7. Roads and Traffic

7.1 Introduction

This section of the EIS identifies and evaluates the likely significant effects of the traffic expected to be generated by the proposed Ringaskiddy Resource Recovery Centre (proposed development), during both the construction and operational phases.

This section commences with a review of the existing traffic flow patterns within the vicinity of the proposed development and outlines the available transport infrastructure that would serve the proposed development. It furthermore reviews the future transportation proposals within the vicinity of the proposed development which may affect future traffic patterns. One of the major future infrastructure provision projects is the delivery of the M28. Cork County Council is also currently investing in developing active travel within the vicinity of Ringaskiddy and the development site and to introduce traffic calming measures within the village. These works are due to be completed in October 2025.

A description of the proposed development and the associated transport infrastructure associated with it (proposed access, car parking and service / delivery areas) are provided, and the expected trip generation and distribution of future traffic, considering new infrastructure to be provided within the vicinity of the proposed development is presented. The impact of the generated traffic on the local road network is assessed and mitigation measures which Indaver intend to include in their proposed development proposals are outlined.

Extensive consultations that Indaver previously had with the local community and statutory authorities when the planning application was originally submitted in 2016, indicated that traffic congestion on the main N28 approaches to Ringaskiddy and how this congestion should be managed during the peak hours, was of concern. This concern is expected to be alleviated considerably by the introduction of the proposed M28 road upgrade. Indaver welcomes this scheme and the recently completed Dunkettle Interchange Upgrade Scheme, and although these are not critical for the proposed development, these road upgrades will improve the free flow of strategic traffic within the area once complete. Indaver also recognises that peak hour capacity on this strategic route will require ongoing management in the future to reduce potential congestion and delay along this corridor.

Accordingly, the minimisation of commuting traffic during the morning and evening peak periods will continue to be an overriding prerogative of the road authorities and strategic road users as indicated in consultations with the road authority in relation to the N40 demand management study.

Consequently, Indaver has approached the design, construction and operation of the resource recovery centre on the principle of minimising traffic at peak periods through the implementation of a HGV booking system, and the arrangement of operational personnel shifts and visitor traffic so that the facility generates minimal traffic on the local road network during the peak traffic periods once operational in the scenario where the M28 is not yet operational. These initiatives are similar to those developed at the Port of Cork as part of their approach to management of traffic flow at peak times. Furthermore, a robust staff Mobility Management Plan, will ensure that there are no staff movements to or from the facility for two-hour periods in the morning and evening by car, while HGV movements will also be reduced to a minimum level during these times. This approach to minimising peak hour traffic will not be required once the M28 is operational. Cork County Council is currently constructing the section of the M28 bypassing Ringaskiddy village. As part of this scheme, traffic calming measures will be in place to reroute Port traffic and other heavy vehicle traffic along the new M28 section and thereby reduce the traffic continuing on the N28 through the village significantly. Indaver also welcomes this proposal and this infrastructure is expected to be fully in place once the proposed development is operational.

In addition, Indaver will arrange construction contracts such that all construction travel to and from the site will be controlled and managed and will not be permitted to access the site during the peak traffic periods, except in situations of emergency or where the M28 is operational and construction vehicles will be routed onto the new M28 route.

Indaver is aware of the concern expressed by the community at the previous consultations in relation to the provision of enhanced active mode travel facilities including improved footpaths, cycle facilities and controlled safe road crossing points. Indaver understands that the local authority has developed proposals and are currently constructing improved pedestrian and cycle facilities in the village of Ringaskiddy and surrounding network which are due to be completed in October 2025.

7.2 Assessment Methodology

The methodology used to carry out the transport assessment can be summarised as follows:

- Step 1 – Assess the existing traffic situation
- Step 2 – Define the traffic flows underpinning the assessment
- Step 3 – Define the traffic generation effects of the proposed development
- Step 4 – Assess the impact of the traffic generated on the local road network
- Step 5 – Identify mitigation measures to form part of the development proposals
- Step 6 – Identify residual impacts which remain present after mitigation is considered.

These steps are described in greater detail below.

Step 1 assesses the existing traffic situation:

- Traffic counts were carried out on critical junctions along the existing N28 corridor from the Shannonpark Interchange to the Shamrock Place junction within Ringaskiddy village.
- 18-hour traffic counts (06:00-00:00) were undertaken on all relevant roads and junctions on Wednesday February 12th, 2025, and form the basis of traffic analysis for this assessment.

Step 2 defines the assessment base case figures:

- As advised by Indaver, the expected opening year for the proposed development is 2030, and the construction period is assumed to occur between 2027 and 2029.
- Background traffic growth rates were obtained from the '*'TII Project Appraisal Guidelines for National Roads (2021), Unit 5.3 – Travel Demand Projections"* for the Cork Metropolitan area; these growth rates were used to increase 2025 traffic levels to the future years for analysis – a peak construction year of 2029, an opening year of 2030 and future years of 2035 and 2045.
- In addition to growth of background traffic, which will ensure that other potential developments in the Ringaskiddy area are accounted for, a specific additional allowance was included in the assessment for the Port of Cork expansion proposals at their Ringaskiddy site, based on traffic flow information contained in the relevant submitted planning documentation. Specific additional allowance was included to accommodate the anticipated redistribution of traffic on the N28 in future year scenarios in which the M28 motorway is operational based on traffic flow information contained in the relevant submitted planning documentation.

Step 3 outlines the assumptions made regarding the traffic generation of the proposed development, based on Indaver's experience elsewhere and similar construction projects and how the traffic is expected to distribute on the future road network:

- An appraisal of the traffic generation during the construction phase is undertaken, split into three categories: heavy goods vehicles (HGV) traffic, workforce traffic and general site traffic. This includes for construction of the facility itself.
- An assessment of the traffic generation during the operational phase is also undertaken, split into two categories: HGV traffic generated by the proposed resource recovery centre, and car traffic generated by the workers commuting to the site and by visitors to the site.

- Both the construction and operational phase traffic expected to be generated were distributed onto the road network in accordance with existing traffic flow patterns on the road network, taking into account the new road network that would be in place as the M28 is constructed and becomes operational. Traffic was then assigned to the road network, based on the assumed traffic distribution.

Step 4 includes an assessment of the impact of the traffic generated by the proposed development on the local road network:

- All traffic flows were converted from vehicles to passenger car units (PCUs). A PCU is a common unit used in traffic modelling to ensure that larger vehicles such as HGVs are proportionally represented when compared with general traffic. When converting private vehicles to PCU, a factor of 1.0 was used for cars, while a factor of 2.3 was used for HGVs. This conversion ensured that the impact of HGVs was fully represented in the traffic modelling carried out.

- Whilst there were distinct morning and evening peak hours on the local road network (06:30-07:30 and 15:30-16:30 respectively), the peak periods extended longer than just one hour in the morning and the afternoon. Observations on-site, traffic counts and conversations with the local authority indicated that both morning and evening peak periods last for at least two hours (from 07:00-09:00 and from 16:00-18:00). During this period traffic conditions on the local road network were sensitive to any disruptions which quickly lead to congestion and delay due to its volatility.

- The traffic assessments considered were three distinct peak periods which included the following:

  - the existing morning and evening peak hours on the network (06:30-07:30 and 15:30-16:30)

  - the morning and evening peak hours at the site during the construction phase (06:00-07:00 and 18:00-19:00), and

  - the operational morning, afternoon and evening peak hours at the proposed development itself once operational (06:00-07:00, 14:00-15:00 and 18:00-19:00).

  These defined peak hours were based on the intended peak operational times (and associated traffic movements of Indaver, who will operate the site).

- The actual numerical and relative percentage increases in traffic on all relevant roads during the morning (AM) and evening (PM) construction peak periods associated with the proposed development (in the 2029 peak construction year) were assessed and reported.

- The actual numerical and relative percentage increases in traffic on all relevant roads during the AM and PM network peaks and the development peak when the proposed development would become operational (opening year 2030) were assessed and reported in two scenarios. In the first scenario the assumption was made that the M28 would not be in place and operational in the opening year of the development, (despite information from TII and the expectation that the road would be operational before 2030, and that the '*Protected Road Scheme'* Barnahely to Ringaskiddy / Port of Cork is due to be completed and operational by Q4 2025) and as such all traffic generated by the proposed development is assigned to the existing N28. The purpose of this scenario is to represent a worst-case scenario for the purposes of a robust assessment. The second scenario makes the assumption that the M28 is operational (according to TII planning and expectations) in the opening year of the proposed development, and that a significant proportion of existing and future traffic on the N28 will be redistributed. This scenario also assumes that existing and future traffic on the N28 is reduced according to the assumed redistribution of traffic in line with the assumptions made in the M28 planning application submitted and approved in 2018.

- Subsequent future year scenarios, both 5- and 15-years post-opening (2035 and 2045) were also included for assessment and reporting. These scenarios also took traffic generated by other new major developments within the vicinity into account including the expansion of the Port.

- The impacts on junction capacity at all relevant junctions of the traffic generated during both the construction phase and the operational phases were assessed and reported.

- The junction capacity assessments were carried out using industry-standard assessment software LinSig, ARCADY and PICADY, for signalised junctions, roundabouts and priority junctions, respectively.

Step 5 identified mitigation measures to reduce the impact of traffic generated by the proposed development.

The sixth and final step was to identify any net residual impacts associated with traffic generated by the proposed development, taking into account the mitigation measures considered in Step 5.

7.3 Baseline Environment

7.3.1 General

Ringaskiddy is situated approximately 15km to the south-east of Cork City centre. The area is located on a peninsula with land access mainly available from the west. The town of Ringaskiddy is located in the eastern part of the peninsula and is the largest village within this location. There are a number of other smaller villages/ settlements within the area which include Coolmore Cross, Shanbally and Raffeen village. To the west of the peninsula lies Carrigaline which is a significantly sized town within the area.

A predominant land use on the peninsula is industrial development, specialising in pharmaceuticals. Companies that have established major industrial plants here include Pfizer, Johnson & Johnson, Sterling Pharma, DePuy and Hovione. There are also several smaller scale industrial facilities which complement the pharmaceutical and Port activities within the vicinity.

The Port of Cork, a deep-water berth, supports the establishment of pharmaceutical industry on the peninsula. Other prominent land uses include the headquarters of the Irish Naval Service and the National Maritime College of Ireland.

Currently the N28, which connects Cork City to Ringaskiddy is the main transportation link serving the peninsula and the established land uses on it. This road is supported by a network of secondary (regional) and tertiary roads (local) which provide access to these facilities. The R613 from Carrigaline provides an additional east-west connection into the peninsula and follows an alignment more towards the south. The site of the proposed development, the land uses outlined above and the road network serving them are shown in **Figure 7.1**.

7.3.2 Existing Road Network

The N28 national primary route links Ringaskiddy to Cork City and beyond. It is the major route into and out of Ringaskiddy and has been designed to accommodate high volumes of traffic, serving the ferry port and the various industrial developments in the area. The roadway, however, does currently experience congestion during peak periods. The N28 terminates at the Ferry Port Access to the east of Ringaskiddy Village, however the route continues on from this point as the L2545, which passes by the proposed development site and continues to provide access to the National Maritime College of Ireland and the Irish Naval Service.

The R613 links Ringaskiddy to Carrigaline and connects with the settlement at Raheens near Coolmore Cross. It furthermore provides access to the Sterling Pharma facility and also indirectly via local roads access to DePuy, Hovione and Thermo Fisher Scientific pharmaceutical plants. Certain sections of the R613, particularly between Coolmore and Carrigaline are narrow with poor visibility and have no footpaths for pedestrians. These parts of the road are not suitable for accommodating heavy goods vehicle (HGV) movements.

Some local roads connect local villages to one another. The north south local road between Shanbally and Raheens connects Shanbally Cross to Coolmore Cross junctions, while there are a number of local roads that were provided as access routes to the pharmaceutical plants within the area.

7.3.3 Existing Junctions

Road network congestion and capacity issues occur usually at its junctions, since vehicles using the junctions are in conflict and have to accommodate one another within the same space. The following key junctions were examined during the morning, afternoon and evening peak periods to assess their present operational capacity. These junctions are expected to accommodate the proposed development traffic (at least until the M28 is in place) and may be impacted by the additional trips generated by the proposed development. Proposed development traffic is not expected to make use of the local roads on the peninsula and therefore will have no impact on these roads. The locations of the junctions included in the assessment can be seen in **Figure 7.2**.

1. Shannon Park Roundabout
2. Raffeen Bridge Junction
3. Shanbally Junctions (Shanbally Roundabout)
4. Port of Cork Junction (N28/R613/Port of Cork)
5. Ferry Port Access
6. Proposed development site access.

