

Attachment L.1

Traffic and Transportation Assessment

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Project

Composting Facility
Milltownmore, Fethard
County Tipperary

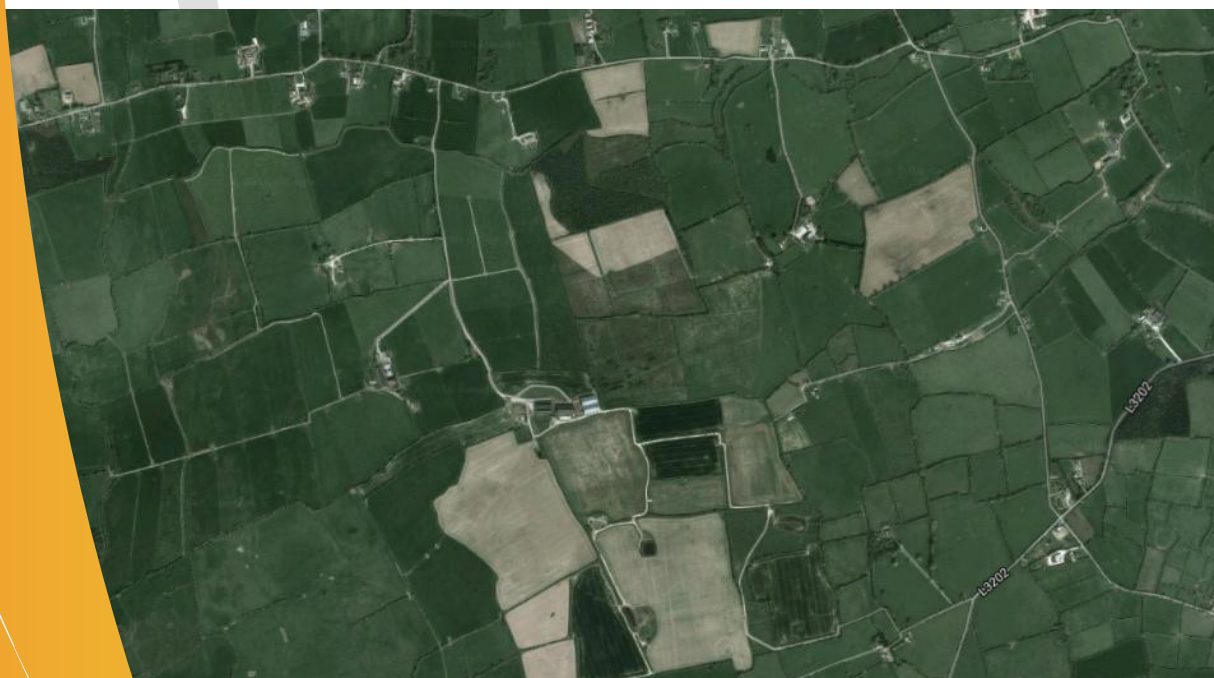
Report Title

TRAFFIC AND TRANSPORTATION ASSESSMENT REPORT

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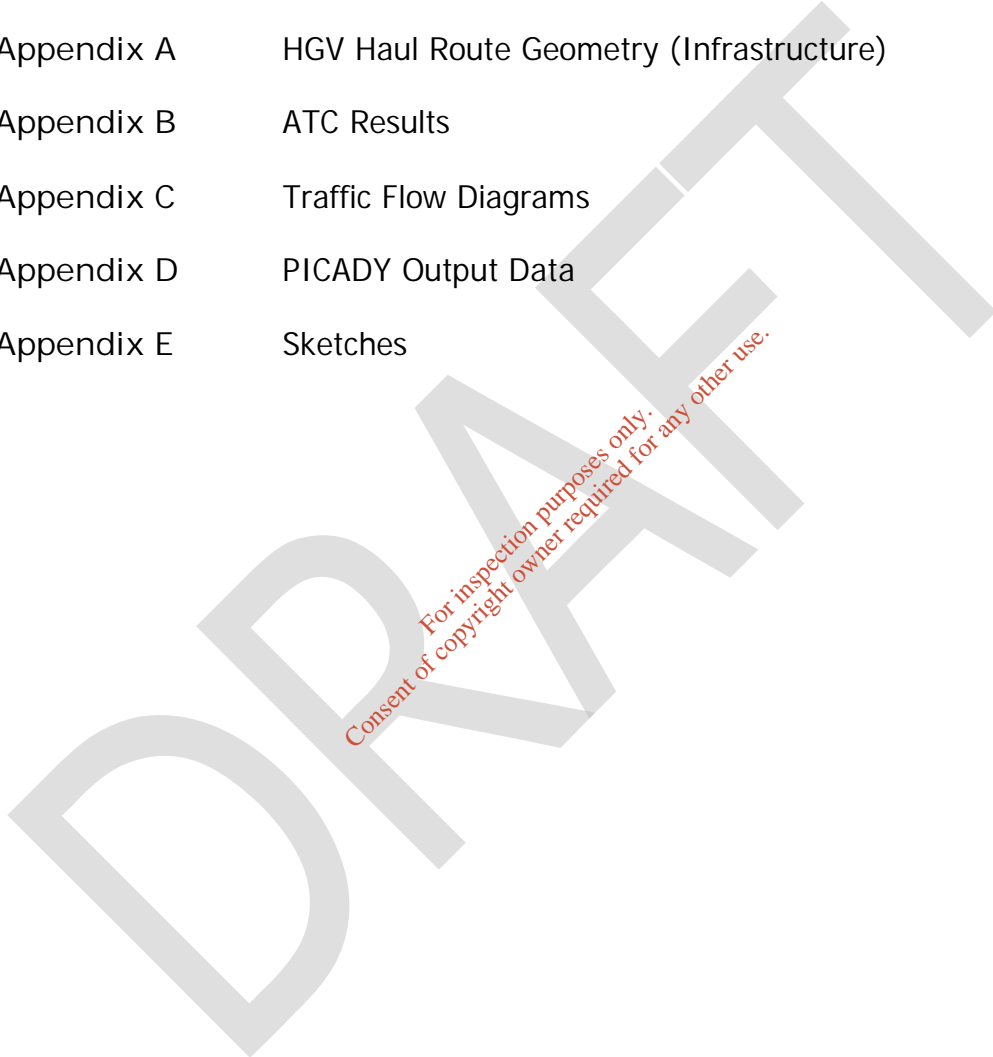
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1.0 INTRODUCTION

1.1 BACKGROUND

1.1.1 DBFL Consulting Engineers have been commissioned to undertake a Traffic and Transport Assessment (TTA) for the proposed intensification of use of an existing composting facility located in Milltownmore South Tipperary.

1.1.2 The report has been produced to address the potential concerns of the local planning authority, key stakeholders and third parties in regard to the potential level of influence generated by the proposed development upon the local transportation system. This report should be considered in conjunction with the other supporting EIS documents submitted to the planning authority as part of the same planning application.

1.2 SCOPE

1.2.1 The purpose of this TTA is to quantify the existing transport environment and to detail the results of assessment work undertaken to identify the potential level of any transport impact generated as a result of the proposed development. The scope of the assessment specifically focuses upon the potential impact generated upon the R688 / L1409 junction in Rosegreen and on local roads approaching the subject composting facility site across which the development generated traffic will travel.

1.3 METHODOLOGY

1.3.1 Our approach to the study accords with policy and guidance both at a national and local level. Accordingly the adopted methodology responds to best practices, current and emerging guidance, exemplified by a series of publications, all of which advocate this method of analysis. Key publications consulted include;

- '*Traffic and Transport Assessment Guidelines*' (May 2014) National Road Authority
- '*Traffic Management Guidelines*' Dublin Transportation Office & Department of the Environment and Local Government (May 2003)

- *'Guidelines for Traffic Impact Assessments'* The Institution of Highways and Transportation.

1.3.2 Our methodology incorporated a number of key inter-related stages, including;

- **Site Audit:** A site audit was undertaken to quantify existing road network issues and identify local infrastructure characteristics. An inventory of the local road network was also developed during this stage of the assessment.
- **Traffic Counts:** Junction turning counts were undertaken and analysed with the objective of establishing local traffic characteristics in the immediate area of the proposed development.
- **Trip Generation:** A trip generation exercise has been carried out to establish the potential level of vehicle trips generated by proposed extension to the existing operations.
- **Trip Distribution:** Based upon existing traffic characteristics and the network layout in addition to the spatial / land use configuration and acknowledging existing (composting facility) planning conditions, a distribution exercise has been undertaken to assign site generated vehicle trips across the local road network.
- **Network Impact:** Ascertain the specific level of influence generated by the proposed development upon the local road network and subsequently identify which junctions need to be assessed in greater detail in accordance with the Institute of Highways and Transportation; Traffic Impact Assessment guidelines.
- **Network Assessment:** Drawing upon the findings of the previous stages, an operational assessment of the local road network has been undertaken to evaluate the performance of key junctions following the implementation of the proposed development.

1.4 STRUCTURE OF REPORT

- 1.4.1 As introduced above, this TTA seeks to clarify the potential level of influence generated by the proposed intensification of use of the existing composting facility upon the local road network and subsequently ascertain the existing and future operational performance of the local transport system. The structure of the report responds to the various stages of this exercise including the key tasks summarised below.
- 1.4.2 Chapter Two outlines the key information pertaining to the local receiving environment and the sites characteristics in relation to accessibility levels.
- 1.4.3 An outline of the development proposals is detailed in Chapter Three.
- 1.4.4 In Chapter Four the relevant local transportation policy documentation and associated key objectives has been summarised.
- 1.4.5 A summary of both the existing on-site operation and the proposed developments vehicle trip generation, vehicle distribution, and network assignment exercise is detailed in Chapter Five. Furthermore, the potential level of impact, as generated by the subject proposals, upon key junctions and links across the local road network have also been quantified and reported in this section.
- 1.4.6 The operational performance of the key R688 Regional classified junction for a range of different development / traffic scenarios both prior to and following the commissioning of the proposed development are investigated and reported within Chapter Six.
- 1.4.7 Finally, a summary of our appraisal together with the main conclusions of the assessment are provided in Chapter Seven.

2.0 RECEIVING ENVIRONMENT

2.1 SITE LOCATION

2.1.1 The position of the proposed development, located on the site of the existing composting facility, lies in a rural location with minimal development or population in close proximity. This existing facility is located approximately 13km southeast of Cashel and approximately 15km north of Clonmel as illustrated in Figure 2.1 below. The indicative site boundary and neighbouring agricultural lands are presented on Figure 2.2.

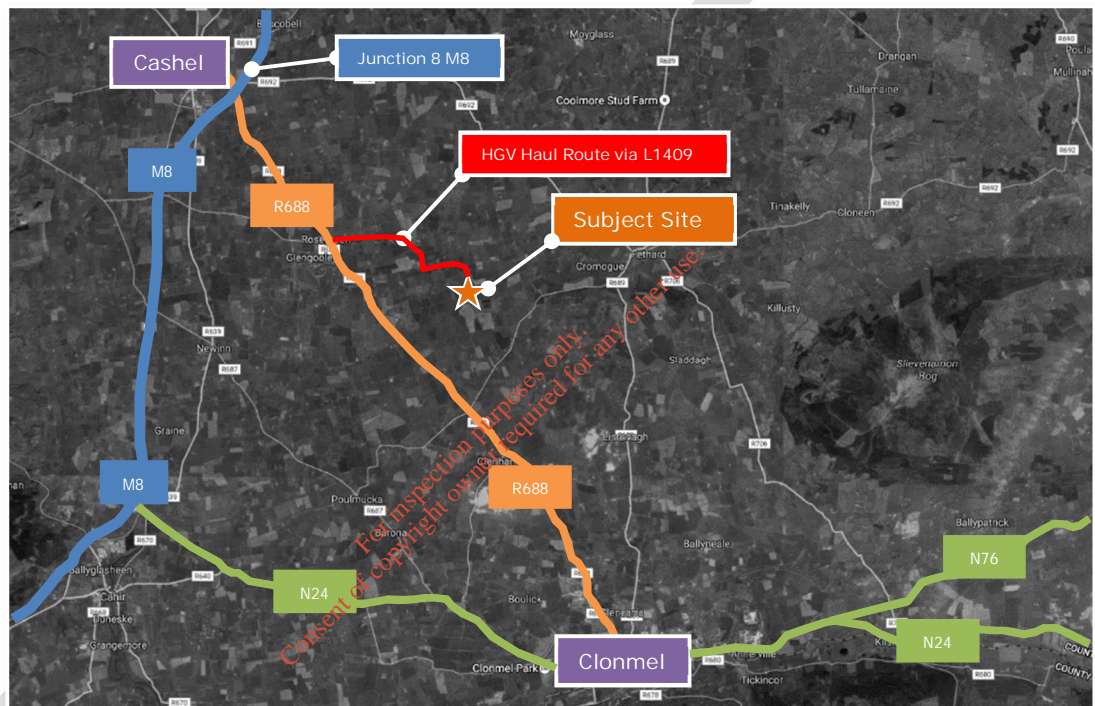


Figure 2.1: Existing Composting Facility Location (Source: Google Maps)



Figure 2.2: Indicative Site Boundary of Existing Composting Facility (Source: Google Maps)

2.2 EXISTING TRANSPORTATION INFRASTRUCTURE

Road Network Connections

- 2.2.1 DBFL Consulting Engineers visited the subject site with the objective of quantifying existing local traffic and infrastructure characteristics. Following the extensive site audit it has been established that the approach roads are subject to a default 80kph speed regulation however in reality, due to the geometry of these rural roads vehicle speeds are generally much lower.
- 2.2.2 The site audit comprised a comprehensive survey of the existing road geometry. The existing road width, verge type / width and boundary treatment have been recorded every 25m over the entire 5250m length of the existing facility's HGV haul route between the subject site and the R688 corridor. Appendix A of this report presents the aforementioned recorded carriageway geometry.



