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INTRODUCTION

Background

- 11.1 This Chapter of the Environmental Impact Assessment Report (EIAR) relates to the potential effects of the continued use of the existing permitted quarry at Barryscourt & Rossmore Tds., Carrigtohill, Co. Cork on material assets.
- 11.2 The planning application is for continuance of use of the existing quarry to the permitted extraction level of -40mOD. The application made in accordance with the requirements of the Planning and Development Regulations 2001-2018 (as amended).
- 11.3 The application site extends to c. 24.7 hectares and comprises an existing operating quarry permitted under planning permission Plan. Ref. 03/4570. The application site is indicated on an extract from the 1:50,000 scale Ordnance Survey Discovery series map in Figure 1-1.
- 11.4 The operator of the existing quarry and applicant with respect to this application is Kilsaran.
- 11.5 The proposed development will consist of continuance of use of the existing quarry development within an overall application area of c.24.7 hectares; extraction to the level of 40m below Ordnance Datum, previously permitted under Plan. Ref. 03/4570; final restoration of the quarry void area and an area of 3.8 hectares to the north adjacent to the public road. Permission is also being sought for an extension to the existing permitted operating hours for the readymixed concrete plant, and for out of hours operation of the plant up to a maximum of 40 occasions per year, to supply critical and strategic building / infrastructure / maintenance projects whose construction requires supply of concrete outside normal plant operating hours.
- 11.6 The quarry will continue to develop within the existing extraction area to the previously permitted level of -40 mOD. No additional topsoil stripping will be required. There will be a small volume of overburden soil to be moved from the north-western area of the quarry to the 3.8 hectare area to the north of the site. An outline of the proposed extraction plan and the final ground level contours is shown in Figure 2-2. Cross-sections through the final landform are shown in Figure 2-3. The total recoverable reserve of limestone from within the proposed extraction area is assessed at c.5.2 million tonnes.

For further detail of the proposed development and the application site context, refer to Chapter 2 of this EIAR.

Scope of Work / EIA Scoping

- 11.7 According to the EPA (EPA (2003) Advice Notes on Current Practice:
- “Resources that are valued and that are intrinsic to specific places are called ‘material assets’. They may be of either human or natural origin and the value may arise for either economic or cultural reasons”.*
- 11.8 Under Schedule 6 of the Planning and Development Regulations (2001) as amended, material assets also refer to architectural and archaeological heritage and cultural heritage.

- 11.9 The draft EPA guidelines in relation to the preparation of EIAR¹ note the following in respect of material assets:
- “Material assets can now be taken to mean built services and infrastructure. Traffic is included because in effect traffic consumes roads infrastructure.”*
- 11.10 The specific headings in the guidelines in relation to material assets refer to built services, roads and traffic and waste management.
- 11.11 Chapter 14 of this EIAR addresses traffic impacts arising from the proposed development and Chapter 12 addresses architectural heritage, archaeological heritage and cultural heritage issues, separately to this chapter.
- 11.12 This chapter comprises the consideration of existing resources pertinent to the proposed development and the application area that are not addressed elsewhere in the EIAR, and the likely development impacts on those resources. On this basis, this chapter addresses built services and waste management. Built services are understood to refer to electricity, telecommunications, gas, water supply infrastructure and sewerage.

Consultations / Consultees

- 11.13 Consultation was not undertaken in the preparation of this chapter of the EIAR.

Contributors / Author(s)

- 11.14 This chapter of the EIAR was prepared by Tim Paul, Director, SLR Consulting Ireland. Tim is a chartered mineral surveyor and chartered engineer with over 25 years’ experience in providing strategic development advice, mineral reserve valuation, minerals planning & EIA; mine waste management; and transactional due diligence services for mining and minerals developments in Ireland and internationally.

Difficulties Encountered

- 11.15 No limitation or difficulties were encountered in the preparation of this chapter of the EIAR.

REGULATORY BACKGROUND

Guidelines

- 11.16 As outlined above, this chapter of the EIAR has been prepared in accordance with the draft Guidelines on the Information to be contained in Environmental Impact Assessment Reports by the EPA (2017).

Technical Standards

- 11.17 There are no technical standards relevant to this chapter of the EIAR.

¹ Environmental Protection Agency (2017) *Guidelines on the Information to be contained in Environmental Impact Assessment Reports*.

RECEIVING ENVIRONMENT

Study Area

11.18 The study area relates to the land uses, dwellings, buildings and infrastructure on the public road network surrounding the application area.

Baseline Study Methodology

11.19 The baseline study comprises a desk-top review of online and published resources, information provided by the applicant and information contained in the other chapters of this EIAR. Ordnance Survey maps and aerial photography were also examined.

Sources of Information

11.20 Baseline information was obtained from the following sources:

- Myplan.ie (<http://myplan.ie>);
- Cork County Development Plan;
- Specialist environmental topic chapters of this EIAR;
- Ordnance Survey maps;
- Aerial photographs;
- Openstreetmap.org.

Built Services / Infrastructure

11.21 Rossmore Quarry is served by mains electricity which feeds directly into the overall site.

11.22 Potable water is supplied from existing mains connection. Process water is supplied from freshwater storage pond.

11.23 Effluent from toilet facilities is treated using an existing on-site treatment system. Surface water is managed as outlined in Chapter 7 of this EIAR and treated water is discharged under the existing discharge licence.

Waste Management

General Waste Management

11.24 General waste produced within the overall site is transported to local designated waste storage areas, where it is collected in bins and removed for recycling or disposal by a licensed waste contractor.

11.25 Waste oils are collected periodically by a licensed company. Any light bulbs, batteries, rubber tyres and scrap metal arising on the site are stored within local designated scrap storage areas prior to collection by a licensed collector.

- 11.26 The Environmental Management System (EMS) provides details of waste management procedures and details on the reuse/recycling/disposal route for waste that may arise on the overall site.

Extractive Waste Management

- 11.27 An Extractive Waste Management Plan for Rossmore Quarry is in place, in compliance with the Waste Management (Management of Waste from the Extractive Industries) Regulations 2009.

IMPACT ASSESSMENT

Evaluation Methodology

- 11.28 The evaluation of effects on built services and waste comprises a qualitative assessment based on the quantitative and qualitative analysis of potential effects on the environment undertaken in other chapters of this EIAR. The assessment also takes into account a review of relevant literature and professional judgement in relation to impacts on built services and waste.

Built Services / Utilities

Construction and Operational Stage Impacts

- 11.29 The proposed development relates to the continuation of extraction in the existing quarry. No construction stage arises and accordingly there will be no construction stage impacts.
- 11.30 The existing road access infrastructure, processing, manufacturing and ancillary development is in place and there will be no site establishment or preparatory works required.
- 11.31 The proposed development will not require the installation of electricity, water supply, telecommunications or wastewater infrastructure and there are no existing built services within or traversing the application area. All of the necessary infrastructure is already provided within the overall site.
- 11.32 Given that the proposed development does not require the provision of any additional built services and the overall site currently operates without significant adverse effects on built services, it is considered that the proposed development would not have any significant, adverse, direct or indirect effects on water supply, wastewater, telecommunications or electricity supply.

Post-Operational Stage Impacts

- 11.33 The post-operational stage relates to the application area following the cessation of extraction operations and the completion of any restoration works.
- 11.34 No activities that would have the potential to affect any built services in the vicinity would be undertaken during this stage. It is not anticipated that there would be any significant direct or indirect effects on built services / utilities during this phase of the development.

Waste

Construction and Operational Stage Impacts

- 11.35 The proposed development relates to the continuation of extraction in the existing quarry. No construction stage arises and accordingly there will be no construction stage impacts.
- 11.36 There are existing waste management arrangements in place in relation to general waste that would be generated by the staff working at the overall site. These arrangements will remain in place for the duration of the operational stage. Any waste generated by the operational stage works will be handled and stored in an appropriate manner and will be removed off site by an appropriately licenced waste collector.
- 11.37 The limited volume of general waste generated within the overall site is appropriately handled. It is considered, therefore, that the impact of waste generation during this stage will be medium-term, temporary and insignificant.

Post-Operational Stage Impacts

- 11.38 By the post-operational stage, the extraction area will be restored. Any waste generated on the site will be limited to general waste produced by any employees that engaged in aftercare on an intermittent basis over a limited time period. Any such limited volumes of waste will be handled in accordance with the established practices on the overall site and will be removed by a licenced contractor.
- 11.39 It is considered, therefore, that the generation of waste during this period will be short-term, temporary and insignificant in its effects.

Unplanned Events (i.e. Accidents)

- 11.40 According to the EPA guidelines, unplanned events, such as accidents, can include “*spill from traffic accidents, floods or land-slides affecting the site, fire, collapse or equipment failure on the site*”. The 2014 EIA directive refers to “*major accidents, and/or natural disasters (such as flooding, sea level rise, or earthquakes)*”. In addition, the EPA guidelines note that “*Some types of factors are particularly vulnerable to unplanned events that have the potential to cause significant sudden environmental effects*”.
- 11.41 In this instance, the vulnerability of the proposed development to accidents, unplanned events or natural disasters is relatively limited owing to
- the nature of the materials being handled / extracted;
 - the relatively simple nature of the development works, extraction and processing activities; and
 - the established nature of these activities with proven management systems in place.
- 11.42 Unplanned events in relation to the proposed development could conceivably relate to:
- instability arising from excavation, handling and placement of materials;
 - spill from traffic accidents; and
 - flooding.
- 11.43 The quarry design incorporates industry standard slope angles, bench heights, and bench widths to ensure both short-term and long-term stability. Adhering to the HSA (2020) Safe Quarry

Guidelines to the Safety Health and Welfare at Work (Quarries) Regulations 2008 will limit the potential for unplanned events in the form of instability in the quarry faces. In any event, instability following the extraction of rock would be unlikely to have any significant impacts on material assets.

- 11.44 The OPW modelled Medium Probability coastal / tidal flood event, has approximately a 1-in-a-200 chance of occurring or being exceeded in any given year, referred to as an Annual Exceedance Probability (AEP) of 0.5%, and the OPW mapping shows the site flooding via the southeast corner of the site where there is a low point in the embankment between the quarry and the estuary. Kilsaran have an emergency contingency plan in place to temporarily raise this area of the site using materials and machinery available on site, in the highly unlikely circumstance that such a flooding event is forecast.
- 11.45 Chapter 14 (Traffic) indicates that the proposed development would not have significant effects on the safety or capacity of the surrounding road network. It is considered that the risk of an accident resulting in a spillage would be no greater in relation to this development than it is for any other form of development that relies on the transportation of goods and materials by HGVs. The potential for significant impacts on material assets as a result of a road spillage is likely to be low and any such effects would be temporary.
- 11.46 In light of these factors, it is considered that no material assets identified in this chapter are particularly vulnerable to unplanned or unforeseen events and that any unplanned events, were they to occur, would be unlikely to cause significant, sudden environmental effects in respect of existing built services / utilities and infrastructure or the management of wastes.

Cumulative / Synergistic Impacts

- 11.47 A search of the online planning search facility indicates that there are no other planned developments in the vicinity of the application area, which were granted planning permission in the last five years and have the potential to have any significant adverse cumulative impacts on material assets.

Transboundary Impacts

- 11.48 It is not anticipated that the impacts of the proposed development would have any significant transboundary effects on material assets.

Interaction with Other Impacts

- 11.49 It is not anticipated that the effects of the proposed development on material assets would interact significantly with other impacts.

'Do-nothing Scenario'

- 11.50 In a 'do-nothing scenario', the permitted operations would continue until such time as the existing permission expires and the overall site is restored.

- 11.51 A 'do-nothing scenario' would not result in any significant adverse impact in relation to built services and waste generation / management and the effect of a 'do-nothing scenario' would be neutral in relation to these factors.

MITIGATION MEASURES

Construction and Operational Stage

- 11.52 No construction stage arises, and there are no built services / utilities within the application site that would be directly affected by the operational stage of the proposed development. No mitigation measures are therefore required in relation to built services / utilities.
- 11.53 Aside from the continued implementation of established good practice and housekeeping, no additional mitigation measures are required in relation to general waste management.

Post – Operational Stage

- 11.54 There are no built services / utilities within the application site that would be directly affected during the post-operational stage of the proposed development. No mitigation measures are required in relation to built services / utilities.
- 11.55 It is not expected that any significant volumes of waste would be generated during the post-operation stage. Any such waste will be handled in accordance with the established practices on site and will be removed by a licenced contractor. No mitigation measures are proposed in relation to waste management.

RESIDUAL IMPACT ASSESSMENT

Construction Stage

- 11.56 The proposed development relates to the continuation of extraction in the existing quarry. No construction stage arises and accordingly there will be no construction stage residual impacts.

Operational Stage

- 11.57 There will be no significant adverse residual impacts on material assets arising during the operational stage. The residual impacts on built services and waste are predicted to be as per the impact assessment outlined above.

Post – Operational Stage

- 11.58 There will be no significant adverse residual impacts on material assets arising during the post-operational stage. The residual effects on built services and waste are predicted to be as per the impact assessment outlined above.

MONITORING

11.59 There is no specific monitoring required or proposed in relation to material assets.

REFERENCES

Environmental Protection Agency (2017) 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports'.

Health & Safety Authority (HSA, 2020). 'Safe Quarry – Guidelines to the Safety, Health & Welfare at Work Regulations 2008 (S.I. No. 28 of 2008)'.

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INTRODUCTION

Background

- 12.1 This Chapter of the Environmental Impact Assessment Report (EIAR), commissioned by SLR Consulting Ireland on behalf of Kilsaran, addresses the impacts on the archaeological, architectural and cultural heritage of the application site and the surrounding area of a proposal to continue the existing quarry at Barryscourt & Rossmore Tds, Carrigtohill in Co. Cork. The site location and study area are indicated in Figure 12-1.
- 12.2 The proposed development will consist of continuance of use of the existing quarry development within an overall application area of c.24.7 hectares; extraction to the level of 40m below Ordnance Datum (i.e. - 40 mOD), previously permitted under Plan. Ref. 03/4570; final restoration of the quarry void area and an area of 3.8 hectares to the north adjacent to the public road. Permission is also being sought for an extension to the existing permitted operating hours for the readymixed concrete plant, and for out of hours operation of the plant up to a maximum of 40 occasions per year, to supply critical and strategic building / infrastructure / maintenance projects whose construction requires supply of concrete outside normal plant operating hours.
- 12.3 The existing site, operations and the proposed development are described in detail in EIAR Chapter 2 – Project Description.

Scope of Work / Methodology

- 12.4 This study which complies with the requirements of Directive EIA 2014/52/EU is an assessment of the known or potential cultural heritage resource within a specified area and includes the information that may reasonably be required for reaching a reasoned conclusion on the significant effects of the project on the environment, taking into account current knowledge and methods of assessment. It consists of a collation of existing written and graphic information in order to identify the likely context, character, significance and sensitivity of the known or potential cultural heritage, archaeological and structural resource using an appropriate methodology (EPA 2002 and 2003).
- 12.5 The study involved detailed investigation of the archaeological and historical background of the development site, the landholding and the surrounding area extending 1km from the development boundary (Fig. 12-1). This area was examined using information from the Record of Monuments and Places of County Cork, the Cork County Development Plan, lists of excavations and cartographic and documentary sources. A field inspection was carried out on 17 July 2018 in an attempt to identify and assess any known archaeological sites and previously unrecorded features and portable finds within the area of landholding.
- 12.6 An impact assessment and mitigation strategy have been prepared. An impact assessment is undertaken to outline potential adverse impacts that the proposed development may have on the cultural resource, while a mitigation strategy is designed to avoid, reduce or offset such adverse impacts.

- 12.7 The application site is located in the Townlands of Barryscourt & Rossmore, Co. Cork on OS Six Inch sheet No. 75, c.1km to the south of the N25 Waterford to Cork road and to the south of the town of Carrigtohill. The proposed development would involve the continuance of use of the existing operational area.
- 12.8 Extracts from the Record of Monuments and Places for County Cork are presented on a map of the local area around the site in Figure 12-1. RMP sites included on the Records of Monuments and Places statutory mapping are identified by black circles. The application area is shown in red.

Contributors / Author(s)

- 12.9 The assessment was prepared by Dr. Charles Mount who is a member of the Institute of Archaeologists of Ireland and a member of the Discovery Programme and has more than twenty-five years of cultural heritage assessment experience. He holds M.A. and Ph.D. degrees in archaeology as well as a professional diploma in EIA and SEA Management.

Limitations / Difficulties Encountered

- 12.10 No difficulties were encountered during the desktop study, field survey or in the preparation of this report.

REGULATORY BACKGROUND

- 12.11 The following paragraphs set out the regulatory background with regard to cultural impact assessments in Ireland in general and the site-specific planning background relevant to this cultural impact assessment, in particular.

Legislation

- 12.12 No specific Irish legislation exists governing cultural heritage assessments.

Planning Policy and Development Control

- 12.13 The Co. Cork Development Plan 2014-2020 (CDP) is the statutory plan detailing the development objectives/policies of the local authority. The plan includes objectives and policies, relevant to this assessment, i.e. with regard to cultural heritage.

Cultural Heritage

- 12.14 Chapter 7 of the Cork County Development Plan sets out the policies on heritage within the county. The Council recognises the importance of identifying, valuing and safeguarding the archaeological and architectural heritage of Cork.
- 12.15 The Council's objectives regarding archaeology are to:
- ENV 3-1 Sites, Features and Objects of Archaeological Interest
- (a) It is an objective to safeguard sites, features and objects of archaeological interest generally.
- (b) It is an objective of the Planning Authority to secure the preservation (i.e. preservation in situ or in exceptional cases preservation by record) of all archaeological monuments included in the

Record or Monuments and Places as established under Section 12 of the National Monuments (Amendment) Act, 1994, and of sites, features and objects of archaeological and historical interest generally.

In securing such preservation, the planning authority will have regard to the advice and recommendations of the Department of the Environment, Heritage and Local Government.

ENV 3-2 Newly Discovered Archaeological Sites It is an objective to protect and preserve archaeological sites discovered since the publication of the Record of Monuments and Places.

ENV 3-3 Zones of Archaeological Protection It is an objective to protect the Zones of Archaeological Potential located within both urban and rural areas as identified in the Record of Monuments and Places.

ENV 3-4 Archaeology and Infrastructure Schemes the Council will have regard to archaeological concerns when considering proposed service schemes (including electricity, sewerage, telecommunications, water supply) and proposed roadworks (both realignments and new roads) located in close proximity to Recorded Monuments and Places and the Zones of Archaeological Potential.

ENV 3-5 Underwater Archaeology It is an objective to protect and preserve the archaeological value of underwater archaeological sites. In assessing proposals for development, the Council will take account of the rivers, lakes, intertidal and sub-tidal environments.

ENV 3-6 Industrial Archaeology It is an objective to protect and preserve the archaeological value of industrial sites such as mills, lighthouses, harbours etc. Proposals for refurbishment, works to or redevelopment/conversion of these sites should be subject to a full architectural and archaeological assessment.

ENV 3-7 Raising Archaeological Awareness It is an objective to raise awareness and improve practice in relation to archaeology in County Cork. Guidance material will be produced setting out the requirements for archaeological protection in the County.

ENV 3-8 It is an objective of the Council to develop and maintain an integrated database system for all relevant information pertinent to the archaeological and built heritage of the County.

Protected Structures

12.16 The Council's objectives are to:

ENV 4-1 General Protection of Structures (a) It is an objective to seek the protection of all structures within the County, which are of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest. (b) In accordance with this objective, a Record of Protected Structures has been established and is set out in Volume 2 of this Plan.

ENV 4-2 Record of Protected Structures It is a particular objective to ensure the protection of all structures (or parts of structures) contained in the Record of Protected Structures.

ENV 4-3 Developing a Comprehensive Record (a) It is an objective, during the lifetime of this plan, to extend the Record of Protected Structures in order to provide a comprehensive schedule for

the protection of structures of special importance in the County. (b) The identification of structures for inclusion in the Record will be based on criteria set out in the Architectural Heritage Protection - Guidelines for Planning Authorities (2005).

ENV 4-4 Protection of Structures Not Included in Record of Protected Structures It is an objective to recognise the County's heritage, which is not included in the Record of Protected Structures and in particular the importance of the County's Railway and Maritime Heritage.

ENV 4-5 It is an objective to protect important non-structural elements of the built heritage. These elements include historic gardens/designed landscapes, stone walls, landscapes and demesnes, curtilage features and street furniture. The Council will promote awareness and best practice in relation to these elements.

Guidelines

- 12.17 The report format and some of the descriptions of effects are based on the **Guidelines on the Information to be contained in Environmental Impact Assessment Reports** (Draft), published by the Environmental Protection Agency (EPA) in May 2017.

Significant Risks

- 12.18 There are no known significant risks to human health or environmental effects, which may occur in relation to this cultural heritage assessment.

RECEIVING ENVIRONMENT

Study Area

- 12.19 The overall study area measures 2.60km by 3.5km, an area of 9.1 square kilometres is shown in Figure 12-1.

Baseline Study Methodology

- 12.20 Research has been undertaken in two phases. The first phase comprised a paper survey of all available archaeological, historical and cartographic sources. The second phase involved a field inspection and archaeological assessment of the proposed development area.

Paper Study

- 12.21 This is a document search. The following sources were examined and a list of sites and areas of archaeological potential compiled:

- Record of Monuments and Places County Cork
- The Sites and Monuments Record
- Available aerial photography
- Cartographic and written sources relating to the study area
- Cork County Development Plan 2014-2020

- The National Inventory of Architectural Heritage

The Record of Monuments and Places

- 12.22 This was established under section 12 (1) of the 1994 National Monuments (Amendment) Act and provides that the Minister shall establish and maintain a record of monuments and places where the Minister believes there are monuments, such record to be comprised of a list of monuments and relevant places and a map or maps showing each monument and relevant place in respect of each county in the State. The associated files contain information of documentary sources and field inspections where these have taken place. 12 Recorded monuments were noted within the study area. All available information on these sites is provided in Appendix 12-1.

Cartographic Sources

- 12.23 This included seventeenth century mapping as well the 1st and 2nd editions of the Ordnance Survey six-inch maps and Documentary sources provide more general historical and archaeological background.

The County Development Plan

- 12.24 This notes structures listed for preservation.

Field Inspection

- 12.25 A field inspection was carried out to determine the location, extent and ascertain the significance of any archaeological sites and to identify any previously unrecorded or suspected sites and portable finds.

RECEIVING ENVIRONMENT, HISTORICAL AND ARCHAEOLOGICAL LANDSCAPE

The Landscape

- 12.26 The application site is located in the Townlands of Barryscourt & Rossmore, Co. Cork, on OS Six Inch sheet No. 75, c. 1km to south of the N25 Waterford to Cork road and to the south of the town of Carrigtohill. The application site is situated in low-lying and undulating countryside next to Rossmore Bay.

Historical and Archaeological Background

- 12.27 The following is a brief summation of the main types of sites and monuments that are known from the county along with the historical development of the study area. It is intended as a guide to the types of sites and monuments that might be encountered in the study area.
- 12.28 The site is situated in the Townlands of Barryscourt & Rossmore, in the Barony of Barrymore, and the civil parish of Mogeasha.

The Prehistoric Period

- 12.29 Prehistoric activity in the study area is indicated by the presence of four Fulacht fia (RMP CO075-018002-, CO075-070----, CO075-071---- and CO075-072----) in Barryscourt townland and a midden, possibly of prehistoric or later date, in Rossmore townland (RMP CO076-011----). A Linear earthwork in Barryscourt townland (CO076-002----) may have formed part of the prehistoric Cliadh Dubh, an ancient linear earthwork over 20km long dating prior to 100AD which runs north-south for 24 kilometres from the Ballyhoura Hills to the Nagle Mountains passing over the River Blackwater.

The Early Medieval Period

- 12.30 In the Early Medieval period (500 AD-1170 AD) the study area formed part of the cantred of Uí Meic Caille, later known as Ymakille, which formed part of the Kingdom of Uí Liatháin (MacCotter 2008, 1156).
- 12.31 Classically settlement at this period is indicated by the presence of enclosed farmsteads known as ringforts, when enclosed with earthen banks, and cashels when enclosed by stone walls. There is one ringfort known in the study area in Clyduff townland (CO076-071----) that indicates some settlement in the study area during the Early Medieval Period.

The Later Medieval Period

- 12.32 In the 1170s following the Anglo-Norman conquest the Barry family came into possession of Olethan and established their chief seat at Barryscourt. In the 13th/14th century a hall-type structure was constructed at Barryscourt that developed in the 15th century into a Tower House enclosed by a bawn (RMP CO075-018001). The Barrys gave up the Tower House In 1617 when Castlelyons Castle became their chief seat in Barrymore.

The Post-Medieval Period

- 12.33 By 1655-6 the Down Survey records that Rossmore townland, referred to as Tullogh Glinikelly, Collanaloonge & Killtowne, was held by Florence McCarthy 1641 and by John Reade in 1670 (<http://downsurvey.tcd.ie>). By the 18th century Barryscourt and Rossmore had come into the hands of the Coppinger family. William Coppinger died unmarried in 1862 and all his estates passed to his nephew, Morgan John O'Connell, brother of Daniel O'Connell of Derrynane who held the lands into the twentieth century (<http://landedestates.nuigalway.ie/LandedEstates/jsp/estate-show.jsp?id=2058>).

BUILDINGS

Protected Structures

- 12.34 The Cork County Development Plan 2014-20 and the Record of Protected Structures was examined as part of the baseline study for this chapter of the EIAR. The review established that there are no Protected Structures situated within the application area. There are two Protected structures listed within the study area (see below).

00497 Barryscourt Castle Barryscourt Townland
See Appendix 12-1 CO075-018001-.

00512 Martello Tower Rosslague townland
Freestanding oval-plan multiple-stage Martello tower, built 1813, now disused. Red brick chimneystacks. Dressed limestone walls.

- 12.35 The closest structure Barryscourt Castle is situated 0.875km north-east of the application area and this and the other structure in the study area are considered too far distant to be directly or indirectly impacted by the proposal.

Non-designated Structures

- 12.36 The National Inventory of Architectural Heritage (NIAH) which is maintained by the Dept. of Culture, Heritage and the Gaeltacht was examined as part of the baseline study for this chapter of the EIAR on 6 July 2018. The review established that there are no additional structures included in the NIAH situated within the application area.

- 12.37 There are six structures included in the NIAH situated outside the application area in the study area. The closest structure listed in the NIAH to the application area, a house in Barryscourt townland No. 20907613, is situated 0.61km to the north-east east of the application area (Fig. 12-1). This structure and the remaining structures in the study area are considered to be too far distant to be directly or indirectly impacted by the development proposal. The structures are noted below.

- 12.38 Tullagreen Country House No. 20907559
Detached five-bay two-storey over raised basement country house, built c. 1820, incorporating fabric of earlier dwelling and having single-bay breakfronts to north and south elevations, two-storey canted projection to east elevation and single-bay single-storey extension to west end of north elevation incorporating entrance. Skirt roof with overhanging eaves, render eaves course, rendered chimneystacks and cast-iron rainwater goods. Render cornice to canted bay. Rendered walls with render quoins. Recessed blind roundels having moulded render surrounds to north elevation of single-storey extension. Square-headed diminishing window openings with painted sills and two-over-two pane and one-over-one pane timber sliding sash windows. Round-headed windows to west elevation of single-storey extension having moulded render arcaded surrounds, cut stone sills and one-over-one pane timber sliding sash windows. Round-headed door opening to single-storey extension with render doorcase comprising piers supporting moulded archivolt set in recess, having timber panelled door and overlight. Square-headed door opening to south elevation with timber panelled half-glazed double-leaf doors surmounted by overlight and approached by flight of rendered steps.

- 12.39 Foaty Gate Lodge No. 20907560
Detached two-bay two-storey former gate lodge, built c. 1880, having gablets to front (west) elevation and single-storey extensions to east and north elevations. Now in use as house. Pitched slate roof with decorative ridge crestings, carved timber pinnacles and bargeboards to gables, cast-iron rainwater goods and skylights to east pitch. Flat-roofs to extensions. Exposed rubble limestone and Cork red sandstone walls with rendered round-headed niche to south elevation and rendered blind roundel to north elevation. Segmental-headed openings with render

surrounds and concrete sills and timber casement windows, opening to south elevation with blind pointed-arch above. Square-headed door opening to flat-roofed extension to north with recent timber panelled half-glazed door. Rubble limestone and Cork red sandstone gate piers and boundary walls to site having red brick and render coping and caps.

- 12.40 Bridge Lodge No. 20907561
 Bridge and sluice carrying road over Slatty Channel, built 1807, of coursed rock-faced limestone construction with carved limestone copings to parapet walls, carved limestone plaques with incised lettering to east parapet wall and round-headed arches to sluice openings.
- 12.41 Foaty Gate Lodge No. 20907562
 Detached three-bay single-storey gate lodge, built c. 1820, with lean-to extension to rear (west). Hipped slate roof with overhanging eaves with timber battens, red brick chimneystack and cast-iron rainwater goods. Rubble limestone walls. Square-headed window openings with quarry glazed timber casement windows. Recessed square-headed door opening to west elevation with timber battened door. Set to north-west of entrance gates comprising ashlar and carved limestone square-profile piers surmounted by replacement cast-iron lanterns and having replacement double-leaf cast-iron gates.
- 12.42 Foaty Gate Lodge No. 20907564
 Detached single-bay single-storey former gate lodge, built c. 1820, with portico to front (north) elevation and gabled porches to east and west elevations. In use as store. Pyramidal slate roof with overhanging timber coffered eaves and rendered chimneystack. Pitched slate roof with cut limestone coping to porches. Lined-and-ruled rendered walls with carved and cut limestone eaves course, plinth, corner pilasters and portico comprising free-standing fluted columns supporting decorative entablature. Carved and cut limestone corner pilasters to porches. Square-headed window openings, splaying to bases, with carved limestone surrounds and six-over-six pane timber sliding sash windows. Square-headed tripartite opening to north elevation with carved limestone surround and six-over-six pane flanked by two-over-two pane timber sliding sash windows. Square-headed door opening to south elevation of east porch with carved limestone surround and timber panelled door. Rendered sweep walls to entrance with carved limestone plinths and copings, square-profile carved limestone piers, paired and those to interior having classical detailing including recessed panels, decorative motifs to caps and animal statue finials. Cast-iron piers and pedestrian gates.
- 12.43 Barryscourt House No. 20907613
 Detached four-bay two-storey house, built c. 1830, having gabled half-glazed porch with to front (west) elevation. Pitched slate roof with red brick chimneystacks and cast-iron rainwater goods, decorative timber bargeboards and finial to porch. Rendered walls, roughcast rendered stall riser to porch. Segmental-headed openings with render surrounds to front elevation, square-headed openings to other elevations, having two-over-two pane timber sliding sash windows. Square-headed openings with one-over-one pane timber sliding sash windows with coloured glass margins to porch. Square-headed openings with half-glazed timber panelled door to front elevation and to front porch, timber battened door to rear (east) elevation. Rendered garden wall and square-profile piers to rear of house. Roughcast rendered plinth wall with concrete balustrade and rendered square-profile piers to front boundary of house. Three-bay single-storey outbuilding to rear elevation forming north range of yard, four-bay single-storey outbuilding forming east range of yard, both with pitched corrugated-iron roofs, rendered walls and square-headed openings. Yard to south with five-bay single-storey outbuilding to south range, four-bay

single-storey house to north range, both having pitched corrugated-iron roof, rendered walls and square-headed openings. Rendered garden walls and square-profile piers to front (south) of house. Multiple-bay two-storey outbuilding forming east range having pitched corrugated-iron roof, rubble stone walls, and square-headed openings with timber fittings. Rendered boundary wall and square-profile piers to yard entrance to west.

Field Inspection

- 12.44 On the 17 July 2018 fieldwork was carried out to identify any additional upstanding non-designated structures in the vicinity of the application area. This involved assessing all upstanding structures that are marked on the 1935 edition of the six-inch Ordnance Survey mapping within 300m of the application area (see Fig. 12-1). There is one structure situated in this area which is not of heritage interest (see below).
- 12.45 Structure 1 Barryscourt, House Plate 12-1
Two bay dormer cottage with uPVC replacement windows, slate roof and twin chimneys. No heritage interest.

ARCHAEOLOGY

Archaeological Assessment

Recorded Monuments

- 12.46 Examination of the Record of Monuments and Places for Co. Cork indicated that there are no Recorded Monuments located within the application area (see Fig. 12-1 and Appendix 12-1).
- 12.47 The closest Recorded Monument to the application area externally is RMP CO075-072---- a Fulacht fia in Barryscourt townland. This monument is situated 0.6km northeast of the application area and is considered to be too far distant to be directly or indirectly impacted by the proposal.
- 12.48 The remaining Recorded Monuments in the study area are situated further from the application area and are considered too far distant to be directly or indirectly impacted by the current proposal.

Undesignated Monuments

- 12.49 Examination of the Sites and Monuments Record (SMR) which is maintained by the Dept. of Culture, Heritage and the Gaeltacht on 26 June 2018 indicated that there are no undesignated monuments included within the application area or the study area.

Cartographic Sources

- 12.50 The Ordnance Survey 1st and 3rd edition six-inch maps and the first edition 25-inch maps of the area were examined. The analysis did not indicate any previously unrecorded archaeological sites in the application area or vicinity.

Place Name Evidence

- 12.51 The place names were extracted from the cartography in order to facilitate the search for structures and monuments and small finds, to help identify any unrecorded monuments or structures, to search for any published papers and documents related to the study area and to assist in the study of the historical development of the area. The English translations of the townland names of the study presented above below are based on Logainm.ie.
- 12.52 Ballintubbrid West: town of the well
 Barryscourt: enclosure of the Barry family
 Carrigtohill: Thuathail's rock
 Foaty: a wood
 Rosslague: promontory of the pillar-stone
 Rossmore: great promontory
 Tullagreen: sunny hill

Archaeological investigations in the study area

- 12.53 There have been no archaeological excavations carried out within the application area. There have been six investigations in the vicinity of the application area mostly associated with Barryscourt Castle (see below).

- 12.54 *Barryscourt Castle, Barryscourt Tower house*
 Barryscourt Castle has been acquired by Barryscourt Trust, who propose reconstruct the 16th-century tower house and 18th-century farm dwelling and outhouses, as part of a tourist development programme. The development is being undertaken in three phases. Phase 1, the reconstruction of the 18th-century farm dwelling

The farm dwelling into which the bawn wall is incorporated, is situated on the southern outer side of the courtyard. An initial requirement in the development is the provision of sanitary facilities. It was necessary to take the sewage trench through the courtyard of the castle to avoid contamination of the local water supply, which is provided from a spring situated close to the eastern side of the bawn wall. Both the soakaway and cesspit were excavated by machine and produced no archaeological evidence. The sewage trench was excavated manually, and four potential archaeological features were noted.

During the excavation of the trench in the adjoining field a spread of burnt limestone was found. It is possible that this spread of burnt stone may represent a fulacht fiadh, as the topography is ideally suited with natural springs occurring. In the excavation in the courtyard a series of five stones in lime and set into a mortar bed emerged. The trench was extended into a rectangle 1.8m x 2.8m and it was found that these stones were part of a substantial wall foundation over 1.5m wide and situated at a depth of 0.6m-0.8m. The sewage trench was moved to avoid interference with the foundation and in doing so the trench cut a small area of cobbling at a depth of 0.6m. It is possible that the cobbling may be associated with the foundation. Situated 2m north east of the wall foundation during the excavation of a manhole, a deposit of waterlogged gravel with small pieces of wood was found at a depth of in. The extent or origin of this deposit is not known.

The archaeological brief was to monitor the excavation of the trench and to move its location if archaeological deposits would be disturbed. The brief did not allow further investigation when interesting material emerged. It was therefore not possible to determine extent, date, or relationship between features. Work took place during August and September 1988 and was funded by Cork County Council.

12.55 *Barryscourt Castle, Barryscourt Tower house*

Barryscourt Castle was acquired by the Barryscourt Trust in 1987. Its aim is to conserve, enhance and develop the heritage potential of the castle. However, prior to any development and restoration, some parts of the castle were identified as areas which merited archaeological examination.

The excavation, which ran for 5 weeks from 4th May 1992, was funded by the Office of Public Works. Work was concentrated in the interior of the 16th-century tower house. Three areas were to be investigated, all at the Great Hall level.

Area 1

Excavation in Area 1 involved the clearance of deposits in the Great Hall which overlies a barrel vault, the main structural vault of the tower house. This replaced the original pointed vault which at some stage collapsed or was deliberately removed. Immediate remedial work was deemed necessary to secure the main vault which was porous and was allowing water to permeate through the vault, washing out the mortar.

Prior to excavation the apex of the vault was already exposed, and vegetation had been removed by FAS. The haunches were found to be filled with a very loose mixture of sand and limestone chippings. A series of lenses of burnt deposits were sealed between this gravel, containing considerable amounts of charred seeds etc.

Overlying the haunch fill, excavation revealed a number of deposits, some of them only a few cms thick. These deposits contained quantities of animal bone, charcoal and pottery including 17th-century German Stoneware. Three lead musket balls were also found. Overlying these deposits and particularly in the northern half of the Great Hall, excavation revealed a quite compact mottled clayey silt deposit. Found to be overlying the haunch gravel, it serves to level the floor in the Great Hall. Similar deposits were found to be partially denuded elsewhere in the hall. There was quite a considerable amount of modern disturbance throughout Area 1, in particular along the western wall.

Area 2

This involved the investigation of a blocked passage leading from a narrow mural stairway just south of the southern embrasure on the east wall. The stairway enters into the eastern half of a vaulted passage running north and originally thought to have been a passageway leading to the spiral staircase in the north-east corner of the Great Hall (Area 3). This however, was disproved. On excavation a back wall was discovered. It was established that Area 2 was in fact a separate chamber. Its eastern wall, with one slit window, is the side wall of the castle. The western wall is a rough irregular coursed mortared wall and post-dates the construction of the chamber. It is associated with the construction of the main barrel vault. The collapse of the pointed vault and the construction of the barrel vault have influenced what remains of this chamber. It would originally have been wider using the area provided by the nature of a pointed vault. It is quite feasible that the chamber continued in use. The floor of the chamber, after the removal of

deposits, was found to be rough and undulating and formed of stones bonded with mortar resulting from activities associated with the vault construction. The chamber was filled with a considerable amount of loose, wind-blown material and was of recent origin.

Area 3

In the north-east corner of the Great Hall is a breach of recent origin into a spiral staircase. The staircase rises by several steps up from the hall level and is now blocked off by a vertical wall. Downward, it accesses an arched passageway running southwards in the thickness of the eastern rowler wall and originally thought to have led to Area 2. Before excavation it was largely filled and blocked by debris obscuring the lower steps. The fill was quite loose and contained modern glass, large stones, lumps of mortar and roofing slates. At the bottom of the stairway is a short passage leading into the chamber proper. As with Area 2, the springing for the replacement barrel vault appear to have been inserted into the western inner wall of the passage and chamber, blocking part of its width and leaving a rough unfinished edge to the wall and also altering the original floor level. The only ope lighting the chamber is in the east wall and is partly blocked by the infill and lies below the present floor level.

12.56 *Barryscourt Castle, Barryscourt Tower house Licence number: 96E0238, 1996*

Excavations inside the bawn and immediately north of the tower house at Barryscourt failed to find evidence for structures earlier than the standing tower house. A shallow ditch below the tower was probably an open drain beside fields and was deliberately infilled when construction commenced.

Although the tower house appears irregular in plan, an examination of the coursed stonework shows that it was built to its present design from the outset. The bawn was probably designed with the tower house but erected a short time later and included an extra accommodation wing to the north-west of the tower.

The extra accommodation was apparently around three sides of an open area. Traces of a mortared wall to the east probably represent a free-standing building in the bawn. Kerbing and isolated small foundations suggest a garden arrangement inside the bawn, to the north and east of the tower house, from an early date. A cultivation bed was later inserted in the bawn north of the tower house, following the removal of the free-standing building and the decorative edging, probably in the seventeenth century. Cultivation continued into the eighteenth or early nineteenth century.

Pottery from contexts postdating the construction of the tower house and as late as the use of the cultivation bed appears anachronistic. No characteristically sixteenth- or seventeenth-century sherds were recovered. All appear to be medieval, thirteenth/fourteenth-century.