The above junctions were analysed using Junctions 9, the suite of computer applications designed by the Transport Research Laboratory (TRL) in the UK. Within Junctions 9, the PICADY module is used to model priority-controlled junctions and the ARCADY module is used to model roundabouts. The signalised Port of Cork Junction was analysed using LinSig. The assessments were carried out using the traffic counts carried out in February 2025 as the base year for a number of peak time periods.

The 2025 base year analysis was carried out for all identified peak periods to establish a baseline for the assessment.

7.3.4 Traffic Flow Characteristics on N28 Road Network

Traffic flow on the N28 between the Shannon Park roundabout and the proposed development site is tidal in nature. During the morning peak, the majority of traffic flows from Cork towards Ringaskiddy relate to employees at pharmaceutical plants arriving to work, while during the evening peak the flow is reversed when flows are returning from Ringaskiddy to Cork and Carrigaline. In addition to the traffic flows to the peninsula, there is a significant Carrigaline to Cork traffic movement during the morning peak and a converse Cork to Carrigaline movement during the PM peak.

During the morning peak, these two traffic flow movements do not conflict with one another as the traffic streams bypass one another. However, the two traffic flow movements do conflict one another during the afternoon peak where both traffic streams have to merge at the junction to travel northbound towards Cork, causing vehicle delay and queuing.

The two most critical junctions on the local road network are the roundabouts at Shannonpark and Shanbally. As outlined below, there have been numerous upgrades proposed at these junctions in recent years, intended to improve junction performance in the interim while awaiting the M28 upgrade. While the Shannonpark Roundabout experiences conflicting movement during the evening peak, Shanbally roundabout experiences particular conflict between eastbound movement on the N28 and northbound on the Marian Terrace northbound movement. The heavy traffic movement on the N28 has a profound impact on villages adjacent to it such as Shanbally and Ringaskiddy and typically these heavy traffic movements is in conflict with local activities such as vehicle cross movements, car parking adjacent to the road and active travel movements. This conflict and friction cause congestion, delay and vehicle queuing to the detriment of both commuters, haulage vehicles, local residents and businesses.

The congested conditions on the N28 result in traffic making use of any available route within the local vicinity. Therefore typically all local routes are used and congestion occurs widespread.

7.3.5 Shannonpark Roundabout

This large roundabout junction links the N28, the major route serving Ringaskiddy, with the R611 Carrigaline Road. After upgrades in 2019, the roundabout provides a three-lane entry on the southbound approach from the Cork Road with one lane providing a dedicated left lane. The northbound approach from Carrigaline is a two-lane approach, while the westbound Ringaskiddy approach is also a three lane approach with a dedicated left lane towards Carrigaline town.

7.3.6 Raffeen Bridge Junction

This is a priority junction connecting the R610 with the N28. On the R610, another priority junction is located roughly 50m to the north of the Raffeen Bridge N28/R610 junction. This junction links the R610 with a minor local road (L2470). This local road provides an alternative route for traffic from the Douglas area to Ringaskiddy, avoiding any queues on the N28 and at the Shannon Park Roundabout.

At the Raffeen Bridge Junction, the N28 has a dedicated "*right-turn in*" lane, allowing vehicles access to Raffeen Bridge without disrupting through traffic.

7.3.7 Shanbally Roundabout and adjacent T-Junction

These junctions operate as two separate junctions. The first junction is a priority-controlled T-junction linking the N28 to Raffeen via Curragh Hill, and the second junction is a roundabout junction providing a link via the L2492 between the N28 and the R613 at Coolmore Cross.

The roundabout at Shanbally, which is approximately 25m to the east of the priority junction experiences congestion in peak conditions, with slow-moving queues of eastbound traffic often extending back for a considerable distance in the morning peak period.

The priority junction exacerbates congestion problems with commuters from Monkstown and Passage West using the junction to access the N28 at the adjacent T-junction, avoiding traffic queues on the N28 between the Raffeen Bridge Junction and the Shanbally Roundabout. In the morning peak period, heavy traffic flow through the roundabout affords little or no opportunity for traffic to exit via the adjacent T-junction to the N28, leading to queuing and delay.

A ghost island arrangement on the N28 at the priority junction in Shanbally allows for the storage of two right-turning vehicles without disrupting westbound traffic. Visibility from the minor arm of the priority junction from Raffeen is below standard.

Due to the off-centre location of the central circular island, the roundabout junction also suffers from pronounced entry deflection on the N28 approach from Ringaskiddy which impacts vehicle speeds entering the junction (particularly HGVs), while conversely, the lack of entry deflection on the N28 approach from the west leads to higher entry speeds. This design therefore contributes to a roundabout with unbalanced traffic flows.

7.3.8 Port of Cork Junction (N28/R613/Port of Cork)

This signalised junction is located to the west of Ringaskiddy Village, linking two heavily trafficked routes at the entrance to the Deep Water Berth at the port. Problems are caused by high volumes of traffic and the proximity of the nearby Deep Water Berth access road which has a high proportion of HGV traffic and steep approach gradients.

The R613 flares on its approach to the junction to allow two vehicles to queue at the stop line. The N28 eastbound has a dedicated right turn lane to access the R613, avoiding a build-up of eastbound traffic. Westbound, the N28 has two lanes on approach to the junction, one shared lane for travelling straight or turning left onto the R613, and one shared lane for travelling straight or turning right into the Deep Water Berth. There are two lanes of traffic exiting the Deep Water Berth, with a dedicated turn right lane onto the N28.

7.3.9 Ferry Port Access

This is a five-arm priority junction of the N28, the Ferry Port access road and local roads to the Loughbeg area. The N28 continues north from this junction into the Port. Beyond the Ferry Port junction, the road continues eastwards as a local road (L2545) to the Naval Base, via the eastern part of Ringaskiddy and Haulbowline Bridge. The Ferry Port access arm of the junction flares to allow two vehicles to wait at the stop line. The width of the N28 at this point, accounting for the hard shoulder, allows right turning vehicles to queue without disrupting through traffic. The Ferry Port junction does not experience congestion during peak periods.

7.3.10 Public Transport

The proposed development site is currently served by four bus routes operated by Bus Éireann, the 223, 223X, 225 and 225L.

The 223 service departs the City Centre from the South Mall and makes numerous stops along its route, including in Douglas, Rochestown, Passage West, Monkstown and Shanbally Village, with the terminus at the National Maritime College of Ireland (NMCI) adjacent to the proposed development. There are three scheduled services in the AM Peak which arrive at the site before 9 AM. Scheduled travel time to the proposed development site from the South Mall is approximately 55 minutes in the AM peak, and the return journey in the PM Peak is approximately 55 minutes.

The 223X provides an express service from the South Mall to the Haulbowline NMCI stop near the site, with two morning peak services and one evening service. This route stops in Douglas and Shanbally and travel time is approximately 35 minutes.

The 225 provides a service from Kent Rail Station to the NMCI, stopping at Cork Airport, Carrigaline and Shanbally. There are three services in the AM peak which arrive at the site before 9 AM. Scheduled travel time to the proposed development site from Kent Rail Station is approximately 1 hour 20 minutes in both the AM and PM peaks.

The 225L provides a service from Carrigaline to the NMCI, stopping at Shanbally. There are three services in the AM peak which arrive at the site before 9 AM, with an approximate travel time of 20 minutes from Carrigaline to the NMCI. The PM peak from the NMCI to Carrigaline has an approximate travel time of 25 minutes.

7.3.11 Walking and Cycling

At the time of writing of this report, the L2545 was under construction and temporary footpaths were available. **Section 7.6** outlines a number of proposed active travel improvements within the vicinity of the proposed development.

7.4 Proposed / Recently Completed Road Infrastructure Upgrades

There are several major infrastructural projects planned or recently completed for the Cork region, which are at varying levels of progress. The most significant of these are the M28 Motorway Upgrade Scheme and the Dunkettle Interchange Upgrade Scheme.

7.4.1 M28 Cork to Ringaskiddy Motorway Scheme

The N28 Cork-Ringaskiddy route lies on the strategic TEN-T European Network of corridors which provide connectivity to key strategic areas, such as the Port of Cork site at Ringaskiddy. As a result, it is proposed to upgrade the N28 from its junction with the N40 at the Bloomfield Interchange to its terminus in Ringaskiddy Village. The upgraded M28 scheme will significantly enhance the level of accessibility to the Ringaskiddy area and will remove a substantial amount of traffic from the existing road network in the area, bypassing numerous settlements such as Ringaskiddy Village itself, Shanbally Village and the Shannonpark Roundabout, for example.

The motorway scheme is currently at the Advanced Works Stage, involving land acquisition and site clearance. Construction of the scheme is due to begin shortly, in Q3 2025 and will have a 36-month construction programme. It is envisaged that the M28 motorway scheme would be in place by Q3 2028. However, the most eastern section of the proposed M28 between the proposed Loughbeg Roundabout and Ringaskiddy Roundabout is currently under construction and is expected to be completed in Q4 2025.

As part of this assessment, in order to ensure a robust, '*worst-case'* scenario, the construction year of 2029 has made the assumption that the M28 is not yet operational and as such all traffic still utilises the N28. Similarly, the opening year of 2030 has been assessed in two scenarios. The first scenario makes the assumption that the M28 upgrade scheme is not in place or operational in the opening year and as such all traffic still utilises the N28. The second opening year scenario makes the assumption that the M28 upgrade is complete and operational and thus operational traffic as well as a proportion of existing traffic on the N28 will utilise the M28.

Post-construction, it is anticipated that the M28 scheme will provide significant relief to the local road network in the vicinity of the proposed development site, and will allow staff and delivery vehicles to avoid travelling through the numerous local settlements along the route. The M28 Motorway Development EIS (2018) presents a comparison between the Do Minimum and Do Something scenarios which present a significant reduction in traffic flows on the existing N28 between the Shannon Park Roundabout and Ringaskiddy with the M28 motorway in place. The assumed reduction of traffic on the N28 as a result of redistribution to the M28 is presented below in **Table 7.1**.

Table 7.1: Extract from M28 Motorway Development EIS (2018) showing assumed redistribution of traffic on the N28

Existing N28 Sector	Percentage Impact (expected reduction in traffic)
Carr's Hill to L6477	-84.8%
L6477 to Shannonpark	-83.2%
Shannonpark to Raffeen	-38.1%
Raffeen to Shanbally	-67.6%
Shanbally to Ringaskiddy DWB	-65.5%
Through Ringaskiddy	-59.8%

As can be seen from the above table, once delivered, the M28 Motorway will result in a significant reduction in traffic flows on the existing N28.

The '*Protected Road Scheme'* which consists of a single carriageway from which will form the easterly section of the M28 is currently under construction from Barnahely to Ringaskiddy / the Port of Cork. The construction stage of the Protected Scheme is nearing completion at the time of writing this EIS and it will therefore be in operation prior to the commencement of construction of the proposed development and will be utilised to reduce/restrict HGV through traffic and general through traffic throughout the village of Ringaskiddy. However, for the purposes of a robust assessment of the surrounding road and junction network, the redistribution of traffic onto the '*Protected Road Scheme'* was not included in modelling scenarios and instead the M28 was considered to be either included or not included as a whole.

7.4.2 Dunkettle Interchange Upgrade Scheme

The Dunkettle Interchange Upgrade Scheme was officially opened in 2024, promising to alleviate congestion, improve safety and streamline traffic flow in Cork. Located approximately 5km east of Cork City centre and approximately 15km northwest of the site, the Dunkettle Interchange is the junction of four national roads, the M8 (Cork-Dublin), the N25 (Cork-Waterford/Rosslare), the N40 (Cork South Ring Road) and the N8 (Cork City National Route). The upgrade delivered a total of 10km in length of new road links, seven new bridge structures, and 2.9km of new walkways and cycleways.

According to TII, journey times through the Dunkettle interchange during peak hours have reduced by almost 50% on average, despite traffic volumes being at an all-time high. On the N40 to N25 route, journey time savings of almost 60% are being achieved during peak hours, while routes accessed via the M8 Southbound are achieving time savings of over 50%.

7.5 Base Year Traffic Flows

For the purpose of this assessment, traffic flows obtained through junction vehicle counts have been converted to Passenger Car Units (PCU) in accordance with the guidance set out in the Transport for London Traffic Modelling Guidelines.

In order to better reflect the composition of the traffic flow and the numerous vehicle types contained therein, traffic modelling software regularly utilises the PCU in order to convert different types of traffic to a common, single type. Various vehicle classification types are assigned a conversion factor to enable them to be collectively assessed. For example, larger vehicles such as buses, coaches and HGVs have a disproportionately higher impact on a road network than a single passenger car, motorcycle or even bicycle.

Where traffic passes through sensitive locations, such as small villages or problematic junctions, converting larger vehicles to PCUs can ensure that the potential impacts associated with traffic flows can be correctly appraised during the traffic modelling process.

Table 7.2 below illustrates the PCU conversion factors adopted for this assessment.