Figure 2.3 : Examples of Road Infrastructure in the Vicinity of the Subject Site and L1409 Approach Roads

- 2.2.3 The site of the existing composting facility is located at the southern terminus of an unnamed local road which extends in a southerly direction from the L1409 Rosegreen-Fethard Road for approximately 650m in length.
- 2.2.4 Travelling in a westerly direction along the L1409 (from its junction with the above unnamed local road that serves the existing composting facility) access can be gained to the regional classified R688 corridor which in turn leads to the strategic

destinations of Cashel (to the north) and Clonmel (to the south). Travelling eastwards along the L1409 local road access to Fethard can be gained in addition to the regional classified R689, R692 and R706 corridors can be gained.

2.2.5 The R688 corridor links Clonmel (to the south) with Cashel (to the north). Travelling initially southwards along the R688 and then turning left onto the L1409, the route between the subject composting facility site and Cashel Town centre is 12.3km in total. Furthermore the strategic M8 motorway is accessible via this same route with the nearest access point (Junction 8) located approximately 10.7km from the subject site. In reference to Figure 2.4 these vehicle routes incorporate the following principal components;

- Section 1a – 5.5km along the R688 corridor (from J8 M8 access),
- Section 1b – 15.1km along R688 to / from Clonmel (N24 corridor)
- Section 2 – 4.6km on the L1409 local access road, with
- Section 3 - the final 0.65km along the local access lane from which access to the subject site is gained.

2.2.6 Figure 2.4 below presents the principal individual components of the local road network between the M8 corridor and the existing on-site Composting Facility.

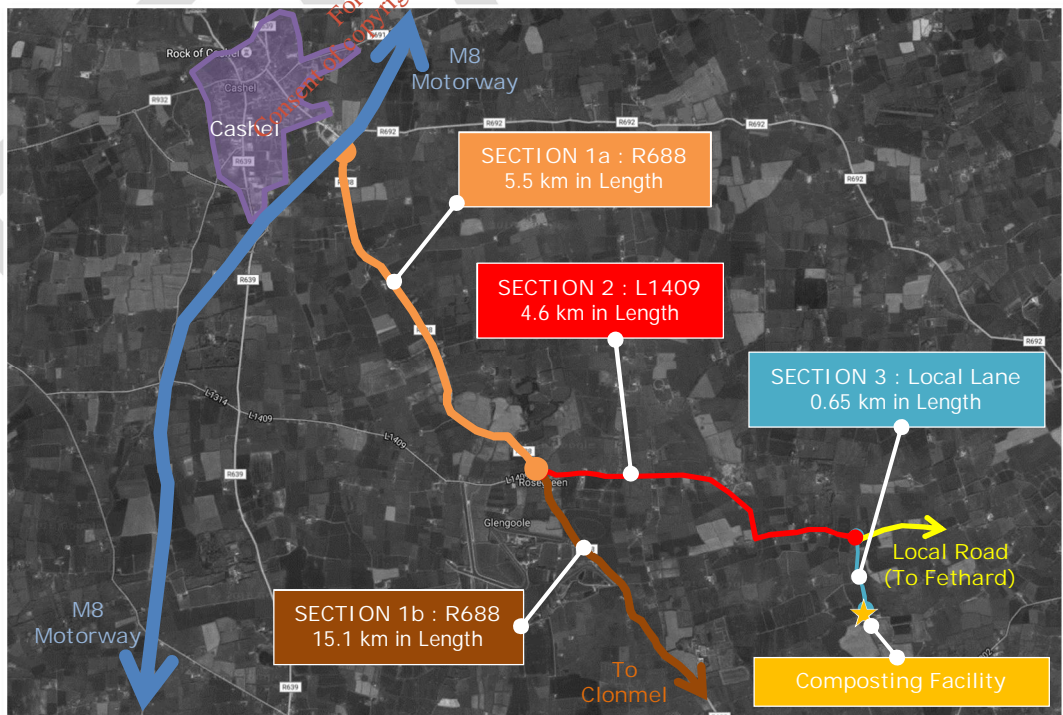


Figure 2.4 : Vehicle Access / Egress Route to/from Existing Composting Facility

Road Network Geometry

- 2.2.7 The R688 corridor along which all HGV vehicular traffic travels on route to / from the existing on-site composting facility benefits from good quality infrastructure that provide high levels of accessibility and accommodate two-way traffic movements.
- 2.2.8 The geometry of the L1409 corridor between Rosegreen and the priority junction with the local lane leading to the subject site ranges from a minimum approximate carriageway width of 4.1m to a maximum approximate width of 6.4m. The average carriageway width along this section of road is approximately 4.9m. The vast majority of this section facilitates two-way car movements however the presence of HGV's requires give way practices to take place.
- 2.2.9 The existing width of the local lane leading to the subject site access ranges from 2.9m to 4.5m resulting in one-way traffic movements along the majority of this corridor. The geometry as recorded every 25m along the L1409 and the local access lane is appended to this report within Appendix A.

Traffic Characteristics

- 2.2.10 With the objective of establishing the existing traffic characteristics on the local road network and site access three number traffic surveys have been undertaken including;
- i. ATC surveys undertaken by Abacus Transportation Surveys Ltd.,
 - ii. Inbound / outbound traffic survey at the subject site access, and
 - iii. Junction turning count (JTC) survey at the R688 / L1409 staggered junction
- 2.2.11 The ATC surveys were undertaken by Abacus between Wednesday 13th January 2016 and 19th January 2016 at three locations along the existing composting facility's HGV haul route as presented in Figure 5.1 below. The ATC's reveal the volume and vehicle type proportions travelling along the local approach roads leading to the subject site.
- 2.2.12 In order to establish the proportion of Milltown Composting HGV vehicles, data was received from Milltown Composting (survey ii) specifying the quantum of HGV vehicles that entered / exited the subject site over the ATC survey period.
- 2.2.13 A junction turning count (JTC) survey was undertaken during PM peak period on Wednesday 21st September 2016 and during the AM peak period on Thursday 22nd September 2016 at the R688 / L1409 staggered cross road junction. Analysis of the

JTC survey data facilitated the determination of the AM and PM peak hours as being between 08:30 to 09:30 and 17:00 to 1800 respectively. Figures 1 & 2 within Appendix C present the AM and PM peak hour slows as recorded during the JTC survey.

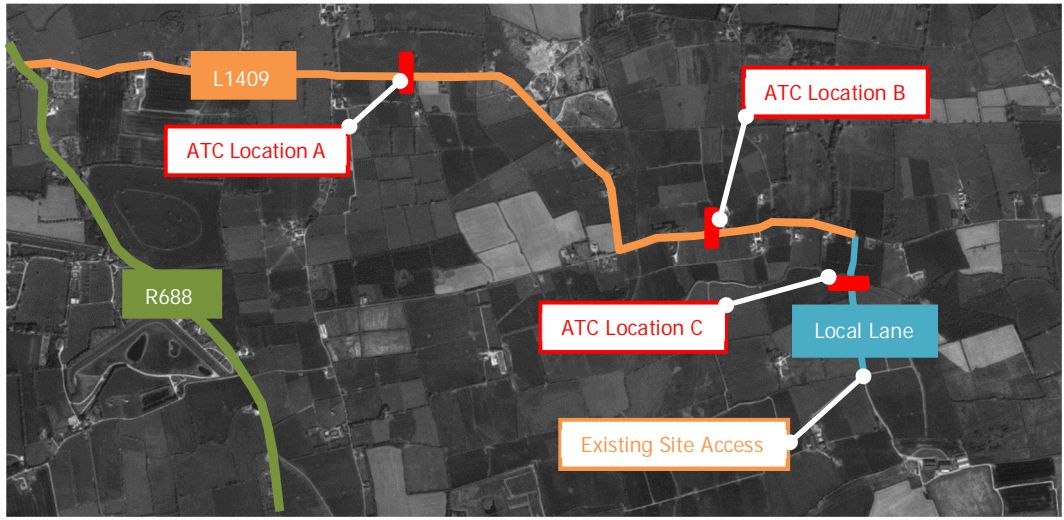


Figure 2.5 : ATC Survey Locations

2.2.14 Figures 2.6 to 2.8 below present the average weekday traffic profile recorded at each ATC location.

2.2.15 The analysis of the ATC survey data collected at Location A (Figure 2.6) reveals that the AM peak hour occurs between 09:00 and 10:00. Two PM peak hours have been observed at this location one of which occurs between 15:00 and 16:00 (likely due to school traffic) whilst the other occurs between 17:00 and 18:00.

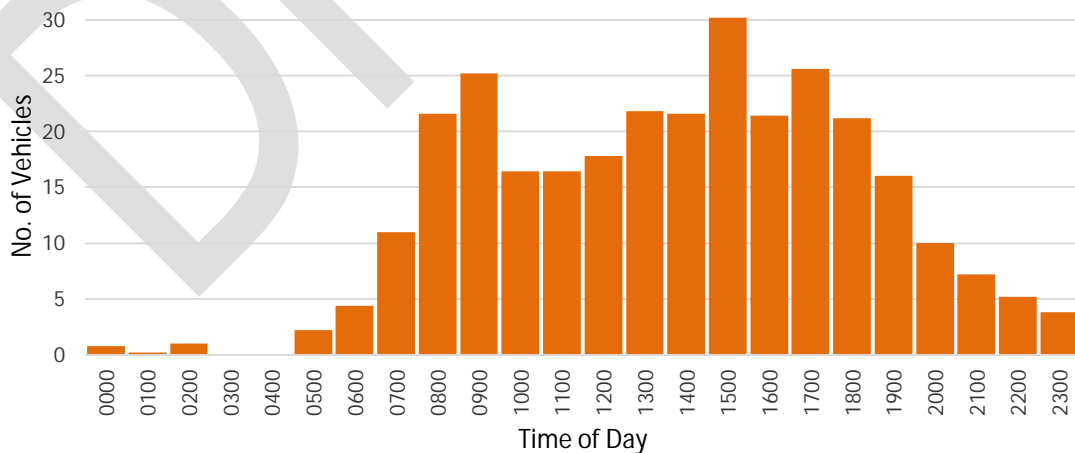


Figure 2.6 : ATC Survey Location A (All Vehicles)

2.2.16 Figure 5.3 below presents a summary of the ATC survey data collected at Location B. It reveals that the AM peak hour occurs between 08:00 and 09:00 whilst the PM peak hour has been observed to occur between 16:00 and 17:00.

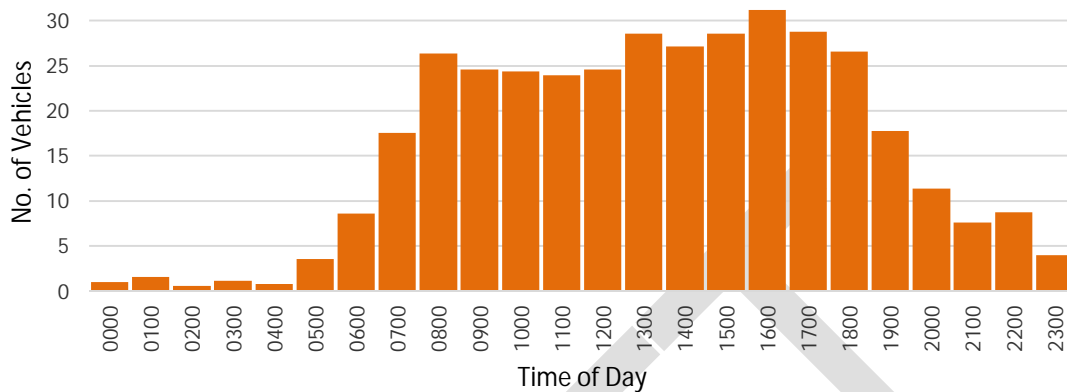


Figure 2.7 : ATC Survey Location B

2.2.17 The analysis of the ATC survey data collected at Location C (Figure 5.4) reveals that the AM peak hour occurs between 08:00 and 09:00. The PM peak hour has been observed to occur between 13:00 and 14:00.

