	297	18	316	4	4	8	2.6%	1	1	2	0.7%
08:00	342	28	370	1	4	5	1.4%	0	1	1	0.3%
09:00	268	23	291	2	4	6	2.1%	1	1	2	0.7%
10:00	240	29	269	3	3	6	2.3%	1	1	2	0.8%
11:00	245	30	276	1	6	7	2.7%	0	1	1	0.4%
12:00	275	25	299	2	3	5	1.7%	0	1	1	0.4%
13:00	287	27	314	3	3	6	2.0%	1	1	2	0.7%
14:00	299	30	330	2	10	12	3.5%	0	2	2	0.6%
15:00	308	30	338	3	14	17	5.0%	1	3	4	1.2%
16:00	393	30	423	2	14	16	3.7%	1	3	4	1.0%
17:00	424	22	446	9	7	16	3.7%	2	2	4	0.9%
18:00	322	13	335	1	0	1	0.3%	0	0	0	0.0%
19:00	234	12	246	0	0	0	0.0%	0	0	0	0.0%
20:00	179	6	185	0	0	0	0.0%	0	0	0	0.0%
21:00	132	5	137	0	0	0	0.0%	0	0	0	0.0%
22:00	94	3	97	0	0	0	0.0%	0	0	0	0.0%
23:00	46	2	48	0	0	0	0.0%	0	0	0	0.0%
Daily	4752	388	5140	38	72	110	2.1%	10	18	28	0.5%

14.102 Table 14-6 indicates that the forecast impact on the receiving R448 to the south of the development access is a maximum 1.2% of existing traffic flow and this occurs in the hour beginning 15:00hrs. The forecast impact in the morning peak hour (08:00-09:00hrs) is 0.3% and in the evening peak hour (17:00-18:00hrs) the increase is 0.9%.

- 14.103 These forecast increases are more than tenfold below the threshold value of 10% for an uncongested network, so based upon the assessment criteria, the impact or effect of development generated traffic is estimated to be imperceptible when the development is operating at the maximum annual intake capacity of 300,000 tonnes. The proposed development will constitute approximately a 4% increase in daily HGV traffic to the south of the development access (over the do nothing or no development scenario), from which the effect can reasonably be considered slight or imperceptible.
- 14.104 It should be noted that the above estimated effects of development traffic are based upon a robust distribution scenario and are also based upon an assumption that the proposed development would receive the maximum annual intake of 300,000 tonnes. The impacts will be relatively short-term, and in any case limited to 2029. Were the assumed intake rate of 300,000 tonnes sustained after 2026, the total volume of 860,000 tonnes would be filled before the end of 2028 so the forecast impact above would be short. Conversely if the development is not completed and backfilled until the end of 2029, the annual intake would be less than provided for in the assessments above and the effect would be reduced. If the active life of the site extends to 2029 it follows that the rate of intake and thus the impact of development traffic would be reduced.
- 14.105 It stands to reason that the forecast impact of traffic in 2029 is likely to be proportionally lower since network traffic is forecast to grow over time whilst development traffic will not. Notwithstanding this, Table 14-7 below shows the results of a traffic assessment based upon forecast 2029 traffic flows. The terms of the assessment remain the same as above where it is assumed that the development site receives the maximum annual intake volume of 300,000 tonnes of material. It can be appreciated that were the site to receive 300,000 tonnes of material in 2029 then the quantity received in the preceding years would be less than the maximum value and the relative impact or effect of the development reduced over that preceding time. It is a feasible scenario nonetheless that circumstances could be such that 300,000 tonnes could be received at the site in 2029.
- 14.106 Table 14-7 shows that the forecast impact on the receiving R448 for 2029 which is the opening year +3yrs. To the north of the development access, the maximum impact is 4.7% of forecast network traffic flow and this occurs in the hour beginning 15:00hrs. The forecast impact in the morning peak hour (08:00-09:00hrs) is 1.3% and in the evening peak hour (17:00-18:00hrs) the increase is 3.5%.
- 14.107 These forecast increases are well below the threshold value of 10% for an uncongested network, so based upon the assessment criteria, the impact or effect of development generated traffic is estimated to be slight in the scenario where the development is operating at the maximum annual intake capacity of 300,000 tonnes in 2029. The proposed development would constitute approximately a 16% increase in daily HGV traffic to the north of the development access (over the do nothing or no development scenario).