1997

This excavation took place ahead of planting and consolidation work and was funded by the NMHPS, Dept of Arts, Heritage, Gaeltacht and the Islands. Further excavations were undertaken in the bawn, to locate the east wall of the west range and to investigate the use of the bawn in the 16th century. Trenches were cut north and south of it to investigate contemporary land use. The west range was built with the bawn wall, attaching itself to the standing tower-house. The dimensions of the two-storeyed south end of the range were established in 1996 (Excavations 1996, 10-11); the width of the central hall was discovered in a small trench this year.

A substantial mortared dividing wall was built with the main bawn wall or shortly after, enclosing the angle between the west range and the tower-house. The wall was later dismantled and replaced with an even wider version (as wide as the bawn wall), enclosing a larger area, and with a battered base (similar to the main bawn wall) facing into the remainder of the bawn. Remains of a timber structure built against the earlier dividing wall may be associated with protecting a spring or shallow well.

No supporting evidence was found for an ornamental garden inside the bawn (suggested after the 1996 excavation), but there were some indications of spade cultivation to the west of the later dividing wall, perhaps in the 17th century.

Excavations inside and outside the bawn found evidence of ambitious landscaping prior to the construction of the bawn wall. Flat-bottomed ditches had been cut into the hillside. Below the bawn these were infilled when the bawn wall was built, but elsewhere they remained open for a while. The arrangement of ditches is unclear but appears to be generally centred on the tower-house. The ditches would have been open after the construction of the tower-house and are unlikely to pre-date the building. They probably channelled and held water.

Proposed geophysical surveying and further excavation should clarify the pattern of landscaping and indicate a function.

1998

A further season of excavations ahead of consolidation at Barryscourt (see Excavations 1996, 10-11, and Excavations 1997, 9, for previous reports), funded by the National Monuments Service, saw a large part of the bawn opened and a number of outstanding problems solved.

It is unlikely that any buildings on site pre-date the large tower-house (probably of 16th-, perhaps of 15th-century construction). A contemporary building has now been identified, probably a kitchen. The building is largely robbed but had mortared stone walls and a battered foot to the gable dropping down into a moat surrounding the site. There is no indication that the moat pre-dates the tower-house.

The kitchen was extended and then damaged, probably in 1581, but was rebuilt shortly thereafter with an enclosing mortared bawn wall and a range of buildings to the west. The new range included a hall, which appears to have been largely timbered on an insubstantial unmortared stone footing.

Garden beds and planting holes (several for trees?) have been identified in the bawn, within 10m of the hall. The arrangement clearly respects the new range and in part post-dates the kitchen. The pattern of beds is not symmetrical but provides indications of the position of the hall entrance.

At an early stage this corner of the bawn was enclosed from the rest of the yard (taking in an area much larger than the garden). At some stage (perhaps in the early 17th century) the far end of the enclosure was raised as a large platform, revetted with substantial mortared walls, perhaps as a garden feature, perhaps as an artillery platform.

1999

Another season of excavations at Barryscourt completed the investigation of more than half of the bawn area and cut a pair of trenches for drainpipes west of the tower-house. Part of the bawn

area opened this season, in front of the tower-house door, would benefit from further investigation.

The tower-house and a second mortared stone building appear to have been built on a green-field site above a stream fed by a nearby spring. The tower-house occupied the corner position of an enclosure defined by a considerable bank and ditch on at least two sides and the ponded watercourse on another. Gun positions in the basement of the tower-house would have covered three sides; the fourth would have been covered from the second mortared building.

The second building overlooked two ponds, at different levels, and had a narrow controlled channel around its other two sides. A potential holding tank for fish has been identified a short distance upstream in the nearby watercourse.

At some stage (in the 16th century) the traditional enclosing bank and ditch were replaced with a string of ponds, but before the present bawn wall was built (in the later 1580s/1590s?) the waterworks were in ruins and the stream had reasserted its meandering course.

The stream was diverted (to its present location?) when the bawn was walled. The new enclosure was divided with an internal wall, restricting access to the north-west. A timber range, most of it one lofty storey over a half-cellar, was built into the corner, overlooking a terraced garden. The garden was probably not maintained for longer than 30 years and should have provided excellent information. However, truncation had generally removed the late 16th/early 17th-century ground level, and the surviving deeper features do not provide a clear design.

2000

A short season of excavations in 2000 at Barryscourt completed the recent campaign to investigate the bawn (Excavations 1999, 24–5). The unfinished area in front of the tower-house doorway was completed, and three small cuts were made outside the bawn to investigate the castle's relationship with an infilled ditch and a standing enclosure wall.

The bawn appears to have been enclosed with the present wall in the late 16th century, when the tower-house door was rebuilt. Prior to this a pair of open drains (bridged or boarded over) carried water away from the ground in front of the tower-house door, towards the nearby stream.

The stone frame around the door was replaced, probably in the early 1580s. Immediately outside the new door, and underground, a box drain carried water into the building, probably from an open drain (not surviving) at the foot of the tower-house wall, to a basement room formerly used as a prison but converted (to a cistern).

A rectangular stave structure outside the new door may have been a platform or porch. A wide linear feature beyond, filled with rubble and mortar but not associated with a robbed wall, was probably a garden bed and preceded a similar feature cut in an arc concentric to the doorway. (A number of garden features have been identified in the enclosed north-west corner of the bawn in recent years.)

An early ditch was investigated on the west side of the tower-house. The excavation clearly showed the ditch to pre-date the tower-house and to have been deliberately infilled during construction. The ditch and associated bank were probably an earlier land division and drain.

This year dendrochronological samples wrought havoc with the late dating at Barryscourt. While the tower-house and bawn wall are undoubtedly late medieval, a felling estimate of AD 1197±9 years (Q10025) from the base of a sluice-gate and felling estimates of AD 616±9 and AD 633±9

years (Q10026, Q10027) from a 'fish trap' in the stream on site have provoked a reappraisal. The 'fish trap' is easily rehabilitated as the truncated remains of a 7th-century horizontal mill, but the sluice-gate suggests activity beside the stream at the start of the 13th century. The second mortared stone building on site, beside the sluice, may considerably pre-date the tower-house. The possibility of continuous occupation of the site from the start of the 13th century is currently being debated.

2006

In 2006 further works, funded by the OPW, to enhance Barryscourt Castle as a visitor attraction involved refurbishing a post-medieval range of farm offices inside the bawn and replacing the guides' hut outside, under archaeological supervision.

Most of the material removed from the footprint of the farm offices was associated with their construction in the 18th/19th century. A fragmentary surface of burnt-mound material, partly exposed below, is probably associated with the late medieval bawn. Generally, the late medieval ground level appeared to be puddled rubble with midden and ex situ clay building debris, with no evidence for early buildings against the east bawn wall.

In the north-east corner of the bawn the cut for a drain exposed truncated clay subsoil less than 0.4m down. North of the bawn this drain cut an infilled pond and an earlier burnt mound. Foundation trenches for a new guides' hut 40m south of the bawn cut through 20th-century material on to clay subsoil.

2007

In 2007 further works to enhance Barryscourt Castle as a visitor attraction involved erecting a wooden gate at the entrance and rebuilding a length of post-medieval enclosure wall at the corner of the tower-house. Groundworks were carried out under supervision in April, May and August.

Recent hardcore at the gate immediately overlay boulder clay; no archaeological levels nor old soil profile survived. At the corner of the tower-house, old soil pre-dating construction was exposed 0.25m below present ground level, apparently cut by two medieval ditches (not investigated). The fill of the later and larger ditch, a pond or moat cut around the corner of the tower-house, had continued to settle after construction of the wall, causing it to lean.

12.57 *Barryscourt Castle, Barryscourt Tower house Licence number: 03E0828*

Test excavation was undertaken at a proposed development site which forms the east boundary of Barryscourt Castle grounds and is located within the zone of archaeological potential for the tower-house and bawn and a fulacht fiadh.

Six trenches were excavated. Significant archaeology was identified in Trenches 1, 5 and 6. Trenches 1 and 4 contained cultivation remains of post-medieval date. The archaeology discovered in Trench 6 included a cobbled surface, a wall and a possible ditch. The wall and cobbled surface are of likely post-medieval date. The possible ditch may be associated with the example previously identified in the fields north and west of the tower-house and bawn. A series of negative features, largely rubbish pits of probable post-medieval date, were identified in Trenches 1 and 5.

- 12.58 *Barryscourt Castle, Barryscourt Tower house Licence number: E004608*
An archaeological trench was cut around the south and west sides of the tower-house at Barryscourt Castle, in advance of installing new drainage. Most of the material found in the trench predates the tower-house. This includes a number of infilled medieval ditches and a yard surface. The ditches and surface have been encountered elsewhere, but their chronological order has been uncertain. Their order is now clearer, but the location of the early core of the castle remains obscure. Further works, under supervision, encountered a number of known and previously recorded ditches
- 12.59 *Anngrove/Tullagreen No archaeological significance Licence number: 02E0486*
Groundworks associated with extending a factory in an industrial estate c. 1km west of Carrigtohill village were monitored. Much of the site had been disturbed during the construction of the existing factory. Stratigraphy at the site consisted of 0.1–0.4m of disturbed topsoil, containing modern building debris and 18th-/19th-century pottery, over a yellow/ brown, featureless subsoil. A field boundary, which separated the townlands of Anngrove and Tullagreen, was evident as a dark brown band of soil; there were no finds associated with this boundary. The site was otherwise featureless.

Cork Co. Development Plan

- 12.60 No sites of archaeological importance, National Monuments, or protected structures listed in the Cork Co. Development Plan 2014-20 are located within the proposed development area.

Aerial Photographs

- 12.61 Examination of the Ordnance Survey 1995, 2000 and 2005 imagery as well as Google earth imagery from 2003, 2006, 2007, 2009, 2013, 2014 and 2017 and Bing imagery from 2016 did not indicate any additional cultural heritage sites in the application area.

Field Assessment

- 12.62 A field assessment was carried out on 17 July 2018 in an attempt to identify any previously unknown archaeological or cultural heritage sites See plate 12-2 for the numbered fieldwork areas. The entire application area has already been developed.
- 12.63 Area 1
This is an area of stored soil. Although included in the application area there is no development proposal for this area and the area is to be restored. There was no visible indication of any archaeological or cultural heritage material
- 12.64 Area 2
This is the quarry extraction area which it is proposed to continue quarrying operations (Plate 12-3). There was no visible indication of any archaeological or cultural heritage material.

ASSESSMENT OF POTENTIAL IMPACTS

Direct Impacts

- 12.65 The proposed development comprises continuance of use of an existing permitted quarry, within the permitted extraction area. There will be no direct impacts on any known items of archaeology, cultural heritage or buildings of heritage interest in the application area or the vicinity.

Indirect Impacts

- 12.66 There will be no indirect impacts on any known items of archaeology, cultural heritage or buildings of heritage interest in the application area or the vicinity.

Interactions with Other Impacts

- 12.67 No interaction with other impacts have been identified.

Do Nothing Impacts

- 12.68 If the proposed development were not to proceed there would be no negative impact on the cultural heritage.

Worst Case Impact

- 12.69 No worst case scenario has been identified.

RECOMMENDATIONS / PROPOSED MITIGATION MEASURES

Direct Impacts

- 12.70 No direct impacts warranting specific mitigation were identified during the course of the cultural heritage assessment.

Indirect Impacts

- 12.71 No indirect impacts warranting specific mitigation were identified during the course of the cultural heritage assessment.

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PLATES



Plate 12-1
View of structure 1 looking south.



Plate 12-2

Aerial image of the application area from Bing Maps showing the numbered fieldwork areas.



Plate 12-3
View of Area 2 looking east.

FIGURES

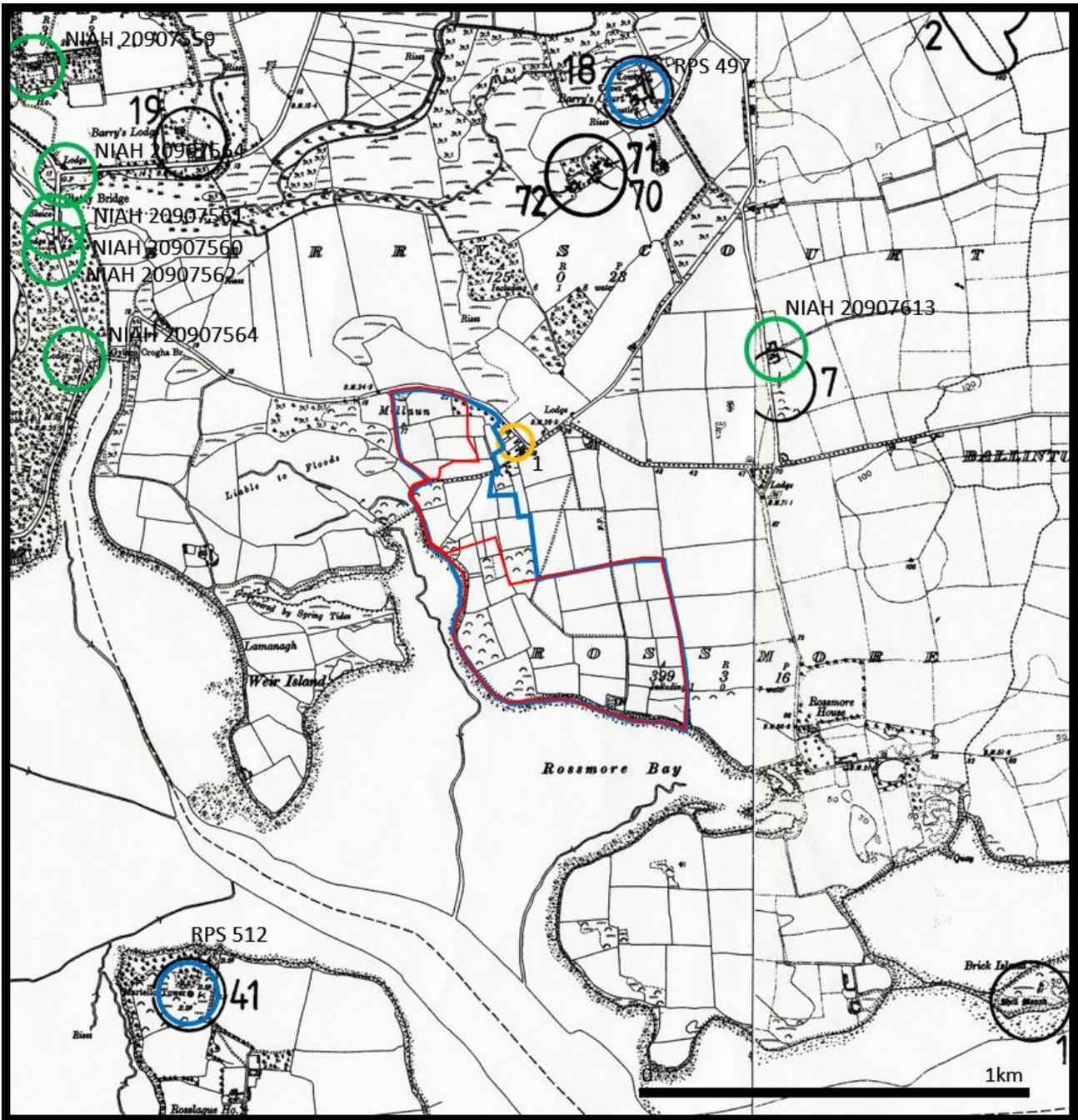


Figure 12-1

The study area. The red line is the application area and the blue line is the land holding. RMP sites are indicated with black circles. Structures in the Record of Protected Structures with blue circles, in the NIAH with green circles and upstanding structures on the 1935 OS mapping within 300m of the extraction area with gold circles.

APPENDICES

Appendix 12-1 Sites in the Record of Monuments and Places

CO075-018001- BARRYS COURT Castle - tower house

On slight rise, in flat low-lying area of reclaimed slob (Coleman 1915, 67-8). Large tower house, with three projecting towers, located at SW corner of, and partially enclosed by, bawn wall which has towers at SE, NE and NW corners.

Chief seat of Barrys in cantred of Olethan (Uí Liatháin)/Barrymore from 1170s (Jefferies 1986). Castle 'defaced and despoiled' during Desmond rebellion in 1581 and briefly occupied by Sir Walter Raleigh. David Barry regained possession c. 1583 and undertook substantial improvements; after his death in 1617 Castlelyons Castle (CO045-004---) became chief seat in Barrymore.

Tower house consists of rectangular main block (14m N-S; 11m E-W) with subsidiary projecting towers at NE (c. 7.5m E-W; 5m N-S) and SW (c. 4m N-S; 4.2m E-W) corners; 3rd tower projects E (c. 2m E-W; c. 3.5m N-S) from S end of E wall.

Main tower entered by pointed-arch door at N end of E wall; doorway appears to be inserted. Small lobby gives access straight through to main ground-floor chamber and S to steep mural staircase rising to SE corner; this gives access to main 1st-floor chamber and, at apex, to main 2nd-floor chamber. At 1st-floor level, on S wall of stairway, traces of inserted masonry suggest former presence of external entrance door. Main ground-floor chamber lit by double-splayed window opens. At E end of N wall mined entry into low chamber in NE tower. Main 1st-floor chamber covered by barrel-vault which replaced earlier pointed vault, part of latter survives at S end; two slit lights in W wall flank hooded fireplace. Door at E end of N wall leads to chamber in NE tower at mezzanine (over 1st floor) level, garderobe chamber in thickness of W wall of NE tower, and chamber over entrance lobby; also 1st-floor chamber in NE tower. Door at S end of W wall of main 1st-floor chamber leads through short passage to narrow garderobe chamber in SW tower; door at E end of S wall leads into chamber in SE tower.

Main 2nd-floor chamber (c. 12m N-S; c. 6m E-W), at 2nd floor level, entered through pointed-arch door at S end of E wall. Lit by 2- and 3-light mullioned and transomed windows inserted into wide splayed embrasures, originally with window seats: two each on W and E walls; one to S. Fireplace on W wall with carved surround (Coleman 1915, pl. opp. 63) with date of 1588; its insertion partially blocked window embrasure. In E wall narrow mural stair descends to infilled mural chamber in haunches of main vault. Door at E end of N wall accesses mural passage leading to chapel in NE tower and via stairs to private chamber. Ogee-headed door at W end of S wall of main 2nd-floor chamber accesses, via slanted passage, large garderobe chamber in SW tower; also base of spiral staircase which leads up to two higher chambers in SW tower. Narrow door with rounded arch at S end of W wall leads down sharply into spiral stairs which accesses small vaulted chamber in SW tower, beneath garderobe chamber. Near E end of S wall of hall descending spiral staircase entered through ogee-headed doorway. This gives access first through very low door (H 0.95m) to chamber in SE tower slightly below level of hall; lit by single slit window in N wall. Stairs descend further to vaulted L-shaped chamber in SE tower and thence to vaulted L-shaped chamber beneath. At E end of S wall of hall, round-arched door leads into spiral stairs which ascend to give entry to

two uppermost chambers and wall walk. Nearly all chambers in corner towers covered by wicker-centred vaults.

Internal face of E, N and W bawn walls partially obscured by and lowered to accommodate 18th/19th-century farm buildings. S bawn wall (L 24.5m) heavily reconstructed; 2-storey 19th century farmhouse, now coffee-shop, built against external face. Original entry to bawn through rebuilt segmental-arched gateway in S bawn wall. SE corner tower (5.4m x 5m) recently repaired. E bawn wall (L 44m) has recent break near SE tower. NE corner tower (c. 5.2m x 5m) has vaulted chamber lit by slit windows partially blocked to form musket loops.

N bawn wall runs W for 34.5m, then returns N for short distance (L c. 4m) before running W for a further 10.5m, latter section wider and more prominently battered. NW tower (c. 4.5m N-S; c. 4.0m E-W), flush with N bawn wall, projects to W: contains chamber with large garderobe. W bawn wall (L 32.5m) has two large double-light pointed-arch windows with widely-splayed embrasures and window seats. At S end of W wall is short return E (L c. 7.0m) to NW corner of main house.

Underlying W bawn wall and NW tower, on slightly different alignments, wall foundations of undressed masonry, indicate presence of earlier structure; similar wall recently uncovered near NE corner of bawn (Lennon 1988a). Projecting section of N bawn wall, NW tower and W bawn wall all part of early hall-type structure possibly in part 13th/14th century, largely 15th century. otherwise bawn wall and its corner towers of 15th century date; NW and SE towers refurbished in 16th century. Tower house probably originally 15th century with 1st-floor entry but substantially rebuilt and repaired in 16th century when SW corner tower added, and present entrance inserted. Currently under restoration by OPW.

CO075-018002- BARRYSCOURT Fulacht fia

In pasture, on W side of stream and outside NE corner of bawn wall of Barryscourt castle (CO075-018001-). Spread of burnt material noted during monitoring of excavation of sewage trench; further investigation not possible (Lennon 1989, 11). Burnt material covers area measuring c. 16m N-S and c. 12m E-W and is incorporated into field fence running N from corner of bawn wall.

CO075-018003- BARRYSCOURT Bawn

On slight rise, in flat low-lying area of reclaimed slob (Coleman 1915, 67-8). Barryscourt Castle (CO075-018001-) is located at SW corner of, and partially enclosed by, a bawn wall which has towers at SE, NE and NW corners. Internal face of E, N and W bawn walls partially obscured by and lowered to accommodate 18th\19th century farm buildings. S bawn wall (L 24.5m) heavily reconstructed; 2-storey 19th-century farmhouse, now coffee-shop, built against external face. Original entry to bawn through rebuilt segmental-arched gateway in S bawn wall. SE corner tower (5.4m x 5m) recently repaired. E bawn wall (L 44m) has recent break near SE tower. NE tower (c. 5.2m x 5m) has vaulted chamber lit by slit windows partially blocked to form musket loops.

N bawn wall runs W for 34.5m, then returns N for short distance (L c. 4m) before running W a further 10.5m, latter section wider and more prominently battered. NW tower (c. 4.5m N-S; c. 4.0m E-W), flush with N bawn wall, projects to W; contains chamber with large garderobe. W bawn wall (L 32.5m) has two large double-light pointed-arch windows with widely-splayed embrasures and window seats. At S end of W wall short return E (L c. 7m) to NW corner of tower house.

Underlying W bawn wall and NW tower, on slightly different alignments, wall foundations of undressed masonry, indicate presence of earlier structure; similar wall recently uncovered near NE corner of bawn.

Projecting section of N bawn wall, NW tower and W bawn wall, all part of early hall-type structure possibly in 13th/14th century, largely 15th century. Otherwise bawn wall and its corner towers of 15th century date; NW and SE towers refurbished in 16th century.

CO075-019----TULLAGREEN Country house

Late 18th/early 19th century 2-storey L-shaped house. Originally hipped-roof, gabled at rear. Entrance front (E) of 5 bays; central door; brick arched windows; brick cornice. Central 2-storey hipped projection to rear. According to local information farm buildings to SSE are remains of larger complex, demolished during Gas Pipeline construction (1976); contained a mill building of which two millstones survive. House subsequently demolished.

CO075-041---- ROSSLAGUE Martello tower

On N shoreline of Great Island, on high point of Rosslague promontory. Well-preserved circular tower (diam. 15.3m) with flattened profile to NE and SW; faced on outside with coursed limestone ashlar, on inside with brick. Entered by door with rounded arch at 1st floor level to S; spiral stone staircase on E side of doorway gives access to ground floor and roof. Ground floor divided radially into four compartments around a central circular area. Barrel-vault of brick over room to NW which was magazine. Wooden floor above survives; 1st floor divided into two compartments by brick wall; each room lit by window with round arch, flanked by fireplace. At roof level six-pronged support for pivot on which traversing platform, carrying the cannon, rested is preserved on raised central limestone plinth. Inner parapet face stepped; groove set into edge of upper step to hold iron 'racer' (Gosling 1989, 90, 141), on which wheels of traversing carriage ran. Outer wall (Wth 2.75m) slopes gently downward with an oversailing coping. Most easterly of three Martello Towers guarding northern approaches to Great Island (CO075-029---: CO075-026---).

CO075-070---- BARRYSCOURT Fulacht fia

Spread of burnt material (10m N-S; 8m E-W) in tillage in reclaimed field; adjacent stream shown on 1935 OS 6-inch map now drained. Two other fulachta fiadh (CO075-071---; CO075-072---) in same field.

CO075-071---- BARRYSCOURT Fulacht fia

Spread of burnt material (6m N-S; 6m E-W) in tillage in reclaimed field; adjacent stream shown on 1935 OS 6-inch map now drained. Two other fulachta fiadh (CO075-070---; CO075-072---) in same field.

CO075-072---- BARRYSCOURT Fulacht fia

Spread of burnt material (8m N-S; 6m E-W) in tillage in corner of reclaimed field; burnt material incorporated in adjacent field fence to W; stream shown on 1935 OS 6-inch map now drained. Two other fulachta fiadh (CO075-070---; CO075-071---) in same field.

CO076-002---- BARRYSCOURT Linear earthwork

In pasture, on N-facing slope. According to local information W confines of Clyduff townland forms part of the Cliadh Dubh, a linear earthwork. Similar to surrounding field fences; earthen bank (H 1m), stone faced in parts. O'Driscoll suggests that this may be Atlantic end of Cliadh Dubh, as 'the popular idea is that the Cliadh extends from sea to sea, one the Atlantic'. Second known section (CO018-001---; CO026-099---; CO034-055---) lies in N Cork running in N-S direction between Ballyhoura hills and the Nagle mountains; third section (CO005-033---) lies in NW Cork and forms part of Cork-Limerick county boundary.

CO076-007---- BARRYS COURT Kiln - lime

In quarry, built against rock-face. Front (H 4.5m) NE-facing, E side partially collapsed. Arched recess (H 1.55m; Wth 2.7m; D 1.75m), stoking hole evident. Recess arch filled by masonry, formerly supported by wooden lintel. Funnel (diam. 2.4m) partially infilled.

CO076-071---- CLYDUFF Ringfort - rath

In tillage, on N-facing slope. According to local information, site of "fort". No visible surface trace in ploughed field.

CO076-011---- ROSSMORE Midden

On Brick Island in estuary to N of Great Island, joined to mainland by narrow neck of land. Island used for mussel farming; midden in SW quadrant. Overgrown; concentration of oyster shells visible in parts along southern shoreline scarp. When surveyed by Power midden measured 'five or six feet thick at the terrace edge' and 'extended along the foreshore for over one hundred and eighty yards and inland for seventy or eighty feet'; it contained 'nearly pure oyster-shells with occasional cockle, mussel, whelk and other marine shells'. 'Thin layers of charcoal were visible in many places' and 'stone pounders varying in size'.

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INTRODUCTION

Background

- 13.1 This EIAR chapter documents the assessment of landscape and visual effects arising from the proposed development at Rossmore Quarry, Carrigtohill, Co. Cork.
- 13.2 Rossmore Quarry is located in the townlands of Rossmore and Barryscourt, approximately 1.7km south of the village of Carrigtohill and 13.5km east of Cork City. The site occupies a low-lying coastal location overlooking Rossmore Bay and Great Island within the wider Cork Harbour area. The existing quarry development consists of a large extraction area, as well as a number of associated processing facilities and an overburden storage area.
- 13.3 The proposed development being applied for under this current planning application will consist of continuance of use of the existing quarry development within an overall application area of c.24.7 hectares; extraction to the level of 40m below Ordnance Datum, previously permitted under Plan. Ref. 03/4570; final restoration of the quarry void area and an area of 3.8 hectares to the north adjacent to the public road. Permission is also being sought for an extension to the existing permitted operating hours for the readymixed concrete plant, and for out of hours operation of the plant up to a maximum of 40 occasions per year, to supply critical and strategic building / infrastructure / maintenance projects whose construction requires supply of concrete outside normal plant operating hours. Further details on the proposed development are contained in Chapter 2 of this EIAR.
- 13.4 Landscape and visual effects are independent but related issues. Landscape effects are concerned with changes to the landscape, its character and quality, while visual effects relate to the appearance of these changes and the resulting effect on visual amenity. Wherever possible, identified effects are quantified, however the nature of landscape and visual impact assessment requires interpretation by professional judgement. In order to provide a level of consistency to the assessment, the assessment of sensitivity and the prediction of magnitude of change and significance of effects have been assessed with reference to criteria defined in the methodology preceding the baseline and impact assessment sections of this report.

Scope of Work / EIA Scoping

- 13.5 The scope of the landscape and visual impact assessment and structure of this section of the EIAR is set out as follows:
- Planning policy (e.g. landscape policies, designated landscapes, sites of nature conservation importance);
 - Receiving Environment – definition of the study area and description of the landscape and visual baseline;
 - Impact Assessment – a description of the aspects of the development which are likely to cause landscape and/or visual effects, including the methodology for and an assessment of landscape and visual receptor sensitivity, as well as the magnitude and significance of the landscape and visual effects;

- Mitigation Measures – a description of the measures which will be integrated to mitigate any landscape and visual effects of the proposed development; and
 - Residual Impact Assessment – a summary of the landscape and visual effects with mitigation measures in place.
- 13.6 The assessment is informed by Landscape Policy in the Cork County Development Plan 2014 - 2020. The assessment is also supported by a series of illustrated figures as follows:
- Figure 13.1 – Landscape Baseline and Designated Scenic Routes;
 - Figure 13.2 - Zone of Theoretical Visibility (ZTV) and Viewpoint Locations;
- 13.7 Photographs of the existing visual amenity at selected viewpoint locations are presented in Figures 13.3, 13.4 and 13.5.
- 13.8 A description of the restoration scheme can be found in Chapter 2 of this EIAR (also refer to Figures 2.4 - Restoration Plan).

Consultations / Consultees

- 13.9 Following a review of published development plans and the site survey, it was considered that there was no requirement for a separate formal consultation to be carried out with regard to potential landscape and visual effects of the proposed development.

Contributors / Author(s)

- 13.10 The assessment including site work and completion of drawings was carried out by a suitably qualified Landscape Architect, Eimear O'Connor, and member of the Irish Landscape Institute.

Limitations / Difficulties Encountered

- 13.11 No difficulties were encountered during the assessment process. The field survey was undertaken from publicly accessible locations.

REGULATORY BACKGROUND

Planning Policy

Landscape

- 13.12 Chapter 13 Green Infrastructure and Environment in the County Development Plan (CDP) 2014 – 2020 (Extended to 2021) contains policies and objectives in relation to landscape, specifically in Sections 13.5 and 13.6. Objectives of relevance to this assessment are presented below.
- 13.13 Objective GI 6-1: Landscape states

- *“a) Protect the visual and scenic amenities of County Cork’s built and natural environment.*
- *b) Landscape issues will be an important factor in all landuse proposals, ensuring that a proactive view of development is undertaken while maintaining respect for the environment and heritage generally in line with the principle of sustainability.*
- *c) Ensure that new development meets high standards of siting and design.*
- *d) Protect skylines and ridgelines from development.*
- *e) Discourage proposals necessitating the removal of extensive amounts of trees, hedgerows and historic walls or other distinctive boundary treatments.”*

13.14 Objective GI 6-2: Draft Landscape Strategy states *“Ensure that the management of development throughout the County will have regard for the value of the landscape, its character, distinctiveness and sensitivity as recognised in the Cork County Draft Landscape Strategy and its recommendations, in order to minimize the visual and environmental impact of development, particularly in areas designated as High Value Landscapes where higher development standards (layout, design, landscaping, materials used) will be required.”*

13.15 Appendix B of the CDP documents a landscape character assessment for the county. The landscape character types have been evaluated in terms of their value, sensitivity and importance. The landscape character types were ranked in terms of value as being of low, medium, high or very high value. Similar rankings were applied in evaluating landscape sensitivity with reference to the following definitions.

13.16 *“Low sensitivity landscapes are robust landscapes, which are tolerant to change, and which have the ability to accommodate development pressure.*

13.17 *Medium sensitivity landscapes can accommodate development pressure but with limitations in the scale and magnitude. In this rank of sensitivity, landscape elements can accept some changes while others are more vulnerable to change.*

13.18 *High sensitivity landscapes are vulnerable landscapes with the ability to accommodate limited development pressure. In this rank landscape quality is at a high level, landscape elements are highly sensitive to certain types of change. If pressure for development exceeds the landscape’s limitations the character of the landscape may change.*

13.19 *Very high sensitivity landscapes are extra vulnerable landscapes (e.g. seascape area with national importance) which are likely to be fragile and susceptible to change.”*

13.20 The importance of the landscape character types was ranked as Local, County or National.

High Value Landscapes

13.21 Landscape Character Types which have a high or very high landscape value and a high or very high landscape sensitivity and are of county or national importance are deemed to be the most valuable landscapes in the county and carry the designation of High Value Landscapes (HVL).

Views and Prospects

13.22 Chapter 13 of the CDP refers to Landscape Views and Prospects for which a number of objectives are documented as follows:

- 13.23 Objective GI 7-1: General Views and Prospects states *“Preserve the character of all important views and prospects, particularly sea views, river or lake views, views of unspoilt mountains, upland or coastal landscapes, views of historical or cultural significance (including buildings and townscapes) and views of natural beauty as recognized in the Draft Landscape Strategy.”*
- 13.24 Objective GI 7-2: Scenic Routes states *“Protect the character of those views and prospects obtainable from scenic routes and in particular stretches of scenic routes that have very special views and prospects identified in this plan. The scenic routes identified in this plan are shown on the scenic amenity maps in the CDP Map Browser and are listed in Volume 2 Chapter 5 Scenic Routes of this plan.”*
- 13.25 Objective GI 7-3: Development on Scenic Routes states
- 13.26 *“a) Require those seeking to carry out development in the environs of a scenic route and/or an area with important views and prospects, to demonstrate that there will be no adverse obstruction or degradation of the views towards and from vulnerable landscape features. In such areas, the appropriateness of the design, site layout, and landscaping of the proposed development must be demonstrated along with mitigation measures to prevent significant alterations to the appearance or character of the area.*
- 13.27 *b) Encourage appropriate landscaping and screen planting of developments along scenic routes which provides guidance in relation to landscaping.”*
- 13.28 Scenic routes of relevance to this assessment include the following:
- S42 – Road at Cashnagarriffe, N.W.Carrigtwohill and Westwards to Caherlag – of which a small part falls within the study area for this assessment;
 - S52 - Road at N.E. Great Island – which falls entirely within the study area for this assessment; and
 - S53 – Road between Cobh and Belvelly – of which a small part falls within the study area for this assessment.
- 13.29 These Scenic Routes are tabulated below together with the detailed analysis of their landscape and visual context as documented in the CDP. The Scenic Routes are illustrated in Figure 13-1:

Table 13-1
Scenic Routes – refer to Figure 13.1

Criterion	S42	S52	S53
Does Route Run Through or Adjoin High Value Landscape	Yes	Yes	Yes
Does the Route adjoin a NHA, pNHA, cSAC, SPA or pSPA	No	pNHA Great Island Channel, SPA & SAC Cork Harbour	pNHA & SAC Great Island Channel
Landscape Type(s)Route Runs Through	Type 1 City Harbour & Estuary	Type 1 City Harbour & Estuary	Type 1 City Harbour & Estuary
Overall Landscape Value	Very High	Very High	Very High

Main Features of Land Cover	Extensive vegetation & tree cover, one-off housing, residential estates and the harbour	Rural landscape, Great Island Channel & vegetation	Settlement, vegetation, estuary & one-off housing
Description & General Views Being Protected	Local Road at Forest-town, N.W. Carrigtwohill and Westwards to Caherlag. Views of the Harbour, open countryside & tree lined hillsides	Local Road at N.E. Great Island Views of Great Island Channel & rural coastal environment	R624 Regional Road, between Cobh and Belvelly. Views of the Upper Harbour and coastal environment.
Structures of Historic or Cultural Importance Visible from Route	No Information Available	Triple Limekiln & Martello Tower, both of which are protected structures & a castle	Haulbowline Island & Cobh Cathedral
Key Characteristics of Land Use	Residential & agriculture	Agriculture	Settlement, residential & associated harbour uses
Is There a Sense of Remoteness as you Travel the Route?	No	Yes	No
Rural Character	Prevalent	Prevalent	Not Prevalent

Designated Nature Conservation Sites

- 13.30 The Great Island Special Area of Conservation and Special Protection Area (site code 001058) occurs within the study area and covers the waterway and shoreline associated with Great Island Channel located immediately south of the application area.

Extractive Industry Policy

- 13.31 Section 6.12 of Chapter 12 of the CDP documents objectives relating to the extractive industry including the following of relevance to this assessment.
- 13.32 Objective EE 12-3 states *“Minimise environmental and other impacts of mineral extraction through rigorous application of licensing, development management and enforcement requirements for the extractive industry and ancillary developments.*
- 13.33 *All extractive industry developments to have regard to the “Quarries and Ancillary Activities Guidelines for Planning Authorities (2004)” published by the DoEHLG or as may be amended from time to time.*
- 13.34 *With new quarries and mines and extensions to existing quarries and mines regard should be had to visual impacts, methods of extraction, noise levels, dust prevention, protection of rivers, lakes,*

European sites and other water sources, impacts on residential and other amenities, impacts on the road network (particularly with regard to making good any damage to roads), road safety, phasing, reinstatement and landscaping of worked sites.”

Protected Structures

13.35 Chapter 12 – Cultural Heritage of this EIAR documents the assessment of effects on protected structures within the study area.

Guidelines

13.36 The landscape and visual impact assessment was undertaken in accordance with the published guidance entitled *Guidelines for Landscape and Visual Impact Assessment*, Landscape Institute and Institute of Environmental Management & Assessment, Third Edition, 2013, hereafter referred to as GLVIA 3.

RECEIVING ENVIRONMENT

Study Area

13.37 A study area measuring 4km from the centre of the Rossmore Quarry was identified following a desktop study and field-based assessment. It should however be noted that the visual envelope, i.e. the area from where the planning application site is actually visible, was found to be considerably smaller, due to the existing topography and vegetation which provides visual screening.

Baseline Study Methodology

13.38 The landscape and visual baseline study has involved a desktop study, field work, data processing and analysis. The aim of the landscape baseline study *“is to provide an understanding of the landscape in the area that may be affected”* (Section 3.15 of GLVIA 3), including its constituent elements, landscape character and its geographic extent.

13.39 With regard to the visual baseline GLVIA 3 (Section 3.15) states that it is the aim *“to establish the area in which the development will be visible the different groups of people who may experience views of the development, the places where they will be affected and the nature of the views and visual amenity at those points.”*

13.40 Representative and illustrative viewpoints were selected for inclusion in the detailed assessment in respect of the following parameters:

- types of receptor: to include residents of settlements and dwellings, road users, recreational users of footpaths, cycle paths, promoted viewpoints, picnic areas, beauty spots and other recreational locations where landscape is an important part of the experience;
- different distances from the development;

- different directions from the development with the aim of achieving a distribution of viewpoints from different compass points around the site; and
- different altitudes.

Sources of Information

- 13.41 The desktop study and field work were supported, inter alia, by information available on the internet, digital as well as paper (Ordnance Survey) maps at different scales and the Cork CDP 2014 - 2020.

Field Survey / Monitoring / Inspection Works

- 13.42 A detailed site survey was carried out on 13th June 2018 in overcast weather conditions with some intermittent showers. Visibility was good during the dry periods. The assessment concentrated on the publicly accessible areas such as roads, residential areas, and points of visitor interest.

Landscape Baseline

- 13.43 The County Development Plan 2014 - 2020 refers to the Landscape Character Types and categorises these in terms of value and sensitivity. The landscape of the application area is located within Landscape Character Type 1 City Harbour and Estuary also referred to as Landscape Character Area 19 – Cork City and Harbour. This is designated as a High Value Landscape (HVL) as a result of the very high value and sensitivity rankings applicable and its status as being of National Importance.

LCT 1 – City Harbour and Estuary - Cork County Draft Landscape Strategy 2007

- 13.44 The Cork County Draft Landscape Strategy 2007 provides the following description for LCT 1 – City Harbour and Estuary within which the application area and the entire study area is located.
- 13.45 *“The topography and landscape components in this area, primarily the River Lee as well as the vast open and natural harbour, have provided the opportunity for human settlement and the development of a city. Overall, the landscape of the city and harbour area comprises a mix of rural and intensely urban areas, combined with a large expansive harbour. To the south of the city, the western side of the harbour supports major industrial development, while on higher ground telecommunication masts or water storage towers punctuate the skyline. The harbour includes large islands, which, along with much of the harbour shore, comprises landscape of fertile farmland which slopes gently to the sea. It comprises a mosaic of fertile fields of mixed use on brown podzols. The rural areas around much of the greater harbour area are now characterised by a prevalence of infrastructure such as roads, bridges and electricity power lines and some urban sprawl. The narrow harbour mouth is defined by two hilltops with old military fortifications on their summits.”*

Landscape Character of the Application Site and its immediate surroundings.