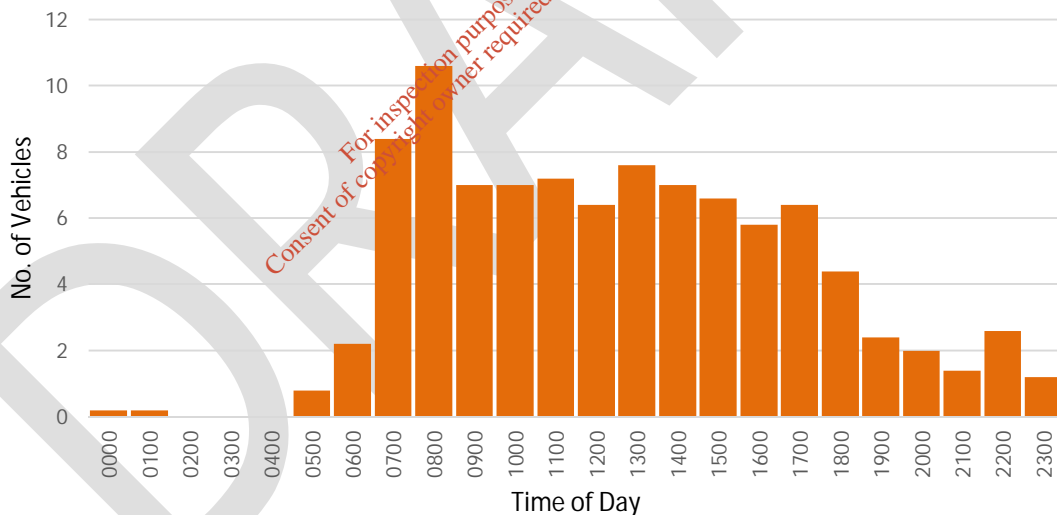


Figure 2.8 : ATC Survey Location C

2.2.18 The extremely low levels of traffic (reference section 5.2) currently travelling along the remote corridor and adjoining rural roads ensures that the existing operations undertaken on-site (and its associated traffic movements) at the waste transfer facility do not currently give rise to any notable traffic concerns or related road safety issues. The existing L1409 vehicular movements have been quantified as being extremely low with the busiest peak hour flows found to be as follows;

- AM Peak Hour (0900-1000) : Two-Way flow of 33 vehicles comprising;

- 14 eastbound vehicles (14 cars)
 - 19 westbound vehicles (16 cars and 3 HGV's / Agricultural), or
 - A maximum of 14 opposing vehicle movements arising which amounts to only one every 4.28 minutes (257 seconds).
- PM Peak Hour (1500-1600) : Two-Way flow of 33 vehicles comprising;
 - 16 eastbound vehicles (15 cars and 1 HGV's / Agricultural)
 - 17 westbound vehicles (17 cars), or
 - A maximum of 16 opposing vehicle movements arising which amounts to only one every 3.75 minutes (225 seconds).

2.2.19 The DBFL site audit noted the presence of a number of informal vehicle passing opportunities (of sufficient size to enable HGV's and large agricultural vehicles to pass one another travelling in opposite directions) along the L1409 and the local lane leading to the subject site. Figure 2.5 and Figure 2.6 below present the existing pass-by locations that currently facilitate the low number of opposing vehicles (maximum of 14 to 16 during the peak hour periods) to conveniently and safely pass one another. These existing informal passing opportunities come in the form of local road widenings located:

- along frontages of dwellings / farmyards,
- at junctions with rural lanes / private accesses, and
- a small number of localised wider road sections.

2.2.20 The DBFL review established that;

- A total of 7 informal vehicle passing locations are currently available along 4.6km length of the L1409 corridor (Section 2 in reference to Figure 2.4),
- A total of 2 potential vehicle passing locations are present along the 0.65km length of the local access lane (Section 3 in reference to Figure 2.4)

2.2.21 In reference to paragraph 2.2.10 above it can be established that the majority of the few recorded opposing vehicle movements generated along the local third class road network consist of either (i) car opposing car manoeuvres or (ii) car opposing HGV / Agricultural vehicle. It is established that very few HGV / Agricultural with HGV / Agricultural conflicts are currently generated even with the existing composting facility in operation on the subject site.

2.2.22 The relatively straight alignment of the L1409 comprising a few bends offers excellent forward visibility in most instances to vehicle drivers travelling along the majority of both the L1409 corridor. As a result, in the majority of instances vehicle drivers benefit from clear unobstructed forward visibility over quite a significant distance in front of them which enables opposing vehicle drives to avail of the existing informal passing locations thus enabling two-way vehicle movements to be accommodated in the vast majority of instances.

2.2.23 The existing arrangement, incorporating a single lane carriageway with regular vehicle passing opportunities will nevertheless exhibit a specific threshold capacity over which any significant increase in vehicle flows will require enhancement works to be implemented in order to safeguard the continued operational performance and safety of the local third class network.

2.2.24 It is DBFL's assessment that the existing third class local rural road network including the L1409 corridor continues to operate satisfactory in the context of the extremely low levels of baseline traffic currently travelling along it (maximum potential of only 14 and 16 conflicting movements in the AM and PM peak hour periods respectively over the busiest section of the L1409) and the frequency / number of informal passing opportunities currently available. As a result, we believe the existing composting facility does not materially adversely impact the operation of the local road network.

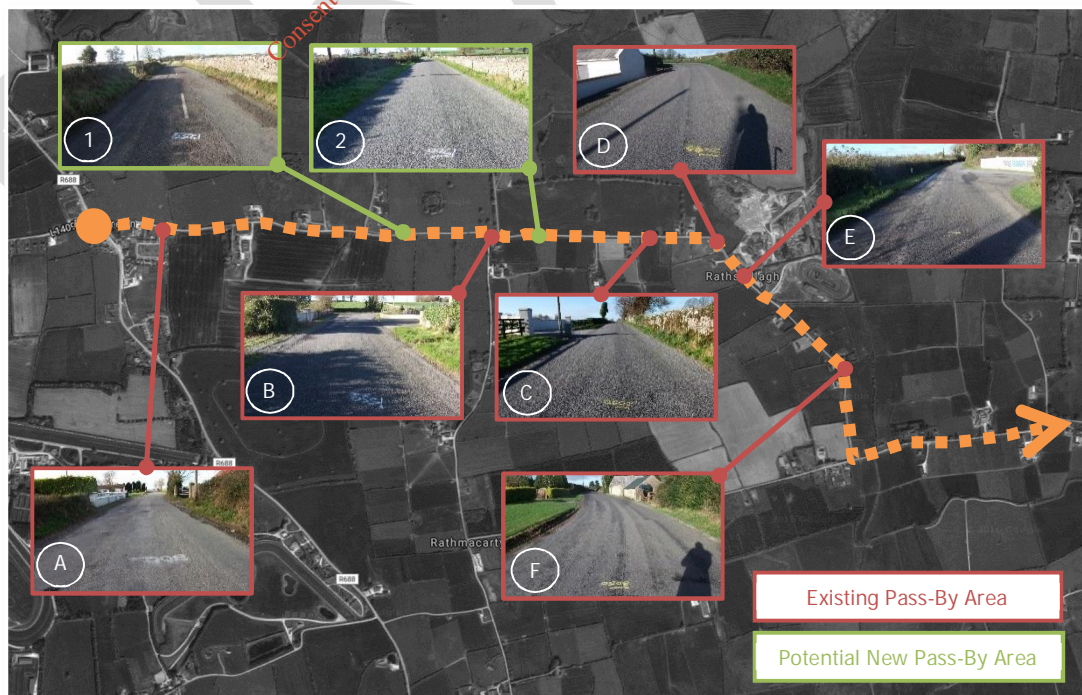


Figure 2.5 : Existing and Potential New Vehicle Pass-By Opportunities (L1409 West)

2.2.25 Nevertheless, during the site audit, a total of six potential new pass-by areas have been identified, one of which is located on the local lane leading to the existing site access. The location of both the existing and potential pass-by areas are presented in Figures 2.5 and 2.6.

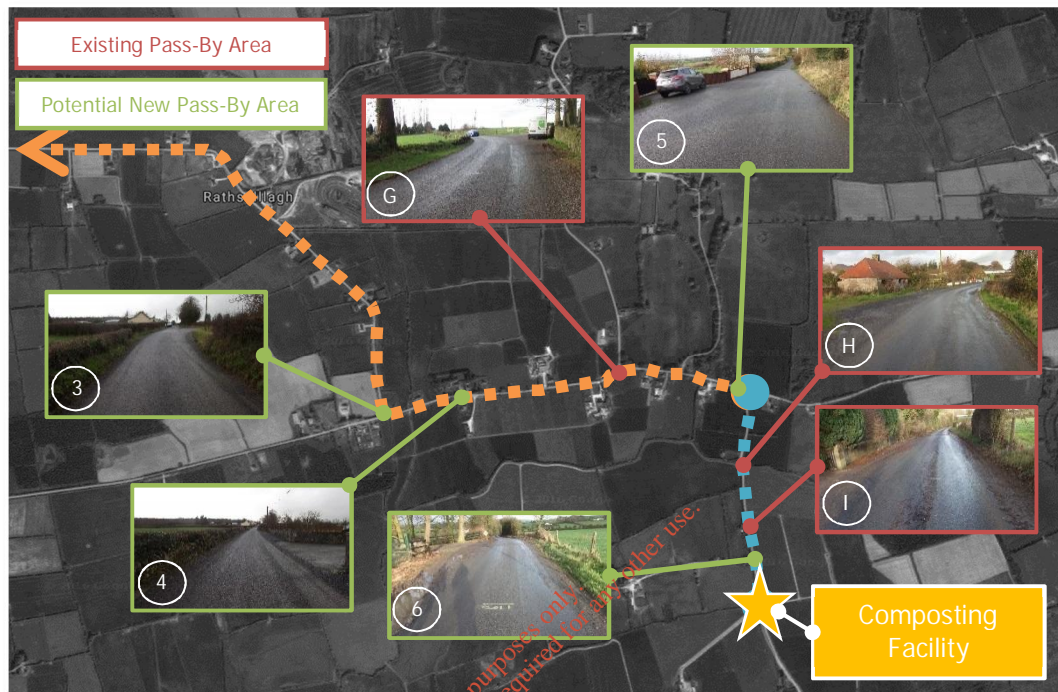


Figure 2.6 : Existing and Proposed New Vehicle Passing Opportunities (L1409 East and Local Access Lane)

Road Network Safety Levels

2.2.26 The collision statistics on the Road Safety Authority (RSA) website were reviewed in order to ascertain the safety record of the local road network over the most recent nine-year period. This includes information for the years 2005 to 2013 inclusive and indicates basic information on all reported incidents.

2.2.27 The RSA records details of all incidents that have been officially recorded such as the Garda being present to formally record details of the incident. As illustrated in Figure 2.7 one minor incident has been recorded on the L1409 approach road corridor and another in the village of Rosegreen in the vicinity of the R688 / L1409 priority controlled junction. Neither of the recorded minor incidents indicated that a HGV vehicle was involved.

2.2.28 Therefore the RSA data reveals that the existing Composting Facility operation does not give rise to a history of road safety issues with the local road network continuing to operate with better than expected road safety levels.

2.2.29

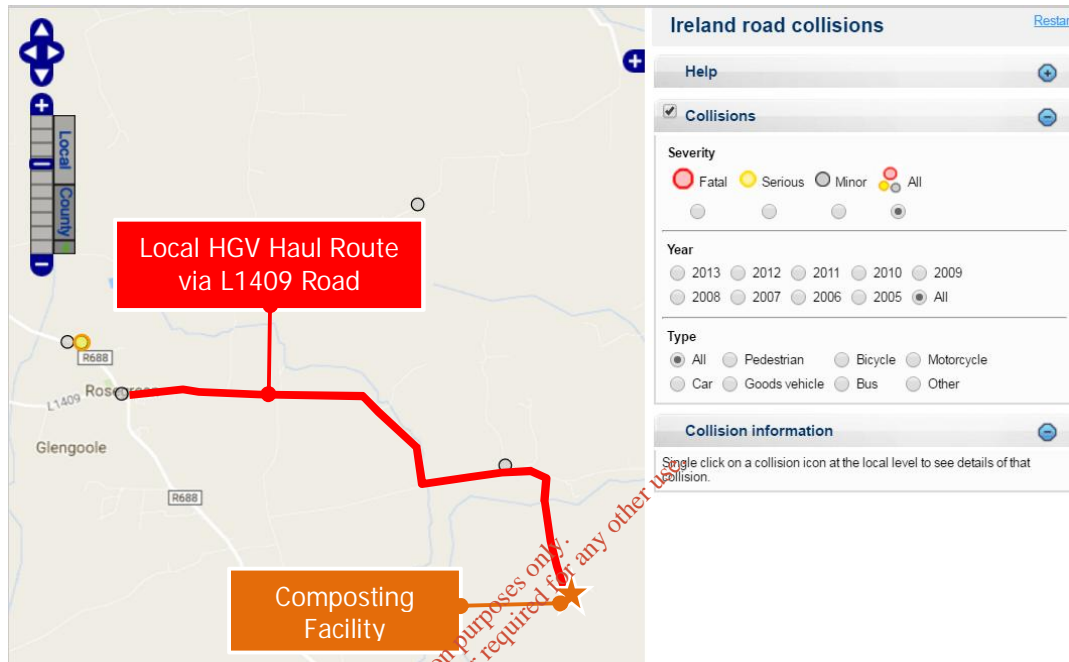


Figure 2.7 : RSA Recorded Road Traffic Incidents (source www.RSA.ie)

Pedestrian & Cycling Environment

2.2.30 As the subject site is located within a rural setting, directly accessed via the local third class network, and currently experiences very low traffic volumes; it is not surprising to find that the surrounding local road network does not benefit from dedicated pedestrian or cycling facilities.