Table 7.2: PCU Conversion Factors (TFL Traffic Modelling Guidelines)

Vehicle Type	PCU Value
Pedal Cycle	0.2
Motor Cycle	0.4
Passenger Car	1.0
Light Goods Vehicle (LGV)	1.0
Heavy Goods Vehicle (HGV)	2.3
Bus/Coach	2.0

A conversion factor of 2.3 is appropriate for HGV traffic – note that in some instances this factor can be reduced to 2.0, or increased to 2.5 or 3.0, depending on the classification of HGV vehicle expected to serve a particular development. However, in the case of the proposed development, HGV traffic serving the proposed development will likely be a mixture of both larger articulated trucks and smaller household refuse collection vehicles – as such a PCU conversion factor of 2.3 is appropriate.

7.5.1 Existing Traffic Levels

An 18-hour (06:00-24:00) traffic count was undertaken at all of the junctions listed in **Section 7.2** above on Wednesday February 12th, 2025, on a typical working day, during school term time.

The traffic surveys on the local road network identified a morning peak hour of 06:30-07:30, and an evening peak hour of 15:30-16:30. However, these peak periods typically extend beyond a single hour, and it is more appropriate to acknowledge a two-hour morning peak period from 07:00-09:00 and a two-hour evening peak period from 16:00-18:00.

The peak hour link counts on the surrounding road network can be seen in **Table 7.3** below. These two-way link flow assessment locations outlined below can be seen in **Figure 7.3**. Note that traffic flows are presented in PCUs.

Table 7.3: Existing Two-Way Link Flows – Year 2025

Roadway	Construction Peak / Operation Peaks			Existing Network Peaks	
	06:00-07:00	14:00-15:00	18:00-19:00	06:30-07:30	15:30-16:30
N28 - North of Shannonpark	2204	2407	2327	2734	2650
R611 - South of Shannonpark	1013	1769	1678	1405	1818
N28 - East of Shannonpark	1537	1262	1312	1689	1565
R610 – North of N28	167	322	259	362	330
N28 (East of Raffeen Bridge)	1459	1090	1219	1501	1651
Raffeen Rd – North of N28	168	124	148	389	458
N28 - (East of Shanbally)	1490	963	1041	1727	1374
L2492 Shanbally Link Rd	195	171	199	280	371

Roadway	Construction Peak / Operation Peaks			Existing Network Peaks	
	06:00-07:00	14:00-15:00	18:00-19:00	06:30-07:30	15:30-16:30
R613 Barnahely Rd-South of N28	480	281	403	594	455
N28 - (West of Ferry Port)	672	480	697	745	703
N28 - (East of Ferry Port)	42	222	85	110	364
Loughbeg Rd-South of N28	638	175	496	578	319
Total Network Hourly Flows	10,065	9,265	9,864	12,112	12,058

*All traffic flows in Passenger Car Units (PCUs) per hour

It can be seen that the network AM and PM peaks (06:30-07:30 and 15:30-16:30) are the busiest time periods for traffic accessing the Ringaskiddy area. **Table 7.3** also shows that the 14:00-15:00 period, which will be the inter-peak period for construction traffic, experiences reduced levels of traffic flow on the N28, with total hourly traffic flows as much as 25% lower in this midday period than during the network AM and PM peak periods.

7.5.2 Assessment Years

It is anticipated that the proposed development will be fully operational by 2030 with the peak construction period therefore occurring in 2029. Background traffic levels for 2025 have been forecasted to 2029, 2030, 2035 and 2045 by applying the following growth rates:

- For 2025-2029 – light vehicles increased by 6.9%, heavy vehicles increased by 12.2%
- For 2025-2030 – light vehicles increased by 8.7%, heavy vehicles increased by 15.5%
- For 2025-2035 – light vehicles increased by 13.7%, heavy vehicles increased by 24.4%
- For 2025-2045 – light vehicles increased by 23.9%, heavy vehicles increased by 46.6%

These growth rates have been established using the guidelines in the *'TII Project Appraisal Guidelines for National Roads (2021), Unit 5.3 – Travel Demand Projections'*, and by utilising the specific growth rates therein for the Cork City and County area. The guidelines present Low, Medium and High growth rates for the Cork City and County area.

A '*Medium-Growth'* scenario was assumed for the Ringaskiddy area in the coming years, and this is considered to allow for all committed and likely future development in the area, with the exception of the Port of Cork redevelopment works at Ringaskiddy, which is a development of strategic significance and warrants special consideration. As a result, Port of Cork redevelopment traffic has been included in the assessment in addition to growth rates as outlined in **Section 7.6.3** below.

The estimated 2029, 2030, 2035 and 2045 traffic flows on the local road network without the proposed development can be seen below in **Table 7.4** to **Table 7.7**.

Table 7.4: Base Traffic Flows, 2029 Construction Year

Roadway	Construction Peak / Operation Peaks			Existing Network Peaks	
	06:00-07:00	14:00-15:00	18:00-19:00	06:30-07:30	15:30-16:30
N28 - North of Shannonpark	2390	2636	2510	2966	2881
R611 - South of Shannonpark	1096	1919	1808	1520	1965
N28 - East of Shannonpark	1670	1399	1418	1836	1710
R610 – North of N28	181	349	278	390	357

Roadway	Construction Peak / Operation Peaks			Existing Network Peaks	
	06:00-07:00	14:00-15:00	18:00-19:00	06:30-07:30	15:30-16:30
N28 (East of Raffeen Bridge)	1584	1209	1318	1633	1800
Raffeen Rd – North of N28	181	133	160	419	494
N28 - (East of Shanbally)	1617	1071	1125	1876	1501
L2492 Shanbally Link Rd	210	185	214	301	400
R613 Barnahely Rd-South of N28	519	306	435	641	493
N28 - (West of Ferry Port)	725	521	751	803	761
N28 - (East of Ferry Port)	46	243	92	119	396
Loughbeg Rd-South of N28	688	190	535	622	345

*All traffic flows in Passenger Car Units (PCUs) per hour

Table 7.5: Base Traffic Flows, 2030 Opening Year

Roadway	Construction Peak / Operation Peaks			Existing Network Peaks	
	06:00-07:00	14:00-15:00	18:00-19:00	06:30-07:30	15:30-16:30
N28 - North of Shannonpark	2439	2697	2559	3028	2942
R611 - South of Shannonpark	1118	1958	1842	1551	2003
N28 - East of Shannonpark	1705	1436	1446	1875	1748
R610 – North of N28	184	356	284	397	364
N28 (East of Raffeen Bridge)	1618	1241	1344	1668	1840
Raffeen Rd – North of N28	184	136	163	427	503
N28 - (East of Shanbally)	1651	1099	1147	1916	1535
L2492 Shanbally Link Rd	214	188	218	307	407
R613 Barnahely Rd-South of N28	529	312	444	653	503
N28 - (West of Ferry Port)	738	531	765	819	776
N28 - (East of Ferry Port)	46	249	94	121	404
Loughbeg Rd-South of N28	701	194	545	634	352

*All traffic flows in Passenger Car Units (PCUs) per hour

Table 7.6: Base Traffic Flows, 2035 (Opening Year +5)

Roadway	Construction Peak / Operation Peaks			Existing Network Peaks	
	06:00-07:00	14:00-15:00	18:00-19:00	06:30-07:30	15:30-16:30
N28 - North of Shannonpark	624	781	781	818	951
R611 - South of Shannonpark	353	586	577	432	620
N28 - East of Shannonpark	648	791	833	766	998
R610 – North of N28	178	315	240	387	297
N28 (East of Raffeen Bridge)	1089	841	895	1156	1227
Raffeen Rd – North of N28	190	125	138	438	362
N28 - (East of Shanbally)	934	444	414	1059	508
L2492 Shanbally Link Rd	174	148	190	256	384
R613 Barnahely Rd-South of N28	312	221	356	428	366
N28 - (West of Ferry Port)	299	238	336	381	336
N28 - (East of Ferry Port)	21	112	39	52	177
Loughbeg Rd-South of N28	430	169	437	406	336

*All traffic flows in Passenger Car Units (PCUs) per hour

Table 7.7: Base Traffic Flows, 2045 (Opening Year +15)

Roadway	Construction Peak / Operation Peaks			Existing Network Peaks	
	06:00-07:00	14:00-15:00	18:00-19:00	06:30-07:30	15:30-16:30
N28 - North of Shannonpark	686	875	850	900	1048
R611 - South of Shannonpark	385	646	626	473	678
N28 - East of Shannonpark	712	890	907	844	1102
R610 – North of N28	194	344	261	420	324
N28 (East of Raffeen Bridge)	1196	950	976	1272	1355
Raffeen Rd – North of N28	206	136	150	476	393
N28 - (East of Shanbally)	1023	505	452	1161	567
L2492 Shanbally Link Rd	190	161	206	278	417
R613 Barnahely Rd-South of N28	341	244	387	466	400
N28 - (West of Ferry Port)	325	261	365	413	367
N28 - (East of Ferry Port)	22	125	43	57	195
Loughbeg Rd-South of N28	468	186	474	440	367

*All traffic flows in Passenger Car Units (PCUs) per hour

7.6 Other Developments in the Vicinity

Existing traffic levels were forecast from 2025 to 2029, 2030, 2035 and 2045 using medium growth rates from the TII Project Appraisal Guidelines for National Roads. Applying this growth to traffic flows on the local road network will account for additional development which may occur in the Ringaskiddy area over this time period.

However, a specific allowance has been made within this assessment for the Port of Cork re-development works at Ringaskiddy, which is considered to be a strategic development and therefore warrants specific inclusion.

There are a number of schemes and infrastructural works in various states of progress in the Ringaskiddy area at present, as detailed below.

7.6.1 Proposed Junction Upgrade at Shanbally Roundabout

Proposals have been developed by the Cork Roads Design Office to upgrade both roundabout junctions at Shannon Park and Shanbally to provide signalised junctions. However, both projects have yet to progress through the planning stage, and their delivery is not certain. Therefore, no allowance has been made in this assessment for these junction upgrades.

7.6.2 Brittany Ferries Cruise Ships

The Brittany Ferry cruise ship service operates between April and September/October. There are two services from Cork Port/Ringaskiddy each week, one on Wednesdays and one on Saturdays. The ferry service typically arrives at 07:00 on Saturday mornings and departs at 16:00 on the same day. Weekend flows on the local road network are significantly reduced from typical weekday flows, and therefore the resultant increase in traffic flow associated with the ferry on a Saturday is not considered to be part of a worst-case scenario during a standard weekday.

In addition, from April to October, cruise ships occasionally dock at Ringaskiddy when the Cobh cruise ship berth is occupied. These cruise ships can in theory arrive any day of the week. Usually, these ships arrive circa 09.00 and depart circa 18.00 or arrive around midday and depart in the late evening. However, due to the irregular nature of this type of occurrence, it is not included within this assessment.

7.6.3 Port of Cork Ringaskiddy Port Redevelopment

The Port of Cork was granted a 10-year planning permission in May 2015 for redevelopment of the existing port facilities in Ringaskiddy. The planning permission expires on the 20th of October 2025, and the Port of Cork have noted it will not be possible to complete all the remaining elements of the planning permission within the lifetime of the current permission.

The Port of Cork have since reapplied for planning permission to complete the remaining phases of the original permitted development.

The remaining redevelopment works include the extension to its deep-water berth at Ringaskiddy West, provision of a second Cork Container Terminal at Ringaskiddy East, provision of the roll-on / roll-off ramp and ancillary works.

The renewed planning application shows current port traffic to be a total of 3,607 vehicles exiting the Ringaskiddy Port daily between 06:00 and 20:00, of which 2,535 are HGVs, accounting for 70.3% of all traffic.

The completion of this development will consist of:

- Ringaskiddy East: construction of a second multi-purpose Berth, dredging works and ancillary works,
- Ringaskiddy West: extension to the existing Deepwater Berth, dredging works and ancillary works, and
- Road Improvements: improvements to the internal road network and ancillary works.

The Ringaskiddy Port Re-development (EIAR) 2025 notes mitigation of impacts of the development pre M28 operation. This will be achieved by limiting port HGV volumes and not allowing activities to be fully functional until the M28 is operational. According to the report, the vast majority of berth operations are already in place and that this development represents an expansion of space rather than an intensification of development. Operational phase traffic impact is not expected to exceed what was anticipated in the original planning application EIS in 2014. The Port of Cork Redevelopment traffic increases were included in the assessment of the proposed development. This comprises of a peak construction period of approximately 25 HGV's per day and 25 construction worker vehicles per day. While construction vehicles will not coincide with the AM and PM peak periods on the network it is noted that the construction staff vehicles are likely to enter and exit at peak times, and as such have been included as part of this assessment.