- 13.46 The application area is located east of Cork City, approximately 1.5km south of the settlement of Carrigtohill. It comprises an existing quarry located on low lying coastal farmland at an approximate elevation of 5 to 20m AOD. The existing facility is located within a broadly ‘L’ shaped

site which features a large extraction area to the south and an overburden storage area to the north. These two elements are separated by an aggregate processing and concrete product manufacturing area. The southern and western boundaries of the site overlook Rossmore Bay and Great Island further afield to the south within Cork Harbour. Earthworks at the coastal edge rise to approximately 14m AOD at the highest point and feature some mature wooded vegetation. This earthwork structure currently provides considerable screening of the facilities and extraction activity in views from the south. The northern and eastern boundaries of the application area are located adjacent to farmland. Linear strips of mature wooded vegetation together with some earthworks are located along these boundaries and provide considerable visual screening of the facilities within. An overhead powerline crosses the site, close to the eastern boundary supported on a wooden 4 pole pylon located on both the north-eastern and southeastern boundary of the site.

- 13.47 The site is located within LCT 1 – City Harbour and Estuary which also carries the High Value Landscape (HVL) designation.

Landscape character of the study area

- 13.48 The study area comprises a gently undulating coastal farmland landscape centred on Cork Harbour. The landscape of the application area overlooks the harbour and Great Island further south specifically at Rossmore Bay within Great Island Channel. This is a visually open estuarine landscape overlooked by hill farmland to the north in the vicinity of Carrigtohill and to the south associated with Great Island. A number of promontories feature on the northern side of Great Island Channel. These include Weir Island, located immediately west of the application area and featuring farmland and mature woodland and Brick Island located immediately east of the application area and further to the east, Brown Island. On the southern side of the channel, a promontory featuring farmland and a large area of woodland along the coastal edge is located at Ballydaniel Beg. Further west, the landscape of Foaty Island, including golf course and resort, represents an extensive area featuring extensive mature vegetation along its shoreline. At the western end of the study area, the channel narrows between Foaty Island and Great Island at Belvelly Bridge where a castle ruin presents as a focal point in the landscape.
- 13.49 The hill farmland inland to the north near Carrigtohill and to the south at Great Island features a strongly defined field pattern with mature hedgerow vegetation and as a result, is a more visually enclosed landscape.
- 13.50 Both high voltage and low voltage overhead powerlines cross the landscape following a broadly north south orientation close to the application area. A third-party extractive facility including processing plant is located immediately east of the application area.
- 13.51 Minor roads cross the landscape in a broadly east west direction featuring individual isolated and small clusters of dwellings. The main settlement of Carrigtohill is located immediately north of the site.

Visual Baseline

General Visibility

- 13.52 The visibility of the application area was initially assessed by a desktop study of ordnance survey mapping (Discovery Map no's 80, 81 and 87 at a scale 1: 50,000) and available aerial photography followed by field survey.
- 13.53 The application area is currently partially visible from local roads along the shoreline of Great Island Channel and also along the regional road R624 at Belvelly Bridge near Foaty Island. Further south within the farmed landscape of Great Island, glimpse views are available of part of the application area at occasional isolated elevated locations in between breaks in the existing wooded vegetation. Glimpsed views of the application area are available from the farmed landscape to the north in the vicinity of Carrigtohill. This is due to the visual screening afforded by intervening promontories associated with Brown Island, Brick Island and Weir Island. Further inland to the north, the application area is partially visible in glimpsed views from elevated locations north of Carrigtohill. The viewing opportunities are intermittent and occasional, afforded at locations where breaks in existing mature vegetation arise.

Visual Receptors

- 13.54 The visual receptors with existing and/or potential views of the application area consist of residents of dwellings, road users and recreational visitors to the area. The location of each of the viewpoints is indicated on Figure 13.2 and described in Table 13-2 below. The table lists the viewer types at each viewpoint and describes the nature of existing views. Photographs depicting the existing visual amenity at the selected viewpoint locations are presented in Figures 13.3, 13.4 and 13.5.

Table 13-2
Viewpoints and Existing Visual Amenity – refer to Figure 13.2

ID	Location	Viewer Types	Existing views / Visual amenity
A	Ballydaniel Beg, Great Island.	Residents of dwelling	Views are available towards Rossmore Bay and the hill farmland further north. The perimeter earthworks associated with the application area is partially visible, above the line of existing vegetation at the shoreline. Structures associated with the third-party extraction facility, adjacent and east of the application area are clearly visible, including mineral faces and silo. The foreground features sailing boats, isolated buildings and a low voltage overhead powerline.
B	Scenic Route S52 – Road at N.E. Great Island.	Recreational visitors	Panoramic views are available of Great Island Channel and undulating farmland to the north including the promontories at Brick Island and Weir Island. Overhead power lines and pylons are clearly visible. Part of the application area, specifically the earthworks, is visible as a small element above the line of existing vegetation at the shoreline in this panoramic view. Part of the third-party extraction facility, adjacent and east of the application area is clearly visible as a small element.

C	Currabally, Great Island.	Road users	A glimpse view is available through a break in the roadside vegetation of Great Island Channel, the promontory associated with Brick Island and Rossmore Bay against the backdrop of the farmed landscape further north. Part of the existing extraction works associated with the application area are visible above the line of existing vegetation at the shoreline. Part of the third-party extraction facility, adjacent and east of the application area is clearly visible as a small element.
D	Belvelly Bridge	Recreational visitors	Expansive views are available of Great Island Channel with the hill farmland landscape of Great Island to the south and that in the vicinity of Carrigtohill to the north. Foaty Island is clearly visible in the foreground together with mature wooded vegetation to the north of the waterway. The wooded promontory at Ballydaniel Beg is clearly visible on the southern side. The application area, specifically the earthworks along the shoreline is partially visible above the line of existing vegetation. Part of the third-party extraction facility, adjacent and east of the application area, including silo is clearly visible.
		Road users	
E	Minor Road west of the application area.	Road users	Views are available of the existing facilities, specifically the processing plant within the application area through a break in the roadside vegetation.
F	Edge of settlement of Barryscourt	Residents of dwellings	Views are available of the processing plant associated with the existing facility with farmland in the foreground and against the backdrop of the hill farmed landscape of Great Island. Earthworks associated with the third-party extractive facility located east of the application area are clearly visible together with overhead power lines and pylons.
		Road users	
G	Minor road at Ballynoe	Residents of dwellings	Panoramic views are available of farmland and the settlement of Carrigtohill including larger scale industrial buildings and multi-unit developments in the foreground against the backdrop of the hill farmland of Great Island further afield. The existing processing plant within the application area is barely visible as a small element in the distance. Structures associated with the third-party extraction facility, adjacent and east of the application area, including earthworks silo are clearly visible albeit as small elements in the distance.
		Road users	
H	R624 Regional Road on Foaty Island.	Road users	Panoramic views are available of Great Island Channel. Part of the wooded edge of Foaty Island is visible in the foreground to the left of the viewer. Overhead powerlines and pylons are visible in the distance. A very small part of the eastern end of the existing facility is visible above the line of existing vegetation and earthworks at the site boundary with Weir Island in the foreground.

IMPACT ASSESSMENT

Evaluation Methodology

- 13.55 In order to arrive at conclusions about the significance of landscape/visual effects, this LVIA links judgements about the sensitivity of a receptor with the magnitude of change. According to GLVIA 3, section 3.26, the sensitivity (or 'nature') of a receptor is *"made up of judgements about:*
- *The susceptibility of the receptor to the type of change arising for the specific proposal; and*
 - *The value attached to the receptor"*.
- 13.56 The magnitude (or 'nature') of change is "made up of judgements about:
- *The size and scale of the change - for example whether there is complete loss of a particular element of the landscape or a minor change;*
 - *The geographical extent of the area that will be affected; and*
 - *The duration of the change and its reversibility."* Duration is described in GLVIA 3 with reference to three categories, short-term lasting up to 5 years, medium term lasting between 5 and 10 years and long-term lasting between 10 and 25 years.
- 13.57 The judgements about the sensitivity and magnitude are supported by a number of pre-defined parameters, where possible, as described in more detail below. They are then summarised using word scales and combined using a matrix to arrive at the overall significance of the effects.

Landscape Sensitivity

- 13.58 The sensitivity of the landscape is made up from a combination of judgements about the susceptibility of the landscape to change and the value attached to the landscape.
- 13.59 Susceptibility to change means the degree to which a landscape type/area/element is able to accommodate change (arising from a particular development) without detrimental effects on its character. Depending on the type of development proposed, this varies, inter alia, with the existing land use, the pattern and scale of the landscape, the visual enclosure/openness of views and the scope for appropriate mitigation. The value attached to the landscape can be judged, inter alia, by way of existing designations, landscape/scenic quality, rarity, recreation value.
- 13.60 For the purpose of this report landscape sensitivity is defined as HIGH, MEDIUM, LOW or NEGLIGIBLE, based on professional interpretation of the findings with regard to the susceptibility and value.

Visual Sensitivity

- 13.61 Viewpoint sensitivity is made up from a combination of judgements about the susceptibility of visual receptors to changes in views/visual amenity and the value attached to views.

- 13.62 The susceptibility to change in relation to different receptor types is defined in terms of high, medium and low susceptibility in Table 13-3 below.
- 13.63 The value attached to views is judged taking account of planning designations, such as protected views and other indicators of the values attached to views, e.g. in relation to heritage assets, views marked on maps or the provision of facilities for the enjoyment of views.

Table 13-3
Susceptibility of Visual Receptor to change

Susceptibility	Visual Receptor Types
High	Users of outdoor recreational facilities including strategic recreational footpaths, cycle routes or rights of way, whose attention may be focused on the landscape; important landscape features with physical, cultural or historic attributes; principal views from residential buildings, beauty spots or picnic areas; communities where views contribute to the landscape setting enjoyed by residents in the areas.
Medium	Other footpaths; secondary views from residential properties, people travelling through the landscape on roads, trains or other transport routes.
Low	People engaged in outdoor sports or recreation (other than appreciation of the landscape), commercial buildings, and other locations where people's attention may be focused on their work or activity.

- 13.64 The overall sensitivity of the visual receptors is summarised on a scale of HIGH, MEDIUM, LOW or NEGLIGIBLE based on the criteria and professional judgement.

Magnitude of Landscape/Visual Change

- 13.65 The judgements of the size or scale, geographical extent and duration/reversibility of the changes in the landscape are based on guidance contained in GLVIA 3, sections 5.49-5.52 including:
- *"The extent of existing landscape elements that will be lost ...;*
 - *The extent to which aesthetic or perceptual aspects of the landscape are altered ...;*
 - *Whether the effect changes the key characteristics of the landscape ...;*
 - Scale at which effects may have influence (e.g. site level, immediate setting, landscape type/character area);
 - Duration of the effect (i.e. short term = 0-5 years, medium term = 5-10 years, long term = 10-20 years, 20+ years = permanent); and
 - Whether full/partial reversibility is possible.
- 13.66 Based on GLVIA 3, sections 6.39-6.41, the judgements of the size or scale, geographical extent and duration/reversibility of visual effects are based on information including:

- *"The scale of the change in the view with respect to the loss or addition of features in the view and changes in its composition ...;*
- *The degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics in terms of form, scale and mass, line, height, colour and texture;*
- *The nature of the view of the proposed development, in terms of the relative amount of time over which it will be experienced and whether views will be full, partial or glimpses;*
- *The angle of view in relation to main activity of the receptor;*
- *The distance of the viewpoint from the proposed development;*
- *The extent of the area over which the changes would be visible;*
- Duration of the effect (i.e. short term = 0-5 years, medium term = 5-10 years, long term = 10-20 years, 20+ years = permanent); and
- Whether full/partial reversibility is possible.

13.67 The overall magnitude of change on the landscape and visual amenity is summarised on a scale of 'substantial', 'medium', 'slight' or 'negligible', based on professional interpretation of the findings with regard to size or scale, geographical extent and duration/reversibility. In order to assist the assessment, brief definitions of each level of magnitude are provided in Table 13-4, below.

Table 13-4
Magnitude of Change

Category	Description
Substantial	Total loss or major alteration of key elements/features/characteristics of the baseline conditions such that post development, landscape character or view composition attributes of the baseline would be fundamentally changed.
Medium	Partial loss or alteration to one or more key elements/features/characteristics of the baseline conditions such that post development, landscape character or view composition attributes would be partially changed.
Slight	Minor loss or alteration to one or more key elements/features/characteristics of the baseline conditions. Change arising from the loss/alteration would be discernible, but the underlying landscape character or view composition attributes would be similar to the baseline.
Negligible	Very minor loss or alteration to one or more key elements/features/ characteristics of the baseline conditions. Change would be barely distinguishable, approximating to 'no change'.

Significance of Effects

- 13.68 The significance of any identified landscape or visual impact has been assessed in terms of ‘major’, ‘moderate’, ‘minor’ or ‘none’. These categories have been based on combining the overall sensitivity of landscape/visual receptors and overall magnitude of effects, as shown in Table 13-5 below. This process is not a quantitative process; there is not an absolute scoring system. Instead, the correlation of the two factors, although reflecting recognised features and methods, is in the end a matter of professional judgement.

Table 13-5
Significance of Landscape and Visual Effects

	Magnitude Substantial	Magnitude Medium	Magnitude - Slight	Magnitude Negligible
Sensitivity - High	Major	Major/Moderate	Moderate	Moderate/Minor
Sensitivity - Medium	Major/Moderate	Moderate	Moderate/Minor	Minor
Sensitivity - Low	Moderate	Moderate/Minor	Minor	Minor/None
Sensitivity Negligible	Moderate/Minor	Minor	Minor/None	None

- 13.69 The above matrix is not used as a prescriptive tool and the methodology and analysis of potential effects at any particular location must allow for the exercise of professional judgement. Thus, in some instances a particular parameter may be considered as having a determining effect on the analysis.
- 13.70 Table 13-6, below, provides a brief definition of the full range of significance criteria. For the purpose of this report, it is considered that Major and Major/Moderate effects are significant.

Table 13-6
Definition of Significance Criteria for Landscape and Visual Effects

Category	Description
None	The proposed scheme is appropriate in its context. It may be difficult to differentiate from its surroundings and would affect very few or no receptors.
Minor	The proposed scheme would cause a barely perceptible impact, and would affect few receptors.
Moderate	The proposed scheme would cause a noticeable difference to the landscape, and would affect several receptors.
Major	The proposed scheme would completely change the character and/or appearance of the landscape for a long period of time or permanently. It would affect many receptors.

Construction Stage Impacts

- 13.71 The proposed development concerns the continuation of existing permitted quarry operations at the Rossmore Quarry facility. In the context of this, effects on landscape and visual amenity are documented as operational stage effects.

Operational Stage Impacts

- 13.72 Impacts during operation are discussed below in terms of the sensitivity of each landscape and visual receptor and the magnitude of change that would arise.
- 13.73 The proposed development constitutes the continuation of the existing permitted quarry within the existing extraction area. The main elements associated with the current permitted development which are relevant to this assessment include deepening of the existing quarry void to a depth of -40 AOD resulting in a permanent lake together with the restoration of the overburden material placed in the northern part of the site and at the site boundaries together with planting to provide visual screening as part of proposed restoration works.
- 13.74 The proposed change relates to the continued presence of this facility in the landscape in the long term (10 to 25 years) and consequent visual effects, currently experienced by viewers in the surrounding area.

Direct Impacts on Landscape

- 13.75 The proposed development concerns the continuation of permitted development and activities within an existing quarry. In this regard, there would be no direct effects in terms of loss of landscape elements such as pastoral farmland, hedgerow, woodland or individual trees. Direct effects would arise to the landscape of the quarry site as a result of the continuation of the existing permitted quarry activities for a longer period of time.

Indirect Effects on-Landscape Character

- 13.76 The proposed development would be apparent in the surrounding landscape for a distance of up to 2.5km to the south and 4km to the north measured from the centre of the application area according to the ZTV illustrated in Figure 13.2. In reality, the receiving landscape would be affected to a much lesser extent than indicated in the ZTV due to the screening afforded by existing mature hedgerows that currently enclose farmland and line existing roads together with tracts of woodland cover such as that at Foaty Island.
- 13.77 The Landscape Character Type 1 – City Harbour and Estuary referred to in the baseline above has been considered in terms of sensitivity to the proposed development, specifically that part of the LCT which falls within the study area.

Landscape Sensitivity – LCT 1 – City Harbour and Estuary

- 13.78 This assessment considers LCT 1 – City Harbour and Estuary to be of high susceptibility to the proposed change. This is largely due to the visual openness of part of this landscape within and close to Great Island Channel. The farmed landscape further inland, however, is considered to be of lower susceptibility to the proposed change due to the presence of mature hedgerow and wooded vegetation as visual screens.

- 13.79 LCT 1 – City Harbour and Estuary is a valued landscape due to its scenic quality reflected in its designation as a high value landscape (HVL), despite the detracting elements present including the existing quarry facilities together with a number of high voltage and low voltage overhead powerlines and pylons.
- 13.80 Based on the above judgements regarding susceptibility and value, this assessment considers LCT 1 – City Harbour and Estuary, where it occurs within the study area, to be of high sensitivity to the proposed change. The county development plan ranks this landscape as being of very high sensitivity generally. As the proposed change relates to the continuation of activities at an existing facility already present in this landscape, the assessment judgement of high sensitivity to the proposed change is deemed to be reasonably consistent with the general sensitivity judgement documented in the county plan draft landscape strategy for this landscape.

Magnitude of Landscape Change and Significance of Effect – LCT 1 – City Harbour and Estuary

- 13.81 The size and scale of the proposed change on the landscape would be very limited. The existing permitted quarry would continue to be apparent in parts of the landscape of the study area albeit in the long term as outlined in the description of the proposed development in Chapter 2 of the EIAR.
- 13.82 In terms of geographic extent, the proposed development would continue to be apparent from more visually exposed farmed landscapes close to and overlooking Great Island Channel and isolated elevated locations to the north near Ballynoe and to the south on Great Island where breaks in the vegetation afford distant views. The proposed development would continue to be permanent, present in the landscape in the long term.
- 13.83 Effects on landscape character would be derived largely from the continued presence of the existing permitted quarry in the long term. In this regard, effects currently experienced by this landscape would continue for a longer period of time as outlined in the project description. A slight / negligible magnitude of change is predicted to arise to this landscape of high sensitivity resulting in a moderate / minor and not significant effect.

Visual Effects

- 13.84 Effects on visual amenity at selected viewpoint locations presented in the baseline are documented below. An evaluation of sensitivity at each viewpoint location is presented along with an evaluation of magnitude of change which is determined with reference to the size and scale, geographical extent and duration/reversibility of the proposed change resulting in a judgement of the overall magnitude of visual change.

Visual Receptor Sensitivity

- 13.85 Table 13-7 below judges the susceptibility of the visual receptors at each of the identified viewpoints, based on the methodology presented above. The table further describes the value placed on views from each of the viewpoints and makes a judgement of the sensitivity of each receptor at each viewpoint.

Table 13-7
Visual Receptor Sensitivity

ID	Susceptibility	Value	Sensitivity
A	Residents of dwellings are of high susceptibility as they have continued interest in their surroundings.	Viewpoint is located in High Value Landscape (HVL).	HIGH
B	Recreational visitors are of high susceptibility due to their interest in the surrounding landscape.	Viewpoint is located on Scenic Route S52 and in High Value Landscape (HVL).	HIGH
C	Road users are of low susceptibility as the view is incidental to the journey.	Viewpoint is located in High Value Landscape (HVL).	MEDIUM
D	Recreational visitors are of high susceptibility due to their interest in the surrounding landscape.	Viewpoint is located in High Value Landscape (HVL).	HIGH
	Road users are of low susceptibility as the view is incidental to the journey.		MEDIUM
E	Road users are of low susceptibility as the view is incidental to the journey.	Viewpoint is located in High Value Landscape (HVL).	MEDIUM
F	Residents of dwellings are of high susceptibility as they have continued interest in their surroundings.	Viewpoint is located in High Value Landscape (HVL).	HIGH
	Road users are of low susceptibility as the view is incidental to the journey.		MEDIUM
G	Residents of dwellings are of high susceptibility as they have continued interest in their surroundings.	Viewpoint is located in High Value Landscape (HVL).	HIGH
H	Road users are of low sensitivity as the view is incidental to the journey	Viewpoint is located in a High Value Landscape (HVL)	Medium

Magnitude of Change and Significance of Visual Effects

- 13.86 The magnitude of change and significance of visual effects at each viewpoint is discussed below. For each viewpoint the size and scale of the change to the existing view is assessed together with the extent of the view that would be affected by the change and the duration, concluding with an overall magnitude of change. Finally, the significance of visual effects at each viewpoint is documented.
- 13.87 From all of the viewpoints, the viewer would continue to see elements associated with the existing permitted quarry facility. The extraction activities including moving plant and machinery would continue to be screened for the most part in views from the south by existing vegetation and perimeter earthworks at the boundaries of the application site. No proposed new structures or activities will be introduced. As a result, there would be scarcely any change to existing views at each viewpoint location however the visual effects currently experienced by viewers would be of longer duration as outlined in the project description.

Viewpoint A

- 13.88 At viewpoint A, residents of dwellings would continue to see part of the proposed development with partial screening afforded by perimeter earthworks and vegetation along the shoreline. These views would be attained in the long term with Great Island Channel in the foreground and against the backdrop of the hill farmland north of Carrigtohill. A negligible magnitude of change is predicted to arise to residents of a dwelling of high sensitivity resulting in a moderate/minor and not significant effect.

Viewpoint B

- 13.89 At viewpoint B, visitors travelling on the Scenic Route No. 52 would continue to see part of the proposed development with partial screening afforded by perimeter earthworks and vegetation along the shoreline as a very small component in an expansive panoramic view of Great Island Channel and hill farmland north of Carrigtohill. These views would be attained in the long term. A negligible magnitude of change is predicted to arise to these recreational viewers of high sensitivity resulting in a moderate/minor and not significant effect.

Viewpoint C

- 13.90 At viewpoint C, road users would continue to attain glimpsed views of the proposed development, specifically the extraction area from an elevated location albeit with partial screening afforded by perimeter earthworks and vegetation along the southern boundary of the application area. These views would continue to be attained in the long term albeit as glimpsed views in between occasional breaks in mature roadside vegetation. As a result, a negligible magnitude of change is predicted to arise to road users of medium sensitivity resulting in a minor and not significant effect.

Viewpoint D

- 13.91 At viewpoint D, the proposed development, mainly the perimeter earthworks along the southern boundary, would continue to be partially visible above the line of existing vegetation associated with Weir Island in the foreground within Great Island Channel. These views would continue to be attained in the long term. A negligible magnitude of change is considered to arise to recreational viewers of high sensitivity resulting in a moderate/minor and not significant effect. Road users of medium sensitivity would experience a minor and not significant effect.

Viewpoint E

- 13.92 At viewpoint E, viewers would continue to see the processing plant framed by mature roadside vegetation. These views would be experienced in the long term as glimpsed views along this minor road at occasional locations through breaks in existing roadside vegetation. A negligible magnitude of change is predicted to arise for road users of medium sensitivity resulting in a minor and not significant effect.

Viewpoint F

- 13.93 At viewpoint F, residents and road users at the edge of Barryscourt would continue to see part of the processing plant as a relatively small element in the view with pastoral farmland in the foreground. The extraction area would continue to be screened from view by mature vegetation. A negligible magnitude of change is considered to arise to residents of dwellings of high sensitivity resulting in a moderate/minor and not significant effect. Road users of medium sensitivity would experience a minor and not significant effect.

Viewpoint G

- 13.94 The proposed development, mainly the processing plant would continue to be barely visible in the long term in this panoramic view of the farmed landscape with the settlement of Carrigtohill in the foreground. A negligible magnitude of change is considered to arise to residents of dwellings of high sensitivity resulting in a moderate/minor and not significant effect.

Viewpoint H

- 13.95 At viewpoint H, viewers would continue to see a very small part of the extraction facility at the eastern end of the site. Much of the western part of the site including the processing plant would continue to be screened from view by mature woodland at Foaty Island. These views would be experienced in the long term. A negligible magnitude of change is predicted to arise for road users of medium sensitivity resulting in a minor and not significant effect.

Impact on Landscape/Planning Designations

Landscape Policy

- 13.96 The proposed development would occur in a landscape which features an existing quarry located within a designated High Value Landscape (HVL). The proposed development constitutes the continuation of existing permitted extraction activities resulting in the introduction of a permanent lake within the quarry void together with site restoration works. This waterbody would be substantially screened from the surrounding landscape by existing perimeter earthworks and vegetation along the site boundaries. There would be no change in terms of loss of farmland land cover or loss of landscape elements such as trees, hedgerows and woodland. Overall, the proposed development is deemed to be compliant with landscape policy set out in the County Development Plan.

Scenic Routes

- 13.97 Effects on the Scenic Routes located within the study area are documented below.

Scenic Route S42 – Road at Cashnagarriffe, N.W.Carrigtwohill and Westwards to Caherlag.

- 13.98 A very short section of this designated scenic route would be affected by the proposed development according to the ZTV. In reality, effects would be very limited and would be experienced where occasional breaks in roadside vegetation afford long distance views. Visual screening by intervening vegetation and built structures would be such that the proposed development would be scarcely visible and no real discernible change in view would be perceived by the viewer. Effects are considered to be not significant.

S52 - Road at N.E. Great Island – which falls entirely within the study area for this assessment

- 13.99 Part of this designated scenic route in the vicinity of Ballydaniel Beg would be affected by the proposed development as described above for Viewpoint B. Much of the Scenic Route would be unaffected due to visual screening by Islands and promontories within the estuary including Brick Island. Effects are considered to be not significant.

S53 – Road between Cobh and Belvelly – of which a small part falls within the study area for this assessment.

- 13.100 This designated scenic route would not be affected by the proposed development due to screening by intervening topography and vegetation.

Extractive Industry and Building Materials Production

- 13.101 The proposed development comprises the continuation of existing permitted extraction and related activities within the existing quarry resulting in a permanent lake within the existing quarry void. No loss of landscape elements such as farmed landcover and vegetation would occur. Effects on landscape character and visual amenity would be very limited and would not be significant. The proposed development is therefore deemed to comply with policy relating to the extractive industry and objectives to minimise environmental effects.
- 13.102 A Restoration Plan is provided in Chapter 2 of this EIAR, detailing the restoration of the lands to an after use which would support future natural habitats and would result in ecological enhancement of the area. The proposed restoration plan is on EIAR Figures 2.4.

Post – Operational Stage Impacts

- 13.103 During the Post operational stage, the quarry would cease to operate. Plant and machinery would be removed, and the site would be restored in accordance with the Restoration Plan illustrated in EIAR Figure 2.4. This would result in some beneficial effects on surrounding landscape and visual amenity compared with the current baseline.

‘Do-nothing Scenario’

- 13.104 If no further works within the planning application area were carried out, the existing quarry, would continue to operate for the remainder of the current planning permission, after which, the site would be restored. The restoration of the site would result in improvements to existing landscape and visual amenity compared with the current baseline.

MITIGATION MEASURES

Operational Stage

13.105 No further mitigation measures, other than that associated with the current permission comprised of earthwork and planting are proposed.

Post – Operational Stage

13.106 No further restoration measures apart from those associated with the current permission are proposed.

13.107 Details of the restoration plan consistent with the current permission are presented in Figure 2.4, refer to EIAR Chapter 2.

RESIDUAL IMPACT ASSESSMENT

Operational Stage

13.108 As the effects during operation take account of the mitigation measures, the residual effects are the same as that documented under operational stage impacts.

Post – Operational Stage

Direct Impacts on Landscape

13.109 Direct changes would occur to the application area as a result of the implementation of the restoration plan. This would result in some beneficial effects on landscape and visual amenity compared with the baseline.

REFERENCES

The Landscape Institute with the Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, Third Edition, Routledge

The Landscape Institute (March 2011) Advice Note 01/11 – Photography and photomontage in landscape and visual assessment, The Landscape Institute.

Environmental Protection Agency (EPA) (May 2017) Guidelines on the Information to be contained in Environmental Impact Assessment Reports, EPA Ireland.

FIGURES



NOTES

- EXTRACT FROM 1:50,000 O.S DISCOVERY MAPS NOS. 80, 81, 87.
- ORDNANCE SURVEY IRELAND LICENCE NO. CYAL50167032 (C) ORDNANCE SURVEY & GOVERNMENT OF IRELAND.

LEGEND

- APPLICANTS LAND INTEREST
- PLANNING APPLICATION AREA (c. 24.7 Ha)
- DISTANCE FROM CENTRE OF APPLICATION SITE
- DESIGNATED SCENIC ROUTES (CORK COUNTY DEVELOPMENT PLAN 2014-2020)
 - S42 – Road at Cashnagariffe, N.W.Carrigtohill and Westwards to Caherlag
 - S52 – Road at N.E. Great Island
 - S53 – Road between Cobh and Belvelly
- VIEWPOINT LOCATIONS

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ENVIROMENTAL IMPACT ASSESSMENT REPORT**

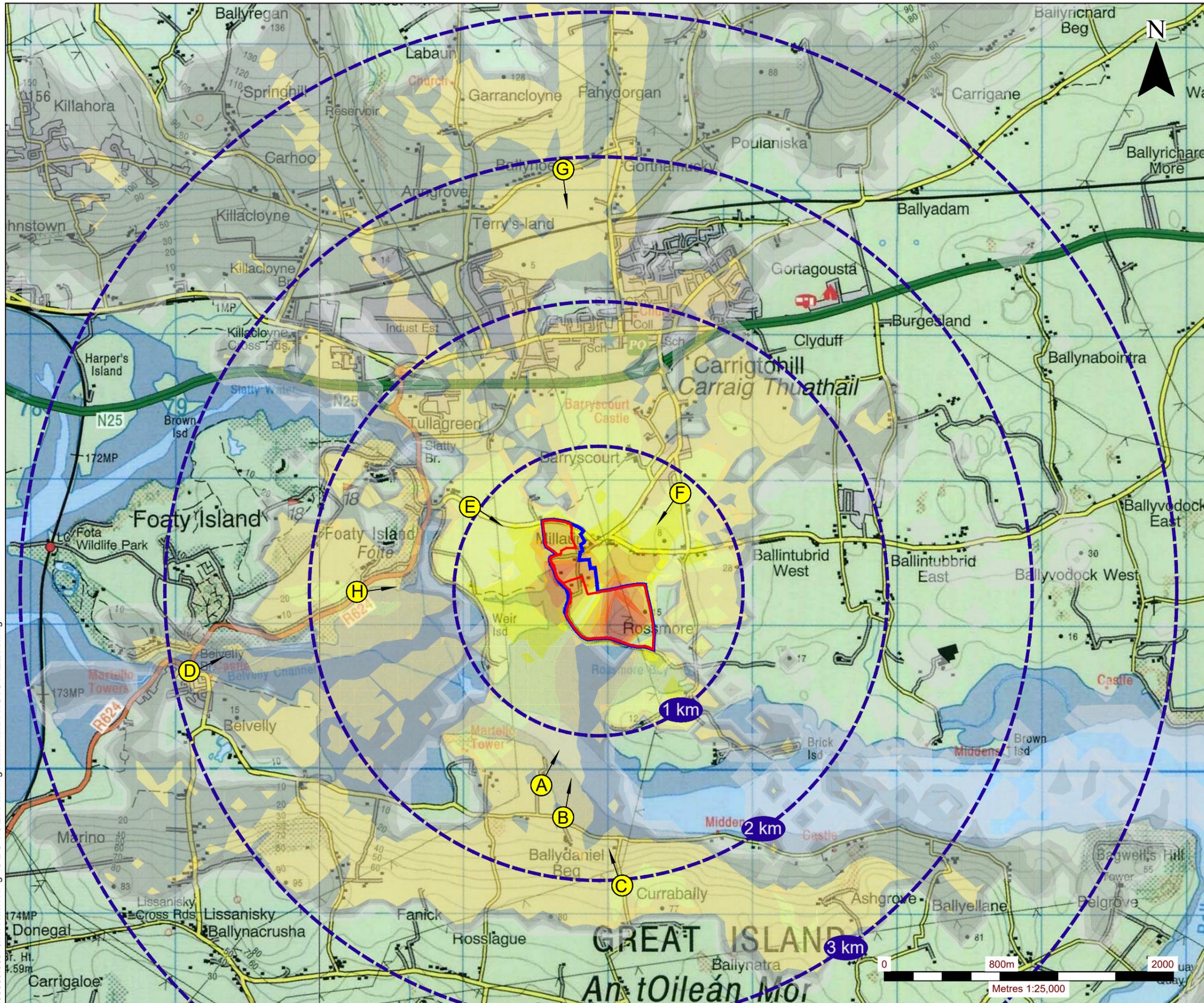
**ROSSMORE QUARRY
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**LANDSCAPE BASELINE AND
VIEWPOINT LOCATIONS**

FIGURE 13-1

Scale 1:25000	Date JUNE 2021
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00036.00070.Rossmore.Fig 13-1-Landscape Baseline and Viewpoint Locations.dwg



NOTES
 1. EXTRACT FROM 1:50,000 O.S DISCOVERY MAPS NOS. 80, 81, 87.
 2. ORDNANCE SURVEY IRELAND LICENCE NO. CYAL50167032 (C) ORDNANCE SURVEY & GOVERNMENT OF IRELAND.

LEGEND

- APPLICANTS LAND INTEREST
- PLANNING APPLICATION AREA (c. 24.7ha)
- VIEWPOINT LOCATIONS
- APPROXIMATE DISTANCE FROM CENTRE OF APPLICATION SITE

VERTICAL SUBTENDED ANGLES VISIBLE

- SUBTENDED VERTICAL ANGLE GREATER THAN 25.6 DEGREES
- SUBTENDED VERTICAL ANGLE 12.8 TO 25.6 DEGREES
- SUBTENDED VERTICAL ANGLE 6.4 TO 12.8 DEGREES
- SUBTENDED VERTICAL ANGLE 3.2 TO 6.4 DEGREES
- SUBTENDED VERTICAL ANGLE 1.6 TO 3.2 DEGREES
- SUBTENDED VERTICAL ANGLE 0.8 TO 1.6 DEGREES
- SUBTENDED VERTICAL ANGLE 0.4 TO 0.8 DEGREES
- SUBTENDED VERTICAL ANGLE 0.2 TO 0.4 DEGREES
- SUBTENDED VERTICAL ANGLE 0.1 TO 0.2 DEGREES
- SUBTENDED VERTICAL ANGLE LESS THAN 0.1 DEGREES
- NO THEORETICAL VISIBILITY

NOTE: Vegetation cover and built structures are not taken into account as part of the calculation process for this ZTV. This ZTV therefore represents a worst case scenario. In SLRs experience, areas in grey (i.e. less than 0.4 degrees) tend to be screened by hedgerows and vegetation, if present. Please refer to Appendix 13-1 of the EIAR for the ZTV methodology.

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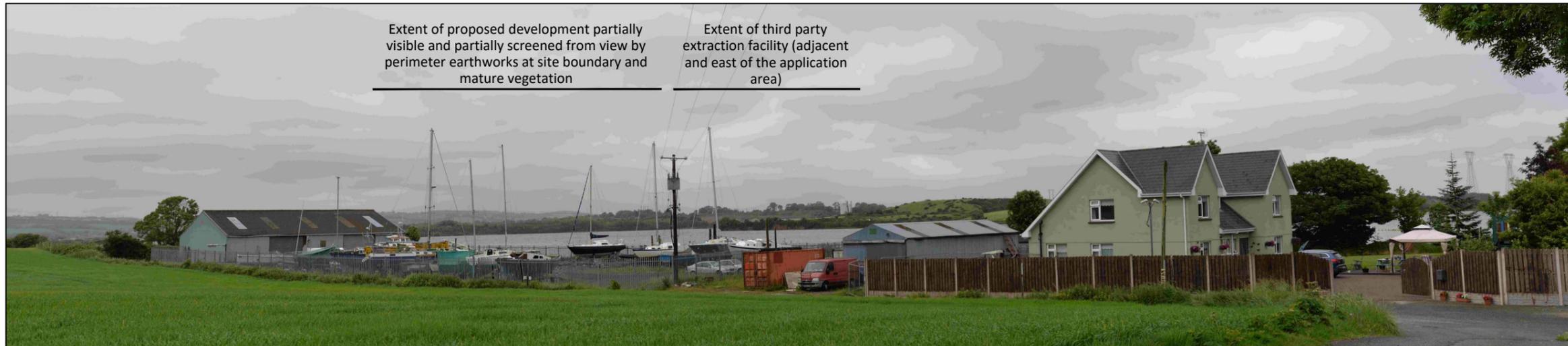
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**ROSSMORE QUARRY
 ROSSMORE, CARRIGTOHILL, CO. CORK**

**ZONE OF THEORETICAL VISIBILITY
 (ZTV) AND VIEWPOINT LOCATIONS**

FIGURE 13-2

Scale 1:25000 Date JUNE 2021



Extent of proposed development partially visible and partially screened from view by perimeter earthworks at site boundary and mature vegetation

Extent of third party extraction facility (adjacent and east of the application area)

VIEWPOINT A: Ballydaniel Beg, Great Island.

Approximate Grid Coordinates: **581419, 569894**

Approximate Elevation: **8m AOD**

Distance from planning application boundary: **1.1km**

Direction of View: **North**

Description: Views are available towards Rossmore Bay and the hill farmland further north. The perimeter earthworks associated with the application area is partially visible, above the line of existing vegetation at the shoreline. Structures associated with the third party extraction facility, adjacent and east of the application area are clearly visible, including mineral faces and silo. The foreground features sailing boats, isolated buildings and a low voltage overhead powerline.



Extent of proposed development partially visible and partially screened from view by perimeter earthworks at site boundary and mature vegetation

Extent of third party extraction facility (adjacent and east of the application area)

VIEWPOINT B: Scenic Route S52 - Road at N.E. Great Island.

Approximate Grid Coordinates: **581613, 569725**

Approximate Elevation: **4m AOD**

Distance from planning application boundary: **1.2km**

Direction of View: **North**

Description: Panoramic views are available of Great Island Channel and undulating farmland to the north including the promontories at Brick Island and Weir Island. Overhead power lines and pylons are clearly visible. Part of the application area, specifically the earthworks, is visible as a small element above the line of existing vegetation at the shoreline in this panoramic view. Part of the third party extraction facility, adjacent and east of the application area is clearly visible as a small element.



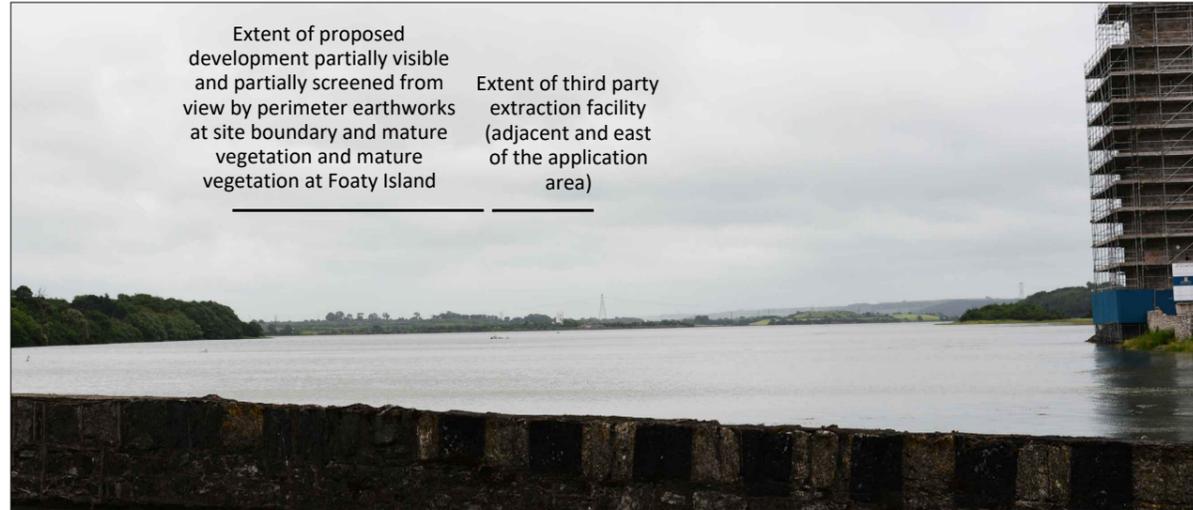
Extent of proposed development partially visible and partially screened from view by perimeter earthworks at site boundary and mature vegetation

Extent of third party extraction facility (adjacent and east of the application area)

VIEWPOINT C: Currabally, Great Island.