2.2.31 In reference to the National Cycle Manual, such rural links with such low vehicle demands and associated vehicle speeds are considered appropriate for shared use operation where both motorised vehicles and cyclists both share the carriageway.

Public Transport - Bus

2.2.32 The subject site is located in a rural location and as such there are no existing public transport services in the immediate vicinity of the subject composting facility.

3.0 CHARACTERISTICS OF THE PROPOSALS

3.1 EXISTING ON-SITE FACILITIES

3.1.1 The subject development site currently accommodates a composting plant that accepts a broad range of compostable materials including source segregated household kitchen waste, catering wastes, non-hazardous industrial and municipal waste water sludges and organic fines generated in the treatment of mixed municipal solid waste (MSW).

3.1.2 The treatment process, depending on the nature of the source material, can involve initial screening to remove contaminants, blending with bulking agents, composting in separate enclosed tunnels and open bays, maturation in windrows and post treatment to remove impurities. The finished product can, depending on quality, either be used for horticultural and agricultural purposes, or as landfill cover.

3.1.3 The current waste licence permits a maximum waste throughput (Inbound) of 24,500 tonnes per annum. The existing facility operates 6 days per week (closed Sundays) between 08:00-18:00 for receipt of inbound vehicle loads.

3.1.4 Whilst the staff (currently 5 no.) based on-site can currently utilise a number of potential vehicle routes when travelling to / from subject site, all HGV vehicles travelling to / from the site travel via the R688 and the defined L1409 'haul route' as illustrated below in Figure 3.1 and in accordance with existing planning conditions.

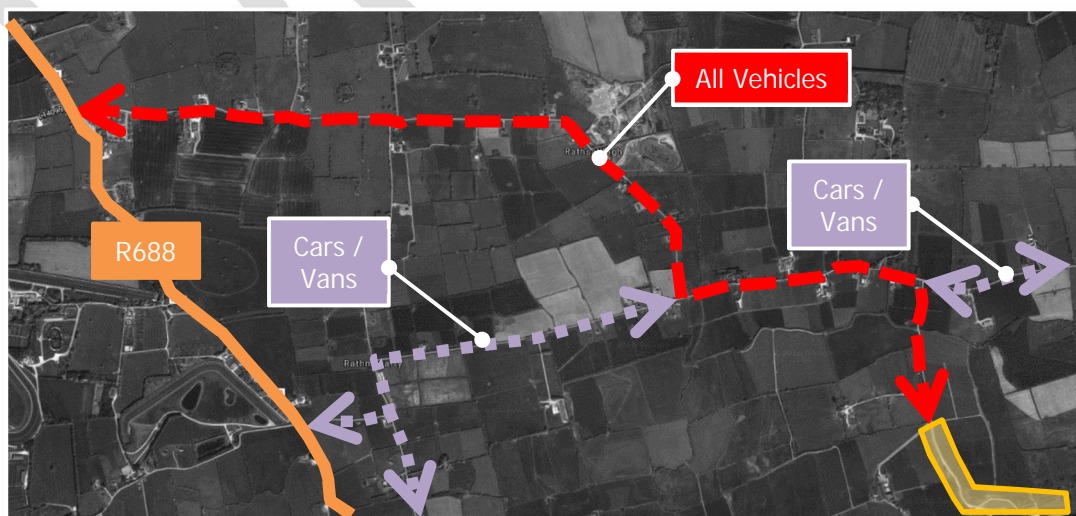


Figure 3.1 : Existing Utilised Vehicle Routes to / from Existing Composting Facility

3.1.5 The facility's existing materials import / export practices result in variations in HGV trip generation by day of week and by months of the year. Figure 3.2 below presents the number of two-way HGV trips generated by the existing facility each weekday between Wednesday 13th January 2016 and Tuesday 19th January 2016 (i.e. the period when the off-site traffic surveys were conducted). This graph reveals the inconsistent and fluctuating nature of existing current import / export practices. It is revealed that the volume of HGV's generated by the subject site is significantly lower on Wednesday and Friday when compared to Monday, Tuesday and Thursday trips. It is noted that during this particular week (January is the facility's peak month) the facility was operating at a higher capacity than normal and received 167% of its average weekly intake. As a result no material was accommodated on the Saturday of this week (wed13th – Tue 19th Jan 2016). Figure 3.3 illustrates the fluctuating 'seasonal' peaks generated demonstrating that January is the peak period with the late summer period generating significantly lower tonnage levels.

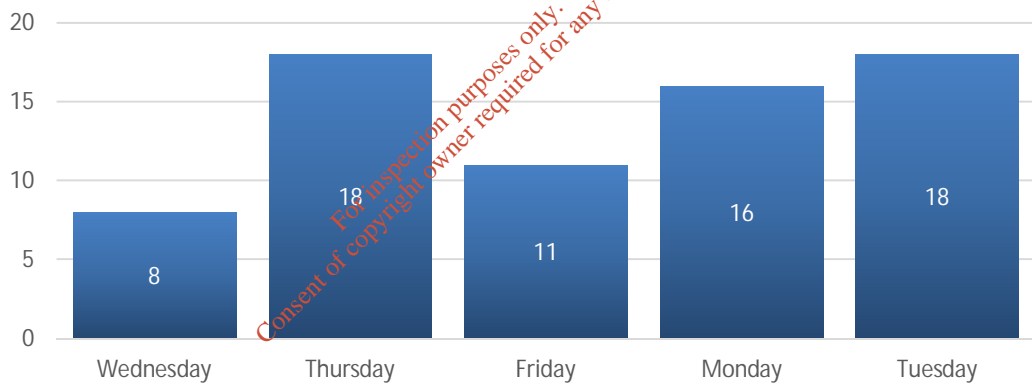


Figure 3.2 : Existing Vehicle Volumes Travelling to / from Existing Composting Facility

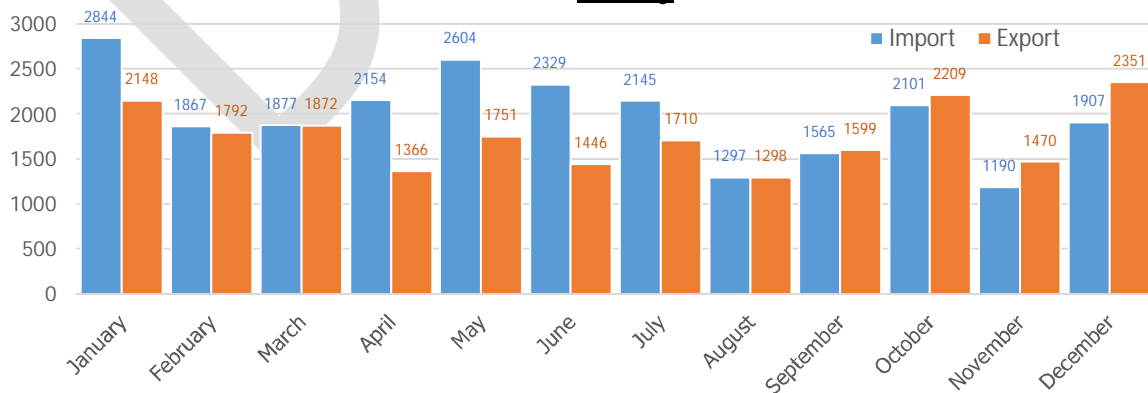


Figure 3.3 : 2015 Annual Tonnage Throughput

3.2 PROPOSED DEVELOPMENT THRESHOLD CHARACTERISTICS

- 3.2.1 The proposals seek permission to increase the throughput (from the existing 24,500 tonnes imported per annum) of material at the existing composting facility to on average 160 tonnes per day and not exceeding 50,000 tonnes per annum (i.e. a total potential increase of 25,500 tonnes of waste material per annum above that currently permitted). The proposed intensification of use will be accommodated by the existing on-site facilities (i.e. no new buildings will be required / constructed as part of the proposals) and the nature of the waste received will be similar to that currently received by the existing operations.
- 3.2.2 Additional details of the proposals on-site facility, the operational process and internal site layout are detailed in the application's supporting Environmental Impact Assessment.

3.3 OPERATIONAL SCHEDULE

- 3.3.1 It is proposed that following the commencement of the increased on-site operations the facility will operate as per the hours of operation of the existing on-site composting facility in terms of when vehicles will arrive and depart from site. The existing on-site activities permit acceptance of materials 6 days per week (Monday to Saturday) throughout the year with HGV vehicles arriving / departing between 0800 and 1800 each day. Whilst receipt of materials will be restricted to these hours the on-site composting process will be manned from 06:00 to 18:00 each day.
- 3.3.2 As previously introduced, there is significant variations in the quantum of HGV trips generated by the existing facility by both weekday and by time of the year. Whilst the seasonal peaks (Ref. Figure 3.3) are predicted to remain unchanged, it remains an operational objective to instigate a more balanced tonnage arrival rate by both day of the week and time of the day. Accordingly a change to the existing import / export practice as part of the current proposal is the introduction of a structured management regime consisting of the assignment of 'scheduled' delivery slots to each individual material supplier. The proposed new regime will ensure the rate of HGV trips arriving / departing the subject site is more consistent for each day of the week thereby eliminating the concentration of material transfer and associated HGV trip generation on any one day of the week or any particular time of the day. The proposed management regime will incorporate a policy whereby if a supplier misses

their prearranged delivery slot, they will have to reschedule to the next available delivery slot.

- 3.3.3 The existing transfer facility operates with five members of office / operational staff. The proposed increase in throughput is expected to require an additional four number staff members on-site.

3.4 GEOGRAPHICAL AREA OF OPERATION

- 3.4.1 These existing on-site operations currently receive materials from the Southern Waste Region with materials sourced predominantly in the Waterford and Tipperary areas. Additionally materials are also sourced from the Greater Dublin Area and transported via the M8 motorway. The proposed composting facility will continue to receive materials from these same catchment areas as graphically illustrated in Figure 3.4 below.

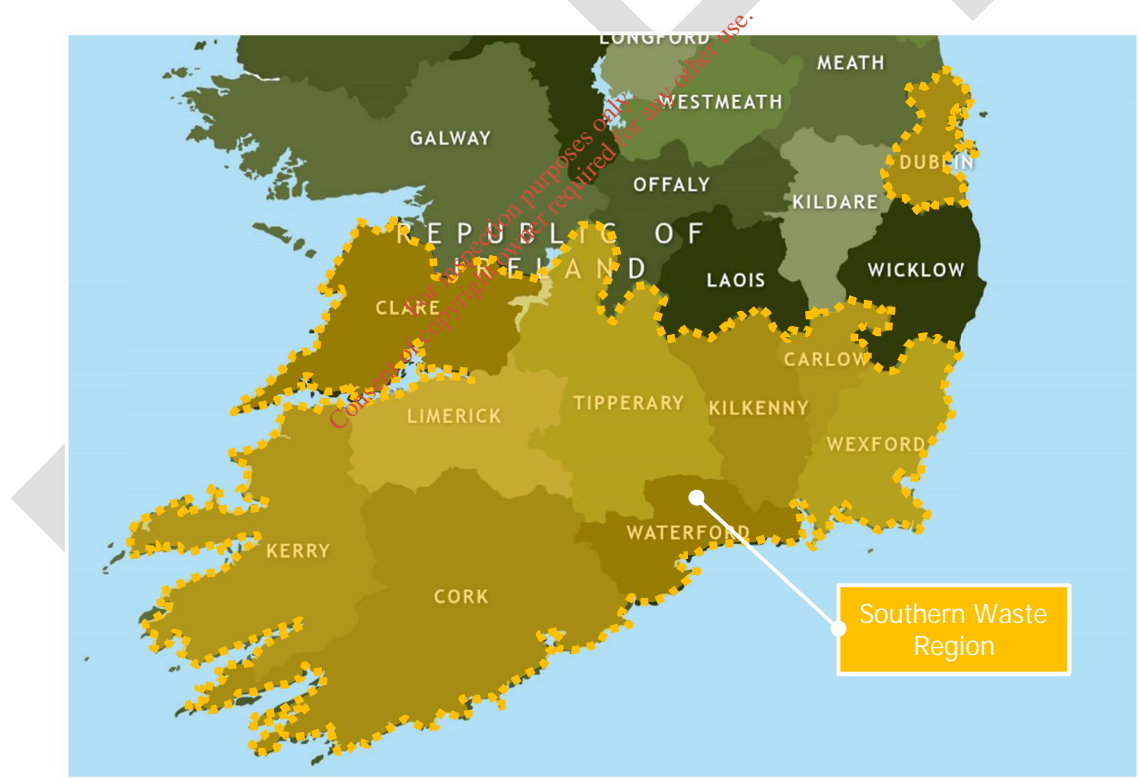


Figure 3.4 : Composting Facility Catchment Area

3.5 SITE ACCESS ARRANGEMENTS

- 3.5.1 The subject site will be accessed by all vehicles via the existing dedicated site access / egress as located at the south termination of the local rural road. This gated access,

as illustrated in Figure 3.5 below is located to the north of the existing on-site composting facility.