7.6.4 Ringaskiddy Urban Realm and Active Travel Scheme

Works commenced in October 2024 in Ringaskiddy to provide an enhanced public realm in the village centre as well as a new active travel route along the existing N28, from the Port of Cork entrance to the car park at Gobby Beach. The proposed enhancement works include a new shared use pedestrian/cycle facility on the north side of the N28 as well as Public Realm improvements to the village centre including new paving, landscaping and junction improvement works. Speed reduction measures in the form of gateway features and raised pedestrian crossings will also be included in the scheme. The assumed construction programme for the Ringaskiddy Urban Realm and Active Travel Scheme is 12 months and as such the scheme shall be completed prior to the commencement of construction of the proposed development.

7.6.5 Carrigaline to Ringaskiddy Pedestrian and Cycle Route

The Carrigaline to Ringaskiddy Pedestrian and Cycle Route, which is currently under preliminary design, will connect Carrigaline to the Port of Cork junction in Ringaskiddy via two circa 5.5m-6.5m width designated routes which will run parallel to the N28 and to the M28 respectively. The proposed routes will tie in with the Ringaskiddy Urban Realm and Active Travel Scheme at the Port of Cork Junction.

7.6.6 Other Proposed developments

There are a number of developments in the Ringaskiddy area that are either under construction at present, or expected to commence construction in the near future. The construction and operation traffic generated by these proposed developments are covered by the Medium-Growth assumptions applied in line with TII guidance on the existing traffic volumes. These developments include:

- New vehicular entrance off the L2545 (Planning Ref. No. 224356);
- Janssen Sciences Ireland UC – Upgrade and extension to existing biomedicines manufacturing facility (Planning Ref. No. 254704); and
- Pfizer Ireland Pharmaceuticals – Construction of Building 124 – Site Lab Building (Planning Ref. No. 235834).

7.7 Characteristics of Proposed Development

As indicated in **Section 7.1**, the proposed development is located on a site to the east of Ringaskiddy Village. In terms of traffic generation, aside from the traffic generation during the construction stage, the key operational element of the development is the resource recovery centre.

The traffic impact appraisal has been undertaken by examining both the construction traffic (traffic generated by the workforce and processes involved in the construction period) and the operational traffic (traffic generated by the processes involved in the operation of the facility once complete). The expected level of traffic generated by both the construction and the operational aspects of the development are detailed below.

Indaver have committed to scheduling construction traffic during the construction phase, and operational traffic in 2030 (and beyond until the M28 is fully operational) so as to have a minimal amount of traffic flow to and from the site in two-hour periods in the morning and evening, thereby avoiding the peak periods outlined above in the morning and evening, and instead availing of the capacity on the local road network outside of these times in the scenario where the M28 is not operational.

Once the M28 is operational, these restrictions on scheduling of operational traffic will no longer be required as capacity issues will be relieved upon the completion M28.

7.7.1 Construction Traffic

Traffic will firstly be generated during the construction phase of the development. Throughout the construction phase, three types of construction traffic will access the site.

- HGV traffic
- Workforce traffic
- General site traffic

Through the construction phase there will be some variation in the numbers working on site. It is anticipated that a maximum of 320 construction workers will be employed on site at any one time with around 250 workers working a daytime shift and 70 working a night shift.

Typical working hours during the construction phase will be:

Start	Finish	
0600	2000	Monday-Friday
0700	1300	Saturday

To minimise the potential impact of traffic flows during the construction stage, it is proposed to schedule HGV, workforce and general site traffic that it does not coincide with network peak hour periods. Therefore, as a mitigating measure no construction vehicles will arrive or depart the proposed development site from 07:00-09:00 and from 16:00-18:00.

It will be necessary to work overtime (including at weekends) and night shifts at certain critical stages during the project. Consideration of safety, weather or sub-contractor availability is likely to necessitate working outside normal hours. Over the 31-month construction phase there will be up to eight weeks of nighttime working. Heavy or noisy construction activities will be avoided outside normal hours and the amount of work outside normal hours will be strictly controlled.

7.7.1.1 HGV Traffic

The construction stage of the proposed development will involve some HGV movements. Estimates of the anticipated HGV construction traffic volumes indicate that a maximum of 11 heavy goods vehicles per hour will access the site during the daytime shift with smaller volumes expected during the night shift.

7.7.1.2 Workforce Traffic

The construction period will also generate demand in terms of construction workforce access. Throughout the construction period there will be some variation in the number of workers or size of the workforce on site. However, a maximum of approximately 320 construction workers will be employed on site, with around 250 workers required during a daytime shift and 70 working a night shift.

To determine the trips generated during construction it is assumed that 95% of the workforce will travel by car and there will be car occupancy of 1.15. These assumptions are applied to the 250 workers arriving for the day shift and also to the 70 workers leaving after the night shift.

Due to the nature of the construction stage of the proposed development, not all workers will arrive or depart simultaneously in the morning/evening as there will be some natural variation in activity throughout a typical day. For the purpose of this assessment, the following arrival and departure profile for the construction workers was assumed:

- 100% of the daytime construction workers arrive before 07:00
- 100% of the night-time construction workers leave before 07:00
- 25% of the daytime construction workers leave between 12:00-14:00, with 75% of these leaving before 13:00 and 25% arriving back before 13:00.
- 40% of the daytime construction workers leave between 18:00-19:00
- 60% of the daytime construction workers leave after 19:00
- 100% of the night shift construction workers arrive after 18:00.

7.7.1.3 General Site Traffic

The construction stage will also generate general site traffic in addition to HGV movements and workforce traffic. This general site traffic accounts for visitors and general service vehicles to the site. The general site traffic is estimated at up to a maximum of 32 vehicles (in and out) per hour between 06:00 - 19:00 with a fall-off to 6 vehicles (in and out) per hour during the night shift. As with the workforce traffic, no general site traffic will be permitted to or from the site during the 2-hour restriction periods in the morning and evening.

7.7.1.4 Total Construction Traffic

The projected volume of traffic generated during the construction phase of the development can be seen in **Table 7.8** and **Table 7.9** below. For clarity, **Table 7.8** presents the daily profile of arrivals in vehicles, while **Table 7.9** converts these flows to PCUs.

It can be seen from **Table 7.8** and **Table 7.9** below that no vehicles will arrive or depart the proposed development site during the morning and evening peak periods (07:00-09:00 and 16:00-18:00) during the construction process.

Table 7.8 Projected Volumes of Construction Traffic (Vehicles per Hour)

	Construction		Workforce Traffic		General Site Traffic		Traffic Generation		
	HGV Movements		Car Movements		Car & LV Movements		All		
	In	Out	In	Out	In	Out	In	Out	Total
06:00-07:00	10	10	207	58	14	14	231	82	313
07:00-08:00	0	0	0	0	0	0	0	0	0
08:00-09:00	0	0	0	0	0	0	0	0	0
09:00-10:00	11	11	0	0	16	16	27	27	54
10:00-11:00	10	10	0	0	14	14	24	24	48
11:00-12:00	10	10	0	0	14	14	24	24	48
12:00-13:00	10	10	39	13	14	14	63	37	100
13:00-14:00	10	10	13	39	14	14	37	63	100
14:00-15:00	10	10	0	0	14	14	24	24	48
15:00-16:00	11	11	0	0	16	16	27	27	54
16:00-17:00	0	0	0	0	0	0	0	0	0
17:00-18:00	0	0	0	0	0	0	0	0	0

	Construction		Workforce Traffic		General Site Traffic		Traffic Generation		
	HGV Movements		Car Movements		Car & LV Movements		All		
	In	Out	In	Out	In	Out	In	Out	Total
18:00-19:00	10	10	58	83	14	14	82	107	189
19:00-20:00	2	2	0	124	3	3	5	129	134
20:00-21:00	2	2	0	0	3	3	5	5	10
Total/Day	96	96	317	317	136	136	549	549	1,098

*All traffic flows are in Vehicles per hour

Table 7.9 Projected Volumes of Construction Traffic (PCUs per hour)

	Construction		Workforce Traffic		General Site Traffic		Traffic Generation		
	HGV Movements		Car Movements		Car & LV Movements		All		
	In	Out	In	Out	In	Out	In	Out	Total
06:00-07:00	23	23	207	58	14	14	244	95	339
07:00-08:00	0	0	0	0	0	0	0	0	0
08:00-09:00	0	0	0	0	0	0	0	0	0
09:00-10:00	26	26	0	0	16	16	42	42	84
10:00-11:00	23	23	0	0	14	14	37	37	74
11:00-12:00	23	23	0	0	14	14	37	37	74
12:00-13:00	23	23	39	13	14	14	76	50	126
13:00-14:00	23	23	13	39	14	14	50	76	126
14:00-15:00	23	23	0	0	14	14	37	37	74
15:00-16:00	26	26	0	0	16	16	42	42	84
16:00-17:00	0	0	0	0	0	0	0	0	0
17:00-18:00	0	0	0	0	0	0	0	0	0
18:00-19:00	23	23	58	83	14	14	95	120	215
19:00-20:00	5	5	0	124	3	3	8	132	140
20:00-21:00	5	5	0	0	3	3	8	8	16
Total/Day	223	223	317	317	136	136	676	676	1,352

*All traffic flows are in Passenger Car Units (PCUs) per hour

7.7.1.5 Earthworks

The above tables were used to analyse the impact of the construction traffic on the local road network during peak periods. However, it is recognised that the earthworks element of the construction will introduce some additional heavy goods vehicles to the area, and a separate analysis of this is presented.

Before work can commence on the main construction phase of the development, a projected net quantity of 74,664m^3 of surplus material will be excavated and removed from the site. This excludes the quantity which will be re-used to raise the levels in the Indaver site above the 1:200 year tidal event.

In addition, 30,261m^3 of engineering fill and crushed stone will be imported onto the site. Of the 30,261m^3 of imported engineering fill and crushed stone required for the construction works, approximately 1,150m^3 consists of shingle required for the coastal protection works, approximately 4,796m^3 will be required for the road upgrade and approximately 24,365m^3 of engineering fill required for the site (over the eastern and western fields).

It is anticipated that the excavation of materials and the import of fill materials will occur simultaneously for a period of 6 weeks. After this, the import of materials will cease, and the excavation works are expected to continue for a further 7 weeks.

It is therefore estimated that the entire excavation and import processes will be carried out over a 16-week period. This equates to 17 truckloads per hour for the first 6 weeks when both processes are occurring at the same time, and then will equate to 9 trucks per hour for the remaining 7 weeks. These figures are based on the following assumptions:

- 20 tonnes per truck,
- 48 hours per week – 6 days, 8 hours per day (note this allows for no trucks during the 07:00-09:00 and 16:00-18:00 periods).

The bulk excavation works and construction of the retaining structures will be undertaken in advance of the main construction phase and will not be as labour intensive. Therefore, the bulk excavation and construction of the retaining structures will have less of an impact on the local traffic network than the main construction phase, the impact of which is assessed and included in this chapter.

7.7.1.6 Placing of Sacrificial Material on the Beach

The placing of sacrificial material on the beach will be undertaken towards the end of the main construction phase over a 3-week period. The quantity of sacrificial material is expected to be 1,150m³. It will require 83 truckloads in total, equivalent to an average of 5 trucks per day. However, the phasing of this will be programmed so as to not occur in tandem with either earthworks or construction phases, and is therefore not included in the main assessment.

7.7.1.7 Electricity substation building, compound and grid connection

As discussed in **Section 4.5.10** of **Chapter 4** ***Description of the Proposed Development***, the electricity import/export substation and compound within the Indaver site will be located east of the main entrance to the resource recovery centre.

The resource recovery centre will be connected to the national electrical grid either via the 38kV electrical substation (Loughbeg substation) adjacent to the eastern boundary of the Hammond Lane facility or via the 110kV pylon directly south of the site.

For the first option (Loughbeg substation) the grid connection will be made by running underground cables from the ESB side of the Indaver electricity compound to the Lough Beg substation. The works required within Loughbeg substation lands will be carried out by ESB Networks (ESBN). The grid connection within Loughbeg substation lands will require the excavation of one or two short trenches (approximately 5m in length) – the exact connection method will be decided by ESBN.

For the alternative option (110kV pylon) additional trenching (along the route of the existing 10kV overhead cables, which are to be diverted underground) as far as the existing 10 kV overhead pole, located in the southern part of the site, would be provided to extend the 38kV cable route underground to extend the 38kV

cable route underground to the pylon. An additional trench of approximately 15 metres will be required to reach the foot of the pylon.

The works required to connect the cable from the proposed development site to the overhead power lines would be carried out by ESBN and also for the subsequent works at the Barnahely substation to facilitate a 38kV connection there.

It is likely that this process may occur in parallel with the construction phase of the resource recovery centre itself. The traffic impact of these works will be very low, and will not be recurring due to the short-term nature of the works in question. As a result, these works have not been included as part of this Traffic Impact Assessment. Due to the layout of the facility, there will be no requirement to divert the existing 38 kV lines which traverse the site.