Approximate Grid Coordinates: **582057, 569232** Approximate Elevation: **62m AOD**
Distance from planning application boundary: **1.73km** Direction of View: **North**

Description: A glimpse view is available through a break in the roadside vegetation of Great Island Channel, the promontory associated with Brick Island and Rossmore Bay against the backdrop of the farmed landscape further north. Part of the existing extraction works associated with the application area are visible above the line of existing vegetation at the shoreline. Part of the third party extraction facility, adjacent and east of the application area is clearly visible as a small element.



Extent of proposed development partially visible and partially screened from view by perimeter earthworks at site boundary and mature vegetation and mature vegetation at Foaty Island

Extent of third party extraction facility (adjacent and east of the application area)

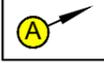
VIEWPOINT D: Belvelly Bridge.

Approximate Grid Coordinates: **579043, 570751** Approximate Elevation: **3m AOD** Distance from planning application boundary: **2.7km**
Direction of View: **East**

Description: Expansive views are available of Great Island Channel with the hill farmland landscape of Great Island to the south and that in the vicinity of Carrigtohill to the north. Foaty Island is clearly visible in the foreground together with mature wooded vegetation to the north of the waterway. The wooded promontory at Ballydaniel Beg is clearly visible on the southern side. The application area, specifically the earthworks along the shoreline is partially visible above the line of existing vegetation. Part of the third party extraction facility, adjacent and east of the application area, including silo is clearly visible.

NOTES
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LEGEND

-  APPLICANTS LAND INTEREST
-  PLANNING APPLICATION AREA (c. 24.7ha)
-  VIEWPOINT LOCATIONS
-  DISTANCE FROM CENTRE OF APPLICATION SITE

VIEWPOINT LOCATION MAP (1:50,000 @ A3)



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VIEWPOINTS A-B-C-D

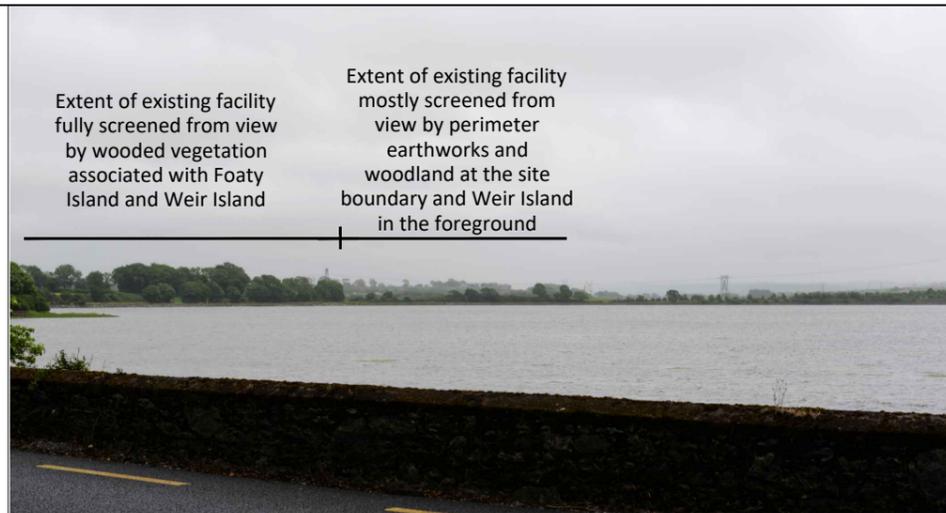
FIGURE 13-3

Scale: NA Date: APRIL 2021

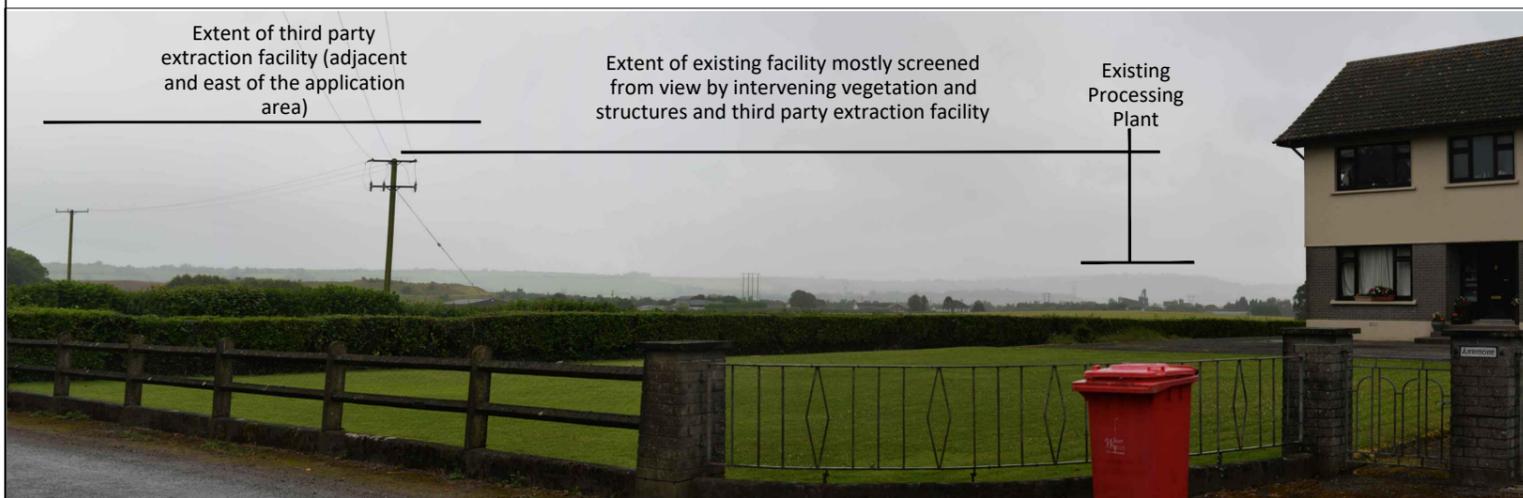
00036.00070.Rossmore.Fig 13-2-3-4-5 ZTV no vegetation and PHOTOSHEETS.dwg



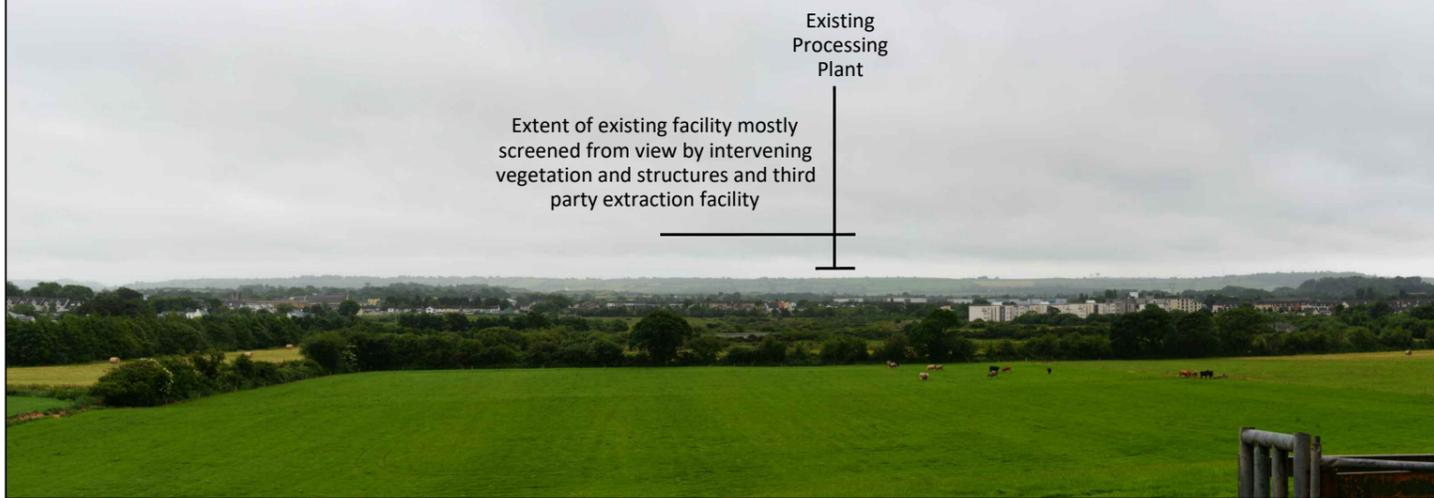
VIEWPOINT E: Minor Road west of the application area
 Approximate Grid Coordinates: **581017, 571865** Approximate Elevation: **2m AOD**
 Distance from planning application boundary: **0.7km** Direction of View: **South East**
Description: Views are available of the existing facilities, specifically the processing plant within the application area through a break in the roadside vegetation.



VIEWPOINT H: R624 Regional Road on Foaty Island
 Approximate Grid Coordinates: **580201, 571267** Approximate Elevation: **7m AOD**
 Distance from planning application boundary: **1.5km** Direction of View: **East**
Description: Panoramic views are available of Great Island Channel. Part of the wooded edge of Foaty Island is visible in the foreground to the left of the viewer. Overhead powerlines and pylons are visible in the distance. A very small part of the eastern end of the existing facility is visible above the line of existing vegetation and earthworks at the site boundary with Weir Island in the foreground.



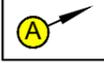
VIEWPOINT F: Edge of settlement of Barryscourt.
 Approximate Grid Coordinates: **582453, 572031** Approximate Elevation: **18m AOD** Distance from planning application boundary: **0.9km** Direction of View: **South**
Description: Views are available of the processing plant associated with the existing facility with farmland in the foreground and against the backdrop of the hill farmed landscape of Great Island. Earthworks associated with the third party extractive facility located east of the application area are clearly visible together with overhead power lines and pylons.



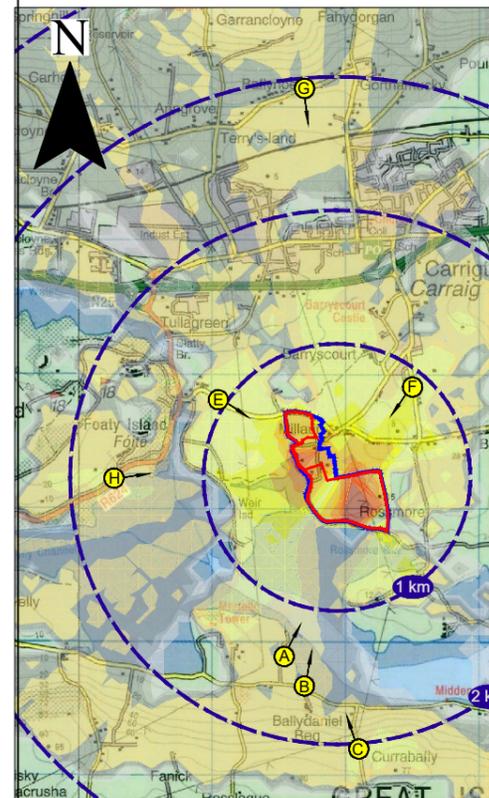
VIEWPOINT G: Minor Road at Ballynoe.
 Approximate Grid Coordinates: **581613, 574186** Approximate Elevation: **28m AOD** Distance from planning application boundary: **2.7km** Direction of View: **South**
Description: Panoramic views are available of farmland and the settlement of Carrigtohill including larger scale industrial buildings and multi unit developments in the foreground against the backdrop of the hill farmland of Great Island further afield. The existing processing plant within the application area is barely visible as a small element in the distance. Structures associated with the third party extraction facility, adjacent and east of the application area, including earthworks silo are clearly visible albeit as small elements in the distance.

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LEGEND

-  APPLICANTS LAND INTEREST
-  PLANNING APPLICATION AREA (c. 24.7ha)
-  VIEWPOINT LOCATIONS
-  DISTANCE FROM CENTRE OF APPLICATION SITE

VIEWPOINT LOCATION MAP (1:50,000 @ A3)



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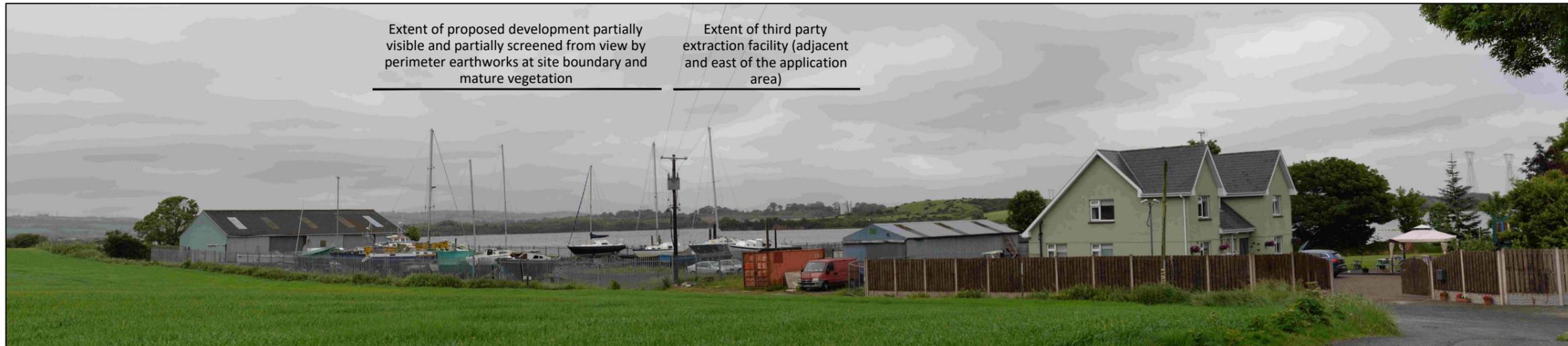
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VIEWPOINTS E-F-G

FIGURE 13-4

Scale NA Date APRIL 2021

00036.00070.Rossmore.Fig 13-2-3-4-5 ZTV no vegetation and PHOTOSHEETS.dwg



Extent of proposed development partially visible and partially screened from view by perimeter earthworks at site boundary and mature vegetation

Extent of third party extraction facility (adjacent and east of the application area)

VIEWPOINT A: Ballydaniel Beg, Great Island.

Approximate Grid Coordinates: **581419, 569894**

Approximate Elevation: **8m AOD**

Distance from planning application boundary: **1.1km**

Direction of View: **North**

Description: Views are available towards Rossmore Bay and the hill farmland further north. The perimeter earthworks associated with the application area is partially visible, above the line of existing vegetation at the shoreline. Structures associated with the third party extraction facility, adjacent and east of the application area are clearly visible, including mineral faces and silo. The foreground features sailing boats, isolated buildings and a low voltage overhead powerline.



Extent of proposed development partially visible and partially screened from view by perimeter earthworks at site boundary and mature vegetation

Extent of third party extraction facility (adjacent and east of the application area)

VIEWPOINT B: Scenic Route S52 - Road at N.E. Great Island.

Approximate Grid Coordinates: **581613, 569725**

Approximate Elevation: **4m AOD**

Distance from planning application boundary: **1.2km**

Direction of View: **North**

Description: Panoramic views are available of Great Island Channel and undulating farmland to the north including the promontories at Brick Island and Weir Island. Overhead power lines and pylons are clearly visible. Part of the application area, specifically the earthworks, is visible as a small element above the line of existing vegetation at the shoreline in this panoramic view. Part of the third party extraction facility, adjacent and east of the application area is clearly visible as a small element.



Extent of proposed development partially visible and partially screened from view by perimeter earthworks at site boundary and mature vegetation

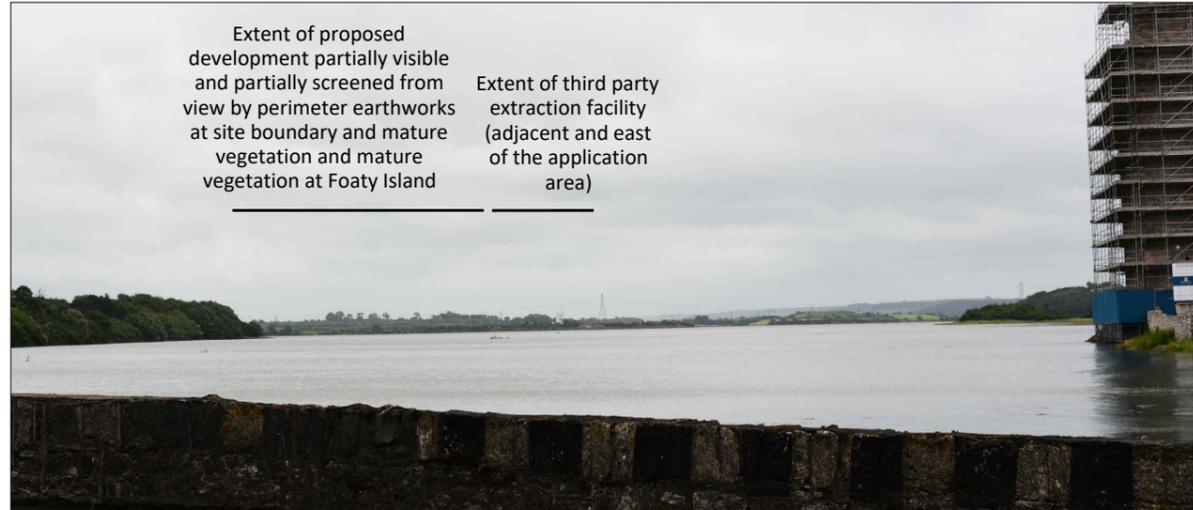
Extent of third party extraction facility (adjacent and east of the application area)

VIEWPOINT C: Currabally, Great Island.

Approximate Grid Coordinates: **582057, 569232** Approximate Elevation: **62m AOD**

Distance from planning application boundary: **1.73km** Direction of View: **North**

Description: A glimpse view is available through a break in the roadside vegetation of Great Island Channel, the promontory associated with Brick Island and Rossmore Bay against the backdrop of the farmed landscape further north. Part of the existing extraction works associated with the application area are visible above the line of existing vegetation at the shoreline. Part of the third party extraction facility, adjacent and east of the application area is clearly visible as a small element.



Extent of proposed development partially visible and partially screened from view by perimeter earthworks at site boundary and mature vegetation and mature vegetation at Foaty Island

Extent of third party extraction facility (adjacent and east of the application area)

VIEWPOINT D: Belvelly Bridge.

Approximate Grid Coordinates: **579043, 570751** Approximate Elevation: **3m AOD** Distance from planning application boundary: **2.7km**

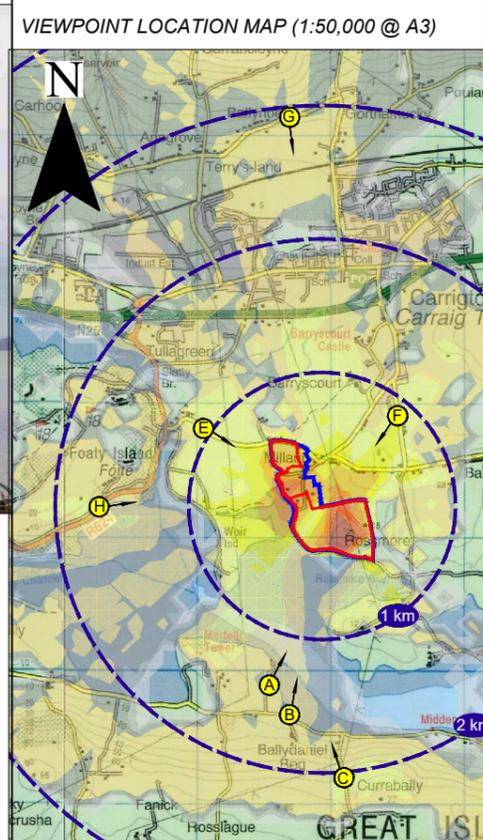
Direction of View: **East**

Description: Expansive views are available of Great Island Channel with the hill farmland landscape of Great Island to the south and that in the vicinity of Carrigtohill to the north. Foaty Island is clearly visible in the foreground together with mature wooded vegetation to the north of the waterway. The wooded promontory at Ballydaniel Beg is clearly visible on the southern side. The application area, specifically the earthworks along the shoreline is partially visible above the line of existing vegetation. Part of the third party extraction facility, adjacent and east of the application area, including silo is clearly visible.

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LEGEND

- APPLICANTS LAND INTEREST
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FIGURE 13-3

Scale: NA Date: APRIL 2021

00036.00070.Rossmore.Fig 13-2-3-4-5 ZTV no vegetation and PHOTOSHEETS.dwg



Extent of proposed development partially visible and partially screened from view by perimeter earthworks at site boundary and mature vegetation

Extent of third party extraction facility (adjacent and east of the application area)

VIEWPOINT A: Ballydaniel Beg, Great Island.

Approximate Grid Coordinates: **581419, 569894**

Approximate Elevation: **8m AOD**

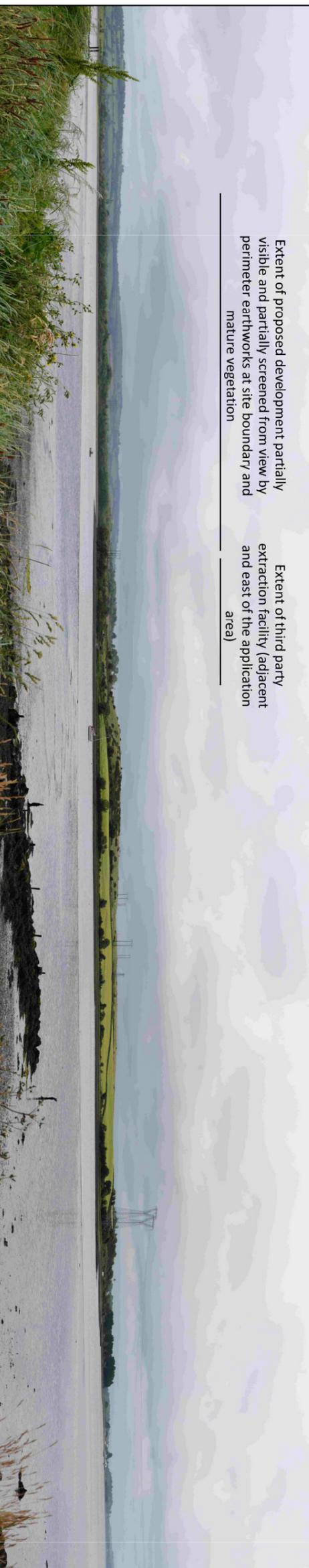
Distance from planning application boundary: **1.1km**

Direction of View: **North**

Description: Views are available towards Rossmore Bay and the hill farmland further north. The perimeter earthworks associated with the application area is partially visible, above the line of existing vegetation at the shoreline. Structures associated with the third party extraction facility, adjacent and east of the application area are clearly visible, including mineral faces and silo. The foreground features sailing boats, isolated buildings and a low voltage overhead powerline.

Extent of proposed development partially visible and partially screened from view by perimeter earthworks at site boundary and mature vegetation

Extent of third party extraction facility (adjacent and east of the application area)



VIEWPOINT B: Scenic Route 552 - Road at N.E. Great Island.

Approximate Grid Coordinates: **581613, 569725**

Approximate Elevation: **4m AOD**

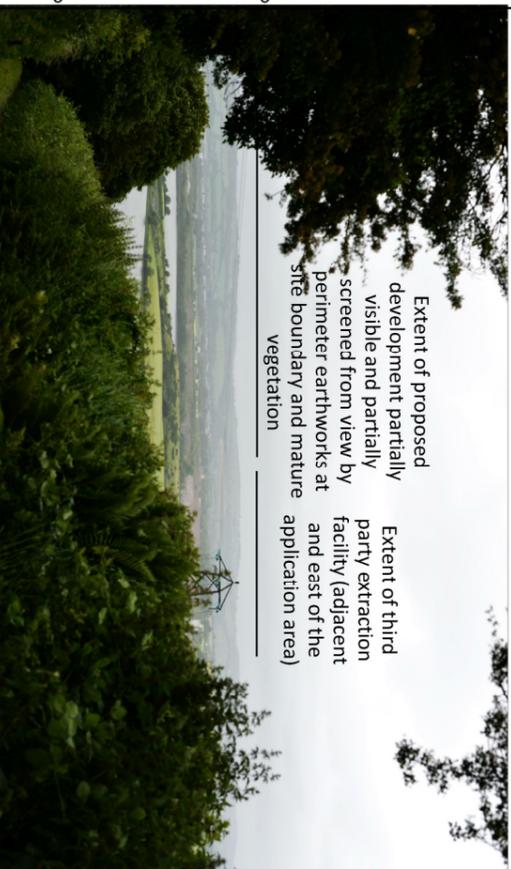
Distance from planning application boundary: **1.2km**

Direction of View: **North**

Description: Panoramic views are available of Great Island Channel and undulating farmland to the north including the promontories at Brick Island and Weir Island. Overhead power lines and pylons are clearly visible. Part of the application area, specifically the earthworks, is visible as a small element above the line of existing vegetation at the shoreline in this panoramic view. Part of the third party extraction facility, adjacent and east of the application area is clearly visible as a small element.

Extent of proposed development partially visible and partially screened from view by perimeter earthworks at site boundary and mature vegetation

Extent of third party extraction facility (adjacent and east of the application area)

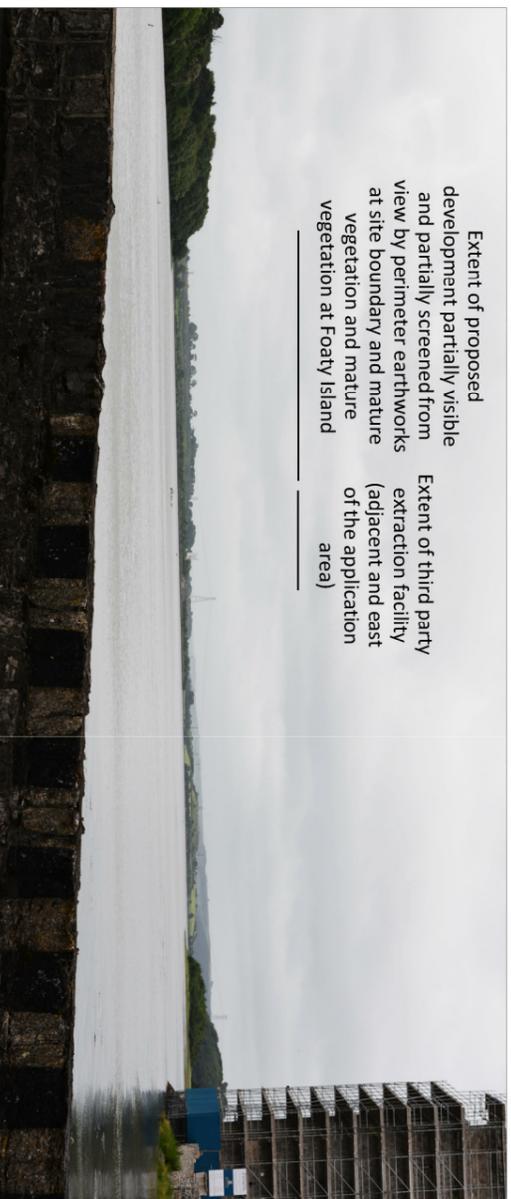


VIEWPOINT C: Currabally, Great Island.

Approximate Grid Coordinates: **582057, 569232** Approximate Elevation: **62m AOD**

Distance from planning application boundary: **1.73km** Direction of View: **North**

Description: A glimpse view is available through a break in the roadside vegetation of Great Island Channel, the promontory associated with Brick Island and Rossmore Bay against the backdrop of the farmed landscape further north. Part of the existing extraction works associated with the application area are visible above the line of existing vegetation at the shoreline. Part of the third party extraction facility, adjacent and east of the application area is clearly visible as a small element.



VIEWPOINT D: Belvelly Bridge.

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Direction of View: **East**

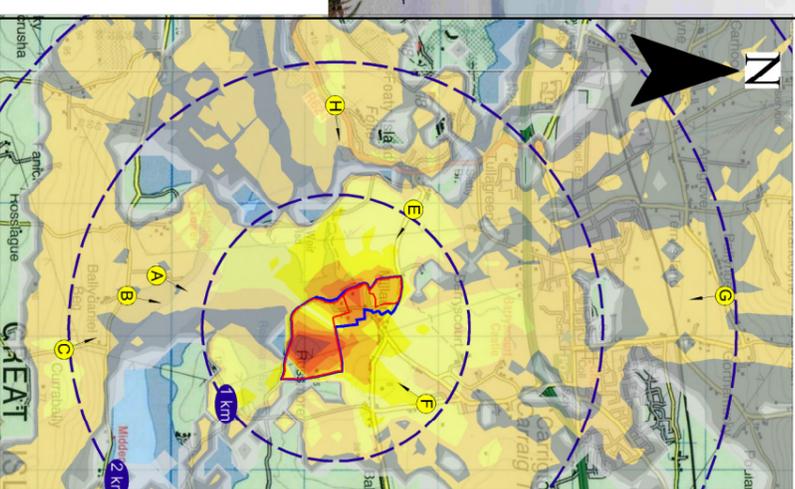
Description: Expansive views are available of Great Island Channel with the hill farmland landscape of Great Island to the south and that in the vicinity of Carrigtohill to the north. Foaty Island is clearly visible in the foreground together with mature wooded vegetation to the north of the waterway. The wooded promontory at Ballydaniel Beg is clearly visible or the southern side. The application area, specifically the earthworks along the shoreline is partially visible above the line of existing vegetation. Part of the third party extraction facility, adjacent and east of the application area, including silo is clearly visible.

Extent of proposed development partially visible and partially screened from view by perimeter earthworks at site boundary and mature vegetation at Foaty Island

Extent of third party extraction facility (adjacent and east of the application area)

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- LEGEND**
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 - DISTANCE FROM CENTRE OF APPLICATION SITE

VIEWPOINT LOCATION MAP (1:50,000 @ A3)



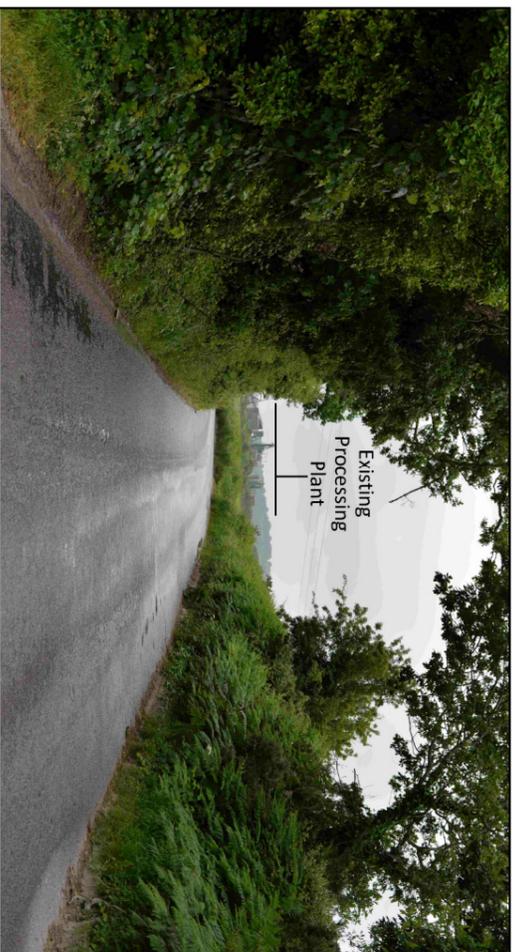
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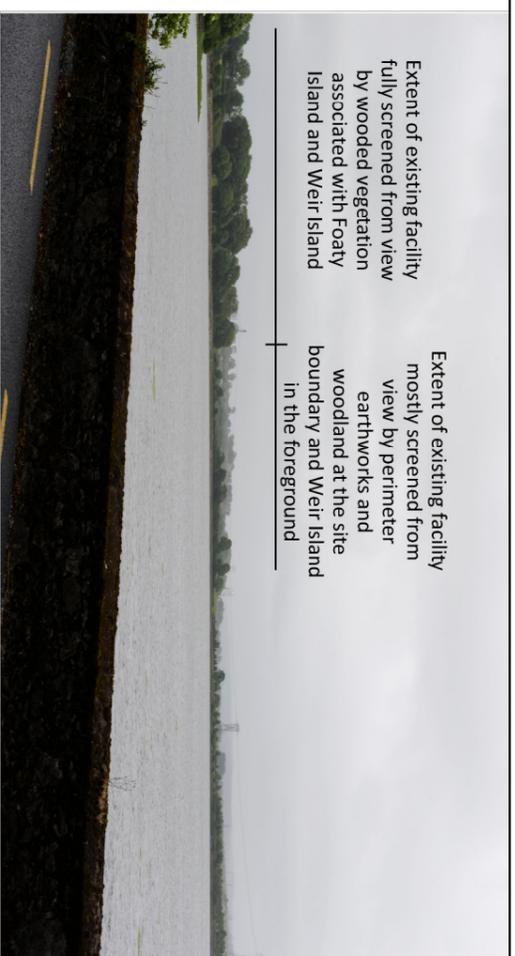
VIEWPOINTS A-B-C-D

FIGURE 13-3

Scale: NA Date: JUNE 2021



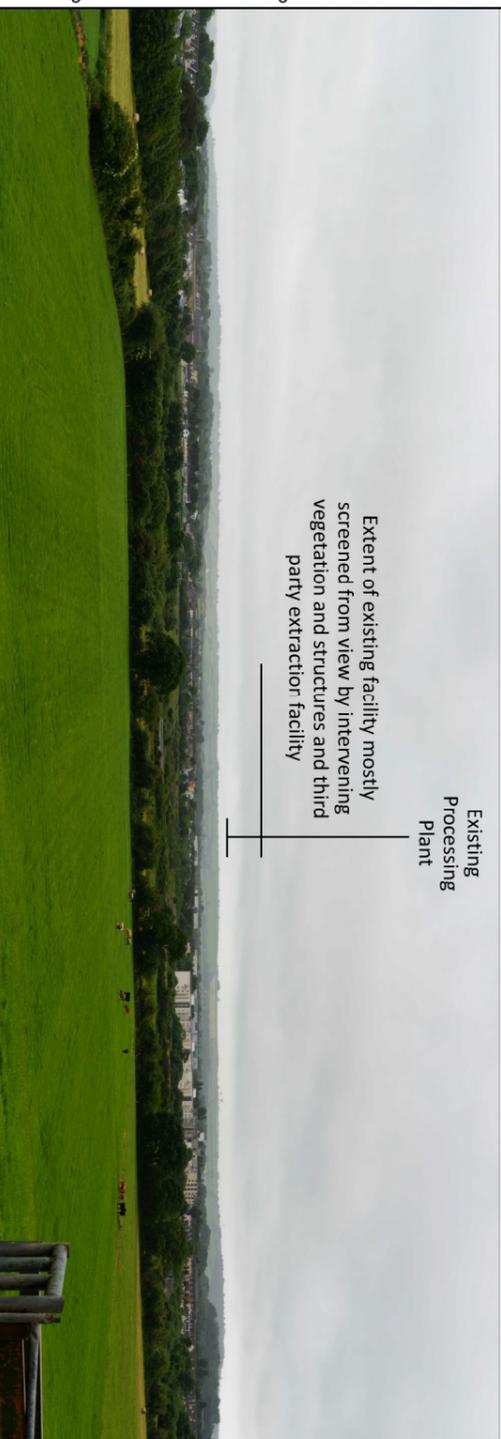
VIEWPOINT E: Minor Road west of the application area
 Approximate Grid Coordinates: **581017, 571865** Approximate Elevation: **2m AOD**
 Distance from planning application boundary: **0.7km** Direction of View: **South East**
 Description: Views are available of the existing facilities, specifically the processing plant within the application area through a break in the roadside vegetation.



VIEWPOINT H: R624 Regional Road on Foaty Island
 Approximate Grid Coordinates: **580201, 571267** Approximate Elevation: **7m AOD**
 Distance from planning application boundary: **1.5km** Direction of View: **East**
 Description: Panoramic views are available of Great Island Channel. Part of the wooded edge of Foaty Island is visible in the foreground to the left of the viewer. Overhead powerlines and pylons are visible in the distance. A very small part of the eastern end of the existing facility is visible above the line of existing vegetation and earthworks at the site boundary with Weir Island in the foreground.



VIEWPOINT F: Edge of settlement of Barryscourt.
 Approximate Grid Coordinates: **582453, 572031** Approximate Elevation: **18m AOD** Distance from planning application boundary: **0.9km** Direction of View: **South**
 Description: Views are available of the processing plant associated with the existing facility within farmland in the foreground and against the backdrop of the hill farmed landscape of Great Island. Earthworks associated with the third party extraction facility located east of the application area are clearly visible together with overhead power lines and pylons.



VIEWPOINT G: Minor Road at Ballynoe.
 Approximate Grid Coordinates: **581613, 574186** Approximate Elevation: **28m AOD** Distance from planning application boundary: **2.7km** Direction of View: **South**
 Description: Panoramic views are available of farmland and the settlement of Carrigtohill including larger scale industrial buildings and multi unit developments in the foreground against the backdrop of the hill farmland of Great Island further afield. The existing processing plant within the application area is barely visible as a small element in the distance. Structures associated with the third party extraction facility, adjacent and east of the application area, including earthworks silo are clearly visible albeit as small elements in the distance.

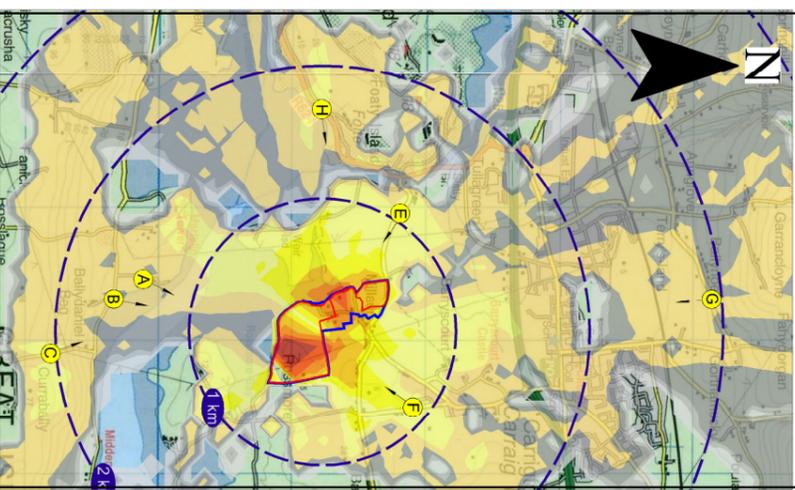
NOTES

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LEGEND

-  APPLICANTS LAND INTEREST
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-  VIEWPOINT LOCATIONS
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VIEWPOINT LOCATION MAP (1:50,000 @ A3)



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VIEWPOINTS E-F-G
FIGURE 13-4

Scale NA Date JUNE 2021

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FIGURE 14-3 TOTAL MONTHLY VOLUME OF AGGREGATE EXTRACTED IN 2019 V. TOTAL PERMITTED

FIGURE 14-4 EXISTING AND PROPOSED VEHICLE HAUL ROUTES

INTRODUCTION

- 14.1 This chapter of the EIAR provides an assessment of the current (based upon 2019) and forecast traffic generation arising at Rossmore Quarry and evaluates the relative influence of same upon the capacity and operation of the receiving road network. The study examines site infrastructure and access arrangements serving the existing quarry site located in the townlands of Rossmore and Barryscourt, Carrigtohill, Co. Cork.
- 14.2 This chapter of the EIAR was prepared by Julian Keenan, a Director of Trafficwise Ltd. Julian Keenan has over thirty years engineering experience including approximately seven years in Local Government in the UK and over 23 years of private engineering consultancy services in Ireland. Holding a principal degree in Civil Engineering from UCG, Julian has specialised in Roads Design and Traffic & Transportation Planning for approximately 25 years. Consultancy experience includes advising clients in relation road schemes, residential, commercial, industrial and leisure developments for which the key work involves the provision of professional services in the design and appraisal of schemes including the preparation of planning applications and appeals. Julian has represented clients at An Bord Pleanála oral hearings for commercial development, strategic infrastructure development and represented landowners and stakeholders in relation to various road schemes and infrastructural works. He has given sworn evidence before the Property Arbitrator and has provided expert witness testimony in the High Court.