Figure 3.5 : Existing Site Access Treatment

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4.0 POLICY FRAMEWORK

4.1 DEVELOPMENT POLICY

South Tipperary County Development Plan 2009-2015 (As amended)

4.1.1 The South Tipperary County Development Plan 2009 – 2015 (As Amended) sets out the policies for sustainable development within the council area and will remain in effect until a new Regional Spatial and Economic Strategy is made by the Southern Regional Assembly, thereafter a new Tipperary County Development Plan will be produced. In the context of the subject development site and the proposed scheme the most relevant policies include;

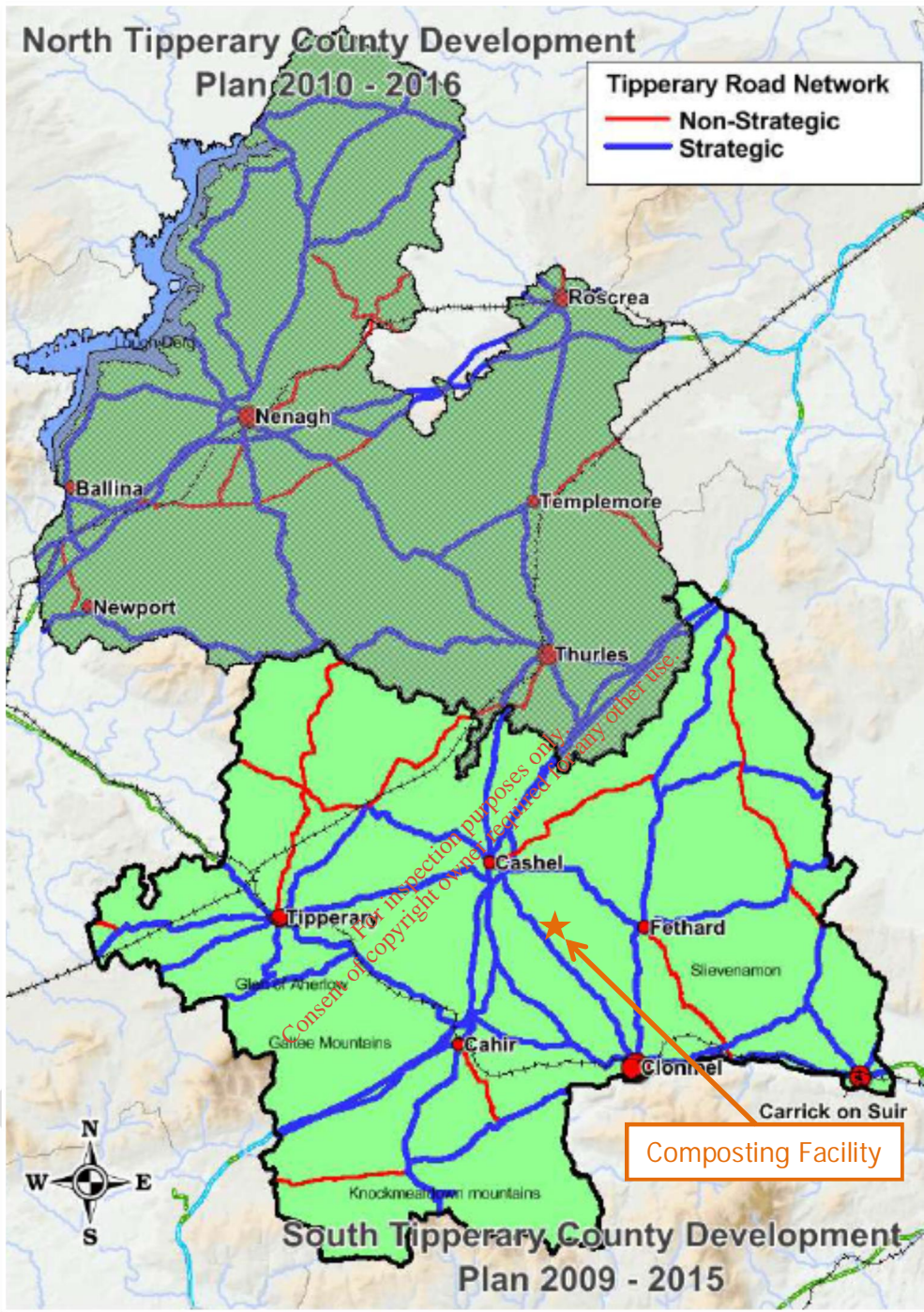
Road Infrastructure

Policy T12 – *“It is the policy of the Council, to seek the implementation of Strategic Transport Improvement Priorities identified in the SERPGS and the MWRPGs and any strategic transportation documents for the Region. The Council will seek to support the implementation of these schemes by the reserving the corridors of the proposed routes free from inappropriate development, so as not to compromise the future road schemes”.*

Enterprise in the Open Countryside

Policy ED9 - *It is the policy of the Council to support and facilitate the provision and/or expansion of appropriate small scale rural enterprise in the open countryside within residential sites and in vacant or derelict buildings. Development proposals will be required to meet the following criteria:*

- a) The development shall not have an adverse impact on the residential, environmental and rural amenity of the area;*
- b) Any new structure shall be of a scale appropriate to the size of the site, and be sited and designed to ensure it does not detract from the rural setting and landscape character of the area.*
- c) The development shall comply with the development management standards set out in Chapter 10.*



Source: South Tipperary County Development Plan 2009-2015 (as Amended)

Figure 4.1 : Strategic and Non-Strategic Roads

Industrial Development Standards

Table 10.4 of the Development Plan sets out the development standards for industrial developments in the Plan area as summarised in Table 4.1 below.

| | |
|---|--|
| <i>Site Layouts</i> | <i>Adequate space shall be provided for the loading and unloading of goods and the manoeuvring of vehicles within the site. Turning space shall be provided for 15 metre articulated vehicles and 9 metre fixed axle vehicles. A building line set back of at least 12 metres from estate roadside boundaries shall be provided.</i> |
| <i>Design Scheme</i> | <i>Multi-unit industrial proposals shall submit a detail design scheme; to set out design approach and materials and finishes to be applied throughout the entire scheme. The design scheme shall ensure that the overall development implements a uniform/complimentary approach to design and finishes.</i> |
| <i>Boundary treatment / landscaping</i> | <i>A comprehensive boundary treatment and landscape plan providing for details of uniform approach to boundary treatment and planting shall accompany applications. Existing trees and hedgerows shall be incorporated where practicable and new planting shall utilise trees and shrubs that are indigenous to the area. All services shall be laid underground.</i> |
| <i>Use</i> | <i>Full details of the use, including industrial processes involved, any toxic materials, chemicals or solvents used, shall be submitted with the planning application if known. Changes in use may require the grant of a new planning permission in accordance with the Planning & Development Regulations, 2001 (as amended).</i> |
| <i>Storage of Goods & Fuels</i> | <i>Goods, including raw materials, manufactured goods, packaging, crates etc., shall be stored or displayed only within the enclosed factory or industrial unit area behind the front building line. All over-ground oil, chemical storage tanks shall be adequately bounded to protect against spillage. Adequate storage to facilitate the segregation & storage of waste materials at source shall be provided.</i> |

Source: South Tipperary County Development Plan 2009-2015 (as Amended)

Table 4.1 : Industrial Development Standards

4.2 DEVELOPMENT CONTROL

Car Parking Standards

- 4.2.1 In reference to the Development Plan there is no corresponding car parking standards included within Table 10.2 for the subject development type / land use. It is noted however that there is an existing hard standing area on-site with significant reserve capacity available to comfortably accommodate the predicted additional vehicle movements and associated parking demand (Car and HGV) on-site.

5.0 TRAFFIC GENERATION AND DISTRIBUTION

5.1 OVERVIEW

5.1.1 The following paragraphs present the process by which the potential level of vehicle trips, associated with the proposed development, have been generated and subsequently assigned across the local road network.

5.1.2 A total of 2 different traffic scenarios are considered within the TTA as follows;

- Do-Nothing – existing as surveyed baseline network conditions,
- Do-Something – Considers the post intensification of use scenario with the proposed additional material throughput in operation.

5.1.3 A review of the local authority's planning database reveal that no third party committed developments have been granted planning permission that would when complete and operating generate a material impact upon the volume of traffic travelling across the local road network.

5.2 TRAFFIC GENERATION

Existing Operations

5.2.1 The existing composting facility is currently permitted to process 24,500 tonnes (inbound) per annum. With the objective of establishing the volume of traffic the current operations generate across the local approach roads leading to the subject site a number of data sources have been analysed. As introduced previously ATC surveys were undertaken between Wednesday 13th January 2016 and 19th January 2016 at three locations along the existing composting facility's HGV haul route (between Rg88 corridor and the composting site) as presented in Figure 5.1 below. These ATC surveys have been supplemented with a survey of all vehicle movements entering and exiting the site over the same 7 day period. By cross referencing these two data sources it has been possible to quantify the volume of the site generated vehicles (composting facility) travelling along the HGV Haul route and through each of the three off-site ATC survey locations detailed in Figure 5.1.

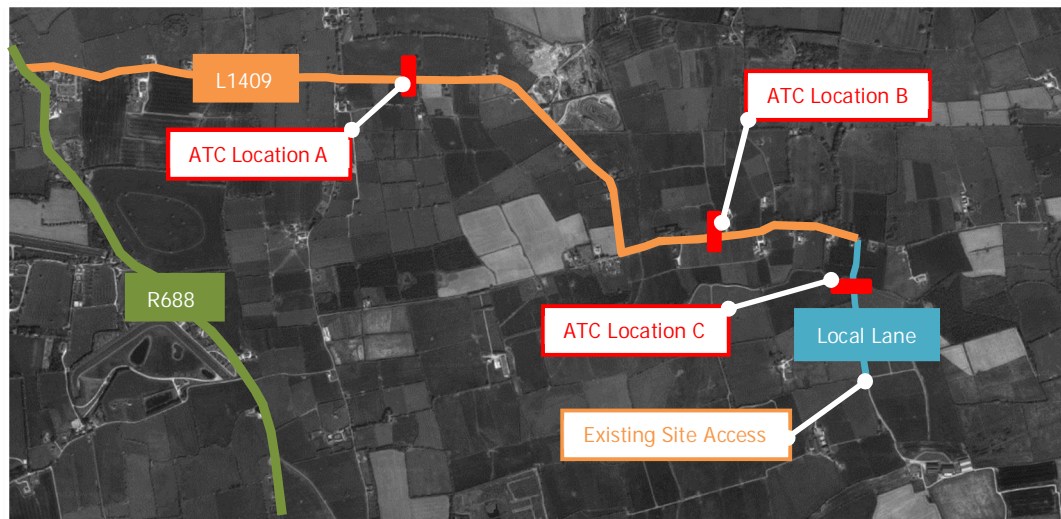


Figure 5.1 : ATC Survey Locations

- 5.2.2 Figures 5.2 to 5.4 below present the average (January) weekday traffic profile recorded at each of the three off-site ATC survey locations. The existing composting HGV traffic are depicted as the red columns in these figures. It is noted that these recorded flows represent a worst case scenario (in terms of HGV levels) as in addition to them representing the peak seasonal month; the entire weekly tonnage was imported over 5 days opposed to 6 (i.e. no material was imported on Saturday 6th January).
- 5.2.3 The analysis of the ATC survey data collected at Location A (Figure 5.2) reveals that the AM peak hour occurs between 09:00 and 10:00. Two PM peak hours have been observed at this location one of which occurs between 15:00 and 16:00 (likely due to school traffic) whilst the other occurs between 17:00 and 18:00. The HGV proportions are observed as being at their highest during the AM and early afternoon survey period between 07:00 and 14:00 with the peak HGV traffic occurring between 08:00 and 10:00.
- 5.2.4 Figure 5.3 below presents a summary of the ATC survey data collected at Location B along the defined 'haul' route. It reveals that the AM peak hour occurs between 08:00 and 09:00 whilst the PM peak hour has been observed to occur between 16:00 and 17:00. The HGV proportions are again observed to be highest during the AM and early afternoon survey period between 08:00 and 13:00 with the peak hour occurring between 08:00 and 09:00.