7.7.2 Operational Traffic Generation

The proposed development will generate two types of operational traffic. Heavy goods vehicle (HGV) traffic will be generated by the operation of the facility. Car traffic will be generated by workers commuting to the site and by visitors to the site.

As outlined above, the construction-related traffic (the arrivals and departures of staff and construction vehicles) has been arranged in order to ensure no arrivals or departures will be during the morning and evening local network peak periods. However, from an operational and logistics perspective, it is not feasible to reduce deliveries of waste materials to the site entirely (to zero) during these hours.

Instead, in order to minimise the impact of operational traffic on the local road network during the morning and evening network peaks, it is proposed to control the arrivals and departures of waste delivery vehicles to and from the site during the two-hour network peak period in the morning (07:00-09:00) and the evening (16:00-18:00) until the M28 is fully operational. Further details of the proposed restriction to waste delivery vehicles is outlined in **Section 7.10** ***Mitigation and Monitoring Measures*** below.

7.7.2.1 HGV Generation

The estimated volume of HGV traffic generated by the proposed development was based on anticipated volumes of waste coming into the facility. The facility will accept waste for 50 weeks per year, for 5.5 days per week and 14 hours per day (from 06:00-20:00).

Information obtained from the Indaver Meath facility which also treats similar waste streams to those proposed for Ringaskiddy, established that peak hour traffic at the site was around 16% of total daily traffic. This occurs in the first hour of waste acceptance, when the facility opens.

Discussions with waste collection operators in the Cork area indicate that there is a preference to avoid the AM and PM peak periods due to prevailing traffic congestion on the network and the resultant delay to vehicles travelling to and from the facility. These waste collection operators have indicated that an opening time of 06:00 would be preferable in terms of delivering waste in the morning period ahead of the local peak period, whilst extending the opening hours to 20:00 also allows operators to avoid the evening peak period.

The facility is expected to generate a total of 71 HGVs to the site over the course of the 14-hour day, i.e. a total of 142 two-way HGV movements over the entire day.

It is noted from past experience at other facilities that waste deliveries are not uniform and the waste processing procedure does not operate at a continuous rate; peaks and troughs tend to occur throughout the year. Based on monthly variations at the Dublin Port Waste Transfer Station, for example, it was established that the peak usage of the facility was 13% greater than the average usage. The traffic generated through HGV movements (37) has been increased by 13% to account for the peaks in the arrival of vehicles, resulting in an increase to 80 vehicles (i.e. 160 two-way HGV movements) per day.

As outlined above, it is planned to manage HGV movements so that the vast majority of vehicles will arrive to and/or depart from the facility outside of the Ringaskiddy morning and evening peak periods (07:00-09:00 and 16:00-18:00) by extending the hours that waste will be accepted at the facility. The number of HGV vehicles that arrive and depart during the peak periods will be capped at three arrivals and three departures per hour.

7.7.2.2 Commuters/Site Visitors

A total of 63 staff will be employed on site once the facility is in operation. **Table 7.10** below classifies the staff and indicates their expected working hours.

Table 7.10 Staff Numbers and Working Hours

Staff Type	Number of Staff	Hours of Operation
Administration Staff		
Customer Logistics/Tech Support	8	06:45-14:45
Sales	8	09:30-18:00
Other	5	09:30-18:00
Resource Recovery Centre Staff		
Shift Pattern 1	5	06:00-14:00
Shift Pattern 2	5	07:00-15:30
Shift Pattern 3	5	14:00-22:00
Shift Pattern 4	5	22:00-06:00
Tipping Hall & Crane Staff – A	2	06:00-13:00
Tipping Hall & Crane Staff – B	2	13:00-20:00
Maintenance, Warehouse & Plant Logistics – A	5	06:45-14:45
Maintenance, Warehouse & Plant Logistics – B	5	09:30-18:00
Security – A	1	06:00-13:00
Security – B	1	13:00-20:00
Management	6	09:30-18:00
Total	63	

Note that administration staff in **Table 7.10** above will be transferred from the existing Indaver Administration facility at the Kinsale Road Industrial Park to the proposed development.

In addition to the above traffic flows, it has also been assumed that one delivery/visitor vehicle will arrive and depart the site per hour between 08:00-18:00.

In the event that staff require a temporary amendment to their working hours, they will be permitted to travel to and from the facility in the restriction periods, providing they do so only by public transport, walking or cycling.

7.7.3 Total Operational Traffic

The projected volume of traffic generated during the operational phase of the development can be seen in **Table 7.11** below, in vehicles per hour. **Table 7.12** shows the estimated flows in PCUs per hour. Note that in the subsequent tables, the morning and evening two-hour peak periods (highlighted in grey) show minimal additional traffic associated with the proposed development, and that there will be no traffic movements associated with the operational workforce during these times.

Table 7.11 Projected Volumes of Operational Traffic (Vehicles per Hour)

	HGV Movements		Workforce Traffic		Visitor/Delivery Traffic		Total Traffic Generation		
	In	Out	In	Out	In	Out	In	Out	Total
06:00-07:00	12	12	18	5	0	0	30	17	47
07:00-08:00	3	3	0	0	0	0	3	3	6
08:00-09:00	3	3	0	0	1	1	4	4	8
09:00-10:00	9	9	24	0	1	1	33	9	42
10:00-11:00	6	6	0	0	1	1	7	7	15
11:00-12:00	7	7	0	0	1	1	8	8	16
12:00-13:00	9	9	3	0	1	1	13	10	23
13:00-14:00	8	8	5	3	1	1	14	12	26
14:00-15:00	7	7	0	18	1	1	8	26	34
15:00-16:00	6	6	0	5	1	1	7	12	18
16:00-17:00	3	3	0	0	1	1	4	4	8
17:00-18:00	3	3	0	0	1	1	4	4	8
18:00-19:00	2	2	0	24	0	0	2	26	29
19:00-20:00	2	2	0	0	0	0	2	2	5
20:00-21:00	0	0	0	3	0	0	0	3	3
21:00-22:00	0	0	5	0	0	0	5	0	5
22:00-23:00	0	0	0	5	0	0	0	5	5
23:00-00:00	0	0	0	0	0	0	0	0	0
Total	80	80	63**	63	10	10	153**	153	306

*All traffic flows are in Vehicles per hour

**The Figures of 63 and 153 workforce arrivals includes 55 and 145 staff as indicated in the table plus an additional 8 staff who arrive before 06:00

Note: there will be no workforce traffic during the morning and evening peak periods.

Table 7.12 Projected Volumes of Operational Traffic (PCUs per Hour)

	HGV Movements		Workforce Traffic		Visitor/Delivery Traffic		Total Traffic Generation		
	In	Out	In	Out	In	Out	In	Out	Total
06:00-07:00	27	27	18	5	0	0	44	31	75
07:00-08:00	7	7	0	0	0	0	7	7	15
08:00-09:00	7	7	0	0	1	1	8	8	17
09:00-10:00	18	18	24	0	1	1	43	19	63
10:00-11:00	15	15	0	0	1	1	16	16	32
11:00-12:00	17	17	0	0	1	1	18	18	35
12:00-13:00	20	20	3	0	1	1	24	21	46
13:00-14:00	18	18	5	3	1	1	24	22	47
14:00-15:00	17	17	0	18	1	1	18	36	53
15:00-16:00	13	13	0	5	1	1	14	19	33
16:00-17:00	7	7	0	0	1	1	8	8	17
17:00-18:00	7	7	0	0	1	1	8	8	17
18:00-19:00	6	6	0	24	0	0	6	30	35
19:00-20:00	6	6	0	0	0	0	6	6	11
20:00-21:00	0	0	0	3	0	0	0	3	3
21:00-22:00	0	0	5	0	0	0	5	0	5
22:00-23:00	0	0	0	5	0	0	0	5	5
23:00-00:00	0	0	0	0	0	0	0	0	0
Total	185	185	63**	63	10	10	258**	258	516

*All traffic flows are in Passenger Car Units (PCUs) per hour

**The Figures of 63 and 258 workforce arrivals includes 55 and 250 staff as indicated in the table plus an additional 8 staff who arrive before 06:00

Note: there will be no workforce traffic during the morning and evening peak periods.

From the table above it can be seen that the morning, afternoon and evening peak levels of development traffic is at 06:00-07:00, 14:00-15:00 and 18:00-19:00, respectively. These peak periods are outside of the general Ringaskiddy area road network peak periods, which are from 06:30-07:30 and 15:30-16:30, respectively.

7.7.4 Assessment Scenarios

Five time periods have been determined as having the most significant impact by traffic generated by the proposed development. These five time periods are as follows (note that the Construction AM and PM peak periods and the Operational AM and PM peak periods are coincidental):

- Construction AM Peak (06:00 – 07:00)
- Construction PM Peak (18:00 – 19:00)
- Operational AM Peak (06:00 – 07:00)
- Operational Afternoon Peak (14:00 – 15:00)
- Operational PM Peak (18:00 – 19:00)
- N28 Network Existing AM Peak (06:30-07:30)
- N28 Network Existing PM Peak (15:30-16:30)

Figure 7.4 shows a profile of traffic flows over the 18-hour period of the 2025 traffic surveys at all sites. This figure shows the total flows at each junction (on all arms). It can be seen that across the local road network, there is an extended AM Peak period around 06:30-08:30 and a distinct PM Peaks in traffic flows at around 15:30.

Figure 7.4 also highlights the five assessment time periods outlined above. It can be seen that the proposed operational peak periods (06:00-07:00, 14:00-15:00 and 18:00-19:00) are coincidental with reduced traffic flows across the study area compared to the existing network AM and PM peak periods (06:30-07:30 and 15:30-16:30).

Figure 7.5 shows the same traffic flow profiles, but also highlights the hours in the morning and evening when restrictions are proposed for traffic entering and exiting the proposed facility, i.e. the time periods when no construction vehicles will enter or exit the site during the construction stage and when controls will be in place to reduce the number of operational vehicles that will enter or exit the site in the scenario where the M28 is not operational. It can be seen in **Figure 7.5** that the restriction periods (06:00-08:00 and 16:00-18:00) allow for an extended time period around the peak hours to account for the extended duration of traffic flows over the peak hours.

7.8 Potential Effects

7.8.1 Traffic Distribution

The generated traffic from the proposed development has been distributed on the road network based on expected origins of both construction/waste delivery vehicles and workforce staff origins. **Table 7.13** shows the estimated trip distribution profile for the proposed development. It has been assumed that the same arrival/distribution profile presented in **Table 7.13** below will apply to vehicles travelling to and from the site during the construction phase and the operational phase scenarios in which the M28 motorway development has not been included.

Table 7.13 Traffic Distribution - Indaver

Roadway	Percentage HGVs To/From	Percentage Staff To/From
N28 – North of Shannon Park	80%	60%
R611 – South of Shannon Park	15%	20%
R610 – North of N28	2%	5%
Raffeen Rd – North of N28	0%	5%
R613 Barnahely Rd – South of N28	3%	10%
Total	**100%**	**100%**

In the scenarios where the M28 is operational and the redistribution of traffic from the N28 has been assumed, Indaver traffic distribution follows the same approach as presented in the table above, but with the redistribution rates onto the M28 presented in **Table 7.1** applied. This represents a robust future assessment of the N28 network in the future scenarios with the M28 operational.

Once operational, the M28 motorway shall have adequate capacity to accommodate all vehicles associated with the proposed development, for example the M28 EIS documentation anticipates 2035 traffic flows on the M28 between Carr's Hill and Rochestown Road to be in the region of 1080 northbound trips and 857 southbound trips between 09:00 and 10:00. In the same hour, the proposed development trips are 29 inbound trips and 5 outbound trips. Assuming a robust scenario in which all development trips utilise the M28 between Carr's Hill and Rochestown Road this represents a 3% increase in southbound vehicle volumes and a 0.4% increase in northbound vehicle volumes on the M28, which is deemed to be of negligible impact on the road network. This increase is seen as a robust assessment and in reality, a number of these operational trips associated with the proposed development, in particular staff trips which make up the majority of trips in this time period, will not all be traveling on the M28 due to the nature of their origin. Therefore, the percentage increase of vehicles on the M28 associated with the proposed development shall be even less.

7.8.2 Traffic Assignment

The projected levels of construction and operational traffic generated by the proposed development were assigned to the local road network in accordance with the trip distribution detailed above. **Table 7.14** below shows the projected construction traffic (two-way) assigned to the local road network in 2029. **Table 7.15** shows the projected operational traffic (two-way) assigned to the local road network in 2030, 2035 and 2045.