TRAFFIC STUDY METHODOLOGY

- 14.3 Based upon weighbridge records for 2019 together with vehicle records and statistics relating to this and other similar sites operated by Kilsaran, this section provides a review of traffic generation rates for various traffic streams arising from the current permitted and the future proposed development. The 2019 records are considered the latest available records that depict 'normal' operations at the quarry, as 2020 and 2021 were subject to periods of Covid lockdowns. Classified turning count surveys undertaken on the receiving road network identify baseline traffic conditions. The traffic surveys were carried out by Traffinomics Ltd. (formerly Abacus Transportation Surveys). In the interest of a comprehensive appraisal of the receiving road traffic characteristics the report provides an assessment of the traffic flow variations recorded on the receiving roads network that includes the current haul routes to Rossmore Quarry. Notwithstanding the occasional need for deliveries to local construction projects the current haul routes are principally Local Road L3619 to the west of the site to Regional Road R624 and to a lesser extent L3612 to N25 Junction 4 to the northeast.
- 14.4 This chapter provides an evaluation of the potential traffic generation of the permitted development at the existing site, and this is compared with the existing 2019 operation and with the forecast potential traffic scenario arising from the proposed development; all assessment scenarios consider the site operating at comparative rates of material extraction.
- 14.5 This chapter identifies how existing and future traffic associated with the development is accommodated on the existing local road network. Where considered appropriate, measures are discussed regarding the management of traffic generated by the proposed development together with local signing improvements and road maintenance.

- 14.6 The advice to local authorities in Spatial Planning and National Roads (Guidelines for Planning Authorities - January 2012), Chapter 3, 'Development Management and Roads' is to make sure that development located close to national roads and their junctions can be catered for by the design assumptions underpinning such roads and junctions thereby avoiding potentially compromising the capacity and efficiency of the national road. The assessments provided in this traffic study show that the traffic generated by the proposed development will not give rise to a premature or unacceptable reduction in the level of service available to road users on national roads or their junctions in the vicinity of the existing development.

Threshold Approach for a Traffic and Transport Assessment

- 14.7 In Ireland, a Traffic and Transport Statement (TTS) must accompany all planning applications for developments that could potentially act as traffic generators. A Traffic and Transport Statement is a brief outline of the transport requirements for the development and is used as a first step to identify the likely impact of any development. The Traffic and Transport Statement is also used to determine if further, more detailed traffic modelling analysis is required to evaluate potential impact upon the capacity of links and junctions on the receiving road network.
- 14.8 An in-depth analysis of the impact of a development in terms of traffic is carried out through the preparation of a Traffic and Transport Assessment (TTA). The NRA Traffic and Transport Assessment Guidelines recommend the following thresholds for undertaking a TTA:

“Applications that exceed any of the following thresholds will be required to produce full TTAs, in addition to completing a TTS. The TTS should summarise the findings of the TTA and briefly outline the mitigating measures proposed by the developer or agent:

- Industry GFA in excess of 5,000 sq.m
 - Distribution and Warehousing GFA in excess of 10,000 sq.m
 - 100 trips (in/out combined) in the peak hour
 - Development traffic exceeds 10% of two-way traffic flow on adjoining road
 - Development traffic exceeds 5% of two-way traffic flow on adjoining road if congestive or sensitive
 - 100 on-site parking spaces”
- 14.9 In accordance with the above guidance, we have included in the scope of this assessment locations on the local roads network considered as having the ‘potential’ to experience traffic flow fluctuations of between +5% and +10% based upon the potential traffic generation of the site if operating at its respective existing and proposed potential capacity.

EXISTING ENVIRONMENT

Site Location

14.10 The existing Rossmore Quarry is located in the townlands of Rossmore and Barryscourt, Carrigtohill, Co. Cork. Located to the south of Carrigtohill and approximately 1km to the south of the N25 National Primary Road. The area can generally be considered rural in nature where there is a dispersed mix of single dwelling houses and farms. Some commercial and industrial sites are located adjacent to the N25. The site is accessed directly from Local Road L3619 which forms the northern boundary of the site. The site is generally set within an agrarian landscape and is bounded by mature hedgerow and farmlands on the north and west sides, the southern side abuts the tidal bay and on the eastern side is Lagan's quarry. The northern boundary of the existing site is characterised by dense gorse and hedgerow and palisade fencing along the L3619 road frontage.

Overview of Existing Development

14.11 The existing limestone quarry is described fully in EIAR Chapter 2 'Project Description' with details of the existing site layout shown on **Figure 2-1**. The planning application covers an area of approximately 24.7 hectares.

14.12 Planning permission was granted in August 2004 (Cork County Council Ref. No 03/4570) for the continued use and extension of the existing development.

14.13 That development comprised of the following:

- Extension of the existing quarry over an area of 19.9 hectares,
- Deepening of the quarry from the level permitted under Plan. Ref. 99/3410 to 40m below Ordnance Datum,
- Relocation and reconfiguration of the existing 38kV electricity pole sets that traverse the south east of the site
- Restoration works for the final quarry void (extractive area) and an area of 3.8 hectares to the north adjacent to the public road
- And all other associated development

14.14 The planning approval was granted for a period of 15 years which expires on 12th August 2019. An extension to the duration of the development granted under 03/4570 was granted in November 2018 (Plan Ref. 18/06465) for a further five years in accordance with the provisions of Section 42 of the Planning and Development Act, 2000 as amended

14.15 Planning permission reference S/99/3410 granted in July 2000 was for the '*extension and retention of limestone quarry to include extraction below the level of water table and construction of settlement pond*'. The quarry development the subject of S/99/3410 has largely been completed and is superseded by the quarry extension granted under planning reference 03/4570.

- 14.16 Planning permission reference S/99/3411 granted in July 2000 was for the aggregates processing plant and concrete manufacturing plants on the site. Condition No.1 of the grant of planning permission intrinsically links the development to the quarrying activities at the site, and development is therefore permitted until the quarries on the contiguous lands have been exhausted. The development description is as follows: *“additional concrete batching plant with 7 silos for the storage of materials, provision of a truck wash and retention of an existing processing plant including aggregate crushing and screening plant, concrete batching plant, concrete block plant and block yard, readymix mortar plant, bitmac plant and all associated infrastructure and structures including crushers, hoppers, silos, conveyors, conveyor rails, storage bins, storage bays, storage sheds, storage tanks, settlement ponds, retaining walls, workshop, ESB substation, weighbridge, offices staff canteen, two septic tanks all on 6.3ha”*.
- 14.17 The existing quarry operations comprise extraction of limestone using blasting techniques; processing (crushing and screening) of the fragmented rock to produce aggregates for concrete production (readymix and blocks), road construction and site development works.
- 14.18 Manufacturing facilities currently in operation at the site include a concrete manufacturing facility (readymix and blocks), and a mortar plant but exclude the bitmac plant permitted under S/99/3411. Ancillary facilities at the quarry include the office, weighbridge, canteen, toilets, bunded fuel storage areas and a garage / workshop. As referenced above these manufacturing facilities operate under the current planning permission Plan. Ref. S/99/3411 which is separate to the current permission for extraction of materials under Plan. Ref. 03/4570.
- 14.19 Readymix concrete trucks, concrete block trucks, aggregate haulage trucks and cement tankers have been associated with transporting and delivering materials to and from the existing facility since after 2000 when planning permissions for extraction of materials and manufacture of value-added products at Rossmore Quarry were granted (Cork County Council Plan. Ref. Nos. 99/3410 and S/99/3411).
- 14.20 Traffic surveys show that traffic using the local road network in the area is predominately composed of private cars accessing one-off housing and local amenities although there is a modest background HGV content. Traffic volumes on the receiving road network serving the quarry are considered relatively light.

Site Access and Receiving Road Network

- 14.21 Rossmore Quarry is an existing operational quarry the entrance to which is located on Local Road L3619 approximately 1 kilometre east of the junction of L3619 with Regional Road R624, which junction is located approximately 1 kilometre south of N25 Junction 3 (Cobh Cross). The existing site enjoys frontage along the Local Road L3619 and direct vehicular access via. An approved single simple priority entrance located on the southern side of the road.
- 14.22 The quarry site is approximately 1.5km due south of Carrigtohill which is approximately 12 kilometres east of Cork city. Carrigtohill is bypassed to the south by National Road N25. The existing site is primarily serviced from R624 which leads south to Cobh and north to the N25 at Junction 3.
- 14.23 Local Road L3619 is a single lane carriageway. The metalled carriageway surface varies in width measuring approximately 5-6m over the primary haul route to the R624. Accommodating a verge varying in width from 1-3m on either side, there are centreline road markings, but no edge markings as is typical of the regional road network. The road is subject to a posted speed limit of 80kph.

- 14.24 The road surface of the L3619 is in general considered to be in a good state of repair. It is noted that the carriageway in the vicinity of the existing site access and to the west was observed to be in a good state of repair relative to the general condition. The carriageway locally shows no significant signs of serious structural defects and there is no evidence of variable edge settlement. Traffic surveys show that the predominant flow of traffic from Rossmore Quarry is to and from the west of the site.
- 14.25 An existing working quarry (Roadstone Carrigtohill) is located east of Ballintubber West. Lagan's quarry is located immediately to the east of the existing site. Traffic surveys suggest that a small number of HGV originating from these sites to the east pass along the L3619 to access the R624.
- 14.26 The character of the area is rural. The L3619 road is relatively bendy and the site access is located on the inside of a shallow bend. The splayed existing entrance is flanked by palisade fencing. The overall quarry site has a road frontage of approximately 300m along which there are no footways. The verges either side of the access are generally narrow with vegetation extending to the road edge in many places.

Traffic Surveys

- 14.27 In establishing the scope of the study, it was estimated that the influence of traffic generated by the proposed development was not likely to be significant beyond the immediate haul route serving the site. In the interest of a comprehensive assessment of traffic patterns on the local roads network in the vicinity of the proposed development classified traffic turning count surveys have been commissioned at the entrance to the existing site and at the R624/L3619 junction to the west. The surveys also include two local junctions to the east of the site access on the route to N25 Junction 4. The manual traffic surveys were carried out by Traffinomics Ltd. before schools closed on Tuesday 26-June-2018 and covered the period 07:00-19:00hrs. A copy of the base survey data including location mapping is provided in **Appendix 14-1** and the listed site references are as follows:

- Site 1 R624/L3619 Crossroad Junction
- Site 2 L3619 Kilsaran Site Access T-junction
- Site 3 L3619/Ballintubber Road T-junction
- Site 4 L3619/L3612 Carrigtwohill Road T-junction

- 14.28 Given the ongoing Covid-19 Pandemic Emergency Measures it has not been possible to collect contemporary traffic flow data on the receiving road network. The site is located on a local road which would not ordinarily experience traffic growth at the forecast rates for national roads. Given the influences of the pandemic upon traffic flows it is considered highly unlikely that network flows have grown to values in excess of those recorded in the 2018 traffic surveys. Based upon the characteristics of the baseline traffic flows on L3619 the survey data is considered a valid baseline for the purposes of the assessments provided in this chapter. **Appendix 14-2**, Figures 1 through 8 show in network flow diagram format the surveyed local roads traffic flows and also identify that portion of traffic generated at the existing quarry based upon site records for 2019 which is the most recent year of pre-pandemic normal operation. **Appendix 14-2** shows the following:

- Figure 1 Daily Network Traffic Flows (07:00-19:00hrs)

- Figure 2 Daily Quarry Generated Traffic Flows (07:00-19:00hrs)
- Figure 3 Morning Peak Hour Network Traffic Flows (08:00-09:00hrs)
- Figure 4 Morning Peak Hour Quarry Generated Traffic Flows (08:00-09:00hrs)
- Figure 5 Development Peak Hour Network Traffic Flows (09:00-10:00hrs)
- Figure 6 Development Peak Hour Quarry Generated Traffic Flows (09:00-10:00hrs)
- Figure 7 Evening Peak Hour Network Traffic Flows (17:00-18:00hrs)
- Figure 8 Evening Peak Hour Quarry Generated Traffic Flows (17:00-18:00hrs)

14.29 As is standard industry practice, the surveys were carried out on a 'neutral' day of the week. Generally, traffic flows manifest on a neutral day are considered more likely to be representative of typical traffic conditions on the local roads network. Based upon inspection of weighbridge data for 2017, 2018 and 2019 the traffic flows manifest in the month of June (count month) are representative of above average traffic generation at the quarry and June data includes for normal schools related traffic, which can in some cases have a significant impact on the operation of the general roads network during the commuter morning network peak hour. **Figure 14-4** attached, shows the haul routes associated with the site and shows the relative level of use as derived from the traffic surveys.

Network Traffic Flows – L3619 (Passing Site)

- 14.30 Based upon survey data for Site 2 (Existing Kilsaran Access) the total two-way traffic flow recorded passing the site access between 07:00 and 19:00hrs was 603 vehicles, of which 273 travelled eastbound and 330 travelled westbound. Of those 273 eastbound vehicles 255 were light vehicles made up of cars and vans whilst 18 were HGV. Of those westbound vehicles some 318 were light vehicles whilst 12 were HGV. These figures are related to the volume of traffic passing the site and do not include for traffic generated by the existing quarry. The HGV content of the traffic flow on L3619 in the absence of the quarry would be in the order of 7% for eastbound traffic and 4% for westbound. Reference **Appendix 14-2** Figure 1 for daily traffic flows in network flow diagram format.
- 14.31 The morning and evening peak hour periods for general network traffic flow on the L3619 past the site were recorded in the traffic survey as being 08:00-09:00hrs and 17:00-18:00hrs respectively whilst the peak hour for traffic generation at the existing quarry site was recorded as 09:00-10:00hrs.
- 14.32 The traffic turning count surveys recorded morning peak hour traffic flows on the L3619 passing the site in the period 08:00-09:00hrs and comprised 19 cars and 1 HGV eastbound together with 24 cars and 0 HGV westbound. Reference **Appendix 14-2** Figure 3 for morning peak hour traffic flows in network flow diagram format. The traffic turning count surveys recorded development peak hour traffic flows on the L3619 passing the site in the period 09:00-10:00hrs and comprised 20 cars and 1 HGV eastbound together with 19 cars and 0 HGV westbound. Reference **Appendix 14-2** Figure 5 for development peak hour traffic flows in network flow diagram format.
- 14.33 The traffic turning count surveys recorded evening peak hour traffic flows on the L3619 passing the site in the period 17:00-18:00hrs and comprised 40 cars and 0 HGV eastbound together with 34 cars

and 2 HGV westbound. Reference **Appendix 14-2** Figure 7 for evening peak hour traffic flows in network flow diagram format.

Network Traffic Flows – L3619 (Haul Route West)

- 14.34 Based upon survey data for Site 2 (Existing Kilsaran Access) the total two-way traffic flow recorded on the L3619 between the site access and the R624 between 07:00 and 19:00hrs, inclusive of all traffic generated by the exiting quarry was 776 vehicles, of which 356 travelled eastbound and 420 travelled westbound. Eastbound vehicles comprised 271 light vehicles and 85 HGV. Westbound vehicles included 341 light vehicles and 79 HGV. These figures are related to the total volume of traffic on the L3619 and include for traffic generated by the existing quarry. The HGV content of the traffic flow recorded on L3619 to the west of the site access is in the order of 20%. **Appendix 14-2** Figure 1 for daily traffic flows in network flow diagram format.
- 14.35 The morning peak hour traffic flows on the L3619 to the west of the site in the period 08:00-09:00hrs comprised 22 cars and 6 HGV eastbound together with 25 cars and 5 HGV westbound. Reference **Appendix 14-2** Figure 3 for morning peak hour traffic flows in network flow diagram format.
- 14.36 The development peak hour traffic flows on the L3619 to the west of the site in the period 09:00-10:00hrs comprised 20 cars and 13 HGV eastbound together with 20 cars and 11 HGV westbound. **Appendix 14-2** Figure 5 for development peak hour traffic flows in network flow diagram format.
- 14.37 The evening peak hour traffic flows on the L3619 to the west of the site in the period 17:00-18:00hrs comprised 40 cars and 1 HGV eastbound together with 38 cars and 3 HGV westbound. **Appendix 14-2** Figure 7 for evening peak hour traffic flows in network flow diagram format.

Network Traffic Flows – L3619 (Haul Route East)

- 14.38 Based upon survey data for Site 2 (Existing Kilsaran Access) the total two-way traffic flow recorded on the L3619 to the east of the access between 07:00 and 19:00hrs, inclusive of all traffic generated by the exiting quarry was 665 vehicles, of which 308 travelled eastbound and 357 travelled westbound. Eastbound vehicles comprised 277 light vehicles and 31 HGV. Westbound vehicles included 331 light vehicles and 26 HGV. These figures are related to the total volume of traffic on the L3619 and include for traffic generated by the existing quarry. The HGV content of the traffic flow recorded on L3619 to the west of the site access is in the order of 8.5%.
- 14.39 The morning peak hour traffic flows on the L3619 to the east of the site in the period 08:00-09:00hrs comprised 19 cars and 1 HGV eastbound together with 25 cars and 4 HGV westbound.
- 14.40 The recorded development peak hour traffic flows on the L3619 to the east of the site in the period 09:00-10:00hrs comprised 20 cars and 2 HGV eastbound together with 20 cars and 0 HGV westbound.
- 14.41 The evening peak hour traffic flows on the L3619 to the east of the site in the period 17:00-18:00hrs comprised 47 cars and 0 HGV eastbound together with 34 cars and 4 HGV westbound.

Existing Site – Surveyed Traffic Generation (26th June 2018)

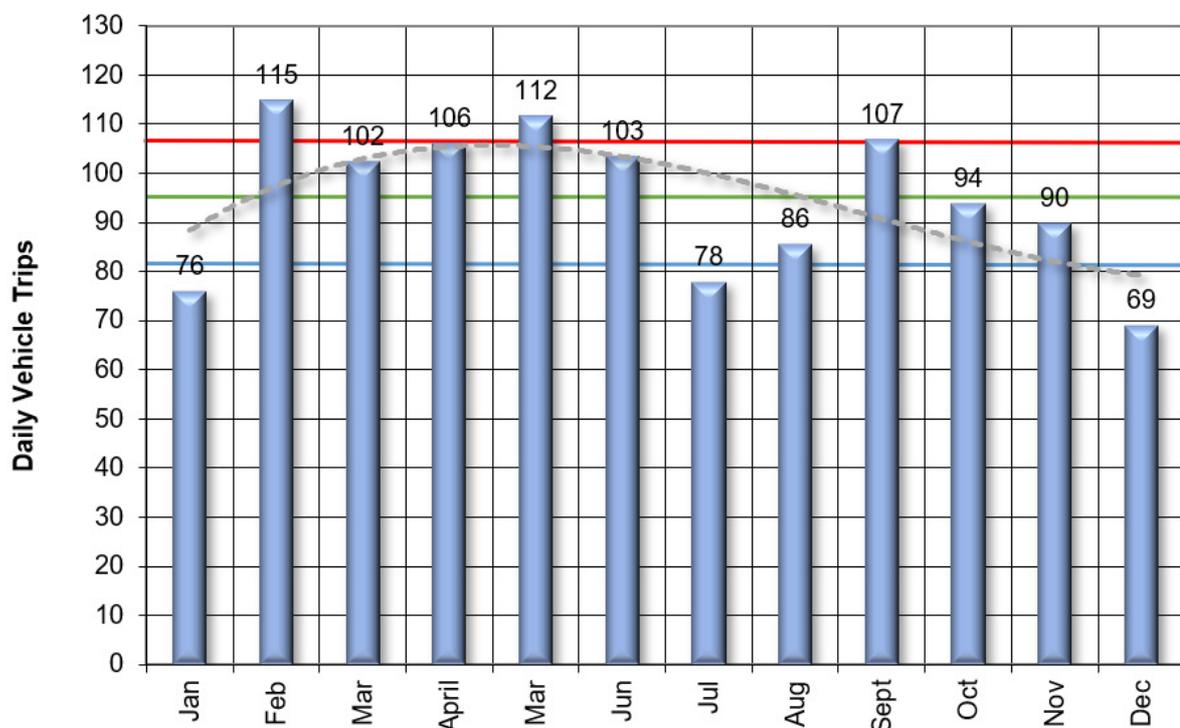
- 14.42 Based upon survey data for Site 2 (Existing Kilsaran Access) the total number of vehicle trips (a trip includes for the inbound and outbound movement i.e. 1 Trip = 2 Movements) between 07:00 and 19:00hrs on the day of the survey was 45 cars and 81 HGV. **Appendix 14-2** Figure 1 for daily traffic flows.

- 14.43 The morning peak hour site traffic generation in the period 08:00-09:00hrs comprised 4 cars and 9 HGV movements inbound and 1 car and 5 HGV movements outbound.
- 14.44 The development peak hour site traffic generation in the period 09:00-10:00hrs comprised 1 car and 12 HGV movements inbound together with 1 car and 12 HGV movements outbound.
- 14.45 The evening peak hour site traffic generation in the period 17:00-18:00hrs comprised 0 car and 3 HGV movements inbound together with 11 cars and 1 HGV movement outbound.

Calibration/Validation of Surveyed Traffic Generation (26th June 2018)

- 14.46 The weighbridge records and delivery docket for the year 2019 have been examined in order to calibrate or validate the traffic survey data. The following Figure 14.1 is a graph of the surveyed total HGV traffic generation of the existing site set against the recorded traffic flows.

Figure 14 - 1
Total Daily HGV Generation at Existing Site 2019



- 14.47 The data includes for all HGV traffic movements including those transporting aggregates, ready mix concrete, concrete blocks from the site and HGV delivering sand and cement for use in the onsite manufacture of value-added products. The figures are based upon the average daily traffic flow recorded each month. The dotted grey line shows the polynomial average monthly HGV traffic generation over the course of the year. The 'red' line indicates the 85th percentile traffic generation rate often used as the upper value figure in the assessment of road network capacity and junction analyses. The 'green' line shows the average traffic generation of the site whilst the 'blue' line shows the traffic generation recorded on the day of the survey. The 85th percentile or upper value is 108 trips per day, the average daily traffic generation is 95 trips per day.

- 14.48 The classified turning count survey data is representative of traffic generation at the site which is approximately 12% below the recorded annual average for the calendar year 2019. This factor is taken into account in the traffic analyses where average annual daily traffic flows are factored from the traffic survey data.
- 14.49 Figure 9 of **Appendix 14-2** shows surveyed quarry generated traffic flows arising on the local roads network factored to be representative of the annual average daily HGV traffic generation of the site as derived from the weighbridge records. **Appendix 14-2** shows the following:
- Figure 9 Annual Average Existing Daily Quarry Generated Traffic Flows (07:00-19:00hrs)

Existing Quarry HGV Traffic Generation

- 14.50 The rate of extraction of aggregates currently permitted is 750,000t per annum. The volume of value-added product that can be derived from the extracted materials is not restricted save for by the rate of extraction of materials.
- 14.51 Of the aggregates extracted at the quarry a certain proportion is exported directly and a portion is used on-site to produce value-added products including readymix concrete and concrete blocks.
- 14.52 It can be appreciated that the generation of HGV and the volume of product transported by each vehicle leaving the site is not only product dependent but is commercially driven.
- 14.53 The quarry provides aggregates and stone derived products for building. Product is delivered to a broad spectrum of construction projects in correspondingly diverse quantities. Product is delivered in the quantity prescribed by the various purchasers and clients. There are projects which by their nature may require many loads and logistical efficiency is typically the objective in those cases. Such efficiency is achieved by ensuring that in the case of multiple loads as many as practicable are full loads. Equally there are smaller deliveries arising from specific demands relating to finite activities on larger sites or simply arising on smaller jobs or works such as house extensions and the like.

Product Transportation Statistics

- 14.54 Based upon an assessment of weighbridge data the haulage of aggregate from the site does not typically occur all in full loads. Over the course of 2019 the average payload of vehicles leaving the site with aggregates was recorded as 22 tonnes. The aggregate transportation vehicles in the Kilsaran fleet are predominantly the eight-wheeler and articulated types. The annual average daily number of HGV exporting aggregates over the course of 2019 was 48 trips per weekday.
- 14.55 The concrete wagons in the Kilsaran fleet are predominantly rigid vehicles with a maximum payload of 8m³. Articulated concrete wagons in the fleet have a maximum payload of 10m³. The average payload of concrete wagons leaving the site with product over the course of 2019 was 6m³. The annual average daily generation of concrete wagons over the course of 2019 was 28 trips per weekday.
- 14.56 Concrete blocks are exported in purposed flatbed trucks. The annual average daily generation of concrete block trucks over the course of 2019 was 24 trips per weekday.
- 14.57 The import of materials to the site includes for the constituents of products that cannot be won directly on site. In the case of concrete and concrete block production this includes cement and sand.

- 14.58 Based upon an assessment of weighbridge data the haulage of materials to the site is typically in full loads. The average payload of vehicles hauling sand to the site was recorded as 23 tonnes and the average payload of vehicles hauling cement to the site was 31 tonnes. The annual average daily generation rate for vehicles importing sand is 2 HGV trip per day, for the importation of cement the average daily rate is also 2 HGV trips per day.
- 14.59 The following Table 14-1 provides a summary of the vehicle types generated by the existing operations at the site.

Table 14 - 1
Existing Haulage Vehicle Types

ACTIVITY	PRINCIPLE VEHICLE TYPE	GROSS WEIGHT	NO. OF AXLES	OTHER VEHICLE TYPE	GROSS WEIGHT	NO. OF AXLES
Aggregates Haulage	Articulated Trailer	40t	5	Rigid Truck	32t	4
Concrete Export	Concrete Mixer	32t	4	Articulated Concrete Mixer	40t	5
Cement Import	Articulated Tanker	40t	5			

Existing Recorded Traffic Generation

- 14.60 The following **Table 14-2** is based upon the recorded weighbridge traffic flow data for 2019 and provides a summary of the traffic movements generated by the permitted development set against the annual rate of extraction of materials recorded for 2019. The figures are based upon the empirically derived relationship that 1m³ of readymix concrete requires 1.9t of aggregate whilst blocks require 20t of aggregate per 1,000 blocks. As a cross-check of relative quantities readymix concrete generally requires approximately 0.32t of cement per 1m³ whilst concrete blocks require 1.25t of cement per 1,000 blocks.

Table 14 - 2
Existing Traffic Generation based upon 2019 Records

MATERIAL	EXTRACTED	AGGREGATE USED	AVERAGE LOAD	ANNUAL LOADS	DAILY LOADS
Aggregates	265,727t	NA	22t	12,078	44
Concrete	46,097m ³	87,584t	6m ³	7,682	25
Concrete Blocks	3,296,701	65,934t	Varies	6,084	22
Cement	17,031t	NA	31t	550	2
Sand	10,866t	NA	23t	462	2
TOTAL		419,245t			95

14.61 **Table 14-2** shows that the permitted development operating at a rate of extraction of 419,245t per annum and manufacturing approximately 46,000m³ of concrete and 3.3M concrete blocks is calculated to generate an average of 95 HGV trips per day. Ordinarily the volume of product transported from a quarry site is not only product dependent but is commercially driven accordingly the rate of production and extraction can fluctuate throughout the year as is highlighted in the above **Figure 14-1** which shows an 85th percentile value of 108 vehicle trips per day associated with the operation of the existing development at the rates manifest in 2019 as shown in **Table 14-2**.

Potential Traffic Generation arising from Permitted Development

14.62 Under the current permission the maximum rate of extraction of materials is 750,000t per annum which is considerably higher than the 419,245t recorded in 2019. **Table 14-3** provides an estimate of the traffic generation of the existing site were it to operate at an extraction rate of 750,000t per annum.

14.63 The potential traffic generation figures set out in **Table 14-3** are based upon an assumption that to reach the permitted rate of extraction there would not only be increase in the rate of extraction of materials but that there would be a corresponding pro rata increase in the rate of manufacture of value-added products at the site. This is referred to as 'Scenario 1' for the purposes of these calculations.

14.64 The resultant potential traffic generation of the existing site operating at the maximum permitted rate of extraction is in the order of 171 vehicle trips per day which is practically double the current rate based upon the weighbridge data for 2019.

Table 14 - 3
Current Permitted Potential Traffic Generation (Scenario 1)

MATERIAL	EXTRACTED	AGGREGATE USED	AVERAGE LOAD	ANNUAL LOADS	DAILY LOADS
Aggregates	507,378t	NA	22t	23,062	83
Concrete	80,780m ³	153,483t	6m ³	13,463	49
Concrete Blocks	4,456,977	89,140t	Varies	8,914	33
Cement	31,102t	NA	31t	1,003	4
Sand	14,062t	NA	23t	611	2
TOTAL		750,000t			171

14.65 Were the rate of manufacture of value-added product to remain at current levels and the extraction rate to be elevated to 750,000t per annum then only the rate of export of aggregates would increase and this is referred to as 'Scenario 2'. The potential traffic generation of the permitted development under the assumptions of Scenario 2 is set out in **Table 14-4** below.

Table 14 - 4
Current Permitted Potential Traffic Generation (Scenario 2)

MATERIAL	EXTRACTED	AGGREGATE USED	AVERAGE LOAD	ANNUAL LOADS	DAILY LOADS
Aggregates	596,482t	NA	21t	27,112	98
Concrete	46,097m3	87,584t	6m3	7,682	25
Concrete Blocks	3,296,701	65,934t	Varies	6,084	22
Cement	17,031t	NA	31t	550	2
Sand	10,866t	NA	23t	462	2
TOTAL		750,000t			149

- 14.66 The existing traffic generation of the site operating at the current extraction rate of 419,245t per annum under Reg. Ref. No 03/4570 equates to an average of approximately 9 No. vehicle trips per hour throughout the working day. This traffic predominantly but not exclusively uses the L3619 haul route between the site access and Regional Road R624 located 1km to the east.
- 14.67 From analysis of HGV traffic generation at other similar Kilsaran facilities and from assessment of the traffic survey data the typical hourly deviation from the average is approximately ±3 vehicle trips per hour over the typical operational hours for quarry between 07:00 and 18:00hrs.
- 14.68 Based upon the figures presented in **Table 14-3** for the current permitted 750,000t per annum extraction rate the hourly traffic flows would be in the order of 15 HGV trips ±6 or potentially double those recorded in 2019 and considered representative of current existing operations at the site.

PROPOSED DEVELOPMENT

Overview of Proposed Development

Operational Phase (Limestone Extraction and Processing)

- 14.69 The proposed development being applied for under this current planning application is shown on **Figure 2-2** and is for continued use previously granted under Cork County Council Ref. No 03/4570 and will consist of:
- Continuance of use of the existing quarry development within an overall application area of c.24.7 hectares;
 - Extraction to the level of- 40m below Ordnance Datum, within the extraction area previously permitted under Plan. Ref. 03/4570;

- Final restoration of the quarry void area and an area of 3.8 hectares to the north adjacent to the public road.

Permission is also being sought for an extension to the existing permitted operating hours for the readymixed concrete plant, and for out of hours operation of the plant up to a maximum of 40 occasions per year, to supply critical and strategic building / infrastructure / maintenance projects whose construction requires supply of concrete outside normal plant operating hours.

The proposed operational period is for 20 years plus 2 years to complete restoration (total duration sought 22 years).

Restoration (Reinstatement to Agricultural Use and Nature Conservation Habitat Areas)

- 14.70 Upon the cessation of extraction operations, it is proposed to return the lands within the planning application area to natural habitat, refer to EIA **Figure 2-4**.
- 14.71 The only material requirements in respect of the planned restoration scheme are those topsoils and subsoils already present on site, having been stripped and stockpiled within the existing operational site area.

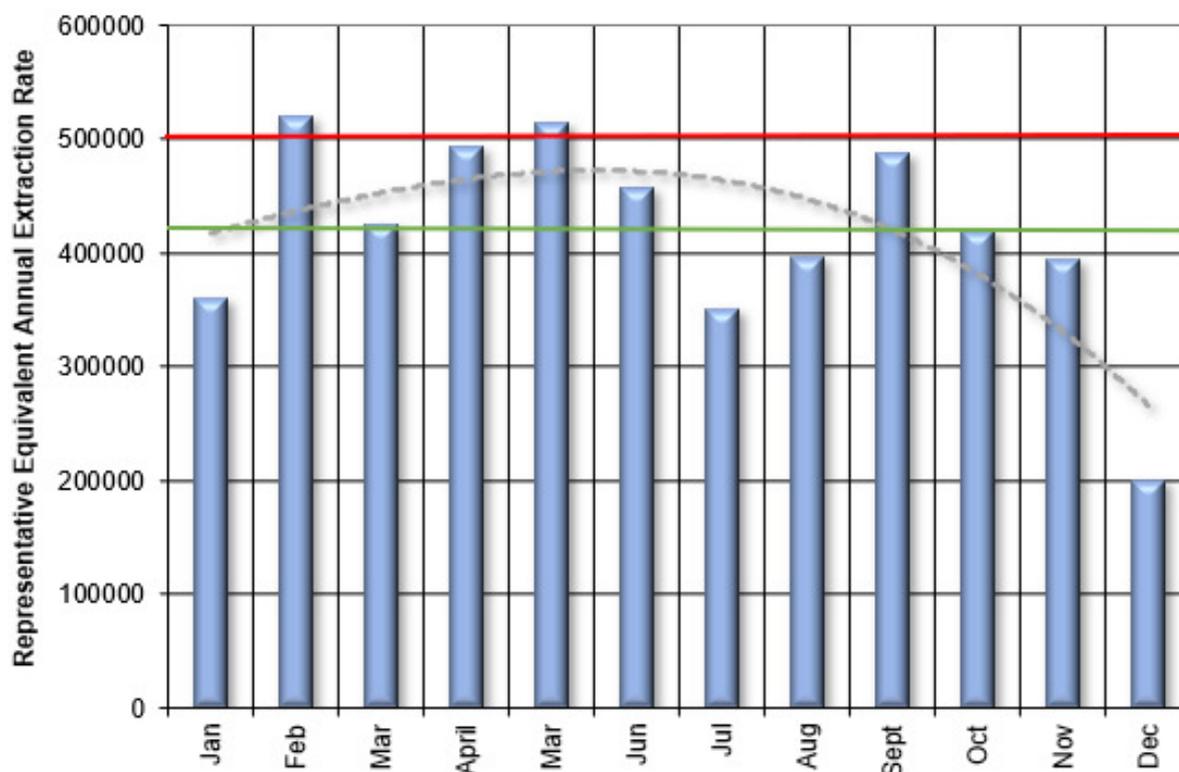
Proposed Development Traffic

Traffic Generation

- 14.72 Under Ref. No. S/99/3411 the existing development is permitted to manufacture value added product including concrete blocks and readymix derived from aggregates won on site. Cork County Council Ref. No. 03/4570 currently permits the extraction of aggregates up to a maximum extraction rate of 750,000t per annum.
- 14.73 In describing the proposed development reference is again made to the grant of permission under Cork County Council Ref. No. 03/4570 and the particulars of that application. Based upon the traffic surveys and the weighbridge records for 2019 the current rate of extraction is in the order of 419,245t per annum.
- 14.74 Based upon the current reserves and the market for aggregates and value-added product it is expected that the future rate of extraction will be in the region of 250,000t to 500,000t per annum.
- 14.75 The current proposal seeks permission for continuance of extraction of aggregates not at the current permitted rate of 750,000t per annum but at a reduced rate.
- 14.76 It is anticipated that the site will continue to operate at the level of extraction and at rate of manufacture of value-added product as manifest in the 2019 weighbridge data as set out in **Table 14-2** and shown in **Figure 14-1** above.
- 14.77 The extractive industry is acknowledged to be market or demand driven and this gives rise to fluctuations in the weekly and monthly volumes of material extracted, processed and transported to and from the development site.
- 14.78 The current annual rate of extraction equates to 419,245t. The following **Figure 14-2** is based upon the weighbridge data for 2019 and is provided in order to show graphically the current monthly fluctuations in traffic over the course of the year. In preparing **Figure 14-2** the volume of aggregate extracted is calculated from the combination of the volume aggregate sales and aggregates used in

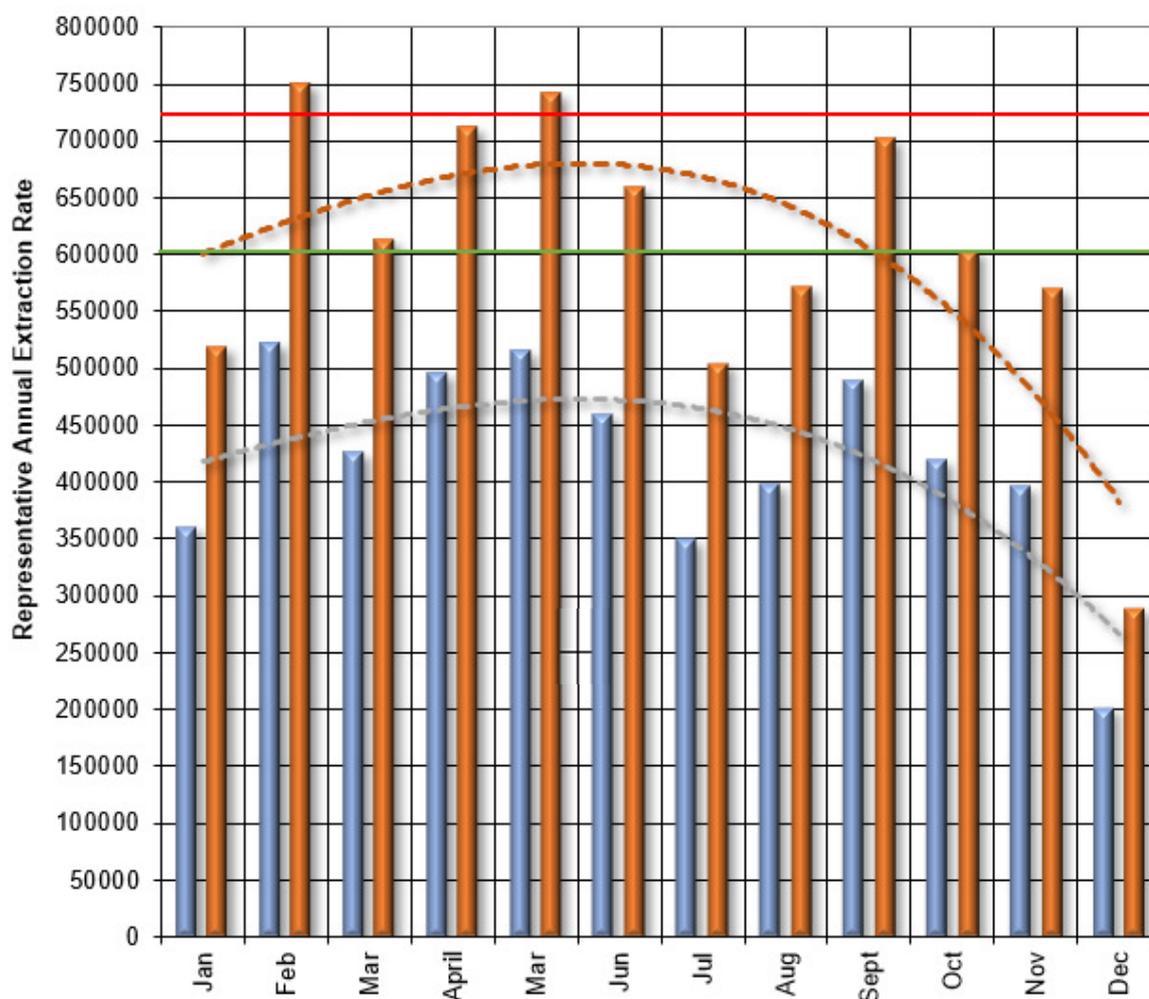
the manufacture of value-added product. The total volume of aggregate extracted per month is then multiplied by 12 in order to provide an estimated equivalent annual rate of extraction.