Table 14-7
Forecast Traffic Impact – 2029 (Max. Intake 300,000 t/a)

Time	Network Traffic			Development Generated Traffic							
	R448 Two Way			North of Access				South of Access			
	LV	HGV	Total	LV	HGV	Total	%	LV	HGV	Total	%
00:00	25	1	26	0	0	0	0.0%	0	0	0	0.0%
01:00	13	1	14	0	0	0	0.0%	0	0	0	0.0%
02:00	7	2	9	0	0	0	0.0%	0	0	0	0.0%
03:00	10	2	12	0	0	0	0.0%	0	0	0	0.0%
04:00	21	11	32	0	0	0	0.0%	0	0	0	0.0%
05:00	90	17	107	0	0	0	0.0%	0	0	0	0.0%
06:00	220	26	246	8	0	8	3.3%	2	0	2	0.8%
07:00	315	20	335	4	4	8	2.5%	1	1	2	0.6%
08:00	363	31	394	1	4	5	1.3%	0	1	1	0.3%
09:00	285	26	310	2	4	6	2.0%	1	1	2	0.7%
10:00	254	33	287	3	3	6	2.2%	1	1	2	0.7%
11:00	260	34	294	1	6	7	2.5%	0	1	1	0.4%
12:00	291	27	318	2	3	5	1.6%	0	1	1	0.3%
13:00	304	30	335	3	3	6	1.8%	1	1	2	0.6%
14:00	317	34	351	2	10	12	3.3%	0	2	2	0.6%
15:00	326	34	360	3	14	17	4.7%	1	3	4	1.2%
16:00	417	33	450	2	14	16	3.5%	1	3	4	0.9%
17:00	450	24	474	9	7	16	3.5%	2	2	4	0.9%
18:00	342	15	357	1	0	1	0.3%	0	0	0	0.0%
19:00	248	13	261	0	0	0	0.0%	0	0	0	0.0%
20:00	190	7	197	0	0	0	0.0%	0	0	0	0.0%
21:00	140	6	147	0	0	0	0.0%	0	0	0	0.0%
22:00	99	4	103	0	0	0	0.0%	0	0	0	0.0%
23:00	49	3	52	0	0	0	0.0%	0	0	0	0.0%
Daily	5036	435	5471	38	72	110	2.0%	10	18	28	0.5%

14.108 Table 14-7 shows that the forecast impact on the receiving R448 to the south of the development access in 2029 is a maximum 1.2% of existing traffic flow and this occurs in the hour beginning 15:00hrs. The forecast impact in the morning peak hour (08:00-09:00hrs) is 0.3% and in the evening peak hour (17:00-18:00hrs) the increase is 0.9%.

- 14.109 As with the 2026 scenario, these forecast increases are more than tenfold below the threshold value of 10% for an uncongested network so based upon the assessment criteria the impact or effect of development generated traffic is estimated to be imperceptible in the assessment scenario where the development is operating at the maximum annual intake capacity of 300,000 tonnes.
- 14.110 The proposed development will constitute approximately 0.5% of all traffic and a 3.9% increase in daily HGV traffic to the south of the development access from which the effect can reasonably be considered slight or imperceptible.
- 14.111 It should be noted that the above estimated effects of development traffic are based upon a robust distribution scenario, a robust assumption of a mix in rigid and articulated vehicles and are also based upon an assumption that the proposed development would receive the maximum annual intake of 300,000 tonnes. The impacts will be relatively short-term, and in any case limited to 2029.

‘Do Nothing’ Scenario

- 14.112 The above forecast network traffic flows set out in Table 14-6 and 14-7 show the network flows without the current proposed development and is the ‘Do-Nothing’ Scenario for each of the future year scenarios assessed in this Chapter.

Description of Likely Significant Effects

Construction Phase

- 14.113 All of the site infrastructure required to service the proposed development is already in place. No significant traffic generation arises prior to the operational phase.