Table 7.14 Projected Distribution of Traffic – Construction Phase, 2029 (PCUs her Hour)

Roadway	Construction Peaks	
	06:00-07:00	18:00-19:00
N28 – North of Shannonpark	215	137
R611 – South of Shannonpark	66	41
N28 – East of Shannonpark	281	178
R610 – North of N28	16	9
N28 (East of Raffeen Bridge)	297	187
Raffeen Rd – North of N28	15	9
N28 (East of Shanbally)	311	195
L2492 Shanbally Link Rd	0	0
R613 Barnahely Rd – South of N28	31	18
N28 (West of Ferry Port)	342	214
N28 (East of Ferry Port)	342	214
Loughbeg Rd-South of N28	0	0

Table 7.15 Projected Distribution of Traffic – Operational Phase, 2030, 2035 and 2045 (PCUs per hour)

Roadway	Operational Peaks			Existing Network Peaks	
	06:00-07:00	14:00-15:00	18:00-19:00	06:30-07:30	15:30-16:30
N28 – North of Shannonpark	56	39	24	34	19
R611 – South of Shannonpark	13	9	7	7	4
N28 – East of Shannonpark	69	48	31	41	23
R610 – North of N28	0	0	0	0	0
N28 (East of Raffeen Bridge)	70	49	32	43	22
Raffeen Rd – North of N28	2	1	1	2	0
N28 (East of Shanbally)	70	50	32	42	24
L2492 Shanbally Link Rd	0	0	0	0	0
R613 Barnahely Rd – South of N28	4	3	3	2	1
N28 (West of Ferry Port)	75	54	36	44	25
N28 (East of Ferry Port)	75	54	36	45	25
Loughbeg Rd-South of N28	0	0	0	0	0

The total projected levels of traffic on the local road network, following the addition of the proposed development traffic, can be seen in **Table 7.16** and **Table 7.17** below.

Table 7.16 Projected Total Traffic – Construction Phase, 2029 (PCUs per hour)

Roadway	Construction Peaks	
	06:00-07:00	18:00-19:00
N28 – North of Shannonpark	2605	2647
R611 – South of Shannonpark	1162	1849
N28 – East of Shannonpark	1951	1596
R610 – North of N28	181	278
N28 (East of Raffeen Bridge)	1881	1505
Raffeen Rd – North of N28	197	169
N28 (East of Shanbally)	1918	1312
L2492 Shanbally Link Rd	210	214
R613 Barnahely Rd – South of N28	550	453
N28 (West of Ferry Port)	1068	965
N28 (East of Ferry Port)	388	305
Loughbeg Rd-South of N28	688	535

Table 7.17 Projected Total Traffic – Operational Phase, 2030, 2035 and 2045 (PCUs per hour)

Roadway	Operational Peaks			Existing Network Peaks	
	06:00-07:00	14:00-15:00	18:00-19:00	06:30-07:30	15:30-16:30
N28 – North of Shannonpark	2439	2697	2559	3028	2942
R611 – South of Shannonpark	1118	1958	1842	1551	2003
N28 – East of Shannonpark	1705	1436	1446	1875	1748
R610 – North of N28	184	356	284	397	364
N28 (East of Raffeen Bridge)	1618	1241	1344	1668	1840
Raffeen Rd – North of N28	184	136	163	427	503
N28 (East of Shanbally)	1651	1099	1147	1916	1535
L2492 Shanbally Link Rd	214	188	218	307	407
R613 Barnahely Rd – South of N28	529	312	444	653	503
N28 (West of Ferry Port)	738	531	765	819	776
N28 (East of Ferry Port)	46	249	94	121	404
Loughbeg Rd-South of N28	701	194	545	634	352

7.9 Evaluation of Impacts

7.9.1 General

The impact of traffic generated on the local road network has been assessed by comparing the projected future traffic volumes with and without the construction of the proposed development. In addition, the effect of the generated traffic on the junctions in the immediate vicinity of the proposed development was examined.

7.9.2 Construction Traffic

The projected increase in traffic during the construction stage of the proposed development can be seen in **Table 7.18**. The table includes Year 2029 projected flows both with and without the proposed construction traffic.

Table 7.18 Projected Traffic Increases – Construction Stage, 2029

Roadway	Year 2029 – 06:00-07:00			Year 2029 – 18:00-19:00		
	Without	With	% Change	Without	With	% Change
N28 – North of Shannonpark	2390	2605	9%	2510	2647	5%
R611 – South of Shannonpark	1096	1162	6%	1808	1849	2%
N28 – East of Shannonpark	1670	1951	17%	1418	1596	13%
R610 – North of N28	181	181	0%	278	278	0%
N28 (East of Raffeen Bridge)	1584	1881	19%	1318	1505	14%
Raffeen Rd – North of N28	181	197	9%	160	169	6%
N28 (East of Shanbally)	1617	1918	19%	1125	1312	17%
L2492 Shanbally Link Rd	210	210	0%	214	214	0%
R613 Barnahely Rd – South of N28	519	550	6%	435	453	4%
N28 (West of Ferry Port)	725	1068	47%	751	965	29%
N28 (East of Ferry Port)	46	388	749%	92	305	231%
Loughbeg Rd-South of N28	688	688	0%	535	535	0%

From the above appraisal, it was determined that scheduling the morning construction peak hour to coincide with the lower traffic flows between 06:00-07:00, rather than the higher traffic flows which occur later, is beneficial as peak traffic flows in the network are avoided and therefore the resultant impact on the local road network during the morning and evening peak periods is minimised.

The results above show that there are large proportional increases in traffic flow for the morning construction peak. However, this is due to the background traffic being so low at this time. It should also be noted that the base traffic numbers adjacent to the proposed site entrance are extremely low at this time, which explains the high percentage increase in traffic on the N28, East of the Ferry Terminal access junction for example.

7.9.3 Operational Traffic

The peak period of generated traffic from the proposed development does not correspond with the Ringaskiddy road network peaks. The proposed development traffic peak occurs in the 14:00-15:00 hour, while the Ringaskiddy road network peaks occur in the 06:30-07:30 hour and 15:30-16:30 hour, respectively. To ensure a robust analysis is undertaken, the traffic assessment has been based on the following scenarios:

- AM Operational Peak (06:00-07:00)
- AM Network Peak (06:30-07:30)
- Afternoon Operational Peak (14:00-15:00)
- PM Network Peak (15:30-16:30)
- PM Operational Peak (18:00-19:00)

Operational traffic in the opening year of 2030 has been assessed in two scenarios, both without and with the M28. The projected increase in traffic during the operational stage can be seen in **Table 7.19** to **Table 7.28** below. The tables include Opening Year 2030 flows both with and without the operation of the proposed development.

Table 7.19 Project Traffic Flows – 06:00-07:00 Operational AM Peak – Opening Year 2030 (without M28)

Roadway	Operational – 06:00-07:00		
	Without	With	% Change
N28 – North of Shannonpark	2439	2473	1%
R611 – South of Shannonpark	1118	1127	1%
N28 – East of Shannonpark	1705	1748	3%
R610 – North of N28	184	184	0%
N28 (East of Raffeen Bridge)	1618	1663	3%
Raffeen Rd – North of N28	184	186	1%
N28 (East of Shanbally)	1651	1696	3%
L2492 Shanbally Link Rd	214	214	0%
R613 Barnahely Rd – South of N28	529	532	1%
N28 (West of Ferry Port)	738	787	7%
N28 (East of Ferry Port)	46	92	99%
Loughbeg Rd-South of N28	701	701	0%

From the above table, it can be seen that the proposed development when operational will not have a significant impact on the local road network west of the Port of Cork Junction during the Operational AM Peak Period in the scenario where the M28 is not operational in the opening year.

Table 7.20 Project Traffic Flows – 06:00-07:00 Operational AM Peak – Opening Year 2030 (with M28)

Roadway	Operational – 06:00-07:00		
	Without	With	% Change
N28 – North of Shannonpark	595	607	2%
R611 – South of Shannonpark	337	340	1%
N28 – East of Shannonpark	618	632	2%
R610 – North of N28	170	170	0%
N28 (East of Raffeen Bridge)	1039	1066	3%
Raffeen Rd – North of N28	182	183	1%
N28 (East of Shanbally)	891	912	2%
L2492 Shanbally Link Rd	167	167	0%
R613 Barnahely Rd – South of N28	298	301	1%
N28 (West of Ferry Port)	287	303	6%
N28 (East of Ferry Port)	20	33	69%
Loughbeg Rd-South of N28	412	161	0%

From the above table, it can be seen that the proposed development when operational will not have a significant impact on the local road network west of the Port of Cork Junction during the Operational AM Peak Period in the scenario where the M28 is operational in the opening year.

Table 7.21 Project Traffic Flows – Operational Afternoon Development Peak – Opening Year 2030 (without M28)

Roadway	Operational – 14:00-15:00		
	Without	With	% Change
N28 – North of Shannonpark	2697	2724	1%
R611 – South of Shannonpark	1958	1965	0%
N28 – East of Shannonpark	1436	1470	2%
R610 – North of N28	356	356	0%
N28 (East of Raffeen Bridge)	1241	1275	3%
Raffeen Rd – North of N28	136	137	1%
N28 (East of Shanbally)	1099	1134	3%
L2492 Shanbally Link Rd	188	188	0%
R613 Barnahely Rd – South of N28	312	315	1%
N28 (West of Ferry Port)	531	569	7%
N28 (East of Ferry Port)	249	287	15%
Loughbeg Rd-South of N28	194	194	0%

From the above analysis, it can be seen that during the Operational Afternoon Peak period in the scenario where the M28 is not operational in the opening year, the relative impact on the local road network is not significant.

Table 7.22 Project Traffic Flows – Operational Afternoon Development Peak – Opening Year 2030 (with M28)

Roadway	Operational – 14:00-15:00		
	Without	With	% Change
N28 – North of Shannonpark	740	753	2%
R611 – South of Shannonpark	559	562	1%
N28 – East of Shannonpark	748	765	2%
R610 – North of N28	301	301	0%
N28 (East of Raffeen Bridge)	794	815	3%
Raffeen Rd – North of N28	120	121	1%
N28 (East of Shanbally)	418	430	3%
L2492 Shanbally Link Rd	142	142	0%
R613 Barnahely Rd – South of N28	211	213	1%
N28 (West of Ferry Port)	227	241	6%

Roadway	Operational – 14:00-15:00		
	Without	With	% Change
N28 (East of Ferry Port)	106	121	14%
Loughbeg Rd-South of N28	161	161	0%

From the above analysis, it can be seen that during the Operational Afternoon Peak period in the scenario where the M28 is operational in the opening year, the relative impact on the local road network is not significant. However, it should be noted that the traffic surveys show that during this time period the local road network is not congested.

Table 7.23 Project Traffic Flows – Operational PM Peak – Opening Year 2030 (without M28)

Roadway	Operational – 18:00-19:00		
	Without	With	% Change
N28 – North of Shannonpark	2559	2578	1%
R611 – South of Shannonpark	1842	1847	0%
N28 – East of Shannonpark	1446	1470	2%
R610 – North of N28	284	284	0%
N28 (East of Raffeen Bridge)	1344	1370	2%
Raffeen Rd – North of N28	163	164	1%
N28 (East of Shanbally)	1147	1173	2%
L2492 Shanbally Link Rd	218	218	0%
R613 Barnahely Rd – South of N28	444	446	0%
N28 (West of Ferry Port)	765	795	4%
N28 (East of Ferry Port)	94	124	32%
Loughbeg Rd-South of N28	545	545	0%

The above analysis shows that the proposed development will not have a significant impact on the local road network during the Operational PM Peak period in the scenario where the M28 is not operational other than east of the Ferry port junction, which is lightly trafficked and will have slight effects.

Table 7.24 Project Traffic Flows – Operational PM Peak – Opening Year 2030 (with M28)

Roadway	Operational – 18:00-19:00		
	Without	With	% Change
N28 – North of Shannonpark	747	758	1%
R611 – South of Shannonpark	553	556	1%
N28 – East of Shannonpark	797	812	2%
R610 – North of N28	230	230	0%
N28 (East of Raffeen Bridge)	856	873	2%
Raffeen Rd – North of N28	132	133	1%
N28 (East of Shanbally)	395	402	2%
L2492 Shanbally Link Rd	182	182	0%
R613 Barnahely Rd – South of N28	341	342	0%
N28 (West of Ferry Port)	322	334	4%
N28 (East of Ferry Port)	38	50	32%
Loughbeg Rd-South of N28	419	419	0%

The above analysis shows that the proposed development will not have a significant impact on the local road network during the Operational PM Peak period, in the scenario where the M28 is operational, other than east of the Ferry port junction, which is lightly trafficked and will have slight effects.