Figure 14 - 2
Total Monthly Volume of Aggregate Extracted at Existing Site 2019



- 14.79 The green line in **Figure 14-2** is representative of the average annual extraction rate of 419,245t whilst the red line is representative of the 85th percentile or upper value for traffic assessment which equates to 502,124t per annum. The maximum value recorded in 2019 was in February when the rate of extraction was equivalent to an annual extraction rate of 521,393t.
- 14.80 The current proposal is for the continuance of extraction at the current rate which it can be seen from the data ranges from 250,000-500,000t per annum with an annual average rate of 419,245t.
- 14.81 The current values as derived from the 2019 weighbridge data and are considered to be representative of the proposed annual extraction rates which are expected to be on average 419,245t per annum with an allowance for an upper value of 500,000t to permit the operator the flexibility to respond to market forces that fluctuate throughout the year.
- 14.82 The following **Figure 14-3** shows the current values from **Figure 14-2** set against the current permitted values corresponding to the current upper value for extraction of 750,000t per annum.

Figure 14 - 3
Total Monthly Volume of Aggregate Extracted in 2019 v. Total Permitted



Monthly Extraction Rate Extrapolated to 12 Months Representative Rate 2019
Current Permitted Extraction Rate 750,000t per Annum

- 14.83 **Figure 14-3** above shows the average volume of traffic generated by the existing site were it operated at the permitted upper volume of 750,000t per annum and shows this to be in the region of 164 HGV trips per day whilst the 85th percentile upper value would be in the region of 190 HGV trips per day.
- 14.84 The proposal is for an extraction rate not exceeding 500,000t per annum. The current permitted extraction rate of 750,000t per annum is 50% higher than that currently sought. The current proposal will give rise to a significant reduction in the potential traffic generation of the site from that currently permitted.
- 14.85 **Table 14-2 and 14-3** show that the proposed development operating at the current recorded rate of extraction not exceeding 500,000t has an average extraction rate of 419,245t per annum and manufactures approximately 46,000m³ of concrete and 3.3M concrete blocks and is calculated to generate an average daily HGV traffic flow in the order of 95 HGV trips per day which is a potential reduction of 76 HGV from the average traffic flow of 171 HGV trips (Scenario 1) that would arise from

the current development permitted under Plan. Ref. 03/4570 operating at the permitted maximum extraction rate.

- 14.86 The above figures relating to the proposed development and can be expected to fluctuate. The average traffic generation of the site is in the order to 95 HGV per day. In periods when demand for product is at the highest proposed value of 500,000t per annum the daily HGV generation can be calculated to be in the region of 120. This elevated type of activity is shown in **Figure 14-2** to occur only for two months of the year. Conversely where demand is low the daily HGV traffic generation has been shown in **Figure 14-2** to fall as low as 69 per day (approximate representative annual extraction rate 200,000t/yr).
- 14.87 Comparing proposed traffic generation with that permitted under Reg. Ref. No 03/4570 shows a potential reduction in the average traffic generation of the existing site in the order of 76 to 95 HGV trips per day.
- 14.88 This represents a significant potential reduction in daily HGV traffic generation. In practice the site is not operating at the permitted extraction rate of 750,000t per annum but has been shown through reference to 2019 weighbridge data to be operating at an extraction rate equivalent to that currently proposed which is represented by a permitted 500,000t per annum and in practice with an average annual extraction rate in the order of 419,245t per annum.
- 14.89 The existing traffic generation and that generation rate forecast under the current application equates to an average of approximately 10 No. vehicle trips per hour throughout the working day. This traffic predominantly, but not exclusively, uses the L3619 haul route between the site access and Regional Road R624 Cork Road located 1km to the west.
- 14.90 The forecast traffic generation of the site is 10 HGV trips per hour which from analysis of HGV traffic generation at other similar quarry facilities is expected to show a typical hourly deviation from the average of approximately ± 3 vehicle trips per hour over the typical operational hours for quarry operations.

Haul Routes

- 14.91 It is proposed to maintain the same haul route regime for transporting aggregates and value-added products as described above and shown in **Figure 14-4**.

Light and Private Vehicle Generation

- 14.92 The proposed continuance of the existing quarry development will secure the continued employment of 31 people (Quarry Manager, two Shippers, three technicians, one sales, one fitter, five engaged in contract crushing and up to 18 company and owner truck drivers associated with the combined haulage for quarry products).
- 14.93 The readymix concrete/mortar batching and block making operation will continue to provide employment for the 9 people (two block production and seven company drivers for concrete and concrete blocks))
- 14.94 Therefore, the proposal will secure the continued employment of 40 people for the duration of the extraction development i.e. 20 years.

- 14.95 The typical traffic generation arising from employee vehicles is estimated to be in the order of 50 trips per day by private car. Given the working hours at the site, employee trips are generally manifest on the road network well outside the typical morning and evening commuter peak hour periods. In any case the volume of private cars is not considered significant in the context of the carrying capacity of the receiving road network and the connected greater regional and national network.
- 14.96 Other non-HGV related trips arise from sales and technical staff and also from sundry visitors involved with the day-to-day operation of the site including maintenance staff, meter readers, sales people, the postman etc. Typically equating to the same total volume of staff traffic, these trips are generally distributed throughout the day with approximately 2 trips per hour.

Traffic Generation during Restoration Period

- 14.97 Where feasible, restoration of exhausted and redundant areas will be carried out at the earliest opportunity. However, it is envisaged that the majority of restoration proposals will only be carried out after extraction operations at the site have ceased whereupon it is proposed to return the worked lands to natural habitat after-use, refer to EIAR Figure 2.4.
- 14.98 The only material requirements in respect of the planned restoration scheme are those topsoils and subsoils already present on site and which have been previously stripped and stockpiled within the existing operational site area. The traffic generation arising during the restoration period will be chiefly by site operatives and little or no material will be transported to or from the site. It follows therefore that traffic impact arising during the restoration period is not likely to be significant and thus the impact upon the receiving road network can reasonably be considered likely to be negligible.

Road Safety Authority Collision Records

- 14.99 The Road Safety Authority website www.rsa.ie provides an online record of collision statistics spanning 2005-2016. The RSA data shows no recorded collisions in the vicinity of the existing site access on L3619 and no recorded collisions on the haul route to R624.

DESCRIPTION OF LIKELY SIGNIFICANT IMPACT

- 14.100 The above figures suggest that the average hourly traffic generation rate of 10 HGV trips for the proposed development will be equal to the current average as recorded from the 2019 weighbridge data. There is potential for a significant reduction in traffic generation from that currently permitted under Plan. Ref. 03/4570.
- 14.101 Overall, the proposed continuation of extraction at the Rossmore facility, with reduced annual extraction from a permitted 750,000t to 500,000t per annum will generate levels of traffic approximately 33% to 50% lower than those currently permitted. In practice the proposed extraction rate is equivalent to that recorded in 2019 and would likely be experienced in present day post-pandemic. It follows that in practice the current proposal is for the continuance of operations at the current levels and in practice there will be no change in the current volumes of traffic generated on a day-to-day basis.
- 14.102 Similarly, the traffic volumes described above and associated with the proposed continuance of extraction would continue to use the same haul routes as shown in **Figure 14-4**. Given the potential reduction, or in practice the maintenance of existing traffic generation levels at the site it follows that there will be no significant impact on the local roads network over that currently manifest.

DESCRIPTION OF MITIGATION MEASURES

General

- 14.103 Aggregate haulage lorries will continue to predominantly turn left out of the site and will use the prescribed haul routes shown in **Figure 14-4**.
- 14.104 Haulage vehicles will be regularly maintained, serviced and replaced at intervals.
- 14.105 In order to prevent transport of soil and dirt out of the site onto public roads, an existing wheelwash facility is provided for all HGV's exiting the site. All the aggregates haulage vehicles are required to pass through the wheelwash prior to leaving the site.
- 14.106 Any accidentally spilled material will be removed from the public road by Kilsaran Concrete in a safe and timely manner.
- 14.107 As the planning application relates to the continued use of the existing quarry operation, the proposed development will continue to utilise the existing site entrance. The existing site entrance onto the L3619 has historically been shown to function satisfactorily at its present location. As such, it is considered unnecessary to alter the existing access point in terms of geometry and/or location.
- 14.108 There are currently no formal advance warning signs on the approaches to the site access. It is proposed that new advance signs show a standard junction ahead warning sign which shows drivers which side of the road the entrance is on. It is proposed to augment the sign with an information plate reading 'Quarry Entrance 200m'. If the Planning Authority considers it worthwhile a second set of similar signs can be placed at 100m distance from the site access. The size of the signs and the

details of legend size etc. will be designed in accordance with the Traffic Signs Manual and the precise location agreed with the planning authority. The following **Image 14-1** provides a suggested layout.

Image 14 - 1
Proposed Advance Signage



Junction Capacity

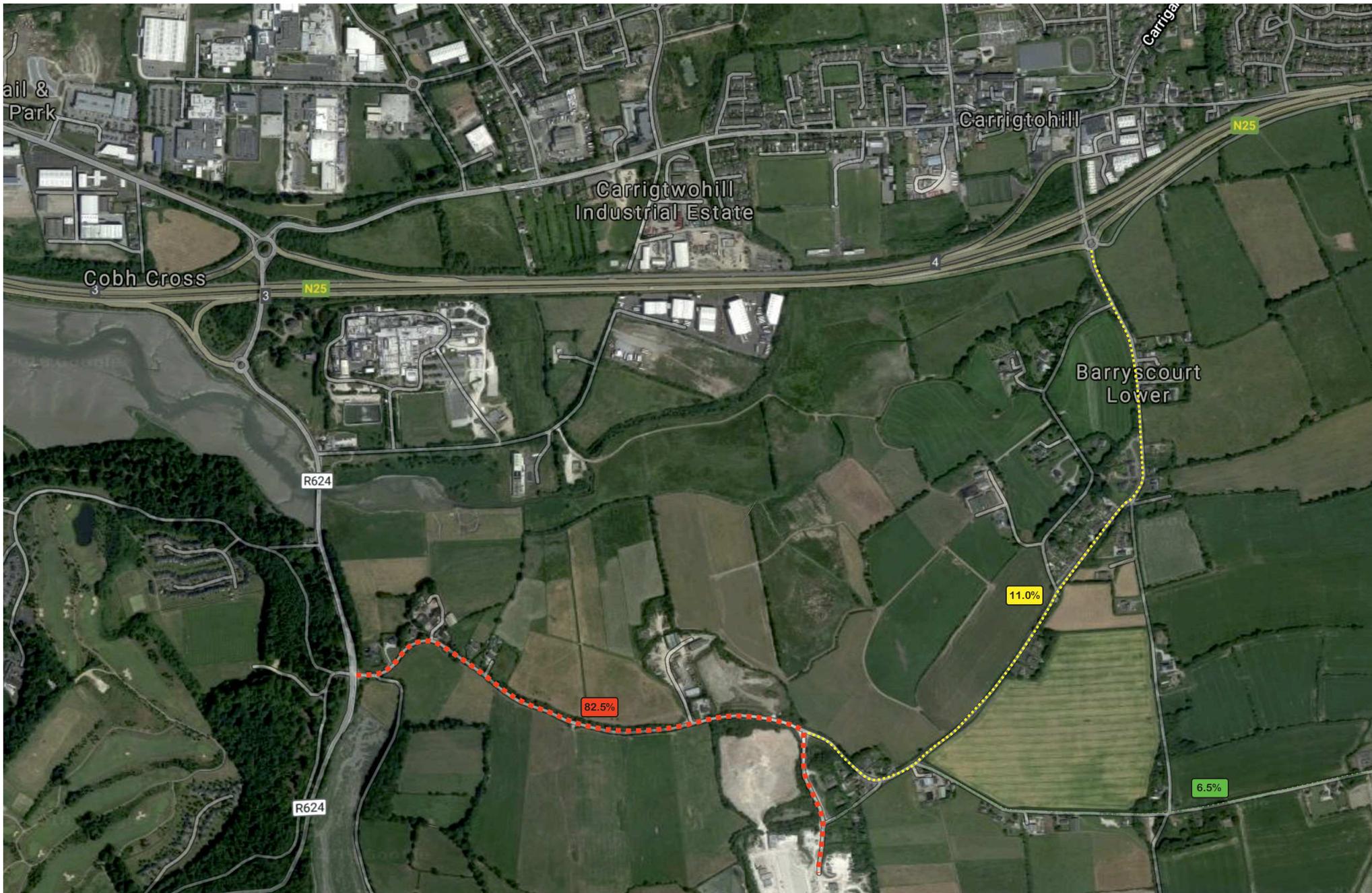
14.109 The existing access and the receiving road are lightly trafficked and will continue to be lightly trafficked in the context of the ultimate capacity of the simple priority access arrangement. The relatively low levels of network and development traffic can be appreciated from a review of the traffic count data together with the graphical analyses and network flow analyses presented in **Appendix 14-1** and **Appendix 14-2** respectively. The existing quarry traffic does not give rise to capacity issues at local junctions and there are unlikely to be capacity issues arising at the existing site access or the junctions on the haul route as a result of the proposed development for continuance of existing quarry operations.

Haul Route

14.110 The primary haul route is between the site and the greater roads network are shown on **Figure 14-4** and includes the L3619. From a walk-over inspection of the haul route it is generally considered to be in a good state of repair with no evidence of structural failure. There are some localised surface defects which require routine maintenance. All roads require a schedule of ongoing maintenance in order to remain serviceable. There is no proposed increase in the volume of traffic using the local road accordingly current annual maintenance costs are unlikely to increase since no additional traffic means there will be no additional wear and tear arising from the activities of the quarry. Given the historic use of these routes by the existing quarry it is highly unlikely that any specific road strengthening works would be required for the proposed continuance of development traffic at the same levels. Similarly, over the extended life of the quarry no additional maintenance works would arise on an annual basis over and above those currently manifest. It is however acknowledged that the current proposal will result in the extension of time over which the haul route is subject to quarry traffic. It must be acknowledged that inherent in the proposed continuance of quarrying activity is the extension of contributions and payments to the planning authority a proportion of which is allocated to the county schedule of ongoing road maintenance.

FIGURES

Figure 14-4
Existing and Proposed Vehicle Haul Routes



Project/Job Title **Rossmore, Co Cork**

Drawing Title **Existing and Proposed Haul Routes
Based Upon 2018 Traffic Survey**

Drawn by: TWL	Checked by: JMK	Approved by: JMK
Date: Mar 2021	Date: Mar 2021	Date: Mar 2021
Scenario: Existing Survey	Job No: 03071	Figure 14-4

APPENDICES

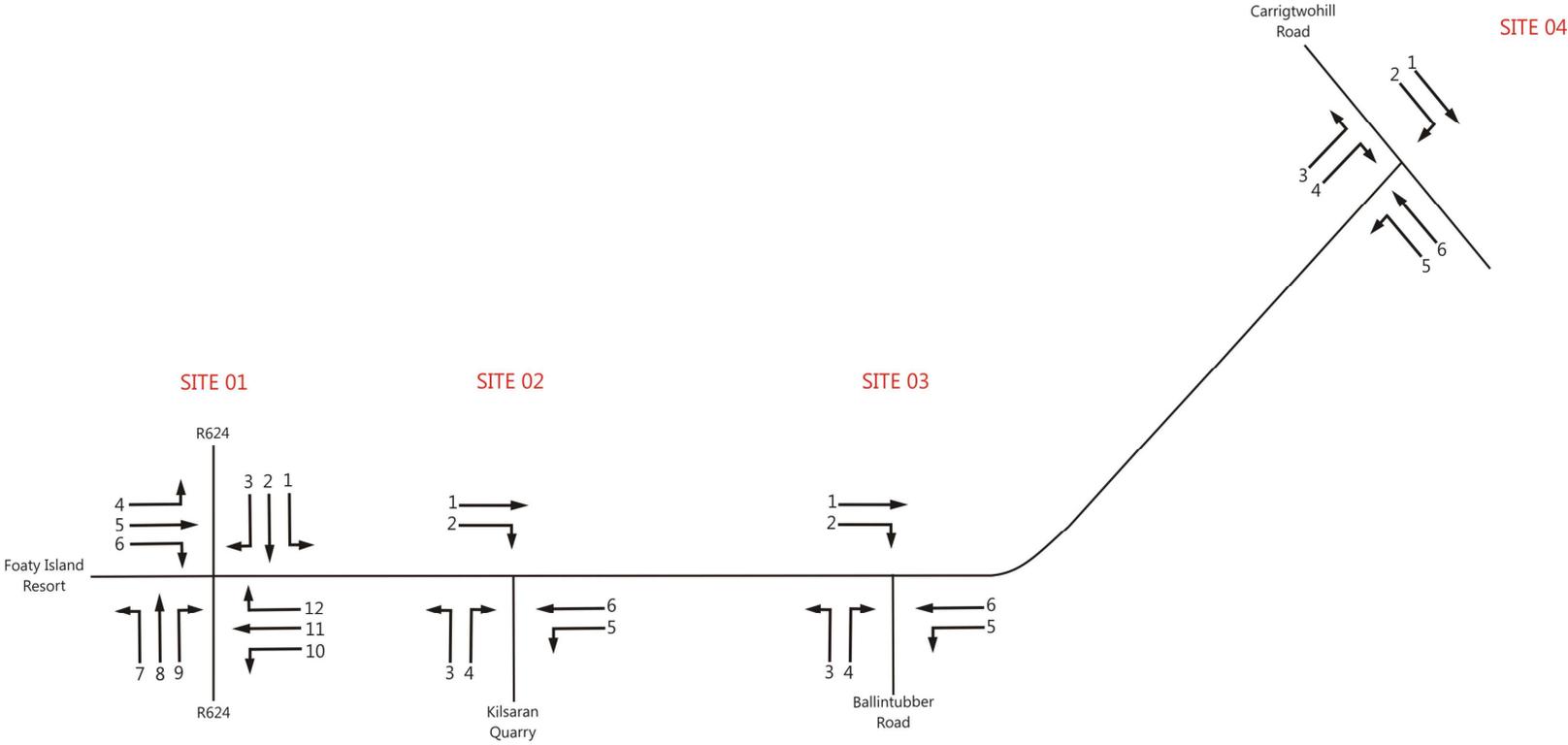
Appendix 14-1

Traffic Survey Data

Appendix 14-2

Network Traffic Flow Diagrams

Site Locations/Movement Numbering



	Job number: TRA/18/106	Job Date: 26 th June 2018	Drawing No: TRA/18/106-02	
	Client: Trafficwise Consulting Engineers	Job Day: Tuesday	Author: SPW	

TRAFFINOMICS LIMITED

**ROSSMORE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**JUNE 2018
ATH/18/106**

SITE: 01

DATE: 26th June 2018

LOCATION: R624/Foaty Island Entrance/Rossmore Townland Road

DAY: Tuesday

TIME	MOVEMENT 1					TOT	PCU	MOVEMENT 2					TOT	PCU	MOVEMENT 3					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
07:00	3	1	0	3	0	7	11	35	7	0	0	2	44	46	5	0	0	0	0	5	5
07:15	0	0	0	0	0	0	0	33	6	0	3	3	45	52	3	2	0	0	0	5	5
07:30	1	1	0	1	0	3	4	39	9	3	0	1	52	55	6	0	0	0	0	6	6
07:45	4	0	0	0	0	4	4	41	16	5	1	3	66	73	10	0	0	0	0	10	10
H/TOT	8	2	0	4	0	14	19	148	38	8	4	9	207	225	24	2	0	0	0	26	26
08:00	3	0	0	1	0	4	5	62	16	2	0	1	81	83	11	1	1	0	0	13	14
08:15	3	1	0	0	0	4	4	65	9	3	0	0	77	79	7	0	1	0	0	8	9
08:30	1	1	0	1	0	3	4	63	7	2	1	2	75	79	14	0	0	0	0	14	14
08:45	2	0	0	4	0	6	11	62	13	1	0	0	76	77	19	0	0	0	1	20	21
H/TOT	9	2	0	6	0	17	25	252	45	8	1	3	309	317	51	1	2	0	1	55	57
09:00	5	1	0	2	0	8	11	61	10	2	1	1	75	78	15	3	0	0	2	20	22
09:15	1	0	0	3	0	4	8	52	8	1	0	3	64	68	13	1	0	0	2	16	18
09:30	1	2	1	2	0	6	9	52	15	1	0	2	70	73	17	0	0	0	0	17	17
09:45	4	0	1	2	0	7	10	58	7	5	0	6	76	85	14	0	1	0	0	15	16
H/TOT	11	3	2	9	0	25	38	223	40	9	1	12	285	303	59	4	1	0	4	68	73
10:00	3	3	0	2	0	8	11	64	10	5	1	1	81	86	20	1	0	0	0	21	21
10:15	5	1	1	0	0	7	8	80	6	4	0	2	92	96	12	1	0	0	0	13	13
10:30	5	0	2	1	0	8	10	81	2	4	2	4	93	102	13	1	1	0	0	15	16
10:45	3	0	0	1	0	4	5	86	11	0	0	4	101	105	11	1	1	0	0	13	14
H/TOT	16	4	3	4	0	27	34	311	29	13	3	11	367	388	56	4	2	0	0	62	63
11:00	3	1	0	2	0	6	9	81	16	5	0	2	104	109	10	1	0	0	0	11	11
11:15	3	0	1	3	0	7	11	100	14	2	3	2	121	128	4	1	0	0	0	5	5
11:30	3	0	1	1	0	5	7	83	8	4	0	1	96	99	13	3	0	0	0	16	16
11:45	2	2	0	4	0	8	13	95	8	5	0	1	109	113	8	1	0	0	0	9	9
H/TOT	11	3	2	10	0	26	40	359	46	16	3	6	430	448	35	6	0	0	0	41	41
12:00	2	2	0	0	0	4	4	90	13	3	2	2	110	116	14	1	0	0	0	15	15
12:15	4	1	0	1	0	6	7	101	8	7	1	4	121	130	15	3	0	0	0	18	18
12:30	2	0	1	2	0	5	8	88	16	7	3	1	115	123	16	2	1	0	0	19	20
12:45	4	1	0	1	0	6	7	96	8	4	0	2	110	114	7	1	0	0	0	8	8
H/TOT	12	4	1	4	0	21	27	375	45	21	6	9	456	483	52	7	1	0	0	60	61

TRAFFINOMICS LIMITED

**ROSSMORE TRAFFIC COUNTS
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**JUNE 2018
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LOCATION: R624/Foaty Island Entrance/Rossmore Townland Road

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TIME	MOVEMENT 1					TOT	PCU	MOVEMENT 2					TOT	PCU	MOVEMENT 3					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
13:00	3	1	0	0	0	4	4	95	13	1	1	7	117	126	13	0	1	0	0	14	15
13:15	5	0	1	1	0	7	9	88	14	4	0	0	106	108	11	0	0	0	0	11	11
13:30	3	1	0	1	0	5	6	107	10	3	1	1	122	126	9	0	1	0	0	10	11
13:45	2	0	0	4	0	6	11	88	13	2	1	1	105	108	9	0	0	0	0	9	9
H/TOT	13	2	1	6	0	22	30	378	50	10	3	9	450	468	42	0	2	0	0	44	45
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14:15	3	0	1	2	0	6	9	98	16	2	0	0	116	117	10	0	0	0	0	10	10
14:30	6	2	1	0	0	9	10	108	15	5	1	1	130	135	20	2	0	0	0	22	22
14:45	3	1	0	2	0	6	9	117	8	2	0	5	132	138	14	1	0	0	0	15	15
H/TOT	15	5	2	4	0	26	32	412	45	11	1	8	477	492	51	3	0	0	0	54	54
15:00	0	0	0	1	0	1	2	114	14	2	2	0	132	136	18	2	0	0	0	20	20
15:15	2	2	0	2	0	6	9	106	19	2	1	2	130	134	17	2	0	0	0	19	19
15:30	1	1	1	1	0	4	6	110	7	6	1	0	124	128	14	1	0	0	0	15	15
15:45	3	0	1	0	0	4	5	99	8	0	1	0	108	109	18	1	0	0	0	19	19
H/TOT	6	3	2	4	0	15	21	429	48	10	5	2	494	508	67	6	0	0	0	73	73
16:00	1	2	0	1	0	4	5	132	12	4	0	1	149	152	18	0	0	0	0	18	18
16:15	4	0	0	2	0	6	9	155	13	1	2	1	172	176	15	2	0	0	2	19	21
16:30	4	0	0	1	0	5	6	152	16	2	0	1	171	173	22	0	0	0	0	22	22
16:45	4	0	0	0	0	4	4	166	18	3	0	1	188	191	20	0	0	0	0	20	20
H/TOT	13	2	0	4	0	19	24	605	59	10	2	4	680	692	75	2	0	0	2	79	81
17:00	3	0	0	0	0	3	3	197	22	2	1	2	224	228	19	0	0	0	0	19	19
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17:30	2	1	0	1	0	4	5	190	13	3	0	2	208	212	16	0	0	0	0	16	16
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H/TOT	14	1	0	1	0	16	17	746	59	11	2	5	823	836	58	0	0	0	0	58	58
18:00	4	1	0	0	0	5	5	178	18	0	0	1	197	198	15	1	0	0	0	16	16
18:15	3	0	0	0	0	3	3	152	11	0	0	0	163	163	20	0	0	0	0	20	20
18:30	5	0	0	0	0	5	5	147	12	1	1	0	161	163	19	2	0	0	0	21	21
18:45	0	0	0	1	0	1	2	128	7	1	0	0	136	137	22	0	0	0	0	22	22
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P/TOT	140	32	13	57	0	242	323	4843	552	129	32	79	5635	5820	646	38	8	0	7	699	710

TRAFFINOMICS LIMITED

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SITE: 01

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LOCATION: R624/Foaty Island Entrance/Rossmore Townland Road

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TIME	MOVEMENT 4					TOT	PCU	MOVEMENT 5					TOT	PCU	MOVEMENT 6					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
07:00	5	0	1	0	0	6	7	0	0	0	0	0	0	0	1	0	0	0	0	1	1
07:15	8	0	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	7	0	0	0	0	7	7	0	0	0	0	0	0	0	1	0	0	0	0	1	1
07:45	5	0	0	0	0	5	5	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	25	0	1	0	0	26	27	0	0	0	0	0	0	0	5	0	0	0	0	5	5
08:00	10	1	0	0	0	11	11	0	0	0	0	0	0	0	2	1	0	0	0	3	3
08:15	16	0	0	0	0	16	16	0	0	0	0	0	0	0	2	0	0	0	0	2	2
08:30	6	1	1	0	0	8	9	0	0	0	0	0	0	0	1	0	1	0	0	2	3
08:45	6	1	0	0	0	7	7	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	38	3	1	0	0	42	43	0	0	0	0	0	0	0	8	1	1	0	0	10	11
09:00	5	1	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	8	0	0	0	0	8	8	0	0	0	0	0	0	0	1	0	0	0	0	1	1
09:30	7	1	0	0	5	13	18	0	0	0	0	0	0	0	2	0	0	0	0	2	2
09:45	4	0	0	0	0	4	4	0	1	0	0	0	1	1	2	0	0	0	0	2	2
H/TOT	24	2	0	0	5	31	36	0	1	0	0	0	1	1	5	0	0	0	0	5	5
10:00	9	0	0	0	0	9	9	0	0	0	0	0	0	0	4	0	0	0	0	4	4
10:15	11	0	1	0	0	12	13	0	0	0	0	0	0	0	5	1	0	0	0	6	6
10:30	8	2	0	0	0	10	10	0	0	0	0	0	0	0	1	0	0	0	0	1	1
10:45	10	1	1	0	0	12	13	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	38	3	2	0	0	43	44	0	0	0	0	0	0	0	12	1	0	0	0	13	13
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11:30	9	1	0	0	0	10	10	0	0	0	0	0	0	0	1	1	0	0	0	2	2
11:45	8	2	0	0	0	10	10	0	0	0	0	0	0	0	6	1	0	0	0	7	7
H/TOT	38	7	0	0	0	45	45	0	0	0	0	0	0	0	14	2	1	0	0	17	18
12:00	9	0	0	0	0	9	9	0	0	0	0	0	0	0	3	1	0	0	0	4	4
12:15	13	0	0	0	0	13	13	0	0	0	0	0	0	0	4	1	0	0	0	5	5
12:30	10	2	0	0	0	12	12	1	0	0	0	0	1	1	2	0	0	0	0	2	2
12:45	9	1	0	0	0	10	10	0	0	0	0	0	0	0	5	0	0	0	0	5	5
H/TOT	41	3	0	0	0	44	44	1	0	0	0	0	1	1	14	2	0	0	0	16	16

TRAFFINOMICS LIMITED

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	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
13:00	12	0	0	0	0	12	12	0	0	0	0	0	0	0	5	1	0	0	0	6	6
13:15	12	0	1	0	0	13	14	0	0	0	0	0	0	0	4	1	0	0	0	5	5
13:30	13	0	0	0	0	13	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	13	0	1	0	0	14	15	0	0	0	0	0	0	0	8	0	0	0	0	8	8
H/TOT	50	0	2	0	0	52	53	0	0	0	0	0	0	0	17	2	0	0	0	19	19
14:00	12	1	2	0	0	15	16	0	0	0	0	0	0	0	4	0	0	0	0	4	4
14:15	18	1	0	0	0	19	19	0	0	0	0	0	0	0	4	0	0	0	0	4	4
14:30	19	1	2	0	0	22	23	0	0	0	0	0	0	0	11	0	0	0	0	11	11
14:45	17	1	0	0	0	18	18	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	66	4	4	0	0	74	76	0	0	0	0	0	0	0	22	0	0	0	0	22	22
15:00	13	1	0	0	0	14	14	0	0	0	0	0	0	0	5	1	0	0	0	6	6
15:15	18	2	0	0	0	20	20	0	0	0	0	0	0	0	4	0	0	0	0	4	4
15:30	17	3	0	0	0	20	20	1	0	0	0	0	1	1	3	0	0	0	0	3	3
15:45	19	2	0	0	0	21	21	1	0	0	0	0	1	1	2	0	0	0	0	2	2
H/TOT	67	8	0	0	0	75	75	2	0	0	0	0	2	2	14	1	0	0	0	15	15
16:00	22	0	0	0	0	22	22	1	0	0	0	0	1	1	8	0	0	0	0	8	8
16:15	15	0	0	0	0	15	15	1	0	0	0	0	1	1	2	0	0	0	0	2	2
16:30	18	1	0	0	0	19	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	16	0	0	0	0	16	16	1	0	0	0	0	1	1	3	1	0	0	0	4	4
H/TOT	71	1	0	0	0	72	72	3	0	0	0	0	3	3	13	1	0	0	0	14	14
17:00	17	1	0	0	0	18	18	2	0	0	0	0	2	2	3	0	0	0	0	3	3
17:15	13	1	0	0	0	14	14	0	0	0	0	0	0	0	4	0	0	0	0	4	4
17:30	21	1	0	0	0	22	22	0	0	0	0	0	0	0	3	0	0	0	0	3	3
17:45	16	1	0	0	0	17	17	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	67	4	0	0	0	71	71	2	0	0	0	0	2	2	11	0	0	0	0	11	11
18:00	20	0	0	0	0	20	20	1	0	0	0	0	1	1	2	0	0	0	0	2	2
18:15	11	0	0	0	0	11	11	0	0	0	0	0	0	0	3	0	0	0	0	3	3
18:30	20	0	0	0	0	20	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	10	0	0	0	1	11	12	0	0	0	0	0	0	0	5	0	0	0	0	5	5
H/TOT	61	0	0	0	1	62	63	1	0	0	0	0	1	1	10	0	0	0	0	10	10
P/TOT	586	35	10	0	6	637	648	9	1	0	0	0	10	10	145	10	2	0	0	157	158

TRAFFINOMICS LIMITED

**ROSSMORE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**JUNE 2018
ATH/18/106**

SITE: 01

DATE: 26th June 2018

LOCATION: R624/Foaty Island Entrance/Rossmore Townland Road

DAY: Tuesday

TIME	MOVEMENT 7					TOT	PCU	MOVEMENT 8					TOT	PCU	MOVEMENT 9					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
07:00	1	0	0	0	0	1	1	145	10	0	0	0	155	155	1	0	0	0	0	1	1
07:15	1	0	0	0	0	1	1	159	14	0	1	0	174	175	0	0	0	0	0	0	0
07:30	2	0	0	0	0	2	2	177	16	0	0	2	195	197	1	0	0	0	0	1	1
07:45	3	0	0	0	0	3	3	191	17	0	0	0	208	208	0	0	0	0	0	0	0
H/TOT	7	0	0	0	0	7	7	672	57	0	1	2	732	735	2	0	0	0	0	2	2
08:00	2	0	0	0	0	2	2	171	15	3	0	2	191	195	3	0	0	0	0	3	3
08:15	2	0	0	0	0	2	2	190	20	0	1	1	212	214	5	0	0	0	0	5	5
08:30	6	0	0	0	0	6	6	163	13	3	1	2	182	187	5	0	0	0	0	5	5
08:45	5	0	0	0	0	5	5	173	14	5	0	7	199	209	1	2	0	0	0	3	3
H/TOT	15	0	0	0	0	15	15	697	62	11	2	12	784	804	14	2	0	0	0	16	16
09:00	3	0	0	0	0	3	3	145	11	2	2	3	163	170	3	0	0	0	0	3	3
09:15	0	0	0	0	0	0	0	140	5	2	0	3	150	154	3	0	0	0	0	3	3
09:30	1	1	0	0	0	2	2	105	14	2	0	1	122	124	2	0	1	0	0	3	4
09:45	1	0	0	0	0	1	1	92	11	1	0	0	104	105	3	0	1	0	0	4	5
H/TOT	5	1	0	0	0	6	6	482	41	7	2	7	539	552	11	0	2	0	0	13	14
10:00	4	0	0	0	0	4	4	92	7	3	1	1	104	108	1	2	1	0	0	4	5
10:15	5	0	0	0	0	5	5	87	10	2	0	1	100	102	2	1	0	0	0	3	3
10:30	4	1	0	0	0	5	5	77	10	5	0	0	92	95	2	2	1	0	0	5	6
10:45	5	1	0	0	0	6	6	84	11	6	0	1	102	106	1	0	0	0	0	1	1
H/TOT	18	2	0	0	0	20	20	340	38	16	1	3	398	410	6	5	2	0	0	13	14
11:00	2	0	0	0	0	2	2	62	9	4	2	0	77	82	4	0	0	0	0	4	4
11:15	2	0	0	0	0	2	2	60	5	4	0	2	71	75	1	0	0	0	0	1	1
11:30	6	0	0	0	0	6	6	79	12	6	1	4	102	110	1	3	0	0	0	4	4
11:45	2	0	0	0	0	2	2	72	8	4	1	0	85	88	3	3	0	0	0	6	6
H/TOT	12	0	0	0	0	12	12	273	34	18	4	6	335	355	9	6	0	0	0	15	15
12:00	1	1	0	0	0	2	2	91	9	5	1	1	107	112	2	1	0	0	0	3	3
12:15	2	0	0	0	0	2	2	78	6	0	1	1	86	88	3	0	1	0	0	4	5
12:30	2	0	0	0	0	2	2	73	6	8	0	1	88	93	2	0	0	1	0	3	4
12:45	6	1	0	0	0	7	7	80	14	2	0	1	97	99	4	0	0	0	0	4	4
H/TOT	11	2	0	0	0	13	13	322	35	15	2	4	378	392	11	1	1	1	0	14	16

TRAFFINOMICS LIMITED

**ROSSMORE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**JUNE 2018
ATH/18/106**

SITE: 01

DATE: 26th June 2018

LOCATION: R624/Foaty Island Entrance/Rossmore Townland Road

DAY: Tuesday

TIME	MOVEMENT 7					TOT	PCU	MOVEMENT 8					TOT	PCU	MOVEMENT 9					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
13:00	1	0	1	0	0	2	3	83	6	4	2	2	97	104	0	1	1	0	0	2	3
13:15	2	0	0	0	0	2	2	87	11	5	0	3	106	112	5	1	0	0	0	6	6
13:30	5	0	0	0	0	5	5	63	9	4	1	7	84	94	4	1	0	0	0	5	5
13:45	3	0	2	0	0	5	6	80	9	2	3	5	99	109	5	0	0	0	0	5	5
H/TOT	11	0	3	0	0	14	16	313	35	15	6	17	386	418	14	3	1	0	0	18	19
14:00	4	0	0	0	0	4	4	85	10	2	0	2	99	102	1	1	0	0	0	2	2
14:15	3	0	0	0	0	3	3	89	6	6	1	1	103	108	2	0	0	0	0	2	2
14:30	1	0	0	0	0	1	1	92	10	3	1	0	106	109	3	1	1	0	0	5	6
14:45	7	0	0	0	0	7	7	143	11	1	0	4	159	164	7	0	0	0	0	7	7
H/TOT	15	0	0	0	0	15	15	409	37	12	2	7	467	483	13	2	1	0	0	16	17
15:00	4	2	0	0	0	6	6	129	9	1	1	1	141	144	3	1	0	0	0	4	4
15:15	4	1	0	0	0	5	5	122	11	4	0	5	142	149	2	0	0	0	0	2	2
15:30	4	1	0	0	0	5	5	100	6	1	1	0	108	110	3	0	0	0	0	3	3
15:45	5	0	0	0	0	5	5	72	10	3	2	3	90	97	2	1	1	0	0	4	5
H/TOT	17	4	0	0	0	21	21	423	36	9	4	9	481	500	10	2	1	0	0	13	14
16:00	1	0	0	0	0	1	1	102	15	2	1	0	120	122	5	0	0	1	1	7	9
16:15	6	0	0	0	0	6	6	82	14	3	1	2	102	107	1	1	1	0	0	3	4
16:30	2	0	0	0	0	2	2	80	11	2	1	2	96	100	2	0	0	0	0	2	2
16:45	3	0	0	0	0	3	3	91	10	1	0	5	107	113	2	0	0	0	0	2	2
H/TOT	12	0	0	0	0	12	12	355	50	8	3	9	425	442	10	1	1	1	1	14	17
17:00	4	0	0	0	0	4	4	100	15	2	2	2	121	127	3	1	0	0	0	4	4
17:15	5	0	0	0	0	5	5	95	11	1	0	3	110	114	9	0	0	0	0	9	9
17:30	3	0	0	0	0	3	3	84	4	0	0	1	89	90	4	1	0	0	0	5	5
17:45	4	1	0	0	0	5	5	94	4	2	0	2	102	105	3	1	0	0	0	4	4
H/TOT	16	1	0	0	0	17	17	373	34	5	2	8	422	435	19	3	0	0	0	22	22
18:00	4	0	0	0	0	4	4	125	7	3	0	3	138	143	1	0	0	0	0	1	1
18:15	1	0	0	0	1	2	3	111	8	0	1	0	120	121	1	0	0	0	0	1	1
18:30	4	0	0	0	0	4	4	102	6	2	2	2	114	120	1	1	0	0	0	2	2
18:45	3	0	0	0	0	3	3	89	4	1	0	0	94	95	0	0	0	0	0	0	0
H/TOT	12	0	0	0	1	13	14	427	25	6	3	5	466	478	3	1	0	0	0	4	4
P/TOT	151	10	3	0	1	165	168	5086	484	122	32	89	5813	6005	122	26	9	2	1	160	168