Operational Phase

- 14.114 The existing development access and the receiving road are relatively lightly trafficked in the context of a strategically significant regional road and former national primary road. The R448 Regional Road and the site access will continue to be lightly trafficked in the context of the ultimate capacity of the simple priority access arrangement serving the existing development.
- 14.115 The relatively low levels of network and development traffic can be appreciated from a review of the traffic count data together with the survey data and network flow analyses presented Table 14-6 and Table 14-7. The existing development traffic does not give rise to capacity issues at local junctions and there are unlikely to be capacity issues arising at the existing site access or the junctions along the haul route as a result of the proposed development if it continues to operate for an additional 3 years.
- 14.116 The above figures suggest that over the course of the proposed opening hours, the average hourly traffic generation when the site is operating at maximum intake capacity is of the order of 6 HGV trips and 2 LV trips to / from the north and 2 HGV trips and 1 LV trip to the south of the existing access.
- 14.117 The assessment shows that the proposed development has the same potential to generate traffic as the exiting permitted facility. The network capacity assessments confirm that the R448 will continue to operate satisfactorily were the proposed extension (to the life and capacity) of the existing facility in place. The level of service and operation of the R448 will be comparable to the current operation and the proposed development will not have any significant effect.
- 14.118 Overall, the proposed development at Halverstown, with an annual maximum importation rate of 300,000 tonnes will generate similar levels of traffic as currently arise. In practice the proposed future rate of intake of materials will be comparable to that recorded in 2023 and would likely be experienced in present day. It follows that in practice, the current proposal insofar as it relates to traffic generation is equivalent to a continuance of

operations at the current levels and in practice there will be no change in the current volumes of traffic generated on a day-to-day basis.

- 14.119 Similarly, the traffic volumes described above and associated with the proposed continuance of materials intake to the site would continue to use the same haul route chiefly heading north along the R448, toward its junction with the M9 Motorway at Kilcullen (Junction 2).
- 14.120 Given the maintenance of existing traffic generation levels at the site it follows that there will be no significant impact on the local roads network over that currently manifest. Table 14-8 below summarises the identified likely effects during the operational phase of the proposed development before mitigation measures are applied.

Table 14-8
Summary of Operational Phase Effects without Mitigation

Likely Effect	Quality	Significance	Extent	Probability	Duration	Type
Traffic	Negative	Not Significant	Local	Likely	Short-Term	Direct

Decommissioning and Reinstatement Phase

- 14.121 Upon cessation of backfilling and recovery operations, the application site will be restored and any dedicated on-site plant or infrastructure decommissioned in accordance with the current proposal. The potential effects of decommissioning the site on the capacity and operation of the receiving road network are not considered to be potentially significant effects.

DESCRIPTION OF MITIGATION MEASURES

Construction Phase

- 14.122 All of the required site infrastructure is already in place. No significant traffic generation arises prior to the operational phase.

Operational Phase

- 14.123 All haulage lorries will continue to predominantly turn left out of the existing site entrance and will travel north along the R448. Haulage vehicles will be regularly maintained, serviced and replaced at intervals.
- 14.124 In order to prevent transport of soil and dirt out of the site onto public roads, a wheelwash facility is provided for all HGV's exiting the application site. All haulage vehicles are required to pass through the wheelwash prior to leaving site. Any accidentally spilled material will be removed from the public road by Kilsaran Concrete in a safe and timely manner.
- 14.125 The wheelwash system on site is de-sludged on a regular basis by an authorised collector and the material is removed to an authorised facility for recovery / disposal as appropriate.
- 14.126 All hauliers importing soil waste or removing waste materials from the facility hold a valid waste collection permit in accordance with the Waste Management (Collection Permit) Regulations 2007, as amended.
- 14.127 The developer carries out works to the front boundary to cut back and maintain the existing verge and hedgerow either side of the existing development access on an ongoing basis to allow for the maintenance of unobstructed lines of sight at the existing entrance in accordance with Condition No.17 of the current grant of permission under Planning Reg. Ref. 18/453.