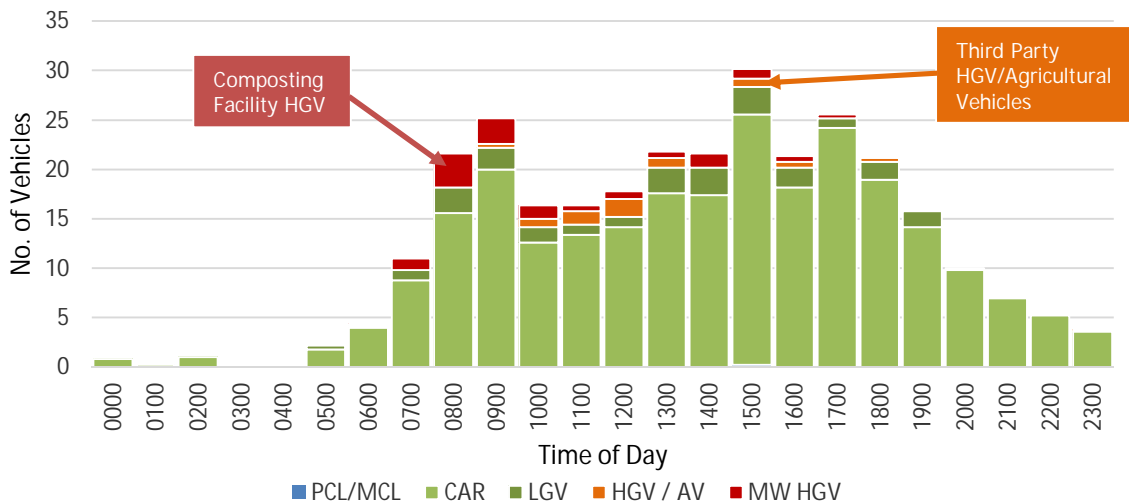


Figure 5.2 : ATC Survey Location A (Weekday Average – January)

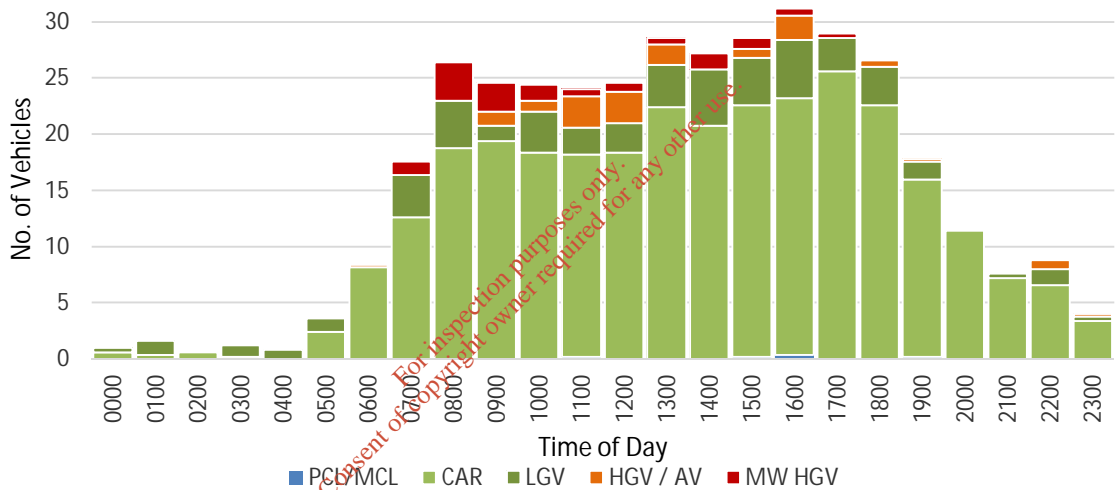


Figure 5.3 : ATC Survey Location B (Weekday Average – January)

5.2.5 The analysis of the ATC survey data collected at Location C (Figure 5.4) reveals that the AM peak hour occurs between 08:00 and 09:00. The PM peak hour has been observed to occur between 13:00 and 14:00. The HGV proportions are observed as being at their highest during the AM and early afternoon survey period between 07:00 and 15:00 with the peak HGV traffic occurring between 08:00 and 09:00.

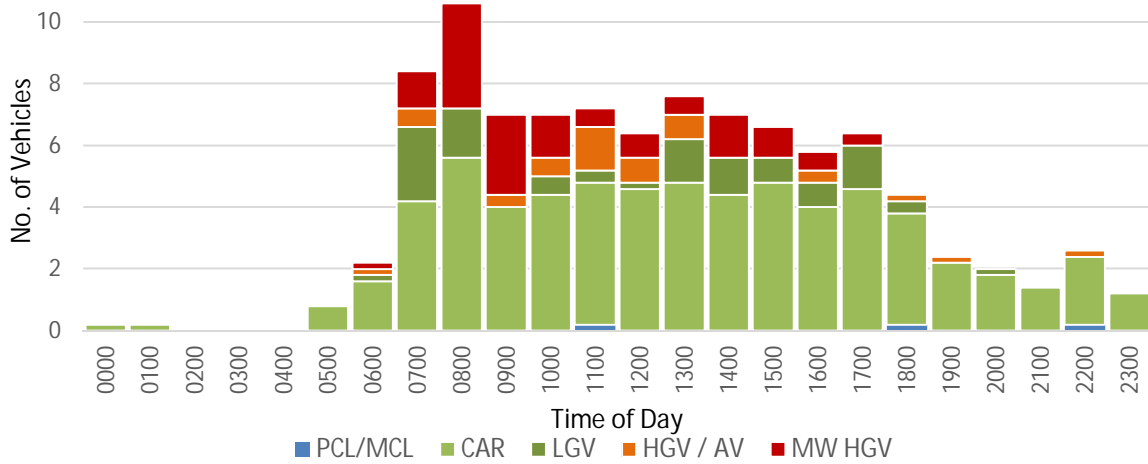


Figure 5.4 : ATC Survey Location C (Weekday Average – January)

5.2.6 Table 5.1 presents the recorded HGV trip movements associated with the existing operation for (i) average, (ii) peak, and (iii) quiet periods. The average trips to / from the existing facility are based on data received from Milltown Composting for the 2015 year.

5.2.7 Three potential HGV arrival / departure scenarios have been observed including;

- Full load truck in / Full load truck out (Dual Trips): Lin-Lout
- Full load truck in / Empty truck out: Lin-Eout
- Empty truck in / Full load truck out: Ein-Lout

5.2.8 Influenced by a number of parameters dual trip (full load truck in / full load truck out) proportions have traditionally been quite low however over the past 24 months a notable increase in dual trips to approximately 24% as illustrated in Figure 5.5 below has been observed. As dual trips benefit both the supplier of materials and the exporter, this trend is expected to continue and therefore it is assumed that the number of dual trips will increase by 15% above the existing quantum.

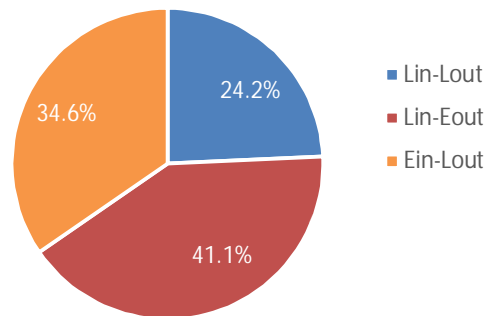


Figure 5.5 : Existing Materials Transfer Scenario Proportions

5.2.9 Due to the existing material transfer regime, the proportion of dual trips is generally relatively low and therefore in the proposed development trip generation process it has been assumed that an additional 15% of material transferred to / from the subject site will be dual trips due to the proposed structured delivery program to be introduced as part of the proposals.

Proposed Development

5.2.10 As introduced previously in Section 3.2 the subject proposals seek permission to increase the amount of material imported (currently 24,500+ / year permitted) by an additional 25,500 tonnes per annum.

5.2.11 Table 5.2 presents the proposed development's (at full capacity of 50,000 tonnes per year) trip generation. Based on discussions with Milltown Composting, it has been assumed that each truck will on average carry 26 tonnes of material when full, however the use of larger HGV's could increase this average capacity and subsequently reduce the total number of HGV's generated. Nevertheless the maximum quantum of HGV's generated by the proposed development has been predicted based upon 26t capacity per arriving / departing HGV.

5.2.12 As stated previously the proposed intensification of use at the subject site will result in an additional four new employees being required. This brings the total number of people employed at Milltown Composting to nine. It has been assumed that six of these employees will arrive / depart during the AM / PM peak hours with the other 4 employees travelling outside of the network peak hour period. Table 5.3 provides a summary of both the potential HGV and Car trips expected to arrive / depart the subject site during the surrounding road network peak hours. (Note: whilst it is proposed to structure the arrival / departure of HGV's to occur outside of the local road network's AM peak hour between 08:30 and 09:30, for the purposes of a robust assessment we have assumed that there will be 1 inbound and 1 outbound HGV during this time)

| | Materials | | Traffic Movements | | | | | | | | | | | | |
|----------------------------|-----------|------------|-------------------|-----|-------|-------|----------|-----|-------|-------|----------|-----|-------|-------|-------------|
| | Tons (In) | Tons (Out) | Lin-Lout | | | | Lin-Eout | | | | Ein-Lout | | | | Total 2-way |
| | | | In | Out | 2-way | % | In | Out | 2-way | % | In | Out | 2-way | % | |
| Per Year | 23880 | 21012 | 330 | 330 | 660 | 24.2% | 560 | 560 | 1120 | 41.1% | 471 | 471 | 942 | 34.6% | 2722 |
| Per Month (average) | 1990 | 1751 | 28 | 28 | 56 | 24.2% | 47 | 47 | 94 | 41.1% | 39 | 39 | 78 | 34.6% | 228 |
| Per Day (average) | 79 | 69 | 1 | 1 | 2 | 24.2% | 2 | 2 | 4 | 41.1% | 2 | 2 | 4 | 34.6% | 10 |
| Per Month (Worst case-Jan) | 2844 | 2148 | 57 | 57 | 114 | 46.7% | 44 | 44 | 88 | 36.1% | 21 | 21 | 42 | 17.2% | 244 |
| Per Day (Worst Case-Jan) | 113 | 85 | 2 | 2 | 4 | 46.7% | 2 | 2 | 4 | 36.1% | 1 | 1 | 2 | 17.2% | 10 |
| Per Month (Quietest - Nov) | 1297 | 1298 | 16 | 16 | 32 | 18.6% | 36 | 36 | 72 | 41.9% | 34 | 34 | 68 | 39.5% | 172 |
| Per Day (Quietest - Nov) | 51 | 51 | 1 | 1 | 2 | 18.6% | 1 | 1 | 2 | 41.9% | 1 | 1 | 2 | 39.5% | 6 |

Lout=Full truck out, Lin=Full truck in, Ein=Empty truck in, Eout=Empty truck out

Table 5.1 : Existing Composting Facility HGV Trip Generation (January to December 2015)

| | Materials | | Traffic Movements | | | | | | | | | | | | |
|----------------------------|-----------|------------|-------------------|------|-------|-------|----------|------|-------|-------|----------|-----|-------|-------|-------------|
| | Tons (In) | Tons (Out) | Lin-Lout | | | | Lin-Eout | | | | Ein-Lout | | | | Total 2-way |
| | | | In | Out | 2-way | % | In | Out | 2-way | % | In | Out | 2-way | % | |
| Per Year | 50000 | 43995 | 1035 | 1035 | 2071 | 39.2% | 888 | 888 | 1776 | 33.6% | 459 | 459 | 917 | 27.1% | 4764 |
| Per Month (average) | 4167 | 3666 | 86 | 86 | 173 | 39.2% | 74 | 74 | 148 | 33.6% | 38 | 38 | 76 | 27.1% | 397 |
| Per Day (average) | 165 | 145 | 3.4 | 3.4 | 6.8 | 39.2% | 3 | 3 | 6 | 33.6% | 2 | 2 | 4 | 27.1% | 16 |
| Per Month (Worst case-Jan) | 5955 | 4497 | 157 | 157 | 313 | 61.7% | 72.5 | 72.5 | 145 | 28.6% | 17 | 17 | 34 | 9.7% | 492 |
| Per Day (Worst Case-Jan) | 236 | 178 | 6 | 6 | 12 | 61.7% | 3 | 3 | 6 | 28.6% | 3 | 3 | 6 | 9.7% | 19 |
| Per Month (Quietest - Nov) | 2716 | 2718 | 52 | 52 | 104 | 33.6% | 53 | 53 | 106 | 34.4% | 33 | 33 | 67 | 32.0% | 276 |
| Per Day (Quietest - Nov) | 108 | 108 | 2 | 2 | 4 | 33.6% | 2 | 2 | 4 | 34.4% | 1 | 1 | 2 | 32.0% | 11 |