TRAFFINOMICS LIMITED

**ROSSMORE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**JUNE 2018
ATH/18/106**

SITE: 01

DATE: 26th June 2018

LOCATION: R624/Foaty Island Entrance/Rossmore Townland Road

DAY: Tuesday

TIME	MOVEMENT 10					TOT	PCU	MOVEMENT 11					TOT	PCU	MOVEMENT 12					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
07:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	2	0	5	8
07:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	1	0	3	4
07:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	5	0	5	12
07:45	3	2	0	0	0	5	5	0	0	0	0	0	0	0	3	0	0	2	0	5	8
H/TOT	6	2	0	0	0	8	8	2	0	0	0	0	2	2	8	0	0	10	0	18	31
08:00	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	1	0	1	2
08:15	4	1	0	0	0	5	5	0	0	0	0	0	0	0	3	0	0	3	0	6	10
08:30	3	1	0	0	0	4	4	1	0	0	0	0	1	1	3	0	1	0	0	4	5
08:45	4	0	0	0	0	4	4	0	0	0	0	0	0	0	2	0	0	1	0	3	4
H/TOT	14	2	0	0	0	16	16	1	0	0	0	0	1	1	8	0	1	5	0	14	21
09:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	0	0	2	0	4	7
09:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	3	0	4	8
09:30	4	3	0	0	0	7	7	0	0	0	0	0	0	0	4	0	0	2	0	6	9
09:45	4	0	2	0	0	6	7	0	0	0	0	0	0	0	1	1	0	4	0	6	11
H/TOT	9	3	2	0	0	14	15	1	0	0	0	0	1	1	8	1	0	11	0	20	34
10:00	3	4	0	0	0	7	7	1	0	0	0	0	1	1	2	2	1	1	0	6	8
10:15	4	1	0	0	0	5	5	0	0	0	0	0	0	0	3	2	1	0	0	6	7
10:30	3	1	1	0	1	6	8	0	0	0	0	0	0	0	1	0	0	1	0	2	3
10:45	2	1	2	0	0	5	6	0	0	0	0	0	0	0	5	0	1	1	0	7	9
H/TOT	12	7	3	0	1	23	26	1	0	0	0	0	1	1	11	4	3	3	0	21	26
11:00	5	0	0	0	0	5	5	1	1	0	0	0	2	2	2	1	0	1	0	4	5
11:15	10	1	0	0	0	11	11	2	0	0	0	0	2	2	2	0	0	1	0	3	4
11:30	3	0	0	1	0	4	5	1	0	0	0	0	1	1	2	0	0	0	0	2	2
11:45	5	0	0	0	0	5	5	0	0	0	0	0	0	0	4	0	0	1	0	5	6
H/TOT	23	1	0	1	0	25	26	4	1	0	0	0	5	5	10	1	0	3	0	14	18
12:00	4	0	1	0	0	5	6	0	0	0	0	0	0	0	6	2	0	3	0	11	15
12:15	4	2	0	0	0	6	6	0	0	0	0	0	0	0	2	1	1	1	0	5	7
12:30	2	1	1	0	0	4	5	0	0	0	0	0	0	0	3	0	0	0	0	3	3
12:45	7	0	0	0	0	7	7	0	0	0	0	0	0	0	4	0	0	2	0	6	9
H/TOT	17	3	2	0	0	22	23	0	0	0	0	0	0	0	15	3	1	6	0	25	33

TRAFFINOMICS LIMITED

**ROSSMORE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**JUNE 2018
ATH/18/106**

SITE: 01

DATE: 26th June 2018

LOCATION: R624/Foaty Island Entrance/Rossmore Townland Road

DAY: Tuesday

TIME	MOVEMENT 10					TOT	PCU	MOVEMENT 11					TOT	PCU	MOVEMENT 12					TOT	PCU	
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			
13:00	2	1	0	0	0	3	3	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2
13:15	6	1	0	0	0	7	7	0	0	0	0	0	0	0	2	1	0	0	1	4	4	5
13:30	4	0	0	0	0	4	4	1	0	0	0	0	1	1	3	0	0	0	0	3	3	3
13:45	3	3	0	0	0	6	6	0	0	0	0	0	0	0	2	0	2	2	0	6	6	10
H/TOT	15	5	0	0	0	20	20	1	0	0	0	0	1	1	9	1	2	2	1	15	15	20
14:00	4	0	0	0	0	4	4	0	0	0	0	0	0	0	1	0	0	3	0	4	4	8
14:15	6	1	1	0	0	8	9	0	0	0	0	0	0	0	2	0	0	4	0	6	6	11
14:30	6	0	0	0	0	6	6	0	0	0	0	0	0	0	3	0	0	0	0	3	3	3
14:45	4	0	1	0	0	5	6	0	0	0	0	0	0	0	5	1	1	0	0	7	7	8
H/TOT	20	1	2	0	0	23	24	0	0	0	0	0	0	0	11	1	1	7	0	20	20	30
15:00	13	1	0	0	0	14	14	0	0	0	0	0	0	0	4	0	0	2	0	6	6	9
15:15	5	1	0	0	0	6	6	0	0	0	0	0	0	0	3	0	0	2	0	5	5	8
15:30	5	0	1	0	0	6	7	0	0	0	0	0	0	0	0	0	0	1	0	1	1	2
15:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	1	1	1	0	5	5	7
H/TOT	24	2	1	0	0	27	28	0	0	0	0	0	0	0	9	1	1	6	0	17	17	25
16:00	8	0	0	0	0	8	8	4	0	0	0	0	4	4	2	0	0	0	0	2	2	2
16:15	5	3	0	0	0	8	8	0	0	0	0	0	0	0	3	1	0	0	0	4	4	4
16:30	8	0	0	0	0	8	8	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1
16:45	5	3	0	0	0	8	8	0	0	0	0	0	0	0	2	1	0	0	0	3	3	3
H/TOT	26	6	0	0	0	32	32	4	0	0	0	0	4	4	7	3	0	0	0	10	10	10
17:00	6	1	0	0	0	7	7	1	0	0	0	0	1	1	1	0	0	1	0	2	2	3
17:15	6	0	0	0	0	6	6	2	0	0	0	0	2	2	5	0	0	0	0	5	5	5
17:30	6	0	1	0	0	7	8	0	0	0	0	0	0	0	2	1	0	1	0	4	4	5
17:45	9	0	0	0	0	9	9	0	0	0	0	0	0	0	2	0	0	0	0	2	2	2
H/TOT	27	1	1	0	0	29	30	3	0	0	0	0	3	3	10	1	0	2	0	13	13	16
18:00	3	1	0	0	0	4	4	0	0	0	0	0	0	0	2	0	0	0	0	2	2	2
18:15	3	1	0	1	0	5	6	0	0	0	0	0	0	0	2	0	0	0	0	2	2	2
18:30	4	0	0	0	0	4	4	0	0	0	0	0	0	0	3	0	0	0	0	3	3	3
18:45	5	0	0	0	0	5	5	1	0	0	0	0	1	1	2	0	0	0	0	2	2	2
H/TOT	15	2	0	1	0	18	19	1	0	0	0	0	1	1	9	0	0	0	0	9	9	9
P/TOT	208	35	11	2	1	257	266	18	1	0	0	0	19	19	115	16	9	55	1	196	196	273

TRAFFINOMICS LIMITED

**ROSSMORE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**JUNE 2018
ATH/18/106**

SITE: 02

DATE: 26th June 2018

LOCATION: Rossmore Townland Road/Kilsaran Quarry Entrance

DAY: Tuesday

TIME	MOVEMENT 1					TOT	PCU	MOVEMENT 2					TOT	PCU	MOVEMENT 3					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
07:00	1	0	0	1	0	2	3	0	0	0	2	0	2	5	0	0	0	2	0	2	5
07:15	1	0	0	0	0	1	1	1	0	0	0	0	1	1	1	0	0	1	0	2	3
07:30	2	0	0	0	0	2	2	0	0	0	1	0	1	2	0	0	0	5	0	5	12
07:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	3	0	3	7
H/TOT	5	0	0	1	0	6	7	1	0	0	3	0	4	8	1	0	0	11	0	12	26
08:00	3	0	0	0	0	3	3	1	0	0	1	0	2	3	0	0	0	1	0	1	2
08:15	4	0	0	0	0	4	4	2	0	0	0	0	2	2	0	0	0	2	0	2	5
08:30	7	0	0	0	0	7	7	0	0	0	1	0	1	2	0	0	1	0	0	1	2
08:45	4	1	0	1	0	6	7	0	0	0	3	0	3	7	1	0	0	1	0	2	3
H/TOT	18	1	0	1	0	20	21	3	0	0	5	0	8	15	1	0	1	4	0	6	12
09:00	3	1	0	0	0	4	4	0	0	0	2	0	2	5	0	0	0	2	0	2	5
09:15	4	1	0	0	0	5	5	0	0	1	1	0	2	4	0	0	0	2	0	2	5
09:30	3	2	1	0	0	6	7	0	0	1	3	0	4	8	0	0	0	4	0	4	9
09:45	5	1	0	0	0	6	6	0	0	2	2	0	4	8	0	1	1	2	0	4	7
H/TOT	15	5	1	0	0	21	22	0	0	4	8	0	12	24	0	1	1	10	0	12	26
10:00	5	1	0	0	0	6	6	1	1	1	2	0	5	8	0	1	2	1	0	4	6
10:15	5	1	0	0	0	6	6	1	0	1	0	0	2	3	1	0	0	0	0	1	1
10:30	5	2	1	0	0	8	9	0	0	1	1	0	2	4	0	0	2	1	0	3	5
10:45	3	1	1	0	0	5	6	0	0	0	1	0	1	2	0	0	2	1	0	3	5
H/TOT	18	5	2	0	0	25	26	2	1	3	4	0	10	17	1	1	6	3	0	11	18
11:00	5	0	0	0	0	5	5	0	0	0	2	0	2	5	0	0	0	1	0	1	2
11:15	5	0	1	0	0	6	7	0	0	0	3	0	3	7	0	0	0	1	0	1	2
11:30	1	3	1	0	0	5	6	0	0	0	1	0	1	2	0	0	0	0	0	0	0
11:45	5	4	0	0	0	9	9	0	0	0	4	0	4	9	1	0	0	2	0	3	6
H/TOT	16	7	2	0	0	25	26	0	0	0	10	0	10	23	1	0	0	4	0	5	10
12:00	1	2	0	0	0	3	3	1	1	0	0	0	2	2	2	1	0	2	0	5	8
12:15	4	1	0	0	0	5	5	0	0	1	1	0	2	4	0	0	1	1	0	2	4
12:30	2	0	1	1	0	4	6	0	0	0	2	0	2	5	0	1	1	0	0	2	3
12:45	5	0	1	0	0	6	7	0	1	0	1	0	2	3	0	0	0	2	0	2	5
H/TOT	12	3	2	1	0	18	20	1	2	1	4	0	8	14	2	2	2	5	0	11	19

TRAFFINOMICS LIMITED

**ROSSMORE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**JUNE 2018
ATH/18/106**

SITE: 02

DATE: 26th June 2018

LOCATION: Rossmore Townland Road/Kilsaran Quarry Entrance

DAY: Tuesday

TIME	MOVEMENT 1					TOT	PCU	MOVEMENT 2					TOT	PCU	MOVEMENT 3					TOT	PCU	
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			
13:00	3	1	1	0	0	5	6	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
13:15	8	1	0	0	0	9	9	0	0	1	1	0	2	4	1	0	0	0	0	0	1	1
13:30	8	0	0	0	0	8	8	0	1	0	1	0	2	3	0	0	0	0	0	0	0	0
13:45	5	1	0	0	0	6	6	0	0	0	4	0	4	9	0	0	1	3	0	4	8	
H/TOT	24	3	1	0	0	28	29	0	1	1	6	0	8	16	1	1	1	3	0	6	10	
14:00	6	4	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0	3	0	3	7	
14:15	2	0	1	0	0	3	4	0	0	0	2	0	2	5	1	0	0	3	0	4	8	
14:30	6	0	0	0	0	6	6	1	0	2	0	0	3	4	0	0	0	0	0	0	0	
14:45	7	1	0	0	0	8	8	0	0	0	2	0	2	5	1	0	2	0	0	3	4	
H/TOT	21	5	1	0	0	27	28	1	0	2	4	0	7	13	2	0	2	6	0	10	19	
15:00	4	3	0	0	0	7	7	0	0	0	1	0	1	2	0	0	0	3	0	3	7	
15:15	3	2	0	0	0	5	5	0	0	0	2	0	2	5	0	0	0	1	0	1	2	
15:30	4	0	0	0	0	4	4	0	1	1	1	0	3	5	0	1	0	2	0	3	6	
15:45	5	1	1	0	0	7	8	1	0	1	0	0	2	3	0	0	1	0	0	1	2	
H/TOT	16	6	1	0	0	23	24	1	1	2	4	0	8	14	0	1	1	6	0	8	16	
16:00	5	2	2	0	1	10	12	0	0	0	1	0	1	2	1	0	0	0	0	1	1	
16:15	4	1	1	0	0	6	7	1	0	0	2	0	3	6	0	1	0	0	0	1	1	
16:30	4	1	0	0	0	5	5	0	0	0	1	0	1	2	0	0	0	0	0	0	0	
16:45	4	0	1	0	0	5	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
H/TOT	17	4	4	0	1	26	29	1	0	0	4	0	5	10	1	1	0	0	0	2	2	
17:00	8	0	0	0	0	8	8	0	0	0	0	0	0	0	0	1	0	1	0	2	3	
17:15	13	1	0	0	0	14	14	0	0	0	0	0	0	0	1	0	0	0	0	1	1	
17:30	10	3	0	0	0	13	13	0	0	0	1	0	1	2	1	0	0	0	0	1	1	
17:45	5	0	0	0	0	5	5	0	0	0	0	0	0	0	1	0	0	0	0	1	1	
H/TOT	36	4	0	0	0	40	40	0	0	0	1	0	1	2	3	1	0	1	0	5	6	
18:00	6	1	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18:15	2	0	0	0	0	2	2	1	0	0	0	0	1	1	1	0	0	0	0	1	1	
18:30	4	1	0	0	0	5	5	0	0	0	0	0	0	0	1	0	0	0	0	1	1	
18:45	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	
H/TOT	12	2	0	0	0	14	14	1	0	0	1	0	2	3	2	0	0	0	0	2	2	
P/TOT	210	45	14	3	1	273	285	11	5	13	54	0	83	160	15	8	14	53	0	90	166	

TRAFFINOMICS LIMITED

**ROSSMORE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**JUNE 2018
ATH/18/106**

SITE: 02

DATE: 26th June 2018

LOCATION: Rossmore Townland Road/Kilsaran Quarry Entrance

DAY: Tuesday

TIME	MOVEMENT 4					TOT	PCU	MOVEMENT 5					TOT	PCU	MOVEMENT 6					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
07:00	0	0	0	0	0	0	0	0	0	0	2	0	2	5	5	0	0	0	0	5	5
07:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	2	0	0	0	0	2	2
07:30	0	0	0	1	0	1	2	1	0	0	0	0	1	1	2	0	0	0	0	2	2
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	0	0	0	7	7
H/TOT	0	0	0	1	0	1	2	1	1	0	2	0	4	7	13	3	0	0	0	16	16
08:00	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2	1	0	0	0	3	3
08:15	0	0	0	0	0	0	0	0	0	0	1	0	1	2	6	1	0	0	0	7	7
08:30	0	0	0	0	0	0	0	1	0	0	1	0	2	3	6	2	0	0	0	8	8
08:45	0	0	0	0	0	0	0	0	0	0	1	0	1	2	6	0	0	0	0	6	6
H/TOT	0	0	0	0	0	0	0	1	0	0	4	0	5	10	20	4	0	0	0	24	24
09:00	0	0	0	1	0	1	2	0	0	0	0	0	0	0	2	1	0	0	0	3	3
09:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0	0	0	2	2
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4	0	0	0	7	7
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4	0	0	0	7	7
H/TOT	0	0	0	1	0	1	2	0	1	0	0	0	1	1	9	10	0	0	0	19	19
10:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	4	2	0	0	0	6	6
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	0	0	1	9	10
10:30	0	1	0	0	0	1	1	1	0	0	1	0	2	3	4	0	0	0	0	4	4
10:45	1	0	0	1	0	2	3	0	0	0	0	0	0	0	5	1	0	0	0	6	6
H/TOT	3	1	0	1	0	5	6	1	0	0	1	0	2	3	19	5	0	0	1	25	26
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	7	7
11:15	0	0	0	1	0	1	2	0	0	0	0	0	0	0	12	4	1	0	0	17	18
11:30	0	0	0	0	0	0	0	0	0	0	1	0	1	2	6	0	0	1	0	7	8
11:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	5	0	0	0	0	5	5
H/TOT	0	0	0	1	0	1	2	1	0	0	1	0	2	3	29	5	1	1	0	36	38
12:00	1	0	0	1	0	2	3	1	0	1	0	0	2	3	4	2	1	0	0	7	8
12:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	4	2	0	0	0	6	6
12:30	0	1	0	1	0	2	3	0	0	0	0	0	0	0	4	1	0	0	0	5	5
12:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	7	0	0	0	0	7	7
H/TOT	1	1	0	2	0	4	7	3	0	1	0	0	4	5	19	5	1	0	0	25	26

TRAFFINOMICS LIMITED

**ROSSMORE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**JUNE 2018
ATH/18/106**

SITE: 02

DATE: 26th June 2018

LOCATION: Rossmore Townland Road/Kilsaran Quarry Entrance

DAY: Tuesday

TIME	MOVEMENT 4					TOT	PCU	MOVEMENT 5					TOT	PCU	MOVEMENT 6					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
13:00	2	0	0	0	0	2	2	1	0	0	1	0	2	3	5	0	0	0	0	5	5
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	1	7	8
13:30	1	0	0	1	0	2	3	1	0	0	0	0	1	1	8	0	0	0	0	8	8
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	6	6
H/TOT	3	0	0	1	0	4	5	2	0	0	1	0	3	4	21	4	0	0	1	26	27
14:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	5	0	0	0	0	5	5
14:15	0	0	0	1	0	1	2	1	0	0	0	0	1	1	8	2	1	0	0	11	12
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8	8
14:45	0	0	0	0	0	0	0	0	0	0	1	0	1	2	8	1	0	0	0	9	9
H/TOT	1	0	0	1	0	2	3	1	0	0	1	0	2	3	29	3	1	0	0	33	34
15:00	0	0	0	1	0	1	2	0	0	0	0	0	0	0	10	2	0	0	0	12	12
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	1	0	0	8	9
15:30	0	0	0	1	0	1	2	0	0	0	0	0	0	0	6	0	2	0	0	8	9
15:45	0	1	1	0	0	2	3	0	1	0	0	0	1	1	5	0	0	0	0	5	5
H/TOT	0	1	1	2	0	4	7	0	1	0	0	0	1	1	26	4	3	0	0	33	35
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8	8
16:15	1	0	0	1	0	2	3	0	0	0	0	0	0	0	5	3	0	0	0	8	8
16:30	0	1	0	1	0	2	3	0	0	0	1	0	1	2	7	1	0	0	0	8	8
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4	0	0	0	9	9
H/TOT	1	1	0	2	0	4	7	0	0	0	1	0	1	2	25	8	0	0	0	33	33
17:00	1	1	0	0	0	2	2	0	0	0	1	0	1	2	7	1	0	0	0	8	8
17:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	9	1	0	1	0	11	12
17:30	4	0	0	0	0	4	4	0	0	0	1	0	1	2	8	0	1	0	0	9	10
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8	8
H/TOT	6	1	0	0	0	7	7	0	0	0	2	0	2	5	32	2	1	1	0	36	38
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	5
18:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	6	1	0	1	0	8	9
18:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	4	0	0	0	0	4	4
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7	7
H/TOT	2	0	0	0	0	2	2	0	0	0	0	0	0	0	21	2	0	1	0	24	25
P/TOT	17	5	1	12	0	35	51	10	3	1	13	0	27	44	263	55	7	3	2	330	339

TRAFFINOMICS LIMITED

**ROSSMORE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**JUNE 2018
ATH/18/106**

SITE: 03

DATE: 26th June 2018

LOCATION: Rossmore Townland Road/Ballintubber Road

DAY: Tuesday

TIME	MOVEMENT 1					TOT	PCU	MOVEMENT 2					TOT	PCU	MOVEMENT 3					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
07:00	1	0	0	0	0	1	1	0	0	0	1	0	1	2	2	0	0	0	0	2	2
07:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
07:30	0	0	0	1	0	1	2	2	0	0	0	0	2	2	1	0	0	0	0	1	1
07:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	2	1	0	0	0	3	3
H/TOT	3	0	0	1	0	4	5	3	0	0	1	0	4	5	6	1	0	0	0	7	7
08:00	1	0	0	0	0	1	1	2	0	0	0	0	2	2	2	0	0	0	0	2	2
08:15	4	0	0	0	0	4	4	1	0	0	0	0	1	1	2	0	0	0	0	2	2
08:30	3	0	0	0	0	3	3	4	0	0	0	0	4	4	2	1	0	0	0	3	3
08:45	1	0	0	0	0	1	1	4	0	0	1	0	5	6	3	0	0	0	0	3	3
H/TOT	9	0	0	0	0	9	9	11	0	0	1	0	12	13	9	1	0	0	0	10	10
09:00	0	0	0	1	0	1	2	2	2	0	0	0	4	4	1	0	0	0	0	1	1
09:15	1	0	0	0	0	1	1	4	1	0	0	0	5	5	1	1	0	0	0	2	2
09:30	2	0	0	0	0	2	2	1	2	1	0	0	4	5	3	3	0	0	0	6	6
09:45	1	1	0	0	0	2	2	4	0	0	0	0	4	4	3	2	0	0	0	5	5
H/TOT	4	1	0	1	0	6	7	11	5	1	0	0	17	18	8	6	0	0	0	14	14
10:00	3	2	0	0	0	5	5	2	2	0	0	0	4	4	5	1	0	0	0	6	6
10:15	0	1	0	0	0	1	1	5	1	0	0	0	6	6	2	1	0	0	0	3	3
10:30	2	2	0	0	0	4	4	4	0	1	0	0	5	6	4	0	0	0	0	4	4
10:45	1	1	0	1	0	3	4	3	0	1	0	0	4	5	2	1	0	0	0	3	3
H/TOT	6	6	0	1	0	13	14	14	3	2	0	0	19	20	13	3	0	0	0	16	16
11:00	0	0	0	0	0	0	0	4	0	0	0	0	4	4	2	1	1	0	0	4	5
11:15	2	0	0	1	0	3	4	2	0	1	0	0	3	4	8	1	0	0	0	9	9
11:30	0	0	0	0	0	0	0	1	3	1	0	0	5	6	4	1	0	1	0	6	7
11:45	1	0	0	0	0	1	1	4	4	0	0	0	8	8	3	0	0	0	0	3	3
H/TOT	3	0	0	1	0	4	5	11	7	2	0	0	20	21	17	3	1	1	0	22	24
12:00	2	0	0	1	0	3	4	0	2	0	0	0	2	2	2	2	0	0	0	4	4
12:15	2	0	0	0	0	2	2	2	1	0	0	0	3	3	5	1	0	0	0	6	6
12:30	0	0	0	1	0	1	2	2	1	1	1	0	5	7	3	1	0	0	0	4	4
12:45	4	0	0	0	0	4	4	1	0	1	0	0	2	3	4	0	0	0	0	4	4
H/TOT	8	0	0	2	0	10	13	5	4	2	1	0	12	14	14	4	0	0	0	18	18

TRAFFINOMICS LIMITED

**ROSSMORE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**JUNE 2018
ATH/18/106**

SITE: 03

DATE: 26th June 2018

LOCATION: Rossmore Townland Road/Ballintubber Road

DAY: Tuesday

TIME	MOVEMENT 1					TOT	PCU	MOVEMENT 2					TOT	PCU	MOVEMENT 3					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
13:00	0	0	0	0	0	0	0	3	2	1	0	0	6	7	3	0	0	0	0	3	3
13:15	2	1	0	0	0	3	3	5	1	0	0	0	6	6	3	0	0	0	1	4	5
13:30	2	0	0	1	0	3	4	8	0	0	0	0	8	8	4	3	0	0	0	7	7
13:45	2	1	0	0	0	3	3	3	0	0	0	0	3	3	3	1	0	0	0	4	4
H/TOT	6	2	0	1	0	9	10	19	3	1	0	0	23	24	13	4	0	0	1	18	19
14:00	5	1	0	0	0	6	6	5	2	0	0	0	7	7	2	1	0	0	0	3	3
14:15	0	0	0	0	0	0	0	2	0	1	1	0	4	6	9	1	1	0	0	11	12
14:30	1	0	0	1	0	2	3	4	1	0	0	0	5	5	7	0	0	0	0	7	7
14:45	3	0	0	0	0	3	3	5	1	0	0	0	6	6	6	1	0	1	0	8	9
H/TOT	9	1	0	1	0	11	12	16	4	1	1	0	22	24	24	3	1	1	0	29	31
15:00	1	0	0	1	0	2	3	4	2	0	0	0	6	6	4	1	0	0	0	5	5
15:15	1	0	0	0	0	1	1	2	1	0	0	0	3	3	4	0	1	0	0	5	6
15:30	2	0	0	1	0	3	4	3	0	0	0	0	3	3	2	1	1	0	0	4	5
15:45	2	1	0	0	0	3	3	3	1	1	0	0	5	6	2	0	0	0	0	2	2
H/TOT	6	1	0	2	0	9	12	12	4	1	0	0	17	18	12	2	2	0	0	16	17
16:00	2	0	0	0	1	3	4	4	0	2	0	0	6	7	6	0	0	0	0	6	6
16:15	4	0	0	1	0	5	6	2	2	1	0	0	5	6	3	1	0	0	0	4	4
16:30	0	2	0	0	0	2	2	4	0	0	1	0	5	6	0	2	0	1	0	3	4
16:45	1	0	0	0	0	1	1	3	0	1	0	0	4	5	2	4	0	0	0	6	6
H/TOT	7	2	0	1	1	11	13	13	2	4	1	0	20	23	11	7	0	1	0	19	20
17:00	3	0	0	0	0	3	3	6	1	0	0	0	7	7	3	0	0	1	0	4	5
17:15	4	0	0	0	0	4	4	10	1	0	0	0	11	11	6	1	0	0	0	7	7
17:30	9	2	0	0	0	11	11	4	0	0	0	0	4	4	1	0	0	0	0	1	1
17:45	2	0	0	0	0	2	2	1	0	0	0	0	1	1	4	0	0	0	0	4	4
H/TOT	18	2	0	0	0	20	20	21	2	0	0	0	23	23	14	1	0	1	0	16	17
18:00	2	0	0	0	0	2	2	4	1	0	0	0	5	5	3	0	0	0	0	3	3
18:15	0	0	0	0	0	0	0	3	0	0	0	0	3	3	5	0	0	1	0	6	7
18:30	1	0	0	0	0	1	1	2	1	0	0	0	3	3	3	0	0	0	0	3	3
18:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	5	0	0	0	0	5	5
H/TOT	4	0	0	0	0	4	4	9	2	0	0	0	11	11	16	0	0	1	0	17	18
P/TOT	83	15	0	11	1	110	125	145	36	14	5	0	200	214	157	35	4	5	1	202	212

TRAFFINOMICS LIMITED

**ROSSMORE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**JUNE 2018
ATH/18/106**

SITE: 03

DATE: 26th June 2018

LOCATION: Rossmore Townland Road/Ballintubber Road

DAY: Tuesday

TIME	MOVEMENT 4					TOT	PCU	MOVEMENT 5					TOT	PCU	MOVEMENT 6					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	4	7
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2
07:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	4	4
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	7	3	0	2	0	12	15	
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	3
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	1	0	0	6	7
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	1	0	7	8
08:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	1	0	4	5
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	13	2	1	3	0	19	23	
09:00	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	2	0	0	0	2	2
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2
09:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	1	0	0	3	4
H/TOT	1	0	0	0	0	1	1	0	1	0	0	0	1	1	1	6	1	0	0	8	9
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	4	5
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	3	4
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	6	3	0	1	1	11	13	
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	0	0	0	7	7
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	3
11:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	12	3	0	1	0	16	17	
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	2	0	0	5	6
12:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
12:45	0	1	0	0	0	1	1	0	0	0	0	0	0	0	3	1	0	0	0	4	4
H/TOT	0	1	0	0	0	1	1	1	0	0	0	0	1	8	1	2	0	0	11	12	

TRAFFINOMICS LIMITED

**ROSSMORE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**JUNE 2018
ATH/18/106**

SITE: 03

DATE: 26th June 2018

LOCATION: Rossmore Townland Road/Ballintubber Road

DAY: Tuesday

TIME	MOVEMENT 4					TOT	PCU	MOVEMENT 5					TOT	PCU	MOVEMENT 6					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
13:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	1	0	4	5
13:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	1	0	0	0	3	3
13:30	0	0	0	0	0	0	0	3	1	0	0	0	4	4	3	0	0	0	0	3	3
13:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	3	0	0	0	0	3	3	3	1	0	0	0	4	4	8	2	0	1	0	11	12
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
14:15	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	1	0	0	0	1	1
14:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	1	0	2	3
14:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	3	1	0	0	0	4	4
H/TOT	3	0	0	0	0	3	3	2	0	0	0	0	2	2	7	2	0	1	0	10	11
15:00	0	1	0	0	0	1	1	0	0	0	0	0	0	0	6	1	0	0	0	7	7
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
15:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	1	0	0	4	5
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4	4
H/TOT	1	1	0	0	0	2	2	0	0	0	0	0	0	0	12	4	1	0	0	17	18
16:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4	4
16:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	5	0	0	0	0	5	5
16:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	4	1	0	0	0	5	5
H/TOT	2	0	0	0	0	2	2	1	0	0	0	0	1	1	14	2	0	0	0	16	16
17:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	3	1	0	0	0	4	4
17:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	4	0	0	1	0	5	6
17:30	0	0	0	0	0	0	0	2	0	0	0	0	2	2	7	1	1	1	0	10	12
17:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	4	0	0	0	0	4	4
H/TOT	1	0	0	0	0	1	1	5	0	0	0	0	5	5	18	2	1	2	0	23	26
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
18:30	1	0	0	0	0	1	1	1	0	0	0	0	1	1	1	0	0	0	0	1	1
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4
H/TOT	1	0	0	0	0	1	1	1	0	0	0	0	1	1	9	1	0	0	0	10	10
P/TOT	15	2	0	0	0	17	17	13	2	0	0	0	15	15	115	31	6	11	1	164	182

TRAFFINOMICS LIMITED

**ROSSMORE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**JUNE 2018
ATH/18/106**

SITE: 04

DATE: 26th June 2018

LOCATION: Carrigtwohill Road/Father O'Keffee Terrace

DAY: Tuesday

TIME	MOVEMENT 1					TOT	PCU	MOVEMENT 2					TOT	PCU	MOVEMENT 3					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
07:00	5	0	1	0	0	6	7	2	0	0	2	0	4	7	3	0	0	1	0	4	5
07:15	5	1	1	1	0	8	10	3	0	0	0	0	3	3	1	0	0	0	0	1	1
07:30	2	0	1	2	0	5	8	2	0	0	0	0	2	2	4	1	0	1	0	6	7
07:45	6	0	1	0	0	7	8	5	1	0	0	0	6	6	4	0	0	0	0	4	4
H/TOT	18	1	4	3	0	26	32	12	1	0	2	0	15	18	12	1	0	2	0	15	18
08:00	6	2	0	4	0	12	17	1	0	0	1	0	2	3	2	0	0	0	0	2	2
08:15	3	1	0	1	0	5	6	4	2	1	0	0	7	8	7	0	0	0	0	7	7
08:30	6	1	1	1	0	9	11	6	0	0	1	0	7	8	3	1	0	0	0	4	4
08:45	6	1	0	2	0	9	12	3	0	0	1	0	4	5	3	1	0	0	0	4	4
H/TOT	21	5	1	8	0	35	46	14	2	1	3	0	20	24	15	2	0	0	0	17	17
09:00	2	2	1	1	0	6	8	2	2	0	0	0	4	4	0	1	0	1	0	2	3
09:15	2	0	2	0	0	4	5	1	1	0	0	0	2	2	2	0	0	0	0	2	2
09:30	7	1	1	3	0	12	16	1	0	1	0	0	2	3	3	0	0	0	0	3	3
09:45	5	5	0	4	0	14	19	2	1	0	0	0	3	3	3	1	0	0	0	4	4
H/TOT	16	8	4	8	0	36	48	6	4	1	0	0	11	12	8	2	0	1	0	11	12
10:00	7	2	0	0	0	9	9	1	2	0	0	0	3	3	3	2	0	0	0	5	5
10:15	4	3	0	0	0	7	7	3	1	0	0	0	4	4	3	1	0	0	0	4	4
10:30	5	1	1	0	0	7	8	2	0	0	1	0	3	4	0	2	0	0	0	2	2
10:45	3	1	0	2	0	6	9	2	0	0	0	0	2	2	5	1	0	1	0	7	8
H/TOT	19	7	1	2	0	29	32	8	3	0	1	0	12	13	11	6	0	1	0	18	19
11:00	8	1	0	1	0	10	11	4	1	0	0	0	5	5	1	0	0	0	0	1	1
11:15	3	3	0	2	0	8	11	4	2	0	0	0	6	6	2	0	0	1	0	3	4
11:30	7	2	0	3	0	12	16	3	0	0	1	0	4	5	0	0	0	0	0	0	0
11:45	7	1	1	2	0	11	14	3	0	0	0	0	3	3	3	0	0	0	0	3	3
H/TOT	25	7	1	8	0	41	52	14	3	0	1	0	18	19	6	0	0	1	0	7	8
12:00	5	2	1	2	0	10	13	5	0	2	0	0	7	8	3	1	0	1	0	5	6
12:15	6	2	2	4	0	14	20	1	0	0	0	0	1	1	5	0	0	0	0	5	5
12:30	6	1	1	1	0	9	11	3	0	0	0	0	3	3	0	0	0	1	0	1	2
12:45	6	1	2	0	0	9	10	5	0	0	0	0	5	5	4	1	0	0	0	5	5
H/TOT	23	6	6	7	0	42	54	14	0	2	0	0	16	17	12	2	0	2	0	16	19

TRAFFINOMICS LIMITED

**ROSSMORE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**JUNE 2018
ATH/18/106**

SITE: 04

DATE: 26th June 2018

LOCATION: Carrigtwohill Road/Father O'Keffee Terrace

DAY: Tuesday

TIME	MOVEMENT 1					TOT	PCU	MOVEMENT 2					TOT	PCU	MOVEMENT 3					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
13:00	10	1	0	1	0	12	13	5	0	0	1	0	6	7	6	0	0	0	0	6	6
13:15	5	3	0	0	0	8	8	3	0	0	0	0	3	3	1	1	0	0	0	2	2
13:30	8	2	1	3	0	14	18	4	1	0	0	0	5	5	3	0	0	1	0	4	5
13:45	13	2	0	2	0	17	20	2	1	0	0	0	3	3	5	0	0	0	0	5	5
H/TOT	36	8	1	6	0	51	59	14	2	0	1	0	17	18	15	1	0	1	0	17	18
14:00	5	4	1	0	0	10	11	4	0	0	0	0	4	4	3	1	0	0	0	4	4
14:15	6	1	2	2	0	11	15	1	1	0	0	0	2	2	4	1	0	0	0	5	5
14:30	12	2	0	3	1	18	23	4	0	0	0	0	4	4	5	0	0	0	0	5	5
14:45	10	3	2	1	0	16	18	4	0	1	0	0	5	6	6	0	0	0	0	6	6
H/TOT	33	10	5	6	1	55	66	13	1	1	0	0	15	16	18	2	0	0	0	20	20
15:00	4	1	0	2	0	7	10	9	2	0	0	0	11	11	1	0	0	2	0	3	6
15:15	9	1	1	1	0	12	14	4	2	0	0	0	6	6	1	0	0	0	0	1	1
15:30	8	0	0	0	0	8	8	6	1	1	0	0	8	9	4	1	0	1	0	6	7
15:45	10	1	0	0	1	12	13	4	1	0	0	0	5	5	3	1	0	0	0	4	4
H/TOT	31	3	1	3	1	39	44	23	6	1	0	0	30	31	9	2	0	3	0	14	18
16:00	2	0	0	1	0	3	4	2	0	0	0	0	2	2	5	0	1	0	0	6	7
16:15	7	0	1	0	0	8	9	7	1	0	0	0	8	8	6	0	0	1	0	7	8
16:30	10	0	1	0	0	11	12	6	1	1	0	0	8	9	0	2	0	0	0	2	2
16:45	6	1	0	0	0	7	7	4	1	0	0	0	5	5	2	0	0	0	0	2	2
H/TOT	25	1	2	1	0	29	31	19	3	1	0	0	23	24	13	2	1	1	0	17	19
17:00	7	1	2	0	0	10	11	6	1	0	0	0	7	7	2	1	0	0	0	3	3
17:15	5	2	0	1	0	8	9	7	1	0	1	0	9	10	4	0	0	0	0	4	4
17:30	11	3	0	0	1	15	16	8	1	0	1	0	10	11	7	3	0	0	0	10	10
17:45	13	2	0	0	0	15	15	5	0	0	0	0	5	5	3	0	0	0	0	3	3
H/TOT	36	8	2	1	1	48	51	26	3	0	2	0	31	34	16	4	0	0	0	20	20
18:00	12	1	0	2	0	15	18	2	2	0	0	0	4	4	3	0	0	0	0	3	3
18:15	5	0	0	0	1	6	7	3	1	1	0	0	5	6	0	1	0	0	0	1	1
18:30	15	0	0	1	0	16	17	3	0	0	0	0	3	3	2	0	0	0	0	2	2
18:45	8	0	1	0	0	9	10	3	0	0	0	0	3	3	4	0	1	0	0	5	6
H/TOT	40	1	1	3	1	46	51	11	3	1	0	0	15	16	9	1	1	0	0	11	12
P/TOT	323	65	29	56	4	477	568	174	31	8	10	0	223	240	144	25	2	12	0	183	200

TRAFFINOMICS LIMITED

**ROSSMORE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**JUNE 2018
ATH/18/106**

SITE: 04

DATE: 26th June 2018

LOCATION: Carrigtwohill Road/Father O'Keffee Terrace

DAY: Tuesday

TIME	MOVEMENT 4					TOT	PCU	MOVEMENT 5					TOT	PCU	MOVEMENT 6					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8	8
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	3	4
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	1	7	12
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	1	0	0	10	11
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	1	1	4	1	28	35
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	1	3	1	13	18
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	2	0	3	1	18	23
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	1	0	1	0	14	15
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	2	2	2	0	14	18
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	6	3	9	2	59	74
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	0	2	0	9	12
09:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	5	1	1	2	0	9	12
09:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	6	3	0	0	0	9	9
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	1	2	0	12	15
H/TOT	1	0	0	0	0	1	1	1	0	0	0	0	1	1	26	5	2	6	0	39	48
10:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	4	3	3	0	0	10	12
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	2	2	0	9	13
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3	0	0	0	8	8
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	1	0	0	8	9
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	18	9	6	2	0	35	41
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	2	0	0	8	9
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	0	3	0	11	15
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	1	3	0	12	16
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	1	0	9	10
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	6	3	7	0	40	51
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12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	1	0	6	7
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	1	1	4	0	15	21
12:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	5	3	1	2	0	11	14
H/TOT	1	0	0	0	0	1	1	1	0	0	0	0	1	1	19	8	3	11	0	41	57