- 14.128 Queuing of trucks entering the site does not occur on the R448 since suitable provision is made for vehicles to queue within the site.
- 14.129 There are advance warning signs on the approaches to the site access that have been erected with the agreement of the Local Authority in accordance with Condition No.15 of the current grant of permission under Planning Reg. Ref. 18/453. The applicant and operator of the site ensures that these signs are maintained clean and in good order.

RESIDUAL IMPACT ASSESSMENT

- 14.130 This section assesses potential significant environmental impacts which remain after mitigation measures are implemented.

Construction Phase

- 14.131 There will be no residual impact arising.

Operational Phase

- 14.132 Any residual impacts on traffic capacity on the receiving road network can be categorised as imperceptible.

Decommissioning and Reinstatement Phase

- 14.133 There will be no residual impact arising.

Cumulative Residual Effects

- 14.134 There will be no cumulative residual impact arising.

INTERACTIONS AND POTENTIAL CUMULATIVE EFFECTS

Interactions

Human Health

- 14.135 There are no significant interactions during the operational phase. Traffic related effects on human health are considered in Chapter 4 of this EIAR.

Noise and Vibration

- 14.136 Traffic related noise and vibration is considered in Chapter 10 of this EIAR. The significance of impact upon local noise and vibration conditions have been assessed to be slight to moderate and not significant for the operational phase.

Air Quality and Climate

- 14.137 Traffic related effects on air quality and climate are considered in Chapter 8 of this EIAR. There will be no significant contribution from the proposed development to climate change or greenhouse gas emissions during construction and operational phases. Possible effects from the operation of the development will be long-term in nature and will comprise of emissions from vehicular sources. The magnitudes of all predicted alterations to air quality are negligible for the operational phase. It is therefore concluded that the effects on air quality from traffic arising from the operation of the proposed development are not significant.

Potential Cumulative Effects

- 14.138 The road network assessments do not include for specific local developments other than the proposed development. Other future development that may give rise to the generation of new traffic on the receiving roads network is included for by the application of TII published growth rates to existing surveyed traffic flows on the receiving road in the study

area. The additional traffic generation arising on the receiving road network assumed in this Chapter through the application of the TII growth rates is as follows:

- 2023-2026 (Opening Year) 1.0603 (Cars) 1.1177 (HGV)
- 2023-2029 (Opening Year +5yrs) 1.1242 (Cars) 1.2493 (HGV)

- 14.139 The cumulative traffic arising from the future economic growth and development of the area and the resulting potential traffic growth on the receiving network are included for in both the 'do-nothing' and 'do-something' road network assessment scenarios. It is reasonable to expect that traffic arising from the proposed development would by definition be included, or at least included in part in the TII growth rates. This factor is disregarded in the traffic assessments which considers all future traffic to the proposed development as totally new to the road network for the proposed period of operation assumed to commence in early 2026.