Table 5.2 : Proposed Composting Facility HGV Trip Generation (Assuming Maximum Production)

| | AM Peak Hour (08:30-09:30) | | | PM Peak Hour (17:00-18:00) | | |
|-------------|----------------------------|-----|-------|----------------------------|-----|-------|
| | In | Out | 2-way | In | Out | 2-way |
| HGV | 1 | 1 | 2 | 1 | 1 | 2 |
| Car | 6 | 0 | 6 | 0 | 6 | 6 |
| Total (pcu) | 8 | 2 | 10 | 2 | 8 | 10 |

Table 5.3 : Proposed Composting Facility Vehicle Trip Generation during Road Network Peak Hours

5.3 NETT INCREASE IN TRAFFIC LEVELS

5.3.1 A comparison of the existing on-site operations vehicle trips and the proposed development's post development generated vehicle trips are summarised in Table 5.4 below for the 'average' daily January scenario.

| Period / Vehicle Trip | AM Peak Hour (08:30-09:30) | | PM Peak Hour (17:00-18:00) | | Daily | |
|-----------------------|----------------------------|----------|----------------------------|----------|----------|----------|
| | Existing | Proposed | Existing | Proposed | Existing | Proposed |
| Inbound | 5 | 7 | 1 | 1 | 10 | 19 |
| Outbound | 1 | 1 | 5 | 7 | 10 | 19 |
| Two Way | 6 | 8 | 6 | 8 | 20 | 38 |

Table 5.4 : Comparison of Existing and Proposed Vehicle (Cars and HGVs) Trip Generation (Peak Month January)

5.3.2 The analysis reveals that the introduction of the proposals results in a modest increase in all vehicles during peak hour movements however due to the proposed new materials transfer structure there is not expected to be an increase in HGV trips during peak hours. The daily average increase in two way vehicle trips has been estimated at 18 additional vehicle eight of which are attributed to the additional staff movements.

5.4 SEASONAL VARIATION IN DEVEVELOPMENT TRAFFIC

5.4.1 The nature of the subject development results in higher proportions of imported materials to the facility during particular times of the year. Figure 5.5 below presents a typical (2015 data presented) annual profile of waste materials delivered to the subject development. It reveals that a peak in materials imported occurs during the month of January with relatively high levels of materials imported during May and June also. The lowest volume of materials are received at the existing facility during the months of August, September and November.

5.4.2 As presented in Figure 5.6 below the highest volumes of exported materials occur during January, October and December whilst the lowest demand for exported materials occurs during the months of April, June, August and November.

5.4.3 This annual material input profile is expected to be replicated following the intensification of operations on the subject Milltownmore site with December and

January experiencing the highest number of HGV's and a corresponding reduction in late Summer

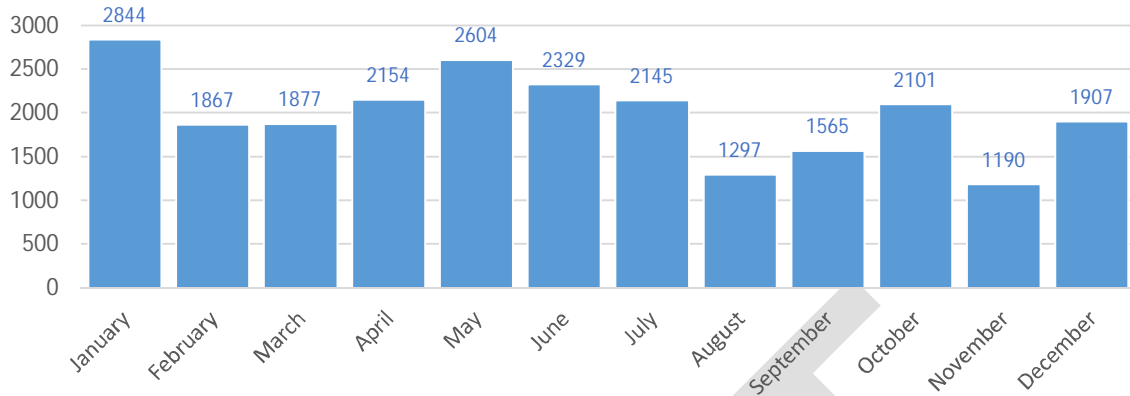


Figure 5.5 : Existing Tonnage Imported Waste Annual Profile (2015)

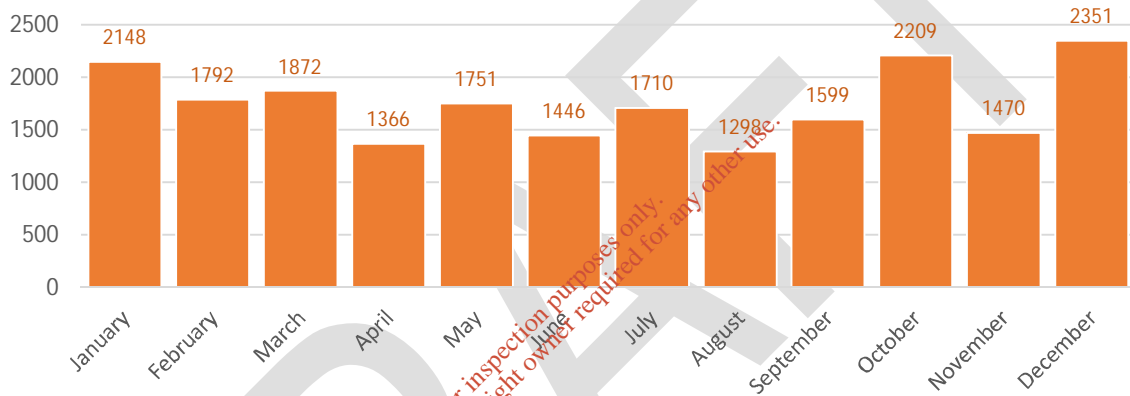


Figure 5.6 : Existing Tonnage Exported Waste Annual Profile (2015)

5.5 TRAFFIC DISTRIBUTION

5.5.1 The existing on-site operations are conditioned by planning to direct all site generated HGV traffic along the defined 'HGV haul route' between the R688 corridor and the subject site. For the purpose of this exercise it has been assumed that this condition remains. Accordingly the proposed new development trips have been distributed and subsequently assigned across the local road network as presented in Figures 3 & 4 of Appendix C.

5.5.2 With the objective of providing a robust assessment and analysing a worst case scenario, it has been assumed that all development trips (including car / LGV based trips which could potentially use alternative routes to the west and east) will travel to and from the subject site from the direction of the R688 corridor by way of the

existing R688 / L1409 priority junction. At this junction, site traffic is distributed 60% to / from the north (i.e. M8 corridor) and 40% to / from the south in response to the facilities geographical catchment (i.e. Southern Waste Region).

5.6 FUTURE TRAFFIC GROWTH

5.6.1 The TTA adopts an Opening Year of 2017 and Future Design Year of 2032 (Opening Year +15 years) as per NRA guidelines. Although traffic growth may not increase at the rates once predicted, to ensure a robust analysis of the impact of traffic upon the local road network we have adopted growth rates using the National Roads Authority (NRA) Project Appraisal Guidelines projections.

5.6.2 Table 5.5.1 within the NRA Project Appraisal Guidelines provides Annual National Traffic Growth Factors for the different regions within Ireland. The subject site lies within 'Region 5 – Central West' with the growth factors as outlined within Table 5.5 below.

| Region | Name | Low Growth | | | | Medium Growth | | | | High Growth | | | |
|--------|---|------------|-------|-----------|-------|---------------|-------|-----------|-------|-------------|-------|-----------|-------|
| | | 2006-2025 | | 2026-2040 | | 2006-2025 | | 2026-2040 | | 2006-2025 | | 2026-2040 | |
| | | LV | HV | LV | HV | LV | HV | LV | HV | LV | HV | LV | HV |
| 5 | Central West Tipperary Waterford City/ County Leitrim Roscommon Donegal | 1.012 | 1.007 | 1.014 | 1.001 | 1.014 | 1.009 | 1.012 | 1.001 | 1.024 | 1.019 | 1.018 | 1.007 |

Table 5.5 : National Traffic Growth Forecasts: Annual Growth Factors (Extract from Table 5.5.1 PAG)

5.7 IMPACT OF PROPOSALS

5.7.1 The Institution of Highways and Transportation document 'Guidelines for Traffic Impact Assessments' states that the impact of a proposed development upon the local road network is considered material when the level of traffic it generates surpasses 10% and 5% on normal and congested networks respectively. When such levels of impact are generated a more detailed assessment should be undertaken to ascertain the specific impact upon the networks operational performance. These same thresholds are reproduced in the NRA document entitled *Traffic and Transport Assessment Guidelines*.

5.7.2 In accordance with the IHT and NRA guidelines we have undertaken an assessment to establish the potential level of impact upon the key junctions and links of the local road network. To enable this calculation to be undertaken we have based the analysis upon the 2017 Opening Year scenario. The analysis has demonstrated that the proposed development will generate the following impacts during the AM and PM peak hours in the 2017 Do-Something scenario.

| Junction / Link | AM Peak | PM Peak |
|-------------------------|---------|---------|
| R688 / L1409 | 0.3% | 0.9% |
| L1409 Link – Location A | 8.5% | 7.7% |
| L1409 Link – Location B | 7.8% | 6.9% |

Table 5.6 : Network Impact (2017)

5.7.3 The analysis demonstrates that the subject proposals will in the adopted worst case scenario (i.e. peak January traffic levels) generate an impact of less than 1% at the R688 / L1409 junction during both the AM and PM peak hours. This level of impact is significantly below the IHT's and NRA's TTA thresholds for normal (i.e. non-congested) networks. Furthermore whilst the impact upon the L1409 link may seem relatively large in reality it is very modest (eg. Only 2 additional vehicles) with the resulting impact distorted by the extremely low baseline traffic flows along this corridor (eg. AADT of only 300).

5.7.4 Nevertheless, with the objective of providing a comprehensive assessment we have undertaken a detailed investigation of the operational performance of this staggered cross road junction as part of this TTA.

5.8 CONSTRUCTION ACTIVITIES POTENTIAL IMPACT

5.8.1 The intensification of use will be accommodated by the existing on-site facilities therefore no additional construction will be undertaken as part of the proposals.

5.9 MITIGATION STRATEGY

With the objective of reducing the scale, frequency and severity of the potential impacts generated by the subject proposals in addition to improving the operational efficiency of the on-site composting activities a number of mitigation measures are planned as part of the subject proposals.

- M1 – Management Regime: Currently all 'inbound' material loads sent to the subject Milltownmore facility by suppliers generally arrives with little to no prior notification given in regard to the day or time of arrival at the subject site. This current arrangement is particularly insufficient from an operational perspective for the compost facility management. As a result, a new management regime is proposed which requires the supplier (or their transport operator) to pre-book a 'delivery slot' (e.g. specific prearranged time based window of arrival) at the composting facility. This practice will be similar to the concept operated at national / regional distribution centres in the retail sector. This new system will enable the composting facility to actively manage the arrival of material on-site through the implementation of a fixed number of delivery slots (e.g. 30 to 60-minute duration or similar) over the entire working day. In addition to assisting the operation of the composting facility this measure will ensure that existing peak arrival rates of 'inbound' HGV's at the site no longer arise resulting in a more even distribution of HGV's over both (i) the entire day, and (ii) days of week.
- M2 – Management Regime: With the objective of minimising the number of HGV's traveling across the local L1409 'haul route' during the networks peak hour period (e.g. AM between 0830 and 0930) it is proposed that a delivery slot for this specific period each weekday is not issued to suppliers. To accommodate this initiative, it is proposed to allow 'inbound' vehicles enter the subject site during an initial delivery slot of 0730-0830.
- M3 – Management Regime: With the objective of minimising the occurrence of site generated HGV traffic meeting one another (when travelling in opposite directions) along the L1409 'haul route' a new 'notification and hold' management measure is proposed. This new initiative will require all inbound HGV vehicle drivers to pull in and contact (via telephone) the plants office to inform the on-site operatives that they are about to turn off the R688 corridor at Rosegreen and enter the L1409 'haul route' on route to the site. In response one of the following actions will take place;
 - 1) In situations where no HGV has left the compost facility within the preceding ten minutes (e.g. it takes approximately 10 to 12 minutes for a vehicle to travel the 5.25km length of the L1409 'haul route')

the 'inbound' vehicle drivers will be instructed to proceed straight to the compost facility site.