TRAFFINOMICS LIMITED

**ROSSMORE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**JUNE 2018
ATH/18/106**

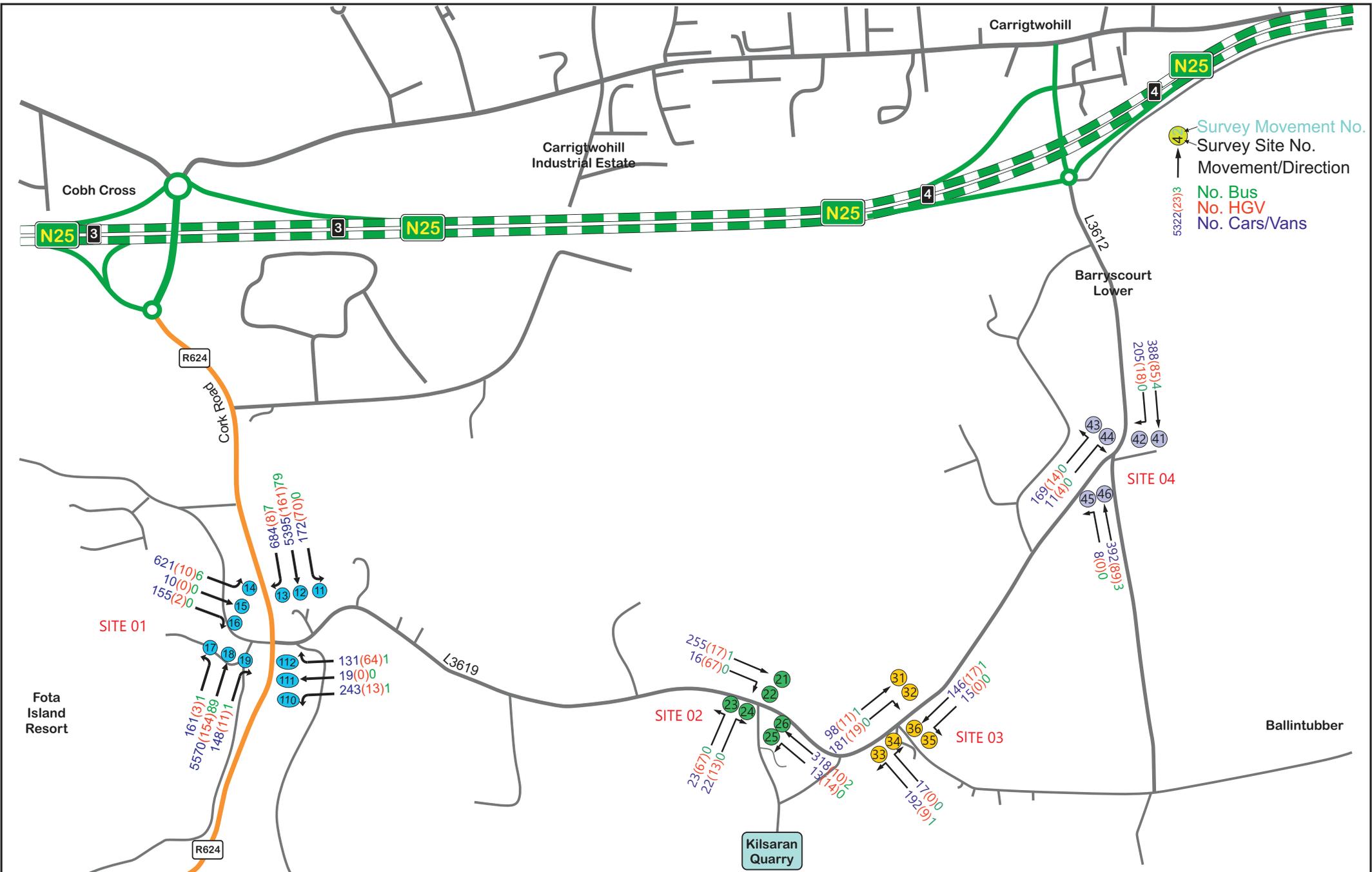
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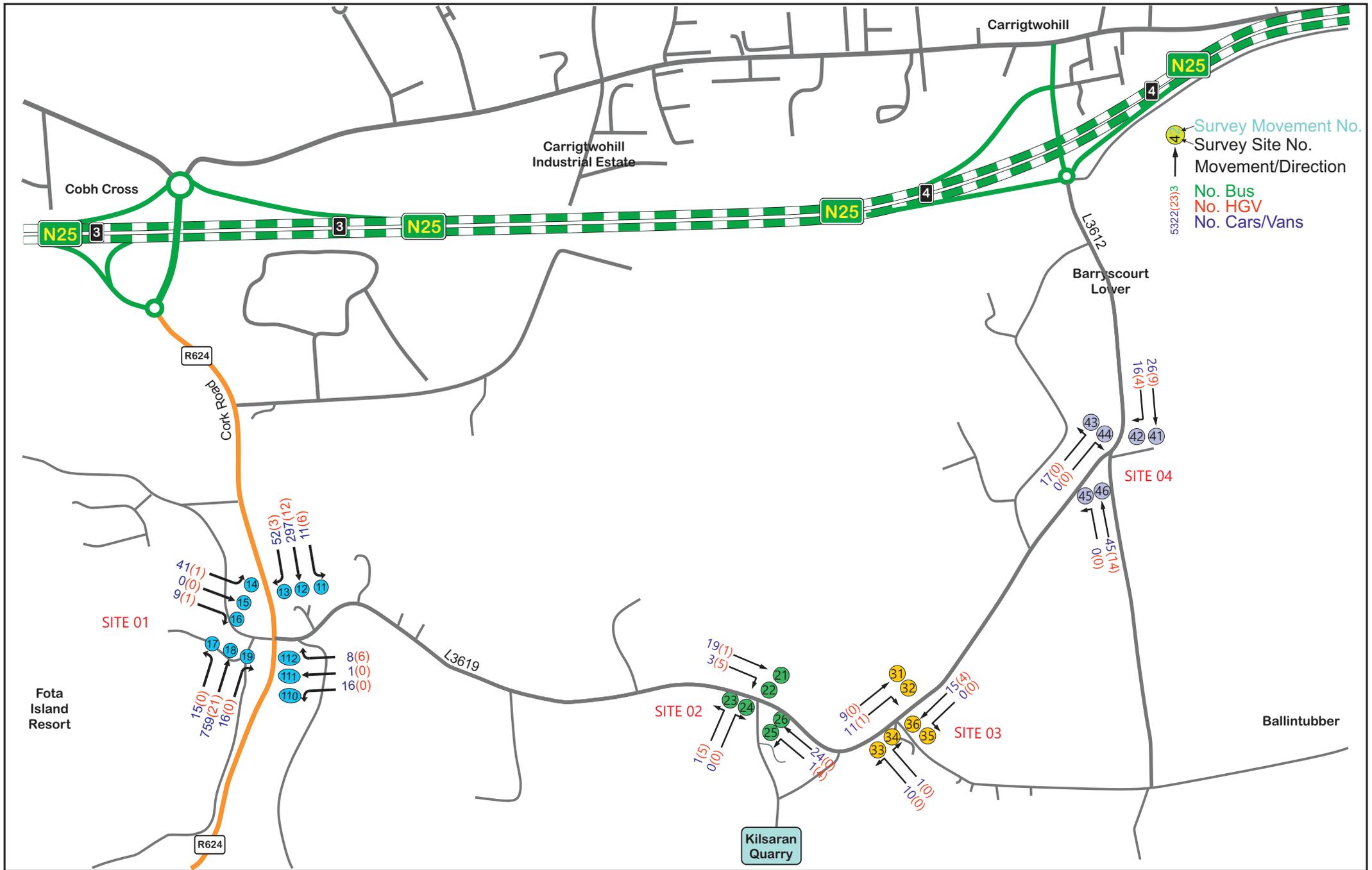
DATE: 26th June 2018

LOCATION: Carrigtwohill Road/Father O'Keffee Terrace

DAY: Tuesday

TIME	MOVEMENT 4					TOT	PCU	MOVEMENT 5					TOT	PCU	MOVEMENT 6					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	3	2	0	13	17
13:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	5	2	0	0	0	7	7
13:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	9	1	0	1	0	11	12
13:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	6	0	2	3	0	11	16
H/TOT	3	0	0	0	0	3	3	1	0	0	0	0	1	1	27	4	5	6	0	42	52
14:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	13	1	0	0	0	14	14
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	3	0	2	0	12	15
14:30	0	0	1	0	0	1	2	0	0	0	0	0	0	0	6	2	0	3	0	11	15
14:45	2	0	1	0	0	3	4	1	0	0	0	0	1	1	7	1	0	3	0	11	15
H/TOT	2	0	2	0	0	4	5	2	0	0	0	0	2	2	33	7	0	8	0	48	58
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	1	1	0	7	9
15:15	0	0	1	0	0	1	2	0	0	0	0	0	0	0	7	1	3	1	0	12	15
15:30	0	0	1	0	0	1	2	0	0	0	0	0	0	0	10	3	2	1	0	16	18
15:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	5	0	1	0	0	6	7
H/TOT	0	0	2	0	0	2	3	1	0	0	0	0	1	1	25	6	7	3	0	41	48
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	2	1	0	0	13	14
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	1	0	5	6
16:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	1	0	0	0	3	3
16:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	7	0	0	0	0	7	7
H/TOT	3	0	0	0	0	3	3	0	0	0	0	0	0	0	22	4	1	1	0	28	30
17:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	6	1	0	0	0	7	7
17:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	9	1	0	0	0	10	10
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	1	0	6	7
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	9	9
H/TOT	0	0	0	0	0	0	0	2	0	0	0	0	2	2	28	3	0	1	0	32	33
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	9	9
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7	7
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	1	0	0	0	11	11
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	1	0	0	0	24	24
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	3	0	0	0	51	51
P/TOT	11	0	4	0	0	15	17	8	0	0	0	0	8	8	330	62	31	58	3	484	578





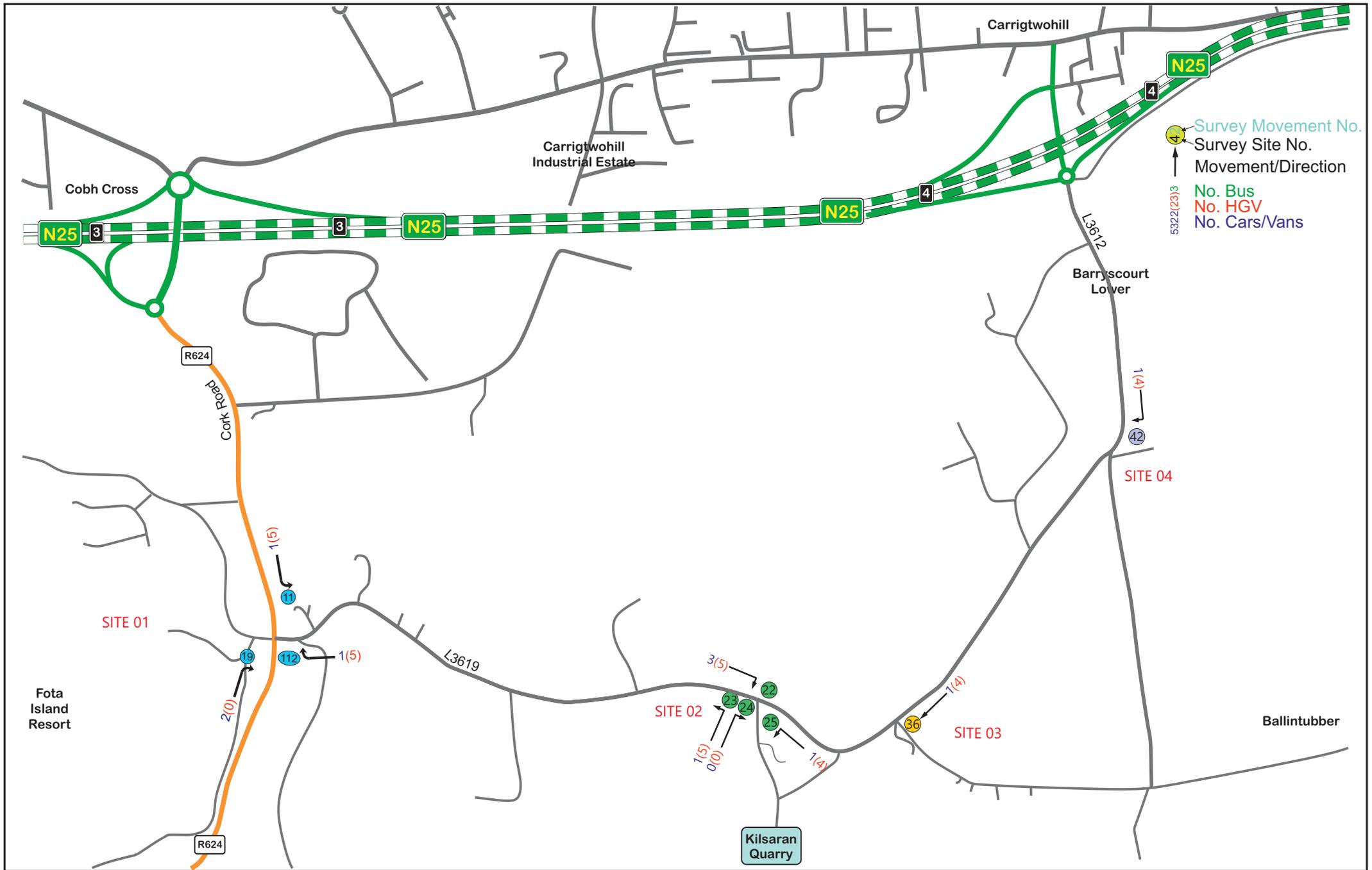
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D15 R59T

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Project/Job Title **Rossmore, Co Cork - Network Flows**

Drawing Title **Existing Baseline June 2018 Surveyed Traffic Flows**
Morning Network Peak Hour Network Traffic Flows No. Cars/Vans (No. HGV)
(08:00-09:00hrs)

Drawn by: TWL	Checked by: JMK	Approved by: JMK
Date: Mar 2021	Date: Mar 2021	Date: Mar 2021
Scenario: Existing Survey	Job No: 03071	Figure 3
Appendix 14-2		



TRAFFICWISE
traffic & transportation solutions

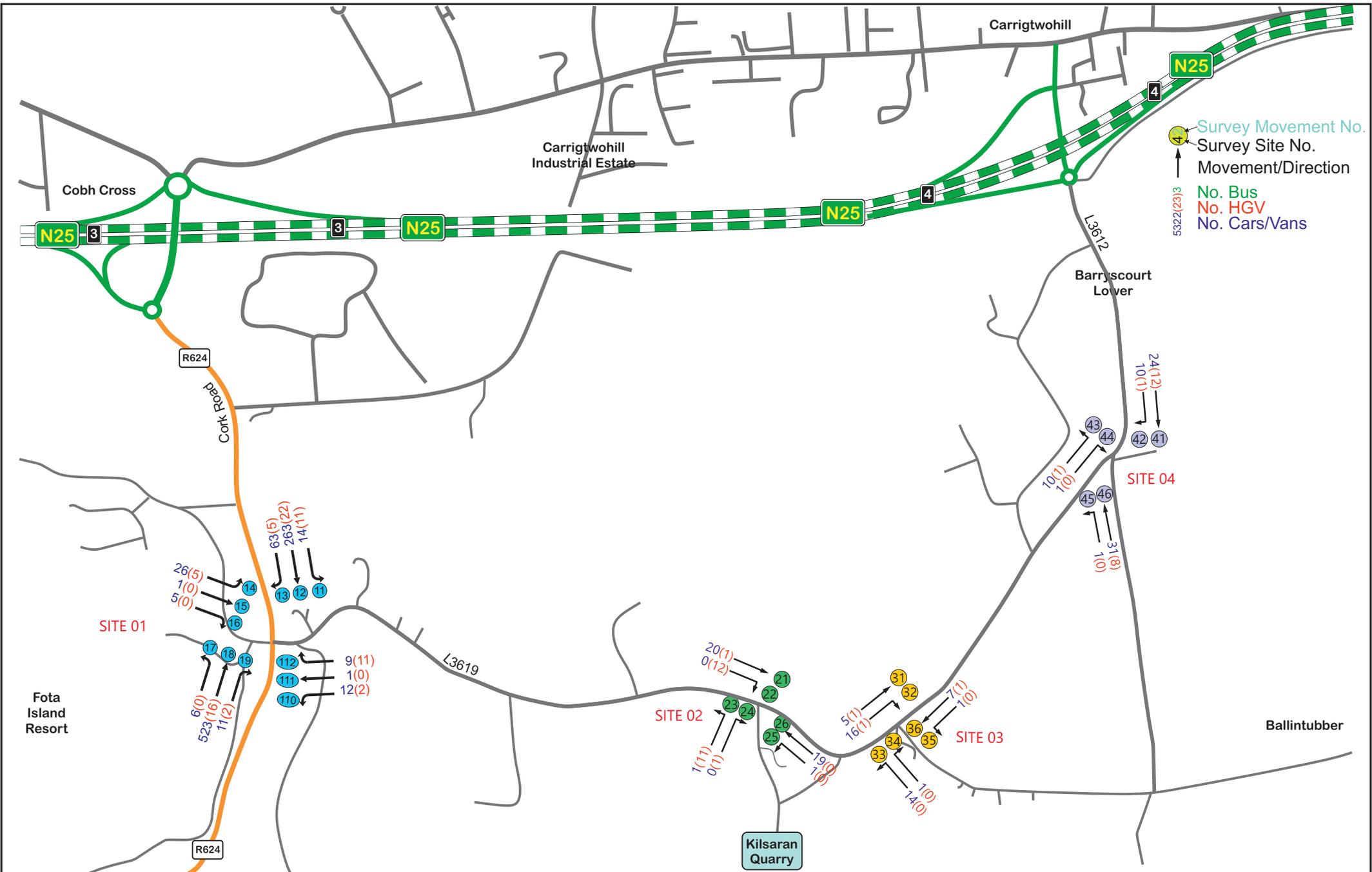
Suite 5, Gowna Plaza,
Bracetown Business Park,
D15 R59T

Telephone: +353 (0)1 8253015
Website: www.trafficwise.ie
E-mail: info@trafficwise.ie

Project/Job Title **Rossmore, Co Cork - Network Flows**

Drawing Title **Existing Baseline June 2018 Surveyed Traffic Flows**
Morning Network Peak Hour Development Traffic Flows No. Cars/Vans (No. HGV)
(08:00-09:00hrs)

Drawn by: TWL	Checked by: JMK	Approved by: JMK
Date: Mar 2021	Date: Mar 2021	Date: Mar 2021
Scenario: Existing Survey	Job No: 03071	Figure 4
Appendix 14-2		



TRAFFICWISE
traffic & transportation solutions

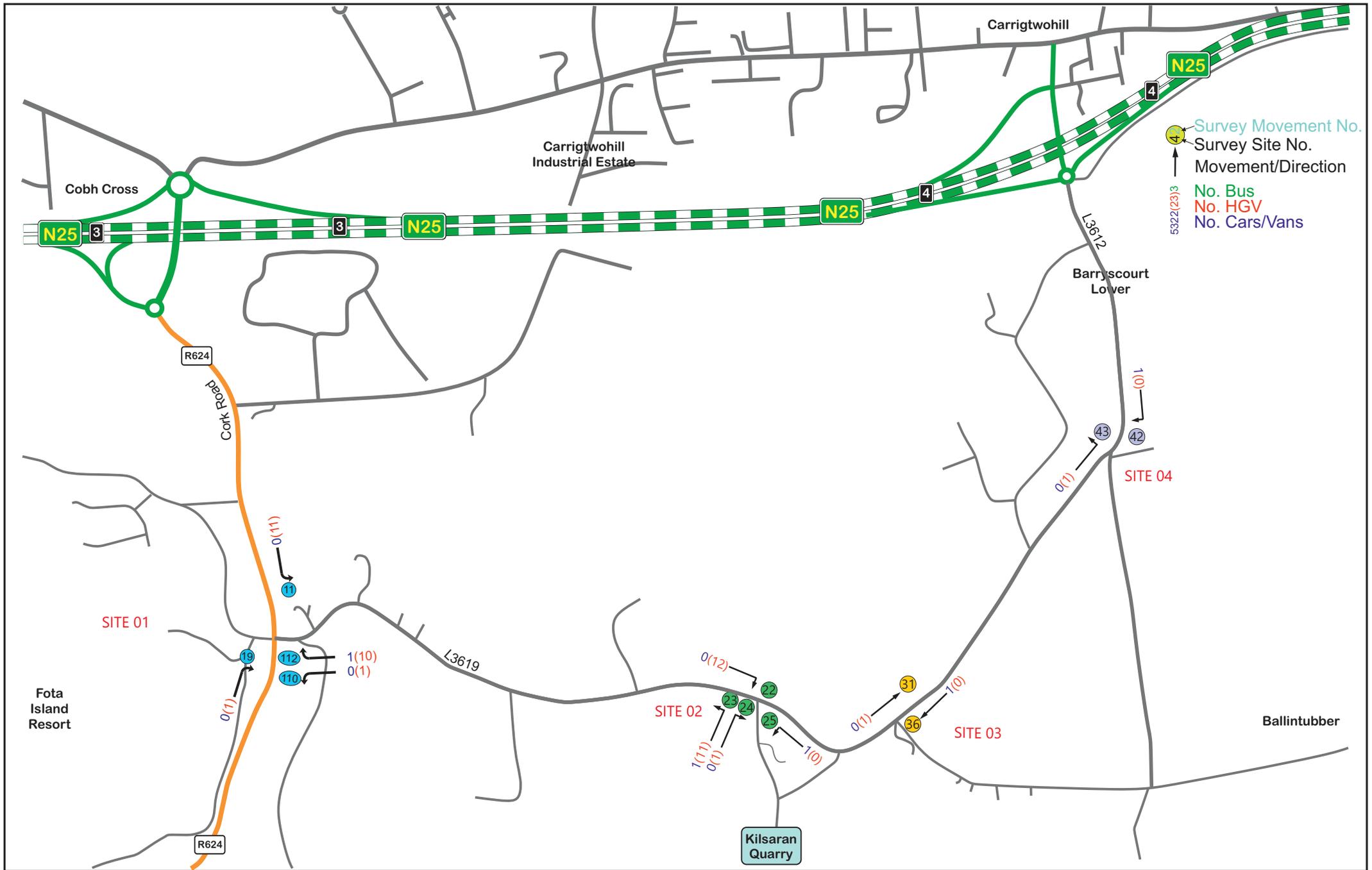
Suite 5, Gowna Plaza,
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D15 R59T

Telephone: +353 (0)1 8253015
Website: www.trafficwise.ie
E-mail: info@trafficwise.ie

Project/Job Title **Rossmore, Co Cork - Network Flows**

Drawing Title **Existing Baseline June 2018 Surveyed Traffic Flows**
Development Peak Hour Network Traffic Flows No. Cars/Vans (No. HGV)
(09:00-10:00hrs)

Drawn by: TWL	Checked by: JMK	Approved by: JMK
Date: Mar 2021	Date: Mar 2021	Date: Mar 2021
Scenario: Existing Survey	Job No: 03071	Figure 5
Appendix 14-2		



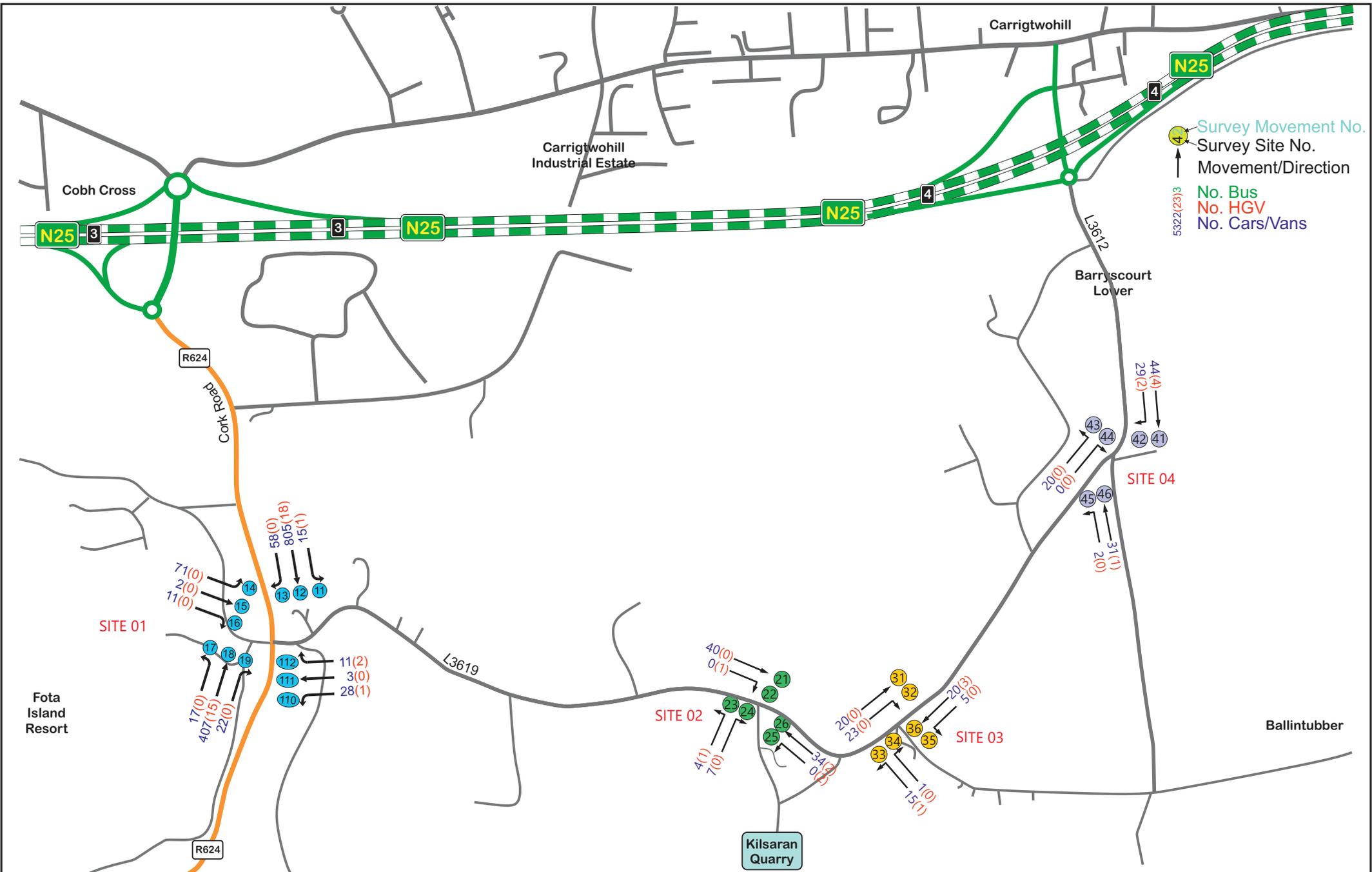
Suite 5, Gowra Plaza,
Bracetown Business Park,
D15 R59T

Telephone: +353 (0)1 8253015
Website: www.trafficwise.ie
E-mail: info@trafficwise.ie

Project/Job Title **Rossmore, Co Cork - Network Flows**

Drawing Title **Existing Baseline June 2018 Surveyed Traffic Flows
Development Peak Hour Development Traffic Flows No. Cars/Vans (No. HGV)
(09:00-10:00hrs)**

Drawn by: TWL	Checked by: JMK	Approved by: JMK
Date: Mar 2021	Date: Mar 2021	Date: Mar 2021
Scenario: Existing Survey	Job No: 03071	Figure 6
Appendix 14-2		



TRAFFICWISE
traffic & transportation solutions

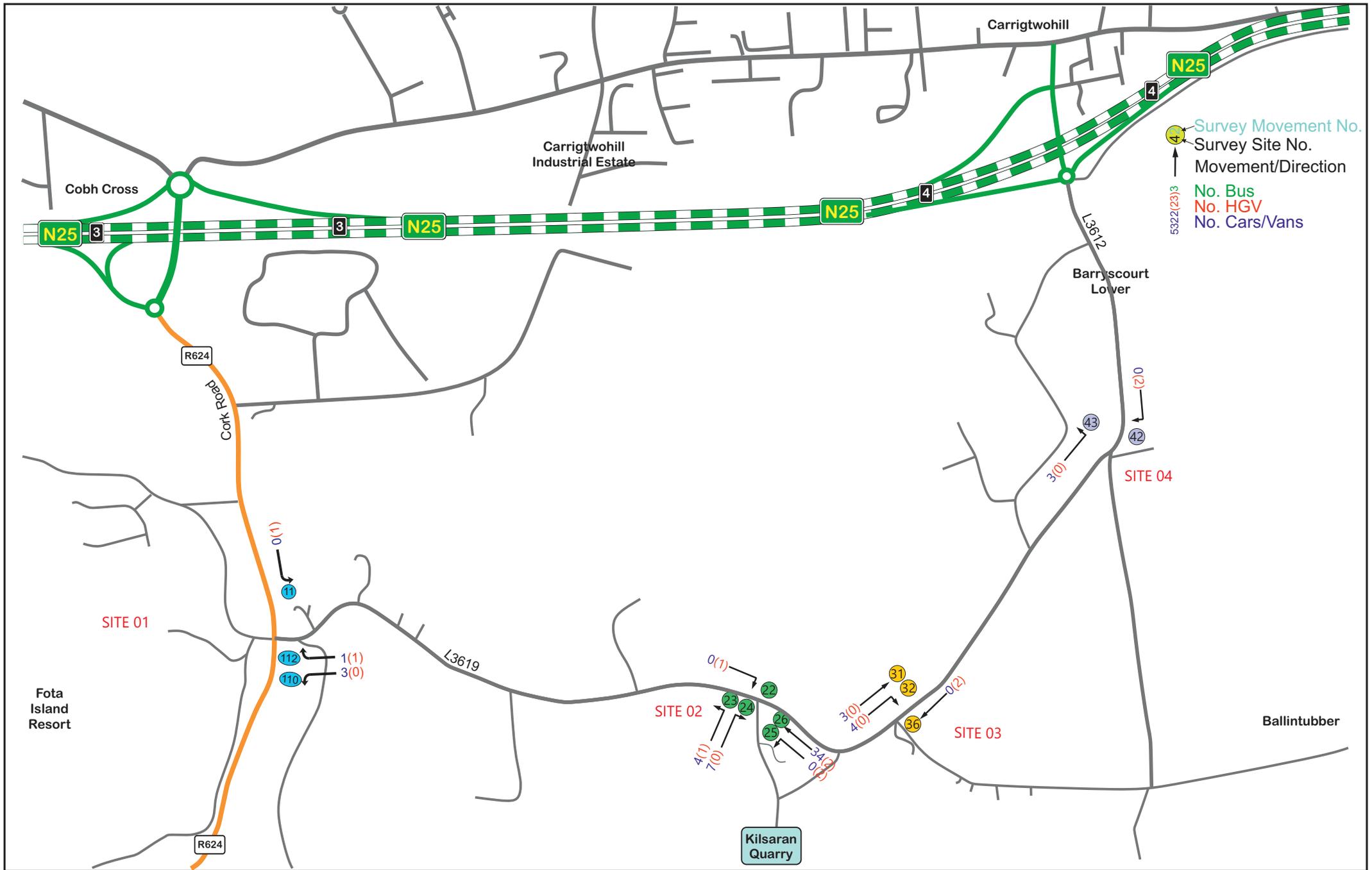
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Website: www.trafficwise.ie
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Project/Job Title **Rossmore, Co Cork - Network Flows**

Drawing Title **Existing Baseline June 2018 Surveyed Traffic Flows**
Evening Network Peak Hour Network Traffic Flows No. Cars/Vans (No. HGV)
(17:00-18:00hrs)

Drawn by: TWL	Checked by: JMK	Approved by: JMK
Date: Mar 2021	Date: Mar 2021	Date: Mar 2021
Scenario: Existing Survey	Job No: 03071	Figure 7
Appendix 14-2		



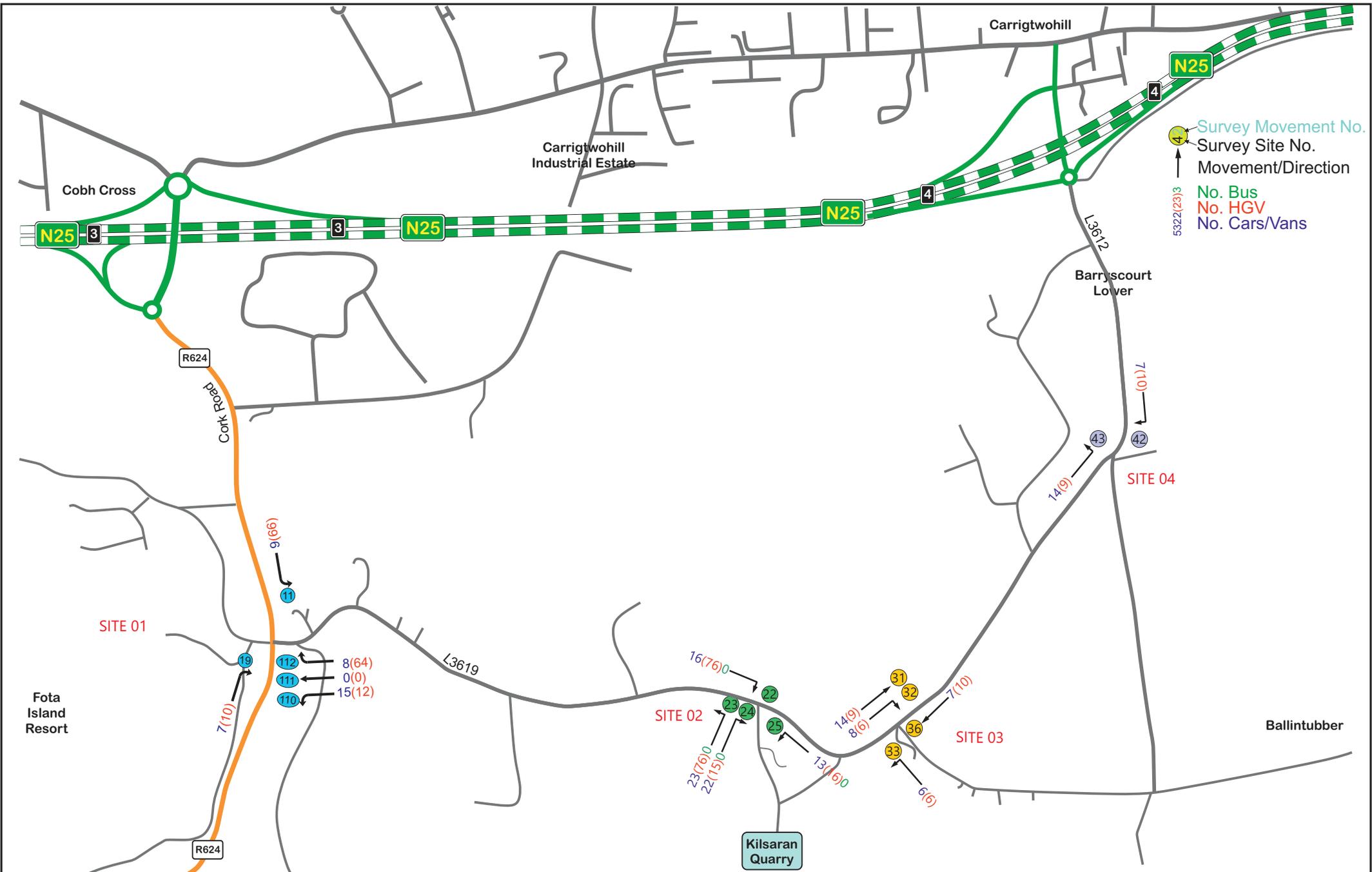
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Website: www.trafficwise.ie
E-mail: info@trafficwise.ie

Project/Job Title **Rossmore, Co Cork - Network Flows**

Drawing Title **Existing Baseline June 2018 Surveyed Traffic Flows**
Evening Network Peak Hour Development Traffic Flows No. Cars/Vans (No. HGV)
(17:00-18:00hrs)

Drawn by: TWL	Checked by: JMK	Approved by: JMK
Date: Mar 2021	Date: Mar 2021	Date: Mar 2021
Scenario: Existing Survey	Job No: 03071	Figure 8
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REFERENCES 5

INTRODUCTION

- 15.1 This chapter of the Environmental Impact Assessment Report (EIAR), prepared by SLR Consulting Ireland, provides supporting information to accompany a Planning Application to Cork County Council by Kilsaran. It addresses the potential interaction of environmental impacts arising from the continuance of use of the existing permitted quarry.
- 15.2 All of the predictable significant impacts of the proposed development and the existing and proposed measures in place to mitigate them have been outlined in this EIAR.
- 15.3 However, for any development with the potential for significant environmental impact there is also the potential for interaction amongst these impacts. The result of these interactions may either exacerbate the magnitude of the impact or ameliorate it. The interaction of impacts on the surrounding environment needs to be addressed as part of the Environmental Impact Assessment process.
- 15.4 This Environmental Impact Assessment Report was prepared by SLR Consulting on behalf of Kilsaran as an integrated document, rather than a collection of separate reports. The impacts that arise as a result of the interaction between several aspects of the development have, therefore been addressed in the main body of each EIAR chapter.

The Interaction of the Foregoing

- 15.5 The interaction between the various environmental topics has been covered within each of the EIAR chapters, 4 through to 14, where relevant.
- 15.6 A matrix method has been used¹, in which the environmental components addressed in the previous sections of this EIAR have been placed on both axes of a matrix; these interactions are summarised in **Table 15-1** below.
- 15.7 The purpose of the effects matrix is to identify potential interactions. Actual interactions and their significance are dealt with in the relevant chapter of the EIAR. An overview of the key interactions is provided below in this chapter.

¹ As per the EPA EIAR draft guidelines (May 2017)

**Table 15-1
Potential Impact Interaction and Key Interrelationships Matrix**

	Population & Human Health	Biodiversity	Land, Soils & Geology	Water	Climate	Air Quality	Noise & Vibration	Material Assets	Cultural Heritage	Landscape and Visual	Traffic
Population & Human Health	Black					Green	Green			Green	Green
Biodiversity		Black				Green	Green				
Land, Soils & Geology			Black	Green							
Water			Green	Black	Green						
Climate				Green	Black						
Air Quality	Green	Green				Black					
Noise & Vibration	Green	Green					Black				
Material Assets								Black			
Cultural Heritage									Black		
Landscape and Visual	Green									Black	
Traffic	Green										Black

OVERVIEW OF KEY INTERACTIONS

Population and Human Health

- 15.8 In relation to the key interactions of human receptors with air quality, noise & vibration, landscape and traffic, these are addressed in Chapter 8 (Air Quality), Chapter 10 (Noise & Vibration), Chapter 13 (Landscape) and Chapter 14 (Traffic), as outlined above.

Biodiversity

- 15.9 In relation to biodiversity there is potential for interaction with air quality and noise & vibration, and these interactions are addressed in Chapter 8 (Air Quality) and Chapter 10 (Noise & Vibration).
- 15.10 Following review of the existing dust deposition, noise & vibration results and detailed assessments it is concluded that continued quarrying operations within Rossmore Quarry (with the range of mitigation measures implemented) will have an insignificant dust, noise and vibration impact on ecological receptors.

Land, Soils and Geology

- 15.11 The interaction between Land, Soils & Geology and Water is addressed in Chapter 7 (Water), see below.

Water

- 15.12 In relation to water there is potential for interaction with land, soils & geology and climate, and these are addressed in Chapter 6 (Land, Soil & Geology) and Chapter 7 (Water) of the EIA.
- 15.13 The water management at the site considers climate (weather conditions). There are existing mitigation and management measures in place to prevent spills and manage the water environment. Continued implementation of these measures will ensure that there will be no significant effects owing to the interaction of land, soils and geology and the water environment.

Climate

- 15.14 The interaction of climate (weather conditions) with the water environment is addressed in Chapter 7 (Water), in terms of surface water, groundwater and water management at the site.

Air Quality

- 15.15 In relation to air quality (in particular dust deposition) there is potential for interaction with human and ecological receptors, and this is addressed in Chapter 8 (Air Quality).
- 15.16 Following review of the existing dust deposition results and a detailed dust assessment it is concluded that quarrying operations within Rossmore Quarry (with the range of existing management / mitigation measures implemented) will have an insignificant dust impact on ecological receptors and an insignificant to slight adverse dust impact on human receptors.

Noise & Vibration

- 15.17 In relation to noise and vibration there is potential for interaction with human and ecological receptors, and this is addressed in Chapter 10 (Noise & Vibration).
- 15.18 Following review of the existing noise & blasting results and detailed assessment it is concluded that quarrying operations within Rossmore Quarry (with the range of existing management /

mitigation measures implemented) will have an insignificant impact on human or ecological receptors.

Material Assets

15.19 It is considered that there is no potential for any significant interaction between material assets (waste management and built services) and the other environmental topics.

Cultural Heritage

15.20 It is considered that there is no potential for any significant interaction between cultural heritage and the other environmental topics.

Landscape & Visual

15.21 The development has the potential to impact on population (human) amenity through changes to the landscape and views / prospects. The detailed landscape & visual assessment provided in Chapter 13 (Landscape) concludes that the development will have a moderate/minor effect on the landscape and that any visual effects will be moderate / minor or less (i.e. effects not regarded as significant).

Traffic

15.22 Potential interactions associated with traffic movements from the existing operational quarry development with the general population in the form of other road users are addressed in Chapter 14 (Traffic). There will be a reduction in the annual maximum extraction rate (from c. 750,000 to 500,000 tonnes per year), and this coupled with the use of established transport routes will ensure there is no significant impact on the local road network.

15.23 Chapter 8 (Air Quality) provides details of the existing management / mitigation measures that are in place at the quarry to prevent / minimise generation of traffic-related dust on the internal access roads and at the quarry entrance.

REFERENCES

Environmental Protection Agency (May 2017) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (Draft)