Table 7.25 Project Traffic Flows – Network AM Peak – Opening Year 2030 (without M28)

Roadway	Network – 06:30-07:30		
	Without	With	% Change
N28 – North of Shannonpark	3028	3048	1%
R611 – South of Shannonpark	1551	1556	0%
N28 – East of Shannonpark	1875	1900	1%
R610 – North of N28	397	397	0%
N28 (East of Raffeen Bridge)	1668	1695	2%
Raffeen Rd – North of N28	427	429	0%
N28 (East of Shanbally)	1916	1942	1%
L2492 Shanbally Link Rd	307	307	0%
R613 Barnahely Rd – South of N28	653	655	0%
N28 (West of Ferry Port)	819	847	3%
N28 (East of Ferry Port)	121	150	24%
Loughbeg Rd-South of N28	634	634	0%

The above analysis shows that the proposed development will have little or no impact on the local road network during the Network AM Peak period in the scenario where the M28 is not operational. This is due to the restrictions on waste acceptance and the scheduling of staff working hours outside of the Network AM Peak. The greatest increase is on the link east of the Ferry Port Junction – an increase of 45 PCUs per hour. This link is lightly trafficked in the AM peak.

Table 7.26 Project Traffic Flows – Network AM Peak – Opening Year 2030 (with M28)

Roadway	Network – 06:30-07:30		
	Without	With	% Change
N28 – North of Shannonpark	780	787	1%
R611 – South of Shannonpark	413	415	0%
N28 – East of Shannonpark	730	739	1%
R610 – North of N28	371	371	0%
N28 (East of Raffeen Bridge)	1101	1119	2%
Raffeen Rd – North of N28	420	421	0%
N28 (East of Shanbally)	1011	1023	1%
L2492 Shanbally Link Rd	245	245	0%
R613 Barnahely Rd – South of N28	409	410	0%
N28 (West of Ferry Port)	364	373	2%
N28 (East of Ferry Port)	50	61	23%
Loughbeg Rd-South of N28	389	389	0%

The above analysis shows that the proposed development will have little or no impact on the local road network during the Network AM Peak period in the scenario where the M28 is operational. The greatest increase is on the link east of the Ferry Port Junction – an increase of 18 PCUs per hour. This link is lightly trafficked in the AM peak.

Table 7.27 Project Traffic Flows – Network PM Peak – Opening Year 2030 (without M28)

Roadway	Network – 15:30-16:30		
	Without	With	% Change
N28 – North of Shannonpark	2942	2954	0%
R611 – South of Shannonpark	2003	2006	0%
N28 – East of Shannonpark	1748	1763	1%
R610 – North of N28	364	364	0%
N28 (East of Raffeen Bridge)	1840	1854	1%
Raffeen Rd – North of N28	503	503	0%
N28 (East of Shanbally)	1535	1549	1%
L2492 Shanbally Link Rd	407	407	0%
R613 Barnahely Rd – South of N28	503	504	0%

Roadway	Network – 15:30-16:30		
	Without	With	% Change
N28 (West of Ferry Port)	776	791	2%
N28 (East of Ferry Port)	404	420	4%
Loughbeg Rd-South of N28	352	352	0%

The above analysis shows that the proposed development will have little or no impact on the local road network during the Network PM Peak period in the scenario where the M28 is not operational, similar to the Network AM Peak. The greatest increase is on the link east of the Ferry Port Junction – an increase of 4 PCUs per hour. This link is lightly trafficked in the PM peak.

Table 7.28 Project Traffic Flows – Network PM Peak – Opening Year 2030 (with M28)

Roadway	Network – 15:30-16:30		
	Without	With	% Change
N28 – North of Shannonpark	905	911	1%
R611 – South of Shannonpark	593	594	0%
N28 – East of Shannonpark	950	957	1%
R610 – North of N28	283	283	0%
N28 (East of Raffeen Bridge)	1169	1177	1%
Raffeen Rd – North of N28	346	346	0%
N28 (East of Shanbally)	482	488	1%
L2492 Shanbally Link Rd	368	368	0%
R613 Barnahely Rd – South of N28	350	350	0%
N28 (West of Ferry Port)	321	326	1%
N28 (East of Ferry Port)	169	175	4%
Loughbeg Rd-South of N28	321	321	0%

The above analysis shows that the proposed development will not have a significant impact on the local road network during the Network PM Peak period in the scenario where the M28 is operational, similar to the Network AM Peak. The greatest increase is on the link east of the Ferry Port Junction – an increase of 10 PCUs per hour. This link is lightly trafficked in the PM peak.

7.9.4 Projected Junction Operation

In urbanised and industrialised areas, it is recognised that it is the performance of the junctions on the road network that determines congestion experienced by users. The following junctions, as shown in **Figure 7.2** were assessed to review the expected future operation of the road network:

- Junction 1 Shannon Park Roundabout;
- Junction 2 Raffeen Bridge Junction;
- Junction 3 Shanbally Roundabout;
- Junction 4 Port of Cork Junction (N18/R613);
- Junction 5 Ferry Port Access Junction; and
- Junction 6 Proposed Indaver Entrance.

The impact of the generated traffic on the local junctions was assessed using Junctions 9, and by using the ARCADY and PICADY modules contained in the software. The signalised Port of Cork Junction was analysed using LinSig. These computer applications determine the projected operation of the junctions based on a number of geometric parameters and traffic flow conditions.

Each junction has been assessed based on the following scenarios outlined in **Table 7.29**. The first scenario is the 2025 base year where all identified peak hour periods are assessed. This is followed by the 2029 construction scenario which assesses the 06:00 – 07:00 and the 18:00 – 19:00 peak periods, when the construction traffic is scheduled to arrive and depart from the site. As noted previously, the scheduling of construction traffic is to reduce the potential traffic impact on the network peak hour periods which is 06:30 – 07:30 and 15:30 – 16:30.

The remainder of the scenarios are operational traffic scenarios. For these scenarios, all the traffic peaks are assessed since the proposed facility is expected to operate throughout a typical day. For 2030, the network operation is assessed in two scenarios. The first is under the assumption that the M28 is not constructed and operational yet, while the second scenario assumes that it is in place. For the 2035 and 2045 scenarios it was assumed that the M28 will be in place and operational.

Table 7.29 Assessment Scenarios for Modelling

Scenario	Construction Peak / Operation Peaks			Existing Network Peaks	
	06:00-07:00	14:00-15:00	18:00-19:00	06:30-07:30	15:30-16:30
2025 Base Year	✓	✓	✓	✓	✓
2029 Construction Year	✓	-	✓	-	-
2030 Opening Year (Without M28)	✓	✓	✓	✓	✓
2030 Opening Year (With M28)	✓	✓	✓	✓	✓
2035 Opening Year + 5	✓	✓	✓	✓	✓
2045 Opening Year + 15	✓	✓	✓	✓	✓

The results of the junction assessments are provided in **Appendix 7.1** and are briefly summarised for each junction below.

7.9.5 Shannonpark Roundabout

7.9.5.1 2025 Base Year

In the 2025 base year, the Shannonpark Roundabout shows that all approaches to the junction operated within capacity in the 06:00 – 07:00 peak although the approach from Cork (N28 North) operated close to capacity. Both the approach from Cork and Carrigaline (R611 South) operated at capacity during the 06:30 – 07:30 peak period.

During the 14:00 – 15:00 peak all of the approaches operated within capacity while the approach from Ringaskiddy (N28 East) was operating over capacity as employees returned home during the 15:30 – 16:30 peak hour. During the 18:00 – 19:00 peak period the junction was performing better than during the 15:30 – 16:00 peak hour, although the N28 East approach was still operating at capacity.

7.9.5.2 2029 Construction Year

In the 2029 construction year, only the 06:00 – 07:00 and the 18:00 – 19:00 peak periods were assessed, since, as a mitigating measure to avoid network peaks, the majority of construction workforce traffic would be expected to arrive and depart within these peaks. The analysis shows that the construction traffic would have a moderate impact on the operation of the junction during both of the abovementioned two peak periods. The deterioration of the junction performance is caused by both background traffic growth and the construction traffic. During the 06:00 – 07:00 peak period, the approach from Cork is expected to operate over capacity causing vehicle queuing to occur while during the 18:00 – 19:00 peak period the approach from Ringaskiddy (N28 East approach) is expected to operate over capacity and cause long vehicle queues. However, as shown in the 2025 analysis, the earlier and later peaks have more residual capacity compared to the network peak periods.

7.9.5.3 2030 Opening Year

In the opening year 2030, the operational traffic associated with the facility has a minor impact on the junction in all peak hours in the scenario where the M28 is not yet operational. The proposed opening hours of 06:00-20:00 allows the morning and evening operational peaks to occur outside of the network AM and PM peaks, and the proposed restrictions on waste acceptance at the facility during the network AM and PM peaks ensure that the impacts associated with the facility at these times are minimal.

In the scenarios with the M28 in operation, the junction operation changes drastically when it is expected that traffic will divert to the M28 and will have ample spare capacity during all peak hour periods.

7.9.5.4 2035 and 2045 Operational Years

For these two operational years it is expected that the M28 will be in place and that therefore traffic on the N28 would be dramatically less and that the N28 will perform more of a local road function and not a strategic function as it currently does.

The results show that in both of these future horizon years the junction performs very well during all peak hours.

7.9.6 Raffeen Bridge Junction

7.9.6.1 2025 base year

During the 2025 base year, the Raffeen Bridge junction operated satisfactorily, with minimal queuing or delay during all of the peak periods.

7.9.6.2 2029 Construction Year

During the 2029 construction year, both with and without the development traffic, the junction is expected to operate within capacity in the 06:00 to 07:00 and the 18:00 – 19:00 peak hour periods.

7.9.6.3 2030, 2035 and 2045 Operational Years

During the 2030 operational assessment year, the junction operates satisfactorily in all peak hour periods both with and without the development traffic. However, the N28 right turn to Raffeen operates at capacity during the 15:30 – 16:30 peak period, both during the with and without development traffic scenarios. Once the M28 is in place all approaches to the junction is expected to operate satisfactorily.

During the 2035 and 2045 operational assessment years the junction is expected to operate satisfactorily with and without peak hour periods and in all peak hour periods.

The impact of the development traffic during the operational traffic scenarios is expected to be negligible.

7.9.7 Shanbally Roundabout

7.9.7.1 2025 Base Year

During the 2025 base year, the Shanbally Roundabout experiences heavy eastbound traffic flow in the AM peak periods (06:00 – 07:00 and 06:30-07:30) and the junction operates at capacity. On site observations have shown that due to the tidal nature of the traffic, with little or no opposing traffic, the junction generally does not break down to gridlock conditions. The eastbound traffic forms a continuous slow-moving platoon of vehicles through the junction. However, this slow-moving platoon is sensitive to interruptions and can quickly deteriorate into vehicle queuing and delays.

During the PM network peak (15:30-16:30), the opposite traffic pattern occurs – the returning traffic heading to Cork and Carrigaline approaches the junction – this time however from the west and south due to the locations of the various industrial developments along the N28 and south in Curraghbinny.

Again, due to the tidal nature of the traffic flow, the returning westbound traffic flow faces little to no opposing traffic at the roundabout, but any disruption can cause some minor queuing and delay on the approach arm from the south (Marian Terrace) as this traffic yields to westbound flow.

7.9.7.2 2029 Construction Year

During the 2029 construction year the traffic flow towards Ringaskiddy approach is expected to operate at capacity during the early AM peak hour when construction traffic will be arriving at the development site. This traffic movement reverses during the late afternoon peak hour when construction traffic departs the site.

The construction traffic is expected to contribute to the junction operating slightly worse than compared to the scenario where there is no construction traffic.

7.9.7.3 2030, 2035 and 2045 Operational Years

During the 2030 operational year, without the M28 in place, the traffic flow approach towards Ringaskiddy during the morning peak hours is expected operate at capacity while the returning movement during the afternoon peak periods will also operate at and over capacity. The proposed development traffic contributes slightly towards the poor performance of the junction in this scenario. However, the results show that in the scenario where the M28 is in place, the junction operates very well, accounting for the diversion of traffic onto the new road infrastructure that is expected to be available.

During the 2035 and 2045 operational years the junction is expected to operate satisfactory in all peak period assessed, with or without the proposed development traffic.

7.9.8 Port of Cork Junction (N28/R613/Port of Cork)

7.9.8.1 2025 Base Year

In the 2025 base year, the Port of Cork junction has sufficient capacity to accommodate the prevailing traffic flows. During the morning and evening network peaks, the available capacity at the junction is reduced, however it is still seen to perform well. Outside of the network AM and PM peaks, however, there is substantial residual capacity at the junction.

7.9.8.2 2029 Construction Year

During the 2029 construction year, the junction has sufficient capacity to accommodate the additional traffic flows associated with the construction of the facility. The scheduling of construction activity outside of the morning and evening network peak periods ensures that the construction peak periods occur when there is capacity available at the junction.

7.9.8.3 2030, 2035 and 2045 Operational Years

Similarly, in the 2030 (without and with the M28), 2035 and 2045 assessment years, the junction is seen to be capable of accommodating the projected operational traffic flows.

7.9.9 Ferry Port Junction

7.9.9.1 2025 Base Year

In the 2025 base year, the Ferry Port junction is very lightly trafficked outside of specific peak times, and as such has significant residual capacity.