- 2) Should a HGV be ready to leave the compost site within the next ten minutes, the outbound HGV will be 'held' on-site until such time that the 'inbound' vehicle has arrived on-site within the compost facility compound.
 - 3) In situations where a HGV has just departed the composting facility (or within the preceding 10 minutes), the inbound vehicle drivers will be informed to wait 10 minutes and then proceed to site thereby ensuring that the outbound site generated HGV vehicle has sufficient time to clear the L1409 'haul route'.
- M4 – Management Regime: Over the last number of years' transport operators have increased the number of 'reverse load' HGV trips due to the operational and financial benefits such practices offer to the supplier / haulage operator. The practice considers the delivery of a full load of waste material followed by the same vehicle (now empty) being loaded with stage 6 compost. Whilst such practices have been relatively infrequent in the past they now account for over 24% (on average) of all HGV movements to/from the subject site (based upon 2015 data). It is reported that this trend has continued to increase during 2016 with such 'reverse load' practices now predicted to increase to levels where it has the potential to account for approximately 50% of all HGV traffic movements in the future. Nevertheless, for the purpose of this assessments 2017 and 2032 design years we have assumed a 'reverse load' average of only 39% (e.g. 2015 level of 24% plus 15%).

I1 – Infrastructure : The findings of both the site audit and the traffic surveys reveals that the opposing (e.g. vehicles traveling in opposite directions) vehicle movements along the L1409 'haul route' predominately consist of (i) car with car; (ii) Car with Van, and (iii) Car with HGV / Agricultural Vehicle. In the majority of such instances these opposing vehicle movements can generally safely manoeuvre past one another with not too much difficulty. Nevertheless, the analysis reveals that on rare occasions when HGV's meet either other HGV's or large agricultural vehicles one or both vehicles may (i) need to encourage onto the adjoining verge, or (ii) yield right of way to the other large vehicle; thereby ensuring that they can pass one another when traveling along the L1409 haul route. Notwithstanding the above mitigation measures (the implementation of which will actively reduce the

occurrence of such opposing vehicle movements) a number of areas along the L1409 haul route have been identified which through the provision of localised road carriageway widening works will provide additional opportunities for opposing large HGV's and Agricultural vehicles to safely pass one another (Pass-by facilities). In reference to Figures 2.5 and 2.6 and Sketch 9002A in Appendix E a total of 6 potential sites are identified which could readily accommodate such localised carriageway enhancements. In the context of the low level of vehicle flows travelling along the L1409 haul route (e.g. AADT of 300) and the other mitigation measures being implemented as part of the subject proposals; it is recommended that new pass-by facilities incorporating local carriageway widening works are implemented in Area 2, Area 3, Area 5 and Area 6 with the objective of mitigating the impact of the subject development works.

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6.0 NETWORK ASSESSMENT

6.1 INTRODUCTION

Junctions

6.1.1 Based upon the quantified level of impact upon the local road network the R688 / L1409 priority junction has been the subject of more detailed assessment, which has been undertaken to investigate the operational performance of this key node for a number of different network traffic scenarios.

6.1.2 In order to assess the operational capacity of the existing priority controlled junction, the TRL developed Junctions 9.0 (PICADY) software program, has been employed. The detailed PICADY output data has been appended as Appendix B.

6.1.3 When considering priority controlled junctions a Ratio of Flow to Capacity (RFC) of greater than 85% (0.85) would indicate a junction to be approaching capacity, as operation above this RFC value is poor and deteriorates quickly.

6.1.4 A 90-minute AM and PM period has been simulated between 08:15 to 09:45 and between 16:45 to 18:15. Traffic flows were entered using an Origin-Destination table for the peak hours.

Assessment Scenarios

6.1.5 In accordance with best practice guidance this key junction has been assessed for the expected year of opening and then a period of 15 years thereafter. In this case it is expected that the proposed additional waste throughput practices may be operational sometime in 2017. Therefore 2017 has been adopted as the assessment opening year. With the objective of investigating the most heavily trafficked period this appraisal focuses upon the plus 15 year 2032 Future Design Year. Accordingly an interim Opening Year plus 5 years assessment has not been undertaken as in the context of (i) the networks low vehicle levels and (ii) the very modest additional flows that may be generated by the subject proposals; it was felt that an interim 2022 appraisal would not prove beneficial nor provide any additional insight into the operational performance of the local road network.

6.1.6 Four assessment scenarios have been considered including;

- 2017 Do-Nothing (2017 Network Flows)
- 2017 Do-Something (2017 Do Nothing plus Development Traffic)

- 2032 Do-Nothing (2032 Network Flows)
- 2032 Do-Something (2032 Do Nothing plus Development Traffic)

6.1.7 For reference, the arms within the PICADY model were labelled as follows:

- Arm A : R688 (North)
- Arm B : L1409 (East)
- Arm C : R688 (South)
- Arm D : L1409 (West)

Assessment Periods

6.1.8 As introduced previously the AM and PM peak hour flows at the R688 / L1409 junction have been identified as occurring between 08:30 – 09:30 and 1700 - 1800 respectively.

6.2 R688 ROSEGREEN JUNCTION

Model Calibration

6.2.1 A 2015 'base' model has been constructed with the objective of identifying a sufficiently calibrated model which could be used as the basis for the approval of the Future Design Year scenarios.

6.2.2 For reference, the arms within the PICADY model were labelled as follows:

- Arm A : R688 (North)
- Arm B : L1409 (East)
- Arm C : R688 (South)
- Arm D : L1409 (West)

6.2.3 In reference to the PICADY output summarized in Table 6.1 below, the predicted queue lengths compare to the actual levels of queues observed on-site during the turning count survey. This level of convergence between the actual observed vehicle queue lengths and that predicted by the PICADY 'Base' model reveals that the base model is sufficiently robust to be employed as the basis for the appraisal of the Future Design Year traffic scenarios.

| Junction Arm | Queue (PCU) | |
|--------------|--------------|--------------|
| | AM Peak Hour | PM Peak Hour |
| B-ACD | 0.2 | 0.1 |
| A-BCD | 0.0 | 0.0 |
| D-A | 0.0 | 0.0 |
| D-BC | 0.1 | 0.1 |
| C-ABD | 0.1 | 0.1 |

Future Year Assessment

- 6.2.4 The PICADY analysis carried out for all both the Do-Nothing and Do-Something scenarios for the 2017 Opening Year and 2032 Future Design Year are presented in Table 6.2 and Table 6.3 below.
- 6.2.5 The PICADY modelling exercise carried out for the Do-Nothing scenario demonstrates that the R688 / L1409 junction will operate with significant reserve capacity during both the 2017 and 2032 Design Years for both the AM and PM peak hours.
- 6.2.6 Similar to the Do-Nothing analysis for all Do Something scenarios, the junction is predicted to operate well within capacity with a maximum RFC values of only 0.14 (14%) being recorded during the 2017 Opening Year AM peak hour and 0.18 (18%) during the Future Design Year AM peak hour. This signifies that with the implementation of proposed development the R688 / L1409 will continue to operate with significant reserve capacity. A comparison of the Do-Nothing and Do-Something scenarios reveals that the impact of the subject development upon the R688 / L1409 is negligible.

| | Junction Arm | Do-Nothing | | | Do-Something | | |
|-------------------------------|--------------|------------|-------------|-----------|--------------|-------------|-----------|
| | | RFC | Queue (PCU) | Delay (s) | RFC | Queue (PCU) | Delay (s) |
| AM Peak Hour (08:30-09:30) | B-ACD | 0.14 | 0.2 | 7.20 | 0.14 | 0.2 | 7.13 |
| | A-BCD | 0.01 | 0.0 | 5.39 | 0.01 | 0.0 | 5.38 |
| | D-A | 0.01 | 0.0 | 5.69 | 0.01 | 0.0 | 5.69 |
| | D-BC | 0.12 | 0.1 | 8.12 | 0.12 | 0.1 | 8.12 |
| | C-ABD | 0.04 | 0.1 | 5.43 | 0.04 | 0.1 | 5.44 |
| PM Peak Hour (17:00-18:00) | B-ACD | 0.09 | 0.1 | 6.90 | 0.09 | 0.1 | 7.10 |
| | A-BCD | 0.01 | 0.0 | 5.43 | 0.01 | 0.0 | 5.44 |
| | D-A | 0.01 | 0.0 | 5.69 | 0.01 | 0.0 | 5.70 |
| | D-BC | 0.07 | 0.1 | 7.83 | 0.07 | 0.1 | 7.85 |
| | C-ABD | 0.04 | 0.1 | 5.25 | 0.04 | 0.1 | 5.25 |

Table 6.2 : PICADY Results: 2017 Opening Year

| | Junction Arm | Do-Nothing | | | Do-Something | | |
|-------------------------------|--------------|------------|-------------|-----------|--------------|-------------|-----------|
| | | RFC | Queue (PCU) | Delay (s) | RFC | Queue (PCU) | Delay (s) |
| AM Peak Hour (08:30-09:30) | B-ACD | 0.17 | 0.2 | 7.75 | 0.17 | 0.2 | 7.68 |
| | A-BCD | 0.01 | 0.0 | 5.32 | 0.01 | 0.0 | 5.30 |
| | D-A | 0.01 | 0.0 | 5.85 | 0.01 | 0.0 | 5.84 |
| | D-BC | 0.15 | 0.2 | 8.68 | 0.15 | 0.2 | 8.68 |
| | C-ABD | 0.05 | 0.1 | 5.37 | 0.05 | 0.1 | 5.37 |
| PM Peak Hour (17:00-18:00) | B-ACD | 0.11 | 0.1 | 7.34 | 0.12 | 0.1 | 7.54 |
| | A-BCD | 0.01 | 0.0 | 5.36 | 0.01 | 0.0 | 5.36 |
| | D-A | 0.01 | 0.0 | 5.84 | 0.01 | 0.0 | 5.85 |
| | D-BC | 0.08 | 0.1 | 8.28 | 0.08 | 0.1 | 8.30 |
| | C-ABD | 0.05 | 0.1 | 5.17 | 0.05 | 0.1 | 5.17 |

Table 6.3 : PICADY Results: 2032 Future Design Year

7.0 SUMMARY AND CONCLUSION

7.1 SUMMARY

7.1.1 DBFL Consulting Engineers have been commissioned to undertake a Traffic and Transport Assessment (TTA) for the proposed intensification of use of an existing composting facility located in Milltownmore South Tipperary.

7.1.2 Our methodology for undertaking this TTA incorporated a number of key inter-related stages, including;

- Site Audit,
- Analysis of Traffic Surveys,
- Trip Generation, Distribution and Assignment,
- Network Impact, and
- Network Assessment.

7.2 CONCLUSION

7.2.1 Based upon the information and analysis detailed within this TTA it has been demonstrated that;

- The analysis of the traffic survey data reveals that the L1409 'haul' route is lightly trafficked even considering the existing on-site operations currently direct all HGV traffic along this access route. In reference to the survey data in Appendix B, the busiest section of the L1409 haul route has an AADT value in the region of less than 300 vehicles.
- The proposed intensification of onsite activities from the existing 24,500 tonnes per year to 50,000 tonnes per year can be accommodated within the existing onsite facilities and plant. Accordingly, no additional construction activities are proposed onsite.
- The proposals will result, when operating at full capacity, in an additional 11 to 19 two-way vehicle movements on average per day.
- A package of mitigation measures (Reference Section 5.9) have been identified to manage the impact arising from this modest increase in vehicle numbers across the local road network.

- The analysis of the adopted worst case scenario (e.g. month of January) demonstrates the specific impact of these additional vehicle movements upon the local road network as being sub-threshold in terms of TII and IHT 'material' thresholds.
- The assessment of the impact upon the operational performance of the key R688/L1409 junctions demonstrates that the proposed development will not generate a material impact at this junction. The PICADY analysis reveals that the modest increase in vehicle flows (as generated by proposals) will have an insignificantly influence upon the junction's performance (RFC, queue lengths etc.) with a significant level of reserve capacity remaining at this key junction in the 2032 post development scenario.
- The assessment of the seasonal peak development traffic flow periods (i.e. December-January) do not coincide with the local areas peak agricultural periods (i.e. August – September). Accordingly the potential for such traffic to occur along the L1409 'haul' route is minimised.

7.2.2 In conclusion, it is considered that the impact on the surrounding road network, as a result of the proposed intensification of use at the Milltown Composting facility will be negligible compared to the existing on-site operations. This is based on the anticipated levels of traffic generated by the proposed development, and the information and analysis summarised in the above 'worst case' assessment.

7.2.3 It is concluded that there are no traffic or transportation related reasons that should prevent the granting of planning permission for the proposed development.

APPENDIX A

HGV Haul Route Geometry (Infrastructure)



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APPENDIX B

ATC Survey Data

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APPENDIX C

Traffic Flow Diagrams

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APPENDIX D

PICADY Analysis

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APPENDIX E

Sketches

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