MONITORING

Construction Phase

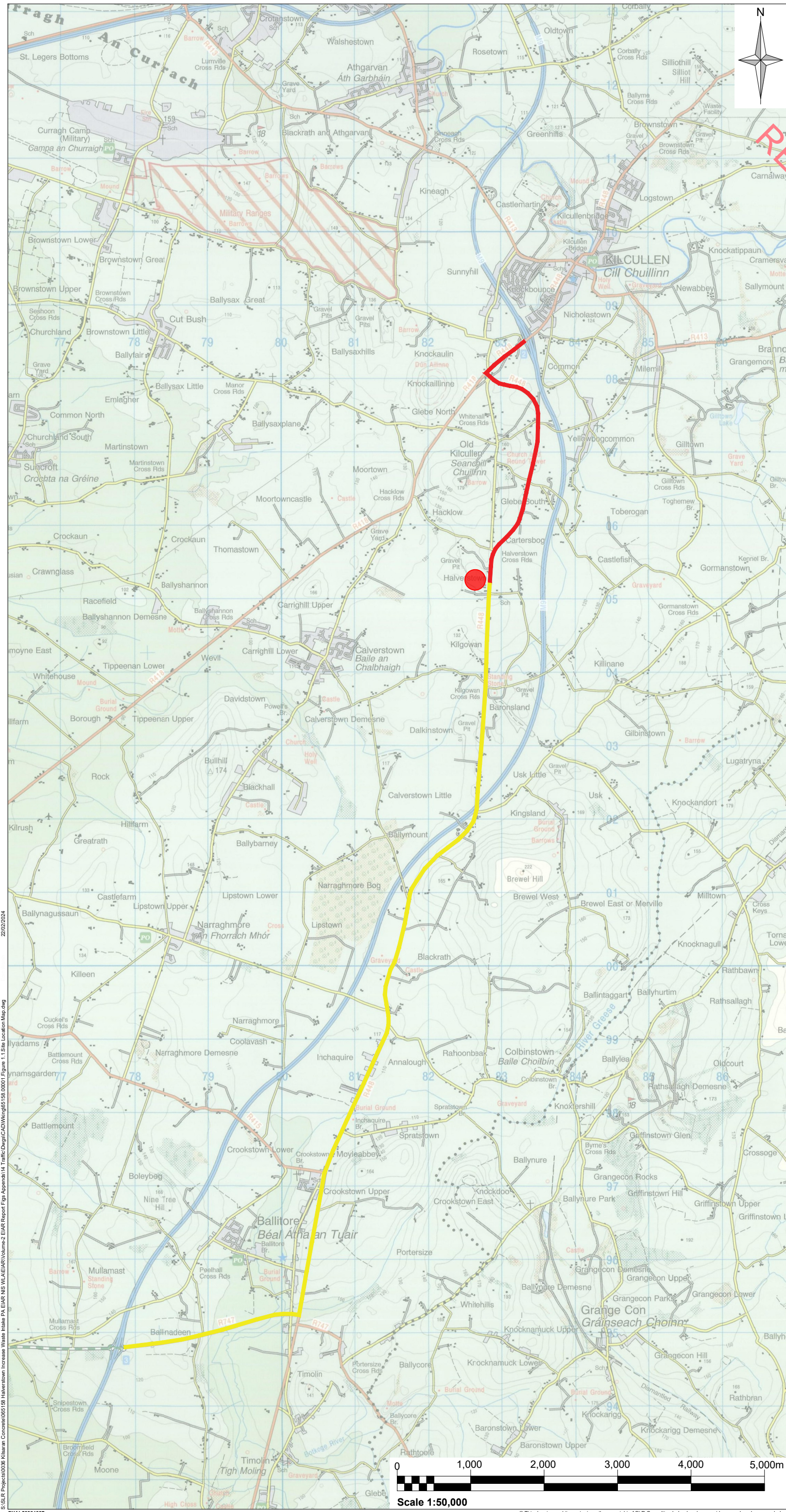
- 14.140 All of the required site infrastructure is already in place. No significant traffic generation arises prior to the operational phase.

Operational Phase

- 14.141 The implementation and performance of traffic management and haul route management measures and initiatives, including any ongoing revisions or new initiatives will be monitored and evaluated throughout the Operational Phase. Other monitoring will include
- Monitoring of vehicle haul routes for debris;
 - Monitoring of condition of advance warning signage;
 - Monitoring of performance of site management measures including timing of arrivals and departures; and
 - Monitoring of the effectiveness of the wheelwash facility.

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DRAWINGS



Notes:

1. EXTRACT FROM OSI DISCOVERY SERIES MAPPING NO. 55 & 56.

Legend:

- LOCATION OF WASTE RECOVERY FACILITY
- HGV ROUTE TO NORTH
- HGV ROUTE TO SOUTH

Rev	Amendments	Date	By	Chk	Auth
 www.slrconsulting.com					
Drawing Status & Suitability Code FINAL					
Client KILSARAN CONCRETE					
Project INCREASED INTAKE TO EXISTING SOIL RECOVERY FACILITY HALVERSTOWN, KILCULLEN, CO. KILDARE.					
Drawing Title HGV ROUTING PLAN					
Scale 1:50,000 @ A3		SLR Project No. 065158.00001			
Designed EW	Drawn EW	Checked DL	Authorised DL		
Date 02/24	Date 02/24	Date 02/24	Date 02/24		
Drawing Number DRAWING 14-1					Rev. 0