7.9.9.2 2029 Construction Year

Similarly, in the 2029 construction year, the junction is approaching capacity in the morning on the N28 Eastbound.

7.9.9.3 2030, 2035 and 2045 Operational Years

In the 2030 opening year, in the scenario where the M28 is not yet operational the junction is approaching capacity in the morning on the N28 Eastbound.

In the 2030 opening year, with the M28 operational, as well as both the 2035 and 2045 assessment years, the junction is also seen to have ample sufficient capacity to accommodate the projected traffic flows associated with the facility.

7.9.10 Proposed Entrance to Ringaskiddy Resource Recovery Centre

7.9.10.1 2029 Construction Year

During the construction of the facility in 2029, the proposed development site access has sufficient capacity to accommodate the projected traffic flows associated with the construction of the facility.

7.9.10.2 2030, 2035 and 2045 Operational Years

Similarly, in the 2030, 2035 and 2045 assessment years, the junction has sufficient capacity to accommodate the projected traffic flows associated with the proposed development.

7.10 Mitigation and Monitoring Measures

As part of the design process for the proposed development, a number of mitigation measures were included to control the impact of the generated traffic on the local road network.

7.10.1 Indaver Staff Mobility Management Plan

Indaver has prepared a Mobility Management Plan (MMP) for staff employed at the facility, which is intended to reduce the amount of single-occupancy car trips to and from the site. Note that for the purpose of this assessment, no reductions in single-occupancy car trips have been assumed as a result of the implementation of the mobility management plan.

This MMP will be reviewed and revised on an annual basis. The review will comprise the undertaking of staff travel-to-work surveys and the review of targets set in the MMP. In the longer term, this will remain part of the company policy in order to ensure that the longer-term capacity of the N28 and upgraded M28 are still considered.

The Indaver Staff Mobility Management Plan is included in **Appendix 7.2**.

7.10.2 Staff Operational Hours

As outlined in this assessment, Indaver has structured staff working hours in order to ensure that arrivals and departures will occur outside of the AM and PM network peak periods. This will ensure that the traffic flows associated with staff movements at the site will occur during hours where there will be sufficient reserve capacity on the local road network to accommodate the projected increase in traffic. Once the M28 is operational, the implementation of restrictions to staff working hours shall be lifted as the M28 will have capacity to accommodate these trips and the impact of these on Ringaskiddy village is removed.

Similarly, during the construction stage in 2029, restrictions on arrivals and departures have been proposed which will ensure that no vehicles (construction staff and HGVs) will arrive or depart the site during the AM and PM network peaks. Instead, these movements will occur during hours with sufficient reserve capacity on the local road network.

7.10.3 Indaver HGV Mobility Management Plan

The strategic development proposals submitted by the Port of Cork (2015) and the renewed application (2025) for an expansion of their facility at Ringaskiddy includes a Freight Mobility Management Plan, developed to assist the Port in managing and controlling the flow of traffic to and from Ringaskiddy during peak hours. The Port's approach includes a number of key elements, as outlined in the Traffic and Transportation chapter of the EIS documentation submitted as part of their planning application:

- Development and use of a booking system to manage freight arrivals and departures,
- Controlling and optimising gate operations to regulate HGV flow,
- Extended operating hours to allow the Port to operate outside of the AM and PM peaks, and
- The use of IT solutions to disseminate information to hauliers regarding port operations and traffic conditions.

Through the above measures, it is stated that the number of arrivals and departures can be controlled and reduced to an acceptable level.

The principle of mobility management is key in the Ringaskiddy area, where there are peak periods that experience high traffic flow, and corresponding inter-peak periods with significant spare capacity on the road network. Though the Port of Cork has completely different operational requirements to an incinerator with energy recovery, Indaver recognise the need for a similar approach to Mobility Management of HGV traffic.

In a similar manner to systems already in use at its Meath facility, Indaver proposes to implement an MMP for HGVs. This will include a dedicated Waste Planner who manages the SAP delivery booking system, control of gate operations at the site entrance, extended operating hours to allow customers to avoid the morning and evening peak periods on the local road network, and a web-text service to disseminate information to customers. This will optimise the volume of waste delivery HGV traffic travelling to and from the site on the road network over the course of the whole day, allowing for traffic arrivals to be controlled and scheduled during peak periods.

The above measures will allow Indaver to control the arrival and departure of HGVs in the 07:00-09:00 and 16:00-18:00 peak periods and reduce HGV trips to and from the resource recovery centre during these times to a minimal level in the scenario where the M28 is not operational. Once the M28 is operational the system will remain in use to ensure orderly deliveries throughout the course of the day as outlined, with the need to reduce arrivals and departures in peak hours no longer required.

It is noteworthy that regardless of traffic conditions in the Ringaskiddy area, Indaver must have control over the delivery of waste material, including advanced notification of the type of waste material to be delivered, and the date of delivery. This is due to the need to control the calorific value (CV) of the mix of waste accepted at the facility at any one time. Consequently, Indaver already adopt a robust approach to the advance planning of the acceptance of waste at specific times, this practice is currently in place at the Meath facility.

Adopting this system will ensure that the impact of HGV traffic flows associated with the facility will be minimised during peak periods until the M28 is operational, and that truck queuing in and out of the facility will be nominal. The HGV mobility management plan covers all stages of delivery, from pre-arrival, through to arrival and presence on-site, and departure. The system works as follows:

- Step 1 – The Indaver Waste Planner uses the booking system to create a high-level waste delivery plan,
- Step 2 – A week in advance, the waste planner in consultation with clients, creates a sales order for each delivery. This includes information about the customer, the waste type and the allocated delivery slot,
- Step 3 – The waste delivery arrives at the facility – note that drivers cannot enter the facility without checking in with the gate-keeper and receipt of a swipe card,
- Step 4 – The gate-keeper matches the delivery in question with the relevant sales order, the booking system records the arrival time and vehicle registration number, the driver receives a swipe card and a delivery docket,
- Step 5 – The driver swipes the card at the weighbridge, recording the entry weight and time, and the driver enters the site,
- Step 6 – The driver proceeds to the waiting zone outside the tipping hall, hands in the delivery docket, and proceeds to a tipping gate when instructed to do so,
- Step 7 – After tipping, the driver returns to the weighbridge,
- Step 8 – The driver swipes his card at the weighbridge, recording the exit weight and time, completing the delivery. An automatic record of the delivery is printed at the gatehouse,
- Step 9 – The driver parks outside the gatehouse, returns his swipe card to the gatekeeper and receives the printed delivery record. The driver then leaves.

At restriction periods, the number of available slots at the facility will be restricted in order to control the arrival of vehicles at the site. Turnaround time at the facility is approximately 25 minutes.

In addition to the proposed HGV MMP, the proposed extended operating hours of 06:00-20:00 will allow hauliers to schedule their deliveries to the proposed facility outside of the prevailing AM and PM network peak hours. Discussions with operators has suggested a strong preference for the proposed extended operating hours at the site, allowing these clients to schedule their deliveries outside of peak traffic times.

Indaver already employ a dedicated Waste Planner for the Meath facility who maintains communications with customers as part of their role. Indaver also already uses a web-text service for the Meath facility, to disseminate general announcements. Indaver proposes to have a dedicated Waste Planner and associated communications tools including a web-text service in Cork to allow hauliers and other customers to communicate with the Indaver Waste Planning Department quickly and efficiently regarding operations at the facility and prevailing road and traffic conditions.

The booking system allows Indaver to keep records of all arrivals and departures at the facility and can generate records for review by the local authority in order to demonstrate the efficacy of the proposed MMP, including arrival, entry and departure times, turnaround times and longer-term delivery trends.

Figure 7.6 shows a screenshot of the existing online planning tool in operation at the Meath facility. A step-by-step process flowchart of the HGV MMP is included in **Appendix 7.3**.

7.10.4 Construction Traffic Management Plan

Indaver will appoint a construction management team for the duration of the construction phase. The team will supervise the construction of the project, including monitoring the performance of the contractors to ensure that all of the proposed construction phase mitigation measures are implemented and that construction impacts and nuisance are minimised. Indaver will liaise with neighbours and the general community during the construction phase to ensure that any disturbance is kept to a minimum.

The Construction Traffic Management Plan included in the CEMP will be updated by the appointed main contractor prior to construction commencing. The Construction Traffic Management Plan will comprise all of the construction traffic mitigation measures which are set out in this EIS and any additional measures which may be required by the conditions attached to any grant of permission by An Coimisiún Pleanála. The Construction Traffic Management Plan will also include any specific requirements of Cork County Council during the construction phase including any monitoring and reporting requirements. This Plan will be submitted to and agreed with Cork County Council prior to construction commencement.

7.11 Residual Effects

Regardless of whether or not the proposed development proceeds, there are ongoing capacity issues on the local road network at a number of key junctions, particularly at Shannon Park and Shanbally roundabouts. The majority of the issues at these junctions are associated with the morning and evening network peak periods (06:30-07:30 and 15:30-16:30), with the Shannon Park Roundabout also quite busy in the early portion of 18:00-19:00 period (although less so than the two periods mentioned above). However, these capacity issues will be relieved upon the completion and operation of the M28 motorway which will result in a significant redistribution of traffic from the N28.

The introduction of the proposed development has a moderate impact during the construction phase in the 18:00-19:00 evening period. This impact is short term in nature as it is associated with construction activity at the site. Post-opening, the facility will not have a significant impact on the local road network.

Indaver have committed to scheduling construction traffic during the construction phase, and operational traffic in 2030 (and beyond) so as to have a minimal amount of traffic flow to and from the site in two-hour periods in the morning and evening, thereby avoiding the peak periods outlined above in the morning and evening, and instead availing of the capacity on the local road network outside of these times in the scenario where the M28 is not operational. Once the M28 is operational, the restrictions on scheduling of operational traffic shall be no longer required.

7.12 Cumulative Effects

The proposed development site is located in an area characterised by industrial land use and is generally surrounded by a number of pharmaceutical companies having large manufacturing facilities in the area, in addition to the Port of Cork facilities. As outlined in **Section 7.6**, a number of cumulative developments in the vicinity of the proposed development, have been taken into consideration in the preparation of this chapter and in the modelling of junctions analysed in **Section 7.9**. The anticipated traffic generation of these committed and potential developments was accommodated for in the application of annual growth rates to the baseline traffic flow data. The baseline traffic data has also been adjusted for future year assessments using a '*Medium*' growth profile as per the Transport Infrastructure Ireland Project Appraisal Guidelines. Therefore, it is considered that this adjusted traffic growth is sufficient to account for the majority of the committed developments in the vicinity of the site. The Port of Cork operational traffic has also been included as a specific additional development (i.e. additional to the adjusted traffic).

In future year scenarios, specific additional allowance was included in the assessment for the Port of Cork expansion proposals at their Ringaskiddy site, based on traffic flow information contained in the relevant submitted planning documentation and to accommodate the anticipated redistribution of traffic on the N28 in future year scenarios in which the M28 motorway is operational based on traffic flow information contained in the relevant submitted planning documentation.

The construction of the M28 motorway is due to commence in Q3 of this year, with the project anticipated to be completed in Q3 2028. As the construction year for the proposed development is 2029, it is not anticipated to coincide with the M28 construction. However, a worst-case scenario has been considered in which the M28 construction and the construction of the proposed development do temporarily overlap, in which case it is important to note that, as stated in the M28 EIS, the construction of the M28 is predominantly offline. Therefore traffic-related construction impacts likely to be not significant. Where construction of the M28 is online, i.e. the section from Carr's Hill to Bloomfield Interchange, the existing N28 will remain open to two - way traffic at all times, except for short term managed road closures for critical works. The section of online construction will result in localised temporary traffic impacts with or without the addition of construction vehicles from the proposed development.

However, it is important to state again that this is a worst-case scenario and should not occur due to the M28 scheduled completion in 2028 prior to the proposed development scheduled construction in 2029.

Figure 7.7 outlines the anticipated construction timelines for a number of larger scale projects in the vicinity of the proposed development, including the expansion of the Port of Cork and the development of the M28 Cork to Ringaskiddy Motorway. Construction timelines for these projects are based off publicly available information (i.e. planning documents).

7.13 References

European Commission – Transport – Infrastructure – TEN-T – Connecting Europe – Core Network.

M28 Cork to Ringaskiddy Project, EIS Volume 2 – Main Text of the EIS - https://www.corkrdo.ie/m28-cork-to-ringaskiddy-project/

Ringaskiddy Port Redevelopment, Environmental Impact Assessment Report (EIAR) - Volume II Main Document (2025) - www.portredevelopmentringaskiddy.ie/index.cfm/page/eiar

Transport Infrastructure Ireland (TII) (2021) *Project Appraisal Guidelines for National Roads (2021), Unit 5.3 – Travel Demand Projections, Table 6.1: Link-Based Growth Rates: Metropolitan Area Annual Growth Rates*, TII, Dublin, Ireland.